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Bachelor Thesis IBEB

The Impact of ESG Risk Susceptibility on Corporate ESG Disclosure Practices

An empirical investigation into the relationship between firms' ESG risk susceptibility and the quality of their ESG disclosures.

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Abstract

Interest in Environmental, Social and Governance (ESG) activities has burgeoned over the past decades, driven by increasing recognition of the need for a more sustainable world. Online platforms have heightened public interest in how corporations behave. Scandalous headlines such as "H&M factories in Myanmar employed 14-year-old workers" expose unethical practices by big firms, raising questions such as: To what extent do they disclose their real activities? This thesis focuses on the relationship between a firm's susceptibility to Environmental, Governance and Social (ESG) risks and the extent of its ESG disclosures, hypothesising that firms in risk-sensitive industries provide more extensive and higher-quality disclosures, which in turn positively impacts financial performance. Using a comprehensive dataset of 119 companies across various sectors, this research employs simple linear regression – to test these hypotheses. Compared to the expectations set by existing literature, the results reveal neither a significant relationship between ESG risk susceptibility and the extent of ESG disclosures, nor one between ESG disclosure quality on financial performance in the sample studied. The findings highlight the complexity of ESG practices and their varied impact across different industries and firm characteristics. This research contributes to the ongoing discourse on ESG by challenging prevailing assumptions and providing a basis for further investigation into the nuanced relationship between ESG practices and financial outcomes in high-risk industries.

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Chapter 1: Introduction

ESG, this buzzword that has been making headlines and circulating widely over the past few years, originates from the ethos of responsible investment. The Principles for Responsible Investment (PRI) define responsible investment as "a strategy and practice aimed at integrating environmental, social, and governance (ESG) factors into investment decisions and active ownership." Thus, ESG commonly serves as a standard instrument used by investors to assess corporate operations and anticipate future financial performance. When assessing the sustainable growth of enterprises as an investment concept, the three core components of ESG represent critical focal points during the investment analysis and decision-making phases. Additionally, environmental, social, and governance (ESG) factors aid in gauging the sustainability and societal impact of business operations.

According to the European Banking Authority (EBA), ESG factors encompass "environmental, social, or governance considerations that could affect the financial performance or solvency of an entity, sovereign, or individual, either positively or negatively." In broad terms, relying on the stakeholder theory, ESG research proposes that enterprises exhibiting stronger responsiveness to stakeholder ESG expectations tend to outperform those that are less diligent in meeting these requirements (Li et al., 2021). For instance, environmental concerns encompass waste management, climate change mitigation, and water resource management. Social issues encompass various aspects such as community engagement, human rights protection, labour relations, workforce diversity, and equitable access to funding. Governance issues pertain to matters such as the quality of reporting, integrity, political stability, financial system stability, corporate governance structure, and ethical business practices (Khan et al., 2016).

Awareness of ESG has gained significant momentum over the years. Based on a survey conducted in 2022 by the Team Lewis Foundation and HeForShe, it was found that young people globally prioritise the well-being of the planet over issues such as gender equality and economic opportunities (Paoletti, 2022).

Furthermore, to underscore the increasing attention ESG has been garnering over the years, according to Morningstar, ESG funds represented nearly one-third of all European fund sales from April to June in 2020, with sustainable equity funds attracting 63% more investment than their conventional counterparts. Globally, ESG funds garnered inflows totalling $71.1

billion in the second quarter of 2020, reaching a milestone of $1 trillion in market capitalization (Díaz et al., 2021). The widespread impact of the pandemic and its disruption of economies and societies globally has led to an increased focus among investors and companies not only on accounting practices but also on other governance and social impact measures included in ESG ratings. This emerging trend has spurred the demand for heightened credibility in ESG information, prompting the advancement of carbon accounting, ESG disclosure measures, and regulatory frameworks worldwide (De Silva Lokuwaduge et al., 2022).

1.1 Research Question

Previous research suggests that firms in certain industries – ESG-risk sensitive industries – are more inclined to engage in social disclosure. To check if this holds water, our thesis investigates if firms that are more vulnerable to ESG risks do in fact provide more extensive non-financial disclosures. This raises the central research question:

Are highly ESG-risk-sensitive firms more likely to provide better ESG disclosures than less risk-susceptible counterparts?

To answer our research question, we will first start by categorising industry sectors and hence the firms in our sample based on GICS (Global Industry Classification Standard) sector definitions. As for the assessment of the ESG disclosures, we construct our own index, partly inspired by the method of Hooks and Van Staden (2011). This is further discussed in Chapter 3.

1.2 Social and scientific relevance

To begin with, the findings of this research hold significant social relevance as they shed light on the transparency and accountability of firms operating in high-risk industries. Not only is timely, reliable, consistent, and comparable ESG information crucial for investors to evaluate corporate behaviour and ensure the sustainability of companies in their investment decision, but also for other stakeholders, including employees, customers, and the broader community. For instance, consumers can make sure that the company's values align theirs, be it environment-related or social-issues-wise, when making purchasing decisions. This also helps

foster customer loyalty. As for employees, they can assess a company's commitment to social and governance practices, such as diversity, labour rights, and ethical conduct, from ESG disclosures. Working for a company that prioritises sustainability and social responsibility helps keep employees engaged and motivated, which results in higher job satisfaction and retention rate. Moreover, the study addresses the increasing public awareness and demand for sustainable and responsible business practices. It also offers valuable insights for policymakers and regulatory bodies, aiding in the enhancement of ESG reporting standards and contributing to the global agenda of sustainable development.

From a scientific perspective, this study makes a substantial contribution to the existing body of ESG literature. By focusing on the propensity of firms in sensitive industries to provide more comprehensive ESG disclosures, it fills a gap in understanding the dynamics of ESG reporting. My innovative approach of constructing the ESG disclosure index, inspired by past methodologies, is potentially a novel framework for evaluating non-financial disclosures and, just like I got inspired by past researchers, my approach might indirectly inspire people or fellow students who also intend to study this topic in the future, of course adding their own twist to it. This interdisciplinary research bridges the fields of finance, environmental science, and social studies, providing a holistic view of corporate sustainability practices. Furthermore, the insights gained from this study could pave the way for future research.

1.3 Thesis Outline

This thesis comprises 5 chapters. In the next chapter – the theoretical framework, we will discuss a multitude of scientific papers about the evolution of corporate reporting, the importance of ESG, the theories motivating ESG disclosures and finally past research relevant for our studies. We will then present our hypotheses. Thereafter, we will go over the methods employed to test my hypotheses in Chapter 3. In Chapter 4, the regression results are presented and discussed. Finally, this research is concluded in Chapter 5. The central research question will be answered and discussed in this chapter, followed by a discussion of the limitations of the study as well as recommendations for future research.

Chapter 2: Theoretical Framework

In this chapter, we will cover the evolution of corporate reporting and the importance of ESG disclosures in 2.1, the theories motivating ESG disclosures in 2.3, and we will finally go over past research as well as introduce our hypotheses in 2.3.

2.1 The Evolution of Corporate Reporting: Sustainability, Social Responsibility, and the Importance of ESG Disclosures

The conventional shareholder-centric perspective, which primarily prioritises maximising financial returns for shareholders, has evolved. Companies are now recognising that achieving long-term success necessitates a focus on sustainability strategies and the disclosure of ESG information, which encompasses various aspects related to the environment, society, and governance. A 2018 report by the Global Reporting Initiative revealed that 12,964 companies worldwide have voluntarily issued 50,197 sustainability reports, covering various aspects of ESG information disclosure (Global Reporting Initiative [GRI], 2018).

The concept of ESG is closely related to sustainable development. The World Commission on Environment and Development defines sustainable development as the type of development that satisfies the needs of current generations without jeopardising the ability of future generations to fulfil their own needs (Alsayegh et al., 2020). Corporate sustainable performance incorporates the concept of the "Triple Bottom Line," introduced by Elkington and Rowlands (1999), wherein companies integrate Environmental, Social, and Economic Sustainability (EES) into their business strategies, with the aim of safeguarding and preserving society and the environment for future generations, alongside the objective of maximising market capitalization(Alsayegh et al., 2020). For an organisation to be sustainable, it must be financially stable and secure to create long-term value, it must demonstrate its capacity to minimise environmental impact through innovative product development and operational practices, and it must adopt a strategy that leverages societal expectations to create a competitive advantage (Nicolăescu et al., 2015). The number of firms implementing sustainability strategies and disclosing both qualitative and quantitative ESG data has grown steadily over the years due to the recognition of the importance of such information by numerous regulatory institutions, exchanges, and investors. ESG information is typically viewed as offering insights primarily into risks rather than into a company's competitive positioning.

Kim et al. (2012) discovered that senior executives who practise Corporate Social Responsibility (CSR) are less likely to face SEC investigations for violations of Generally Accepted Accounting Principles (GAAP). This is because CSR can constrain earnings management, leading companies to adopt more conservative accounting and business decision-making practices, provide transparent financial information, and motivate executives to produce high-quality financial reports (Kim et al., 2012). Furthermore, Gao et al. (2014) identified a notable negative correlation between corporate social responsibility (CSR) initiatives and insider trading among senior executives. This association suggests that the perception of a socially responsible image can serve as a governance mechanism, limiting self-interested behaviours like insider trading (Gao et al., 2014). Furthermore, research indicates that companies that disregard social responsibilities or lack effective governance face significant "hidden" risks (Díaz et al., 2021). For instance, the push for stricter control over hate speech led several prominent companies to boycott advertising on Facebook, while weak governance at WeWork resulted in substantial financial losses for its primary investor, SoftBank (Díaz et al., 2021). Likewise, companies with poor environmental practices are at higher risk of facing costly settlements from environmental lawsuits (Díaz et al., 2021). Not only this, but the study of De Silva Lokuwaduge et al. (2022) also concludes that business leaders globally have the chance to leverage transparent ESG risk and opportunity information to foster better engagement with investors and stakeholders.

Kiron et al. (2015) explained how organisations that take a leadership role in sustainability benefit such as competitive advantage in capital markets by generating better returns for shareholders; stakeholders through improving reputation and credibility; attracting and retaining individuals who want to contribute to sustainability and attract more customers who value the sustainable products. Investors are also increasingly looking for enhanced ESG disclosures (De Silva Lokuwaduge et al., 2022). Furthermore, some jurisdictions may require or regulate ESG related reporting for consistent, comparable, and assurable sustainability-related information that enhances corporate reporting quality (IPCC, 2021). Therefore, corporate directors need to engage with key stakeholders to ensure they are taking all relevant steps in the boardroom, so the business not only properly assesses and mitigates sustainability risks (Levin & Rich, 2017), but also understands the opportunities that sustainability considerations provide, to translate the risks, trends, and stakeholder expectations into the business context, define material sustainability topics and establish measurement and reporting practices to inform business decisions and disclosure to achieve the future sustainability

expectations (De Silva Lokuwaduge et al., 2022). To beautifully finish off this subsection, it should also be mentioned that global and national leaders have legal and ethical responsibility to safeguard the limited resources and deliver sustainable outcomes to their nation and tell their sustainable stories to the world (De Silva Lokuwaduge et al., 2022). Hence providing transparent and extensive ESG disclosures is of paramount importance.

2.2 Motives behind ESG Disclosures – Sustainability Theories

There's a plethora of sustainability theories, including agency/shareholder theory, stakeholder/shared value theory, legitimacy theory, and signalling theory, that offer potential explanations for why corporations disclose ESG information beyond legal requirements. In this subsection, we will delve into some of these theories.

According to the **agency/shareholder theory** developed by Jensen and Meckling (1976), moral hazards arise when there is information asymmetry, with management (the agent) having more knowledge about the company's details and choosing to withhold important information from investors (the principal). Due to information asymmetry – limited information, investors are likely to undervalue well-performing corporations and overvalue poorly performing ones, leading to suboptimal resource allocation in the market (Alsayegh et al., 2020). Without proper monitoring of the agent, management often focuses on short-term earnings, which are typically tied to executive compensation, rather than on sustainable, long-term performance for shareholders and other stakeholders(Alsayegh et al., 2020). Hence, firms disclose additional information to facilitate communication between management and shareholders, thereby reducing the principal-agent problem and the cost of equity capital as considered in agency theory(Alsayegh et al., 2020).

Furthermore, Porter and Kramer (2018) introduced the concept **of corporate shared value theory**, which integrates societal issues into a corporation's strategy and operations. This approach enhances the company's competitive position while also promoting economic, environmental, and social (EES) performance in the communities where it operates (Alsayegh et al., 2020). Creating shared value involves developing policies and practices that enable firms to maximise their economic value while simultaneously addressing societal challenges and needs (Alsayegh et al., 2020). Porter and Kramer (2018) came up with three ways in which companies can create shared value:

1. Rethinking products and markets
2. Redefining productivity in the value chain involves enhancing practices to optimise the efficient utilisation of materials, financial resources, and employees' skills.
3. Sharing knowledge and providing support through the development of local clusters.

Last but not least, the **legitimacy theory** is another motivation for ESG disclosure. The legitimacy theory posits that an organisation can sustain its existence and growth by gaining social acceptance (Guthrie & Parker, 1989). Therefore, according to the legitimacy theory, companies are encouraged to disclose specific information—such as community involvement, human resources, physical resources, environmental contributions, and product and service contributions—to demonstrate to society that their activities are acceptable and contribute positively to social value. In response to mounting social media scrutiny and stakeholder attention, ESG disclosure offers potential business advantages such as increased transparency, employee motivation, improved reputation, and enhanced brand value (Alsayegh et al., 2020). This approach also helps companies mitigate the market stigma linked to perceptions of environmental irresponsibility(Brammer & Pavelin, 2008; Hahn & Kühnen, 2013).

In a nutshell, ESG disclosure can mitigate information asymmetry and prevent adverse selection, where managers possess superior or higher-quality company information compared to various stakeholders involved in potential transactions. As highlighted by An et al. (2011), in regards to high transparency, ESG has the following positive impacts: (1) lowers the likelihood of information asymmetry between firm management and external users of firm information, such as investors and other stakeholders; (2) sends a signal to the society about organisational legitimacy and excellence; (3) finally, enhancing perceptions of firm accountability among external users of firm information, such as investors and other stakeholders.

2.3 Industry risk sensitivity and relevant existing research

To begin with, let's very briefly go over what industry risk sensitivity means. In the financial world, "industry risk sensitivity" can be interpreted in many different ways. According to Bassen et al. (2006), a significant risk of irresponsible corporate behaviour is reputational loss. Sensitive industry sectors are typically marked by social taboos, moral debates, and political pressure, include industries like tobacco, gambling, alcohol, and adult entertainment

(Cai et al., 2012). These sectors have also been described as "controversial". This term encompasses not only sinful industries like tobacco, gambling, alcohol, and adult entertainment, but also industries engaged in emerging environmental, social, or ethical issues, such as weapons, nuclear energy, oil, cement, and biotech (Baron et al., 2011). In my study, I classified industries based on MSCI's ESG Industry Materialy Map, which shows a sector's long-term resilience to ESG risks (per factor). We will delve more in how exactly I did it section 3.2.3 of this paper.

Past studies (e.g., (Deegan & Gordon, 1996; Baron et al., 2011)) have found that larger firms and firms belonging to certain industries are more likely to engage in social disclosure. Regarding firm size, larger firms' increased likelihood to engage in detailed disclosure of their environmental, social and governance practices is very plausible since the latter more likely to be subjected to the watchful eyes of stakeholders, including investors, regulators, and the public, which incentivises them to disclose more about their social and environmental practices. Additionally, larger firms may have more resources to invest in gathering and reporting non-financial information. As to the positive relationship between industry sector and social disclosures, this statement holds credence, in regards to the fact that different industries are subject to varying norms, regulations, and stakeholder expectations regarding social and environmental responsibility. For instance, industries that inflict catastrophic environmental repercussions such as oil, gas or mining industry, or those with high public visibility and consumer sensitivity (like retail or food and beverage) may have higher levels of social disclosure. To further support this cogent statement made by past researchers, Cormier and Magnan (2003), and Kilian and Hennigs (2014) found out that firms that are vulnerable to environmental risks are more inclined to report their environmental performance, thereby demonstrating superior performance compared to companies in less sensitive industries (Lin et al., 2015; Cai et al., 2012). Finally, the findings of Garcia et al. (2017) indicate that companies in industries under higher scrutiny exhibit better environmental performance, regardless of the company's size and location. Hence I introduce my **first hypothesis**:

H1: *In industries that are more susceptible to ESG risks, companies tend to provide more extensive ESG disclosures.*

Shifting our focus to the neoclassical theory which is founded on the assumption of rational behaviour in competitive and the efficient allocation of resources through Adam Smith's invisible hand, ESG practices are merely a source of inefficiency and may potentially reduce in

shareholder returns in the eyes of the proponents of the latter theory. Defying the neoclassical theory, Dhaliwal et al. (2011) found that companies experiencing high capital costs saw a reduction in their cost of capital after disclosing their ESG activities while researching whether voluntary disclosure of non-financial information affects the company's risk and its cost of capital. Serafeim (2015) arrived at similar findings. By preparing an Integrated Report (combining financial and sustainability data), companies appeal to investors interested in long-term investments (Garcia et al., 2017). However, while this has a ring to it, the relationship between the financial and ESG performance of companies in sensitive industries are uncertain or inconclusive. To demonstrate this, Richardson and Welker (2001) discovered that companies in sensitive industries are more likely to engage in non-financial disclosures, yet they demonstrate inferior financial performance compared to their counterparts in non-sensitive industries. In contrast, Baron et al. (2009) found that companies in sensitive industries (Alcohol, Gambling, Firearms, Military, Nuclear Power, and Tobacco) show better financial performance. In a similar vein, Fafaliou et al. (2022) evinced that ESG reputational risks amplify capital constraints, reduce firms' growth opportunities and in turn, increase the likelihood of the firm exiting the market. The latter studied the relationship between ESG risks (also exposure to these risks) and market longevity (Fafaliou et al., 2022). Their findings highlight that firms are strongly motivated to act in socially responsible ways, since this not only results in good financial performance, but they also manage to stay in the market longer , ensuring financial stability (Fafaliou et al., 2022). Hence, I propose my **second** and final **hypothesis**:

H2: *The quality of ESG disclosure positively affects how exposure to ESG risks impact financial performance of firms in more sensitive industries.*

Chapter 3: Methodology

This section provides a comprehensive overview of the methodologies employed to test the hypotheses, including data collection techniques, calculation of relevant indices, the database used, statistical tests applied, and analytical methods used. Section 3.1 presents the regression models, followed by a detailed explanation of the dependent and independent variables and the data collection techniques in Section 3.2. Finally, Section 3.3 discusses the control variables used in the analysis.

3.1 Regression Models

My first hypothesis investigates whether companies in industries that are more vulnerable to ESG risks tend to provide more comprehensive and detailed ESG disclosures. Therefore, we conduct our analysis using the following regression model for our first hypothesis – Model (1):

$$(1)\ ESG\ Disclosure\ Index_i$$
$$= \beta_0 + \beta_1 ESG\ Susceptibility_1 + \beta_2 log(TA)_i + \beta_3 \log(LTD)_i + \beta_4(ROA)_i$$
$$+ \beta_{5(}NE)_i + \beta_6(Rev)_i + \varepsilon_i$$

Here, ESG Disclosure Index represents the combined score ESG disclosure index score that assesses the quality of the ESG disclosures - how detailed and comprehensive they actually are. It's more of a quantitative measure, I will go in more detail on how I calculated it in the next section. Furthermore, ESG Susceptibility represents whether the companies are from more susceptible industries or less susceptible. This will be further explained in the next section as well. TA represents total assets, LTD represents long-term debt (a proxy for leverage), ROA represents return on assets, NE represents number of employees and Rev represents revenue. Last but not least, ἰ is the error term. For all variables, i represents firm i. A description of all variables can be found in table 1.

As for my second hypothesis, it investigates how the quality of ESG disclosures influences the relationship between exposure to ESG risks and financial performance. In essence, it seeks to understand whether companies in industries facing higher levels of ESG risks can mitigate or enhance the impact of these risks on their financial performance through the quality of their ESG disclosures. This investigation aims to shed light on the strategic importance of

transparency and robust reporting in managing ESG-related risks and their potential financial implications.

I test my second hypothesis, using the following model – Model (2):

$$(2)\ ROA_i = \beta_0 + \beta_1 ESG\ Susceptibility_i + \beta_2 ESG\ Disclosure\ Index_i$$
$$+ \beta_3(ESG\ Susceptibility_i \times ESG\ Disclosure\ Index_i) + \beta_4 \log(TA)_i$$
$$+ \beta_5 log(NE)_i + \beta_6 \log(Rev)_i + \varepsilon_i$$

All variables in this model are the same as in Model (1), including the interaction effect between two variables. I will delve deeper into that in the results & discussion chapter. A description of all variables can be found in Table 1, as mentioned earlier.

Table 1   Definition of variables

Variables	Acronym	Definition
ESG Disclosure Index		Quality of ESG disclosures
ESG Susceptibility		Susceptibility to ESG risks 1= more susceptible, 0=less susceptible
Total Assets	TA	Total value of assets reported in the Balance Sheet
Long-term Debt	LTD	Debt obligations due more than one year from the firm's balance sheet data; serves as a proxy for leverage
Return on Assets	ROA	Ratio of EBIT (Earnings before interest and taxes) and total assets of a firm
Number of Employees	NE	
Revenue	Rev	Annual gross income

Note. This table defines the different variables that are used in Model (1) and Model (2). The first column gives the variable name. In Column 2, the abbreviation that is used in the regression model can be found. Lastly, a definition of the variable is given in Column 3.

3.2 Database

Beginning with my continuous variables, we obtained the data from Wharton Research Data Services(WRDS) platform. Wharton Research Data Services (WRDS) is a robust data platform that we utilised for accessing extensive datasets necessary for our research. WRDS offers a vast repository of financial, economic, and company-specific data sourced from various providers, ensuring high reliability and validity. It is widely used in academic research due to its comprehensive coverage and the rigorous standards applied in data collection and curation.

For my study, WRDS provided essential data on the following metrics that I used in my research: total assets, long term debt, number of employees, earnings before interest and taxes (EBIT), and finally, revenue.

This platform's user-friendly interface and powerful data management tools enabled us to efficiently extract and analyse the relevant datasets, ensuring the accuracy and integrity of our research findings.

By leveraging WRDS, I ensured that my data sources were credible and my analytical results were built on a solid foundation of high-quality information. The use of WRDS thus played a crucial role in the data collection phase of my methodology.

3.3 Dependent and independent variables

In this subsection, I will go over each and every variable in our regression equation and explain how I obtained it and if there were any calculations involved, I'll go over that as well.

3.3.1 Financial performance metric: ROA

Before I move on to my ESG-related variables, let's go over the dependent variable of my second hypothesis: ROA; how I calculated it, what it means and its relevance in our research.

Return on assets tells us how effectively a firm utilises its assets to generate profit. While I obtained all our variables directly from the database, I calculated ROA, using the following formula:

$$(3)\ ROA = \frac{Earnings\ before\ interest\ and\ taxes(EBIT)}{Total\ Assets\ (TA)}$$

ROA is crucial for understanding how effectively a company is converting its investments into earnings. A higher ROA indicates better management efficiency and stronger profitability relative to the company's asset base.

ROA was chosen for this study because of its relevance in evaluating the financial performance effects of ESG practices. My hypotheses explore the possibility that companies operating in industries particularly exposed to environmental, social, and governance (ESG) risks may achieve better financial outcomes by providing more comprehensive and transparent ESG disclosures. ROA serves as an appropriate measure for several reasons:

- **Asset Utilisation Efficiency Indicator:** ROA directly assesses how efficiently a company's management utilises its assets to generate profits. Implementing effective ESG practices can enhance operational efficiency, which may, in turn, lead to an improvement in ROA

- **Good Profitability Indicator:** By indicating profitability relative to total assets, ROA allows us to gauge the financial health and performance of companies with different levels of ESG disclosures

- **Good for comparison:** ROA facilitates comparison across companies within the same industry, making it easier to determine if better ESG disclosures are associated with higher efficiency and profitability.

3.3.2 ESG Susceptibility

For my independent variable - ESG Susceptibility, I had the initial idea of classifying companies into two groups - "more susceptible" and "less susceptible"- by making use of the RepRiskRating(RRR) index. RRR offers a robust measure of reputational risk exposure related to ESG issues, which we would have then used to categorise companies based on their level of ESG risk sensitivity.

Although WRDS does offer data on RRR, Erasmus University isn't subscribed to that package, which is very unfortunate. Hence I had to find another way to classify companies based on their sensitivity to ESG risks.

As a first step, I imported all quantitative data that I needed for my research available on WRDS (those metrics were mentioned earlier, in subsection 3.3.1). Then I assigned a random value to every row, which I then used to compile a random sample of 119 companies, by sorting the random values in ascending order and selecting the first 119 rows for my analysis.

Furthermore, once I had my adequate sample of 119 companies, I classified each of them by sector, using GICS sector definitions. The Global Industry Classification Standard (GICS) is an enhanced industry classification system jointly developed by S&P Global and MSCI in 1999. GICS was developed in response to the global financial community's need for one complete, consistent set of global sector and industry definitions and has become the standard widely recognized by market participants worldwide. A description of all sector definitions provided by MSCI and S&P Global can be found in Table A1 (you find Table A1 in the appendix).

To ensure accurate sector classifications for the companies in my sample, I adopted a meticulous approach. I visited each company's website, thoroughly read their "About Us" section, and carefully selected the sector definition that best aligned with their business activities. For added verification, I provided Chat GPT with the GCSI definitions and the "About Us" sections of these companies, requesting them to link them to the definitions provided by MSCI and S&P Global. Remarkably, our sector definitions matched in 9 out of 10 cases, confirming the accuracy of my sector classifications.

The second step in constructing our ESG susceptibility variable is classifying the sectors into the two groups - "more susceptible" and "less susceptible" by making use of MSCI's ESG Industry Materiality Map, which shows a sector's long-term resilience to ESG risks (per factor). We then calculated a total score for every sector. For instance, let's say the consumer staples industry has ratings 0.127, 0.539 and 0.334 for the 3 aspects of ESG(Environmental, Social and Governance) respectively, I sum up the ratings to have the total score. Once I have the total scores for every sector, we calculate the average score and based on this average score, we categorise the sectors into two categories: Tier 1 (more susceptible to ESG risks), and Tier 2(less susceptible to ESG risks). The total scores for every sector and the respective ESG Risks Susceptibility Tier are provided in Table 3 below and an explanation of the classification is provided in table 4.

Table 2   Total score by sector

Sector	Total Score	ESG Risks Susceptibility Tiers
Real Estate Sector	0.381	Tier 1
Energy Sector	0.333	Tier 1
Material Sector	0.333	Tier 1
Industrials Sector	0.333	Tier 1
Consumer Discretionary Sector	0.433	Tier 2
Consumer Staples Sector	0.333	Tier 1
Health Care Sector	0.332	Tier 1
Financials Sector	0.380	Tier 1
Information Technology Sector	1.020	Tier 2
Communication Services Sector	0.333	Tier 1
Utilities Sector	0.333	Tier 1

Note. The total scores in this table have been rounded to 3 decimal places for presentation purposes. Unrounded numbers were taken to calculate the total scores to ensure accuracy.

Table 3   Explanation of ESG Risks Susceptibility Tiers

Average Score	0.4127989091		
ESG Risks Susceptibility Tiers			
Tier 1	*More susceptible*	Lower score -> less than average	**1**
Tier 2	*Less susceptible*	Higher score -> more than average	**0**

To clarify how I classified the sectors in two groups, let's have a look at Table 4. Based on the average score of 0.412 (rounded to three decimal places), I designated two tiers – "More susceptible" and "Less susceptible". Sectors with scores less than the average are categorised as "More susceptible", while sectors with scores more than the average are categorised as "Less susceptible". The rationale here is intuitive: a lower ESG rating indicates lower resilience to ESG risks, thus the "More susceptible" category; conversely, higher ratings suggest greater resilience, leading to the "Less susceptible" category.

Finally, once I categorised the sectors, the companies in my sample were also categorised accordingly.

3.3.3 ESG Disclosure Index

At last, let's move on to the elephant in the room – how I calculated the ESG disclosure index, our independent variable in Model (1) – one of the hardest to calculate and the most critical and also the most essential variable in our research.

For my ESG disclosure index, I took inspiration from the methodologies used by previous researchers – Hooks and Van Staden (2011). Let's briefly go over those methodologies used in the past and how I used them to inspire myself and to construct my own ESG disclosure index, adding my personal touch, knowledge and judgement.

The study of Hooks and Van Staden (2011) contrasts the outcomes of multiple content analysis methods (sentence count, page count, proportions) in measuring the extent of reporting with an assessment of information quality determined through the application of a disclosure quality index. They first developed a comprehensive index of environmental disclosure items, consisting of 23 main items (some with sub-items) and totaling 32 items in all, is organised into six distinct categories:

- The Entity
- Management Policy and Systems
- Environmental Impacts
- Stakeholders
- Financial Impacts
- General Information

Secondly, I developed a scale and then compiled a bunch of ESG reports and thoroughly read and analysed every line in those ESG reports, before giving a score to the ESG disclosures of the company. The scale used to assess the environmental impact of companies and their policies was as follows:

- 0 ⁄4: **Not Disclosed or Discussed:** No information or discussion about the issue.
- 1 ⁄4: **Minimum Coverage with Little Detail:** General terms, anecdotal evidence, or brief mentions of environmental impact.
- 2 ⁄4: **Descriptive:** The impact of the company or its policies was evident but not quantified.
- 3 ⁄4: **Quantitative:** The environmental impact was defined in monetary terms or actual physical quantities.

- 4 1⁄4: **Truly Extraordinary:** The company's environmental performance exceeded industry standards and represented best practices.

Initially, the approach and scale used by Hooks and Van Staden (2011) were considered, which involves reading and analysing every line in each report and scoring the ESG disclosures accordingly. However, this method is impractical and prone to subjective errors. Therefore, a simpler, more objective extent-based approach was chosen by calculating a composite ESG index, with one the metrics being the "Page count index", which Hooks and Van Staden (2011) also cover in their paper. Extent-based methods prioritise the *quantity* of information related to the topic of interest (e.g., the environment), without considering the quality or meaning of the content. On the other hand, quality-based analysis is more about thoroughly analysing the *quality* of the content in company reports; it aims to assess the quality of disclosures by utilising a quality index.

Next, I will the methodology used to calculate the ESG disclosure index will be explained. The index was constructed based on three metrics:

1. Page count index

The page count index is very straightforward to calculate. Ranging from 0-1, the page count index simply reflects the number of pages in a company report attributed to sustainability, CSR(Corporate Social Responsibility), and issues related to ESG in general.

$$Page\ count\ index = \frac{Number\ of\ pages\ attributed\ to\ ESG\ issues}{Total\ number\ of\ pages\ in\ report}$$

This index tells us how extensively topics related to sustainability, corporate social responsibility (CSR), and broader environmental, social, and governance (ESG) issues are covered in a company's report. A higher index value indicates a greater number of pages dedicated to these subjects within the report. This metric helps to gauge the depth and emphasis placed by a company on ESG-related disclosures and initiatives in its public communications. Hence, I thought that although this index ignores the actual content of reports, I think it still tells us a lot about a company's dedication to ESG and hence is a good index.

2.   Whether or not a company provides standalone sustainability reports

As the name suggests, this index tells us whether or not a company provides standalone sustainability reports. This index is insightful since not only does it tell us about the company's commitment to transparency and accountability regarding their ESG practices and performance, but the reports often provide detailed insights into the company's initiatives, goals, achievements, and challenges related to ESG factors, which again, says a lot. **"1"** = *company provides a standalone ESG report*; **"0"**= *company does not provide a standalone ESG report.*

3.   Length of standalone sustainability report

This index is equally straightforward, it reflects the length of a company's ESG reports - sustainability reports and, if available, also corporate governance reports. I thought this is also a good index since ESG reports tell us a lot about: the company's initiatives, goals, achievements, and challenges related to ESG factors, key performance indicators (KPIs) and metrics related to environmental impact, social initiatives, governance practices, and economic sustainability. To ensure that each component contributes proportionally based on its relative importance as assigned by the weights (I will elaborate on the weights assigned to each index shortly), I normalised the length of standalone ESG reports by dividing it by the maximum number of pages of a report. Normalisation ensures that the metric is adjusted to a common scale, allowing for meaningful aggregation across different components of the composite score.

$$Length\ of\ standalone\ sustainability\ report = \frac{Total\ number\ of\ pages\ in\ report}{Maximum\ number\ of\ pages\ of\ a\ report\ in\ our\ sample}$$

Finally, let's delve into the actual calculation of the ESG disclosure index. I started by assigning weights to the 3 metrics we covered above. Firstly, I assigned a hefty weight of 0.7 to the page count index, then lower weights of 0.15 to both the metric that reflects whether or not the company provides standalone ESG reports and the one that reflects the length of the latter. The reason why I thought that the page count index should get the lion's share when it comes to weights and the other two metrics should be assigned lower weights is because approximately only 8% of companies from my sample provided standalone ESG reports. Applying a higher weight to this metric would have created an imbalance and potentially skewed the results inaccurately. Last but not least, equal weights of 0.15 were assigned to the second and third metrics since they are related, and thus it was just logical to do so.

Once I assigned the weights, I calculated the composite score – the ESG disclosure index, as follows:

*ESG Disclosure Index = (0.70 * **Page Count Index**) + (0.15 * **Whether or not a company provides standalone sustainability reports**) + (0.15 * **Length of standalone sustainability report**)*

3.4 Control Variables

In this section, I will delve into the control variables I have used in my analysis in a bid to avoid omitted variables. Control variables could influence the dependent variable and potentially distort the relationship between the independent variable(s) and the dependent variable if not controlled. Hence, researchers include control variables to isolate the effect of independent variable(s) on the dependent variable. In our case, I want to isolate the effect of my independent variable, my dummy variable – "ESG Susceptibility", on my explanatory variable – ESG Disclosure Index – in Model (1), and also the effect of my independent variables – ESG Disclosure Index and dummy variable ESG Risks Susceptibility – as well as my interaction term (ESG Disclosure Index*ESG Risks Susceptibility) on our dependent variable — ROA – in Model (2). Including control variables in my analysis ensures that the results are more accurate and reliable. In the following subsection, I will go over each and every control variable in both Model (1) and (2), and also explain why my choice of control variables is well-founded and how they capture essential aspects. On a side note, before moving on to the justification of my control variables, all of my data – quantitative and the company reports – dates of the year 2023.

3.4.1 Control Variables and Their Justification
1. Logarithm of Total Assets

Firstly, I use the *logarithm* of total assets to normalise total assets – this helps to manage the potential skewness and ensures that the variable's scale aligns with other financial variables. Total assets represent the size of a firm and a scale for its operations and resource base. First and foremost, I included Total Assets in Model (1) to ensure that the analysis accounts for differences in company size when evaluating the impact of ESG susceptibility on ESG disclosure practices. Not only do larger firms tend to be more scrutinised by stakeholders and hence are, in a way, obligated to provide more detailed ESG disclosures, but they usually also tend to invest more in ESG disclosures to manage their reputation and meet regulatory

requirements. Furthermore, as for Model (2), controlling for total assets ensures that the effect of ESG factors on ROA is not conflated with size effects, since larger firms benefit from economies of scale, which definitely affects their profitability. In a nutshell, my control variable, log of total assets, makes sure that the effects of our independent variables on ESG Disclosure index and ROA are unaffected by size disparities.

2.   Logarithm of Long-term Debt

Long-term debt represents the financial leverage of a firm and also the latter's financial structure. Companies with high debts might face more pressure regarding transparency and disclosures, including ESG disclosures, and hence might enhance their ESG disclosures to attract investors and demonstrate good governance and risk management practices. Furthermore, as we discussed in chapter 2 earlier, according to Alsayegh et al., leverage also serves as a proxy to financial ability to fund enhanced ESG disclosures and ESG practices in general. The latter stated that in order to effectively reduce emissions, businesses need increased funding for their essential environmental investments. Moreover, from the perspective of the **trade-off theory**, firms with lower emissions tend to exhibit reduced volatility, which translates to lower anticipated costs associated with financial distress. Consequently, banks recognize and reward such environmentally conscious firms by offering more advantageous financing conditions.

Hence, including long-term debt in Model (1) makes sure that leverage effects are accounted for. Furthermore, long-term debt significantly impacts ROA and profitability in general, since interest expense reduces net income, and it would make sense to include long-term debt as a control variable usually. However, for my analysis, I calculated ROA with EBIT, and not net income, because of the unavailability of data on net income. Hence, it doesn't make sense to incorporate long-term debt in Model (2).

3.   Logarithm of Return on Assets (ROA)

As mentioned earlier, return on assets reflects a firm's profitability and efficiency in utilising its assets to generate profit. Firms with higher ROA and higher profitability in general have access to more resources to invest in better sustainability and governance practices, which in turn might also lead to more extensive ESG disclosures. Hence, including ROA in Model (1)

makes sure that the effect of the firm's vulnerability when it comes to ESG risks on its ESG disclosure is not conflated with its financial performance – ROA.

4.   Logarithm of Number of Employees

Firstly, the number of employees reflects a firm's size and operational scope. Having a large workforce demands more robust social and governance practices, resulting in the firm being more invested in the social aspects of ESG – labour practices, employee welfare, diversity, gender equality, and so on. This might in turn lead to more extensive ESG disclosures. Hence, including the number of employees in Model (1) is relevant. Furthermore, the number of employees also tells us on a company's operational scale and labour management practices. Larger workforces may require more complex management and higher costs, influencing ROA. Controlling for the number of employees in Model (2) isolates the impact of ESG factors on financial performance.

5.   Logarithm of Revenue

Just like total assets, revenue serves as another measure of the company's size and economic activity, which could affect its ESG disclosure practices, making it relevant for Model (1). Furthermore, revenue directly impacts EBIT, and hence ROA. As such, by controlling for revenue, the model can more accurately assess how ESG factors influence ROA without the confounding effect of different revenue levels.

As a recapitulation to sum up section 3.3, by structuring my regression models this way, I make sure that the effect of our independent variable(s) on my dependent variables is not confounded by other factors like company size, leverage, profitability, and economic activity. The chosen control variables covered in subsection 3.3.1 perfectly capture key aspects of company characteristics that can influence the dependent variables (ESG Disclosure Index and ROA). They help to isolate the effects of the primary independent variables and provide a more accurate and reliable analysis. Hence, I can say with absolute certainty that the chosen control variables are good for both models.

For this research, it is chosen to measure all variables at the end of the fiscal year, as this will make sure that it is possible to reliably compare between years. Moreover, the collected data is in euros. The final sample consists of 119 observations, for which the descriptive statistics can be seen in Table 4.

Table 4 Descriptive Statistics

Variable	Obs.	Mean	Std. Dev	Min	Max
ESG Susceptibility	119	0.798	0.403	0	1
ESG Disclosure Index	119	0.196	0.111	0.246	0.539
TA	119	55348.11	210974.6	16.252	1554045
ROA	119	0.061	0.060	-0.0696	0.302
NE	119	29.986	49.776	0.036	305.309
Rev	119	13153.75	25374.28	-1357.025	155498

Note. This table shows the descriptive statistics for the variables that are used in Model (1) and Model (2). The first column shows the different variables. In the second column, the number of observations can be found. The third column gives the mean, and Column 4 gives the standard deviation. Lastly, Column 5 gives the minimum value and the sixth column gives the maximum value in the sample.

Chapter 4: Results & Discussion

In this chapter, we will discuss the results. We will do this by looking at the two hypotheses, in the same order as presented in section 2.4. The regression results of Model (1) will be presented in section 4.1 and those of Model (2) will be presented in section 4.2. We will also discuss the results of the hypotheses and compare them to the theory outlined in Chapter 2. Throughout the chapter, a significance level of 5% is used when discussing whether a relationship is statistically significant or not.

4.1 Regression results Model (1)

First of all, let's assess the first hypothesis; it proposes that in industries that are more susceptible to ESG risks, companies tend to provide more extensive ESG disclosures. The regression results can be found in Table 5. From the results, we can observe that the p-value is 0.4862 (that is, greater than 0.05), suggesting that the overall is not statistically significant. Hence, it can be deduced that there's no significant relationship between a firm's susceptibility to ESG risks and the quality of its ESG disclosures, defying the theory, which suggest that firms in sensitive industries tend to provide more extensive non-financial disclosures due to increased scrutiny and the need to steer clear of reputational risks. From the regression results, it is not possible to reject the first null hypothesis that ESG risks susceptibility does not lead to more extensive ESG disclosures.

Moreover, we also observe that none of the control variables, including, firm size – total assets, total debt, ROA, number of employees, and revenue, showed a significant relationship with the ESG Disclosure Index. The R-squared value of 0.0516 implies that the model's explanatory power is limited, as it only accounts for a small portion (5.16%) of the variability in ESG disclosures. This indicates that the model is not very effective in explaining the differences in ESG disclosure practices among companies.

Table 5 for the relationship between ESG Disclosure Index and ESG Risk Susceptibility

Variable	ESG Disclosure Index
ESG Risk Susceptibility	-0.0171
	(0.027)
Log(TA)	-0.016
	(0.015)
Log(LTB)	0.005

	(0.010)
Log(ROA)	0.005
	(0.129)
Log(NE)	-0.020
	(0.017)
Log(Rev)	0.228
	(0.023)
Constant	0.071
	(0.110)
Observations	108
R-squared	0.0516
F-statistic	0.92

Note. This table shows the results of a linear regression which has ESG Disclosure Index as independent variable and ESG Risk Susceptibility as dependent variable. Log(Total Assets), log(Long-Term Debt), log(Number of Employees), log(ROA) and log(Revenue) are added as control variables. The constant, number of observations, R-squared, and F-statistic are also shown. Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$ and *** $p < 0.01$.

4.2 Regression results Model (2)

The second hypothesis suggests that the quality of ESG disclosure positively affects how exposure to ESG risks impact financial performance of firms in more sensitive industries. From the results in Table 6, we can observe that the overall model is statistically significant, with a p-value 0.0009. However, we also observe that not only are our variables 'ESG disclosure index' and 'ESG susceptibility' not statistically significant, but their interaction effect is not either. This suggests that quality of ESG disclosure does not significantly influence the relationship between ESG risks and financial performance in sensitive industries. This again contradicts the theory which suggests better ESG disclosure should enhance financial performance due to increased transparency and trust.

As for the control variables, the only statistically significant ones are only total assets (negatively associated with ROA) and revenue (positively associated with ROA), suggesting that larger firms might face diminishing returns in terms of financial performance, while higher revenue contributes positively to financial performance. Our finding that larger firms might face diminishing returns in terms of financial performance supports Richardson and Welker's (2001) conclusion that companies in sensitive industries, despite being more engaged in non-financial disclosures, do not necessarily exhibit superior financial performance. In fact, they

may experience the opposite, aligning with the notion of diminishing returns. Last but not least, revenue being positively related to ROA is no surprise and pure common sense; the higher the revenue, the higher the EBIT and hence, higher the ROA.

Table 6 for the relationship between ESG risks and financial performance in sensitive industries

Variable	ROA
ESG Risk Susceptibility	-0.017
	(0.028)
ESG Disclosure Index	0.049
	(0.102)
ESG Risk Susceptibility *	-0.048
ESG Disclosure Index	
Same	(0.115)
Log(TA)	-0.019**
	(0.006)
Log(NE)	-0.013
	(0.008)
Log(Rev)	0.322**
	(0.010)
Constant	0.004
	(0.010)
Observations	117
R-squared	0.834
F-statistic	0.004

Note. This table shows the results of a linear regression which has ROA as independent variable and ESG Risk Susceptibility and ESG Disclosure Index as dependent variables. Log(Total Assets), log(Number of Employees) and log(Revenue) are added as control variables. The constant, number of observations, R-squared, and F-statistic are also shown. Standard errors are in parentheses. $* p < 0.1$, $** p < 0.05$ and $*** p < 0.01$.

4.3 Conclusion about hypotheses
Having discussed the results of Model (1) and Model (2), we can now give an overview of the rejected and not rejected null hypotheses. For the first hypothesis, it was expected that ESG

risks susceptibility is positively related to ESG disclosures. However, there was no significant relationship found, meaning that it is not possible to reject the null hypothesis.

For the second hypothesis, it was expected that the quality of ESG disclosure positively impacts financial performance in sensitive industries. The results showed no significant relationship between ESG Disclosure Index and ROA, leading to the inability to reject the null hypothesis.

In a nutshell, the empirical results of the study suggest that the proposed hypotheses are not supported by the evidence. There is no significant relationship between susceptibility to ESG risks and ESG disclosures, and there is also no significant impact of ESG disclosure quality on financial performance in the sample examined.

Chapter 5: Conclusion and Further Research

5.1 Thesis Analysis

Interest in ESG activities has surged over the past decades, driven by a growing recognition among diverse stakeholders of the imperative to foster a more sustainable world. This includes the proactive, voluntary initiatives undertaken by firms. With headlines about environmental scandals and viral content on platforms like TikTok exposing unethical practices by fast fashion companies such as Shein or H&M, which allegedly involve child labour, some questions that often pop up in our head include: How do these firms get away with such practices? To what extent do they disclose their activities? Do they outright deceive the public about their operations? And what about regulations? This thesis has investigated whether firms in sensitive industries – those firms who are constantly under the scrutiny of the public, those that usually spark controversy – actually do disclose more information when it comes to their environment, social and governance practices.

Hence, my research is concentrated on the following central research question:

Are highly ESG-risk-sensitive firms more likely to provide better ESG disclosures than less risk-susceptible counterparts?

By looking at the relationship between the ESG disclosure index on the one hand, and the extent of the firm's non-financial disclosures, we can conclude about the overall relationship and answer our research question. It is found that neither the relationship between the ESG disclosure index and the ESG risk susceptibility of them, and that between the financial performance (ROA) and the extent of the firm's ESG disclosures as well as its vulnerability to ESG risks, are not statistically significant. Hence we can neither accept or reject our hypotheses. Our solely-statistically-insignificant results can be due to the various limitations of our study.

5.2 Limitations of the Thesis

Moving on to the limitations of our study, the very obvious limitations that come to mind are selection bias and, of course, the sample size. As mentioned earlier, our selected data comes from the WRDS platform only. This might have resulted in omitting observations that exhibited a relationship contrary to the one identified in the sample, albeit the statistical insignificance of the models. If true, this exclusion would have introduced bias into the results. As to sample

size, this is definitely a factor that could have insignificant results – a sample of only 119 companies. A larger sample size would have provided more data points and would have made it more likely to detect statistically significant differences between the groups being compared. With a small sample size, it is more difficult to rule out the possibility that any observed differences are simply due to chance. As mentioned earlier, there is a reason behind our small sample size – the time constraint; thoroughly going through hundreds and hundreds of companies would have been virtually impossible regarding the time constraint. Another significant limitation is the missing observations due to negative log and revenue values, which resulted in an unequal number of observations for our two regression models. This discrepancy can affect the comparability of the models and potentially introduce bias into the findings. Last but not least, suitability of the research method used could be questioned. I employed a simple linear regression model, from which it is not possible to make any causal statements and hence, isn't the most suitable method for my study. Although this was not the purpose of my study, it would have been insightful if we were able to make causal statements.

5.3 Further Research

Now on to future research, it should aim to address the limitations of this study by expanding the sample size and diversity to include a broader range of firms across different industries and regions, thereby improving the generalizability of the findings. Advanced statistical methods, such as panel data analysis and structural equation modelling, could be employed to explore causal relationships between ESG disclosures and ESG susceptibility as well as financial performance more robustly. A second line of research could delve into the role of industry-specific factors in shaping ESG disclosures and their effectiveness could provide valuable insights. For instance, a comparative analysis between firms in countries with stringent ESG regulations versus those in more lenient regulatory environments could yield insights into how legal frameworks influence ESG practices and outcomes. Another important area for future research is the longitudinal aspect – a study to track changes in ESG disclosure quality and their long-term effects on financial performance would help in understanding the sustainability of ESG practices and their evolving influence on firm success. Last but not least, with the recent developments in the Tech world, such as blockchain and AI, the role of these emerging technologies in enhancing the transparency and reliability of ESG disclosures can be studied. These technologies have the potential to revolutionise how ESG data is collected, verified, and

reported, potentially addressing current challenges related to data accuracy and stakeholder trust.

By addressing these areas, future research can provide a more comprehensive understanding of the complex interplay between ESG disclosures, ESG susceptibility and financial performance, as well as other industry-specific factors, ultimately guiding firms in developing more effective and impactful sustainability strategies.

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Appendix

Table A1   Sector definitions provided by MSCI and S&P Global

Sector	Definitions
Energy Sector	The Energy Sector comprises companies engaged in exploration & production, refining & marketing, and storage & transportation of oil & gas and coal & consumable fuels. It also includes companies that offer oil & gas equipment and services.
Materials Sector	The Materials Sector includes companies that manufacture chemicals, construction materials, forest products, glass, paper and related packaging products, and metals, minerals and mining companies, including producers of steel.
Industrials Sector	The Industrials Sector includes manufacturers and distributors of capital goods such as aerospace & defence, building products, electrical equipment and machinery and companies that offer construction & engineering services. It also includes providers of commercial & professional services including printing, environmental and facilities services, office services & supplies, security & alarm services, human resource & employment services, research & consulting services. It also includes companies that provide transportation services.
Consumer Discretionary Sector	The Consumer Discretionary Sector encompasses those businesses that tend to be the most sensitive to economic cycles. Its manufacturing segment includes automobiles & components, household durable goods, leisure products and textiles & apparel. The services segment includes hotels, restaurants, and other leisure facilities. It also includes distributors and retailers of consumer discretionary products.
Consumer Staples Sector	The Consumer Staples Sector comprises companies whose businesses are less sensitive to economic cycles. It includes manufacturers and distributors of food, beverages and tobacco and producers of non-durable household goods and personal products. It also includes distributors and retailers of consumer staples products including food & drug retailing companies.

Health Care Sector

The Health Care Sector includes health care providers & services, companies that manufacture and distribute health care equipment & supplies, and health care technology companies. It also includes companies involved in the research, development, production and marketing of pharmaceuticals and biotechnology products.

Financials Sector

The Financials Sector contains companies engaged in banking, financial services, consumer finance, capital markets and insurance activities. It also includes Financial Exchanges & Data and Mortgage REITs.

Information Technology Sector

The Information Technology Sector comprises companies that offer software and information technology services, manufacturers and distributors of technology hardware & equipment such as communications equipment, cellular phones, computers & peripherals, electronic equipment and related instruments, and semiconductors and related equipment & materials.

Communication Services Sector

The Communication Services Sector includes companies that facilitate communication and offer related content and information through various mediums. It includes telecom and media & entertainment companies including producers of interactive gaming products and companies engaged in content and information creation or distribution through proprietary platforms.

Utilities Sector

The Utilities Sector comprises utility companies such as electric, gas and water utilities. It also includes independent power producers & energy traders and companies that engage in generation and distribution of electricity using renewable sources.

Real Estate Sector

The Real Estate Sector contains companies engaged in real estate development and operation. It also includes companies offering real estate related services and Equity Real Estate Investment Trusts (REITs).