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Sustainability, a means to reach higher profitability?

A quantitative analysis and comparison of ESGC Scores and financial
performance in the Nordics and China

by

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Abstract

The focus on sustainability has increased in our society during the last years and more firms are conducting CSR reports than ever before. Some claim that firms CSR efforts are only window dressing while other claims that sustainability leads to greater profitability for firms. Previous research is ambiguous when it comes to explain how and if sustainability efforts lead to higher profitability. So, the purpose of this study was to increase the understanding of the relationship between sustainability and profitability and if different regions value sustainability differently. Additionally, this thesis also highlights the impact sustainability controversies have on profitability.

We chose to analyze firms from the Nordics and China, as the Nordics are ranked in the top when it comes to sustainability, while Chinese firms are among the worst performers in the world. To test the relationship between sustainability and profitability we used ESGC Scores, which provides a rating of firms CSR efforts, and financial performance in terms of both market based and accounting based measures. Multiple regression models were conducted using panel data of 144 Nordic firms respectively 99 Chinese firms between the years 2009-2018.

The results showed no significant relationship between firms ESGC Scores and financial performance for the Nordic firms. However, the results for the Chinese firms showed positive significant relationships between the Social and Environmental Score to financial performance. The results indicated that CSR is more of a hygiene factor in order to become legitimate and sustain profitability in developed countries such as the Nordics, while in emerging countries like China, CSR can also be used as a means to create uniqueness and increase profitability. From the results, we suggest that CSR have a maximum level where it can contribute to profitability. The Nordic firms CSR efforts are close to this level while Chinese firms still have the possibility to use CSR to increase profitability over its peers. Our study makes a unique contribution to the research on sustainability and its impact on profitability as no study have compared two regions with substantially different sustainability performance previously.

Keywords: ESGC Scores, Financial Performance, Sustainability, Legitimacy, Uniqueness

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Table of contents

1. Introduction	1
1.1. Background.....	1
1.2. Sustainability measures	2
1.3. Theoretical and empirical problem.....	3
1.4. Contribution.....	6
1.5. Purpose	6
1.6. Research question	7
2. Literature review	8
2.1. Previous research overview on the relationship between sustainability measures and financial performance.....	8
2.2. Market based performance and accounting based performance.....	8
2.2.1. Ambiguous results.....	8
2.2.2. Positive, neutral and negative results	8
2.3. Importance of each individual ESGC factor.....	9
2.4. Controversies, an external perspective	11
2.5. Theoretical previous perspectives when examining the relationship between sustainability measures and financial performance.....	12
2.6. Previous research on sustainability and profitability.....	13
3. Theoretical foundation and hypotheses	15
3.1. Corporate Responsibility history	15
3.2. Different view on corporate responsibility	15
3.2.1. Profit maximization and shareholder theory	15
3.2.2. Firm responsibility and stakeholder theory	16
3.3. Corporate Social Responsibility and Creating Shared Value	17
3.4. Means to reach profitability.....	17
3.4.1. Increase profitability by creating a uniqueness	17
3.4.2. Sustain profitability by legitimacy	18
3.4.3. Defensive and offensive CSR strategies	18
3.5. Hypotheses formulation.....	19
3.6. Hypotheses.....	20

4. Method.....	21
4.1. Empirical framework and methodology	21
4.1.1. Regression model	21
4.2. Data collection and sample.....	22
4.2.1. Data collection method.....	22
4.2.2. Sample selection.....	23
4.2.3. Sample data	24
4.3. Variables	25
4.3.1. Dependent variables - Financial performance.....	25
4.3.2. Independent variables - ESGC scores	26
4.3.3. Control variables	27
4.4. Descriptive statistics and correlation matrix	29
4.5. Regression model construction.....	30
4.5.1. Two-way error component with fixed effect.....	30
4.5.2. Multiple regression using OLS	30
4.5.3. Normal distribution, heteroskedasticity and robustness.....	32
4.6. Validity and Reliability	32
4.6.1. Validity.....	32
4.6.2. Reliability	33
5. Empirical results	35
5.1. Descriptive statistics	35
5.2. Correlation matrix results	37
5.2.1. ESGC, Financial Performance and Size correlations in the Nordics	37
5.2.2. ESGC, Financial Performance and Size correlations in China	38
5.3. Regression results for the Nordics.....	39
5.3.1. Summary of the regression results for the Nordics	39
5.3.2. ROA	40
5.3.3. ROE.....	41
5.3.4. ROS	41
5.3.5. Tobin's Q.....	41
5.4. Regression results for China.....	41
5.4.1. Summary of the regression results for China	41

5.4.2.	ROA	42
5.4.3.	ROE.....	43
5.4.4.	ROS	43
5.4.5.	Tobin's Q.....	43
5.5.	Hypotheses results	43
6.	Analysis	45
6.1.	Empirical analysis of the results in the Nordics	45
6.1.	Empirical analysis of the results in China	46
6.2.	Developed and emerging regions	47
6.3.	Compare to previous research	49
6.4.	Theoretical analysis of results	49
6.4.1.	The Shareholder and Stakeholder theory	49
6.4.2.	Controversies.....	51
6.4.3.	Uniqueness and legitimacy.....	52
6.5.	A maximum CSR level to generate profitability	53
7.	Conclusion.....	56
7.1.	Limitations.....	56
7.2.	Suggestions for further research	57
	References	60
	Appendix A	68

List of tables

Table 1. Overview of previous literature on sustainability and financial performance measurements	10
Table 2. ESGC Scores and range	27
Table 3. Operationalization of variables	28
Table 4. Summary of regression analysis.....	31
Table 5. Descriptive statistics Nordics	36
Table 6. Descriptive statistics China	36
Table 7. Correlation matrix Nordics.....	37
Table 8. Correlation matrix China.....	38
Table 9. Regression results Nordics	40
Table 10. Regression results China	42
Table 11. Hypotheses results.....	44

List of figures

Figure 1. Conceptual model	55
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1. Introduction

1.1. Background

Never before have our society talked more about sustainability and we can see that the society has gone from a passive to a demanding and active stakeholder in this regard. The public society, governments and corporations have all addressed larger focus, demand and efforts on creating awareness, new rules and new standards for a more sustainable world. For firms, some claim that sustainable companies are more profitable (Lal Kidwai, 2017) while others are more critical and claims that sustainability is just window dressing to be able to sell for a higher price (Petersson, 2018).

The Swedish girl Greta Thunberg has started a revolution with her school strike for the climate which has inspired millions of people around the world to engage in the question (Watts, 2019). Meanwhile customer preferences have been changing and ethical products and services has grown dramatically and vegan and organic products are becoming the norm for the younger generation (Financial Times, 2017). Governments are also taking sustainability very seriously. EU has for example been working since May 2018 on an action plan to create a common taxonomy for sustainable finance in the EU to reduce uncertainty and create a standard classification of sustainable investments (European Commission, 2019). This will also include new benchmarks and improved disclosure requirements. As EU are making a large effort to create a common taxonomy and regulation indicates that sustainability measures might become mandatory for all legal entities in the future.

Corporate Social Responsibility (CSR) has become an integrated part of today's business practice and many firms are highlighting its importance in their annual reports, public statements and daily activities. In PWCs Global CEO Survey (2016) 64% of all CEOs claimed that CSR was the core to their business (PwC, 2016). In 2017 75% of the firms that counts as the national top 100 companies in terms of revenue in 49 countries conducted CSR reporting, which is an increase from 41% in 2005. Among the countries with a CSR reporting higher than the average we find for example all of the Nordic countries. In 2017 94% of the Danish companies, 89% of the Norwegian companies, 88% of the Swedish companies and 82% of the

Finnish companies conducted CSR reports (KPMG, 2017). According to Robeco (2018) the Nordic countries are also in the top ten of countries possessing the highest ESG rankings in the world with Denmark in the top followed by Sweden, Finland and Norway.

On the other side of the scale, with the countries possessing the lowest ESG rankings we find countries that have been highly criticized for their sustainable efforts (Robeco, 2018; Brubaker, 2012). One of the bottom ten countries with the lowest ESG Scores is China (Robeco, 2018). Historically, few firms in China have conducted sustainability reports and only 4% disclosed ESG information in 2005. This is however a number that have rapidly increased and in 2009 over 80% of the firms disclosed ESG information (Weber, 2014). Although, the increased number of firms disclosing ESG information have not increased the quality of the CSR efforts in China. This since China's sustainability performance in 2017 was below average for emerging markets, placing them among the lowest ranked countries (Candriam, 2017). On the contrary the Nordics performed very well in sustainability and Sweden and Norway were for example ranked first and second (Candriam, 2017). The difference between CSR in emerging markets such as China in comparison to developed such as the Nordics follows the findings of Kamath (2010). He discussed that the European market is on the forefront of CSR reporting and disclosures while Asia overall seem to be laggards. Developed countries being on the forefront of CSR is further strengthened in the Institutional Asset Manager (2018) where research found developed countries to outperform the ESG standard performance over the last years. However, the developed countries simultaneously failed to generate robust economic growth during the same period (Institutional Asset Manager, 2018).

1.2. Sustainability measures

To assess firm's CSR efforts, sustainability measures has arisen in terms of ESG Scores, which are gradings of a firm's Environmental, Social and Governance performance (Thomson Reuters, 2019; Bloomberg, 2019; MSCI, 2018). ESG Scores is a tool many of the largest investment databases, investors and investment researchers uses to compare firms' CSR activities. Large financial information corporations such as Thomson Reuters, Bloomberg and MSCI all provide their own solution for a comparable ESG Score (Thomson Reuters, 2019; Bloomberg, 2019; MSCI, 2018). Since much of the data that is used to create ESG scores come from disclosures provided by the firms themselves, Thomson Reuters also include an ESG

Controversies Score to account for external sources the firms cannot influence (Thomson Reuters, 2019). The Environmental, Social, Governance and Controversies Scores are later combined to an ESGC Combined Score (see Appendix A).

Sustainability is used in this thesis as a general umbrella term of everything that is connected to the term sustainability. When we are talking about firms' efforts to be sustainable we refer to CSR. Firms CSR efforts is later measured by ESG Scores, which is a sustainability measure. When we refer to ESG Scores we include firms environmental, social and governance sustainability performance and when we refer to the Controversies Score, we only focus on the Controversies Score. Lastly, when we refer to ESGC Scores we refer to firm's total sustainability performance, including controversies.

1.3. Theoretical and empirical problem

Why are corporations actually engaging in these CSR activities? Throughout the years two views on corporate responsibility has evolved. The classical view includes the shareholder theory where corporations' main responsibility is to maximize shareholders financial returns and where CSR activities are usually seen to create cost disadvantages (Friedman, 1970). On the contrary stakeholder theory grew as a critique from the classical view where firms are seen as corporate citizens with societal responsibilities to all stakeholders (Freeman & Reed, 1983). Stakeholder theory suggests that firms' responsible activities further can enhance a firm's competitive advantage, efficiency, firm reputation, customer attraction and employee efficiency which leads to profitability (Walsh & Dodds, 2017; Valentine & Fleischman 2008; Menon & Kahn, 2003).

To engage in CSR has been explained on the basis of the moral, ethical and rational arguments for responsibility as well as an economic argument that claims CSR, in addition to avoiding sanctions can offer a uniqueness and potential competitive advantage for firms (Chandler, 2017). Competitive advantage is commonly described as a means to reach higher profitability, either by building on unique resources and processes (Barney, 1991) or by creating a unique position (Porter, 1985). A uniqueness can further be achieved by using an offensive CSR strategy which enables increased profitability (Lubin & Esty, 2010; Hart & Milstein, 1999). However, CSR is also claimed to be used as a means to generate legitimacy by harmonizing the

firm's operations with the values of the society (Suchman, 1995; Dowling & Pfeffer, 1975; Lindblom, 1994). By this reasoning legitimacy is seen as a way to sustain profitability and reduce risk and sanctions (Chandler, 2017). Legitimacy has further been described to be fulfilled by using a defensive CSR strategy (Lubin & Esty, 2010; Hart & Milstein, 1999). Oliver (1997) explain that firms can become profitable either by a value-enhancing strategy or by optimizing the use of their resource capital by supporting the value-enhancing assets. The former strategy implies uniqueness while the later maintains uniqueness, which goes in line with the legitimacy theory. Furthermore, according to Oliver (1997) and Lubin and Esty (2010), both competitive advantage through uniqueness and legitimacy are necessary for long-term sustained profitability. Therefore, we believe the inclusion of both uniqueness and legitimacy will provide us with the frameworks needed to answer whether firms CSR efforts has a relationship to financial performance.

The greater focus on sustainability measures and corporate reporting opens up for further discussion weather these sustainability measures and disclosures are, and can be, used to improve a firm's financial performance or whether they are only used as a tool to create legitimacy. Current researchers differ in empirical explanations and shows ambiguous results regarding the relationship between firms CSR activities and financial performance. CSR activities are mainly measured in terms of ESGC Scores and financial performance is mainly measured in terms of market value, using Tobin's Q and accounting based performance using profitability measures such as return on assets (ROA) and return on equity (ROE). Researchers have found both positive, negative, and no relationship at all. Most of the previous studies that found a positive relationship used the stakeholder theory as theoretical perspective, which have resulted in a highlighted importance of stakeholder management (Baird, Geylani, & Roberts, 2012; Bodhanwala & Bodhanwala, 2017; Eccles, Ioannou & Serafim, 2014; Lo & Sheu, 2007; Taliento, Favino & Netti, 2019; Velte, 2017; Changhong, Yu, Jiahai, Mengya, Daiyu, Yiou & Jiangang, 2016). Of the studies that found no correlation or negative correlation, some of them are modestly critical towards the stakeholder theory. They state that the stakeholder theory cannot fully explain the relationship between CSR and performance, due to stakeholders for example do not yet sanction positive or negative CSR activities and strong perceptions of the firms are already established (Sahut & Pasquini-Descomps, 2015; Aouadi & Marsat, 2016).

Shareholder theory has further been connected with the principal-agent theory where firms are principals and shareholder are agents (Eccles, Ioannou & Serafim, 2014, Velte, 2017). In this light, researchers have rejected the argument that sustainability is just an agency costs that benefits managers on behalf of the firms' financial performance as they found positive relationships between ESG Scores and financial performance (Eccles, Ioannou & Serafim, 2014, Velte, 2017). A few studies also include the legitimacy theory as an explanation to the correlation between CSR and financial performance, however these studies only briefly discuss the importance of legitimacy. Interestingly, one of the most important theories in the strategic management field, competitive advantage, was only found in two studies on the relationship between sustainability measures and financial performance (Lopez, Garcia & Rodriguez, 2007; Taliento, Favino & Netti, 2019). The study Lopez, Garcia and Rodriguez (2007) conducted found that CSR, measured by Dow Jones Sustainability Index (DJSI), have a negative short-term effect on financial performance, although the performance differences between CSR-active and non-active firms diminished over time. Their research was conducted between 1998-2004 and a lot of changes have happened in the sustainability area since then. More recently, Taliento, Favino and Netti (2019) found a positive relationship between ESG Scores and financial performance and highlighted sustainability as a source of competitive advantage and to long-term success.

Limited research has been done whether controversies are linked to financial performance. Some researchers claim that negative news stories are negatively linked with financial performance and they have highlighted the importance of stakeholders (Orlitzky, 2013; Taliento, Favino & Netti, 2019). Others however, claim that there is a contradictive indirect positive relationship between the Controversies Score and financial performance for high-attention firms since many stakeholders have preconceived ideas about the firms (Aouadi & Marsat, 2016). Additionally, Aouadi and Marsat (2016) suggested that these high-attention firms are subject to extensive scrutiny and therefore some firms have lower controversies score, while their ESG Scores are high. Since the Controversies Score is not controlled by the firms themselves, this score is especially interesting to assess to see whether controversies influence firm's financial performance negatively and, thus, indicate the importance of stakeholders and legitimacy. Today's empirical evidence and attempts to address the relationship between controversies and financial performance are weak and ambiguous. As controversies are visible to the greater public and conducted by external stakeholders they should have an impact on the

firm's viewed legitimacy and, consequently, affect financial performance, which we will investigate further.

In conclusion, previous research is ambiguous on the relationship between the ESGC Scores and financial performance, which might depend on which methodology, time or measure that have been used.

1.4. Contribution

From a strategic management point of view, it's important to clarify the link between a firm's strategic activities and its future results. Since previous research is ambiguous, this study aims to contribute with empirical evidence on the relationship between sustainability and profitability through firms ESGC Scores and financial performance. This thesis will contribute to fill a gap in previous research as no empirical research on ESGC Scores and financial performance has, to our knowledge, been conducted on the Nordic countries. Neither have we found any comparison between very developed and sustainable countries to emerging and less sustainable countries. As we will compare the Nordics with China, our study will supply a unique contribution to the research on sustainability in strategic management. Additionally, the Controversies Score, that stands for the external view and is conducted by media has only been studied to a limited extent, therefore we especially want to contribute to the research with much needed empirical research in this area. Lastly, little empirical research and evidence have been proposed whether CSR and theories on increasing and sustaining profitability have any relationship and here we will contribute with our theoretical construct.

1.5. Purpose

Our purpose is to increase the understanding of the relationship between sustainability and profitability. This will be done by testing the relationship between firms ESGC Scores and financial performance. To complement previous research this thesis will present an attempt to address the gap of research in comparing developed and sustainable countries to emerging and less sustainable countries. Lastly, our purpose is to contribute to the limited previous research attention on the Controversies Score and its relation to financial performance. We will do this by conducting a quantitative analysis and examine whether firms CSR activities is a way of

enhancing firms' uniqueness and financial performance. In addition, we will investigate each pillar of the ESGC Score (Environmental, Social, Governance and Controversies) to see which part has the strongest relationship to financial performance.

1.6. Research question

Does firms' sustainability performance lead to higher profitability?

2. Literature review

2.1. Previous research overview on the relationship between sustainability measures and financial performance

Many researchers have attempted to analyze the linkages between sustainability and financial performance around the globe using different sustainability measures, mainly ESG Scores. Researchers have studied financial performance in terms of accounting-based performance, using different profitability measures such as ROA and ROE and in terms of market value using market valuation models such as Tobin's Q. Many of the recent results have showed a positive relationship between sustainability measures and financial performance, while some results have been weaker or even showed negative results (see Table 1). As a whole, results have been mixed and ambiguous. This can depend on the period of time or which methodology used for the study.

2.2. Market based performance and accounting based performance

2.2.1. Ambiguous results

Some studies have returned ambiguous results. Velte (2017) studied both market value and accounting based performance and found that ESG Scores are only positively correlated with accounting performance, while no impact was found on market value. Sahut and Pasquini-Descomps (2015), who only studied market value in terms of Tobin's Q, found ambiguous results as a slightly negative relationship was found for the UK firms but no relationship could be found for the other studied countries.

2.2.2. Positive, neutral and negative results

Other researchers who have studied the relation between sustainability and market value in terms of Tobin's Q found a positive correlation (Eccles, Ioannou & Serafim, 2014; Taliento, Favino & Netti, 2019; Lo & Sheu, 2007; Buallay, 2019; Bohyun, Lee & Byun, 2018). Bohyun, Lee and Byun (2018) highlighted that there was a weaker valuation effect for environmental sensitive industries while Lo and Sheu (2007) also suggested that sustainable companies have

a positive effect on sales growth. Taliento, Favino and Netti (2019) further found that size is a significant mediator to the relationship between CSR and financial performance. Among those who studied the relation between sustainability measures and accounting based performance, a similar pattern emerges and the majority discovered a positive relation between ESG Scores and accounting performance (Bodhanwala & Bodhanwala, 2017; Eccles, Ioannou & Serafim, 2014; Taliento, Favino & Netti, 2019; Changhong et al., 2016). Results on large and listed power generation groups in China also showed that good ESG performance can improve firm's financial performance as their results showed a positive relation between ESG and financial performance (Changhong et al., 2016). Bodhanwala and Bodhanwala (2017) and Bohyun, Lee and Byun (2018) also highlighted the positive relationship between ESG Scores and financial performance in emerging markets. On the other hand, Garcia, Mendes-Da-Silva and Orsato (2017), who also looked at emerging countries and used accounting based performance, did not find any correlation as their results were neutral, but they did find that firms in more sensitive markets reached higher ESG Scores than firms in less sensitive markets. Furthermore, Lopez, Garcia and Rodriguez (2007) studied Europe and found a negative relationship between CSR activities and accounting performance in the short-term as these activities were explained to contribute to economic disadvantages for the firms. However, in the long-term these negative effects corrected themselves.

2.3. Importance of each individual ESGC factor

The quality of corporate governance has been highlighted by researchers as an important mediator to the relation between CSR and financial performance. Chan, Watson and Woodliff (2014) as well as Velte (2017) found that a higher corporate governance rating indicates better financial performance and provide more qualitative CSR-information. Bohyun, Lee and Byun (2018) found that governance practices were especially important for family owned businesses in Korea, so called chaebols. According to Velte (2017) the social component is just behind corporate governance in terms of impact, indicating that social governance is an important mediator even though it is not as important as corporate governance. Furthermore, one study found that the environmental component of the ESG Score has the lowest relatedness to financial performance (Velte, 2017) while one study instead found it to have the highest relation to financial performance (Garcia, Mendes-Da-Silva & Orsato, 2017).

A limited number of researchers have attempted to investigate ESG Controversies and financial performance. Orlitzky (2013) suggested that negative sustainability related news stories are negatively correlated with financial performance. Taliento, Favino and Netti (2019) also highlighted the negative relationship between low ESG Controversies and financial performance. On the contrary Aouadi and Marsat (2016) did not find any direct relationship between negative controversies and firm performance, but they found an indirect positive effect via the other ESG indicators and their result showed that controversies are indirectly connected to increased value for high-attention firms. With high attention firms they included firms located in countries with great press freedom and larger companies, who perform better and get more attention from investors.

Table 1. Overview of previous literature on sustainability and financial performance measurements

Authors, (year)	Sample scope and Time frame	Firms (observations)	Type of financial performance	Research variable	Sustainability Measure	Financial performance measure	Relationship
Aouadi & Marsat (2016)	Global 2002-2011	4312 (15436)	Market-based	Controversies factor	ESG Scores	ROE Tobin's Q	Direct: 0 Indirect: +
Baird, Geylani, & Roberts (2012)	Global 2001-2008	1153 (5073)	Accounting-based Market-based	Corporate Social Performance and Corporate Financial Performance CSP CFP	Domini 400 Social Index vs Non-Domini 400 Social Index	Stock price Intrinsic Value Market Value Revenue ROIC Total debt to total Capital	+
Bodhanwala & Bodhanwala (2017)	India 2010-2015	58 (290)	Accounting-based	"Low ESG" vs "High ESG"	Thomson Reuters ESG (Assets4)	ROIC ROE ROA EPS	+
Bohyun, Lee & Byun (2018)	Korea 2010-2015	212 (1060)	Market-based	E, S, G factors separately	ESG from The Korean Corporate Governance Service	Ohlson's valuation model	+
Chan, Watson & Woodliff (2014)	Australia 2004	222 (222)	Accounting-based	Corporate Governance, CSR disclosure, Size, Industry, Stockholder power, Economic Performance	CSR disclosures in Annual Reports	Return on book value of equity	+

Changhong et al. (2016)	China 2007-2016	20 (N/A)	Accounting-based	ESG Combined Score	Calculated an Index Evaluation System from disclosures	ROCE	+
Eccles, Ioannou & Serafim (2014)	USA 1993-2009	180 (N/A)	Accounting-based Market-based	High sustainability companies vs low sustainability companies	Thomson Reuters ESG (Assets4)	ROA ROE Tobin's Q	+
Garcia, Mendes-Da-Silva & Orsato (2017)	BRICS 2010-2012	365 (1095)	Accounting-based	E, S, G, - factors separately, Industry analysis	Thomson Reuters ESG (Eikon)	ROA FCF	0
Lo & Sheu (2007)	US 1998-2004	349 (1273)	Market-based	Dummy variable 0-1	n/a	Tobin's Q	+
Lopez, Garcia & Rodriguez (2007)	Europe 1992-2002	110 (N/I)	Accounting-based	DJSI vs. DJGI	Dow Jones Index	PBT REV ROE MARG ROA KMPC	-
Sahut & Pasquini-Descomps (2015)	US, UK, Switzerland 2007-2011	200 (618)	Market-based	News-based measure	Covalence	Carhart's model (market-based)	UK: - US: 0 Switzerland: 0
Taliento, Favino & Netti (2019)	Belgium, France, Germany, Italy and Spain 2014-2017	150 (450)	Accounting-based Market based	E, S, G, C - factors separately Corporate Size	Bloomberg ESG	ROI ROA CFOI ROS ROE price-to-book value	+
Velte (2017)	Germany 2010-2014	N/A (412)	Accounting-based Market-based	E, S, G - factors separately	Thomson Reuters ESG Scores (Eikon)	ROA Tobin's Q	Accounting: + Market: 0

2.4. Controversies, an external perspective

Servaes and Tamayo (2013) provided evidence that firms can adjust how they are perceived in the public through advertising. Consequently, this indicates that firms indirectly can influence their own sustainability ratings through disclosures made internally since the larger providers of sustainability ratings construct their ESG ratings using publicly available information typically disclosed by the firm itself (Thomson Reuters, 2019; Bloomberg, 2019; MSCI, 2018). The increasing number of firms disclosing information about CSR have been met with criticism from several studies. According to Michelon, Pilonato and Ricceri (2015) there is evidence indicating that CSR reports are symbolic rather than substantive. Furthermore, they argue that increasing skepticism of CSR reports as being a way to enhance accountability is supported by

their results. Studies have also criticized CSR reports and disclosures as it is argued that it lacks relevance and credibility (Husillos, González & Gil, 2011) as well as lacking any real impact on sustainable development (Gray, 2010). Triple bottom line reporting and the initiatives of the Global Reporting Initiative (GRI) is argued to be insufficient contribution in the strive for sustaining the ecological systems of the earth (Milne & Gray, 2013). Milne and Gray instead suggest that such CSR reporting initiatives paradoxically “may reinforce business-as-usual and greater levels of un-sustainability” (p. 13) as it allows firms to state they are reporting or moving towards sustainability while not actually being sustainable.

2.5. Theoretical previous perspectives when examining the relationship between sustainability measures and financial performance

In the light of the relationship between CSR and financial performance, results have supported different theoretical perspectives. This is highlighted by Chan, Watson and Woodliff (2014) as they discuss that there is no universal theoretical perspective for CSR since prior research have used several different perspectives. They give examples of theories such as stakeholder theory, institutional theory, legitimacy theory and agency theory, but further argues that there seem to be a consensus among researchers that the theories are not distinct but overlapping. The overlap between the different theories are evident in many previous studies as they find support for several theories (Chan, Watson & Woodliff, 2014). The stakeholder theory is the most recurring theoretical framework used to describe why a positive relation between sustainability measures and financial performance is in effect as several authors highlight the importance of stakeholder management (Baird, Geylani, & Roberts, 2012; Bodhanwala & Bodhanwala, 2017; Clark, Feiner & Viehs, 2015; Eccles, Ioannou & Serafim, 2014; Lo & Sheu, 2007; Taliento, Favino & Netti, 2019; Velte, 2017; Changhong et al., 2016). Velte (2017) elaborated further, as he proposed that shareholders might not be able to take full advantage of sustainability efforts which rather demonstrates an evidence for the stakeholder theory. However, some studies also include legitimacy as an important perspective to describe why firms CSR efforts in terms of sustainability measures and financial performance is positively correlated (Bodhanwala & Bodhanwala, 2017; Chan, Watson & Woodliff, 2014; Taliento, Favino & Netti, 2019).

To further explain stakeholder and shareholder theory researchers have highlighted the principal-agent theory where the firms are the principals and the stakeholders the agents (Velte,

2017; Eccles, Ioannou & Serafim, 2014). Building on Friedman's ideas and the model of shareholder value maximization, Eccles, Iannou and Serafeim (2014) suggested, through the agency theory, that corporate responsibility have both advantages and disadvantages. They found evidence for managers can receive private benefits from addressing corporate responsibilities, while the firm is subject to financial implications from such activities which indicates a principal-agent dilemma (Eccles, Iannou & Serafeim, 2014; Balotti & Hanks, 1999; Brown, Helland & Smith, 2006). However as the previous researchers results showed a positive relationship between sustainability measures and financial performance, they rejected the argument that sustainability is just an agency costs that benefits managers on behalf of the firms' financial performance and, thus, their results supported the stakeholder theory (Eccles, Ioannou & Serafim, 2014).

Among the studies that found no correlation or a negative correlation the stakeholder theory is also often discussed. However, these studies have a more critical view on the stakeholder theory as for example Sahut and Pasquini-Descomps (2015) argue that their results indicate that the stakeholders do not yet fully sanction positive or negative CSR efforts. Aouadi and Marsat (2016) instead discussed that the impact negative attention has on stakeholders is only of importance to firms with lower visibility, as stakeholders is less likely to have formed strong assumptions about the firm yet. Garcia, Mendes-Da-Silva & Orsato (2017) discussed that the firms that are more visible and sensitive are more subject to sanctions and therefore need to focus on stakeholder management and building legitimacy. On the contrary Lopez, Garcia and Rodriguez (2007) instead found support to the shareholder theory since their results indicates sustainability to be an economic disadvantage.

2.6. Previous research on sustainability and profitability

Lopez, Garcia and Rodriguez (2007) and Taliento, Favino and Netti (2019) studies was, to our knowledge, the only studies to put sustainability measures into the light of competitive advantage to see whether CSR efforts had a relationship to financial performance. Other researchers have examined whether CSR efforts influence profitability through competitive advantage, but without using sustainability measures. Instead they have used surveys and meta-studies of previous research. Some have found sustainability to positively influence profitability and competitive advantage (Falkenberg & Brunsael, 2011; Clark, Feiner & Viehs, 2015,

Cantele & Zardini, 2018), although some claim it is a complex and intertwined relationship (Gerstlberger, Praest Knudsen & Stampe, 2014). Falkenberg and Brunsael (2011) found that CSR activities leads to a temporary competitive advantage, which in time develops into a strategic necessity to remain competitive. CSR activities and resources have also been stated to positively influence profitability as it is argued to lead to increased efficiencies, attracting customers and obtaining business as well as improving reputation and attracting employees (Walsh & Dodds, 2017; Valentine & Fleischman 2008; Menon & Kahn, 2003). To extend this, Branco and Rodrigues (2006) argue that CSR activities can provide internal and external benefits in terms of resources, capabilities and building a favorable reputation which enhance profitability. Clark, Feiner and Viehs (2015) conducted a comprehensive meta-study of over 200 previous studies on the relationship where 80% of all literature showed positive linkages between CSR activities and financial performance. They also found that firms who engage in CSR activities, corporate strategies and invested sustainably are more profitable and concluded that CSR should be an important part of companies' decision-making.

Other studies however have found that there is a trade-off between sustainability and efficient cost management (Gružauskas, Baskutis & Navickas, 2018; Seuring, 2013; Esfahbodi, Zhang & Watson, 2016; Morrison-Saunders & Pope, 2013; Winn, Pinkse & Illge, 2012). This indicates that a firm incorporating CSR activities into their business lead to increased costs, resulting in decreased profitability and, thus, reduced competitive advantage. In conclusion, previous research has found both positive and negative relationships between sustainability and profitability and the relationship remain debatable.

3. Theoretical foundation and hypotheses

3.1. Corporate Responsibility history

Ever since the first firms were institutionalized, their relationship and responsibility towards society have been discussed. Blowfield and Murray (2008) argued that there have been three eras of responsibility: the industrial revolution, the mid-twentieth-century welfare state and globalization, each with their own major issues. During the industrial revolution, human exploitation was a major issue and both government and interest groups worked for increased conditions in the workplaces. This marked the start for the discussion of how corporations should behave, with some suggesting that corporations should be philanthropic to increase the conditions for their employees. In the mid-twentieth-century welfare state, after the second World War, environmental issues first started to be discussed and this issue have remained a top priority to present time. Today, during the globalization era, free trade has become a major subject as it brought corruption and corporate governance related issues as well as sustainability discussions in terms of environmental, social and economic issues (Blowfield & Murray, 2008).

3.2. Different view on corporate responsibility

Throughout history, two different views on corporate responsibility have emerged. One view argues that corporations only have one responsibility and that is to increase its value to their owners (Friedman, 1970). In the light of this view sustainability activities are creating a cost disadvantage and therefore corporations should not focus on it (Blowfield & Murray, 2008; Aupperle, Carroll, & Hatfield, 1985). The other view suggests that corporate responsibility can create value and this view suggest that corporations have moral and ethical responsibilities towards their stakeholders when performing their activities (Freeman & Reed, 1983; Blowfield & Murray, 2008; Porter & Kramer, 2002; Porter & Kramer, 2011).

3.2.1. Profit maximization and shareholder theory

In 1970 Milton Friedman posted his famous quote about the social responsibility of corporations in The New York Times Magazine. He stated that “there is one and only one social responsibility of business - to use its resources and engage in activities designed to increase its

profits” (Friedman, 1970). Friedman argued in his article that the social value of a corporation is maximized only by focusing on their own self-interests in maximizing their profit (Chandler, 2017). The shareholder view of Friedman later developed into the model of shareholder value maximization, meaning that those governing the firms’ only responsibility is to increase the shareholders’ value (Blowfield & Murray, 2008). The view proposes that if firms’ activities contribute to any other purpose than maximizing profit, these activities are considered as eliminating shareholder’s decision power. This since shareholders money are used for other purposes than being maximized and therefore CSR has been proposed as creating cost disadvantages for firms. Managers spending money for a good cause rather than maximize shareholders profits have been considered as an agency cost and thus generating agency problem (Brown, Helland & Smith. 2006).

3.2.2. Firm responsibility and stakeholder theory

To counterbalance Friedman and the shareholder profit maximization theory, Freeman and Reed (1983) presented an idea that corporations have responsibilities not only to the shareholders but to all stakeholder that can affect or is affected by an organization’s operations. The stakeholder concept was grown from the Organization Theory Literature conducted by Eric Rhenman in 1968 on his work on industrial democracy (Freeman, 2010). Freeman and Reed (1983) introduced the stakeholder theory which means that a firm must include all stakeholders in their strategic decisions to sustain their competitive advantage and remain profitable (Freeman, 2010). Stakeholder theory further argues that firms’ survival depends on their stakeholders, such as employees or customers as well as stakeholders such as interest groups and competitors, which can highly affect the performance of the firm.

Freeman’s ideas later developed into the instrumental stakeholder theory (Jones, 1995). The instrumental stakeholder theory considers the performance consequence following firms’ ethical relationship with their stakeholders. Trusting and cooperative relationship can help to solve problems of opportunism. As the costs of reducing and preventing opportunism are significant, firm’s that base their relationship on trust can reach a higher profitability over those who base their stakeholder relationship on opportunism. Jones (1995) means that this explains why certain altruistic behavior become productive and why those who engage in such behavior survive and thrive. The stakeholder view has been accepted by many researchers recently as

sustainable performance and long-term relationships with stakeholders is considered beneficial to long-term value creation (Bodhanwala & Bodhanwala, 2017).

3.3. Corporate Social Responsibility and Creating Shared Value

Corporate Social Responsibility (CSR) emerged from the stakeholder theory and occurs when a firm consciously works towards enhancing the well-being of those affected from the firm's operations (Post, Preston & Sachs, 2002; Frederick, 2018). CSR has further been explained by Dyllick and Hockerts (2002) as meeting the needs of all stakeholders without compromising the ability to meet the needs of other stakeholders in the future. The goal of CSR is to harmonize economic operations with society's welfare requirements, but there is often competing and contradictory outcomes that must be taken into account (Frederick, 2018). CSR advocates often overlook the economic benefit CSR impose on businesses and instead they focus on reducing social costs. CSR skeptics however, tend to put their attention to reduce the costs of social initiatives, resulting in both sides struggling to reach a whole-encompassing view of CSR (Frederick, 2018). Porter and Kramer (2011) tried to connect the two opposing views of social initiatives and economic benefits through the Creating Shared Value (CSV) approach. They argue that the competitiveness of a firm and its surroundings are mutually dependent and thus, a healthier environment leads to increased profitability for the firm. Such activities of increasing performance by being socially responsible have also been supported through the stakeholder theory (Freeman, Parmar, Harrison, Purnell & De Colle, 2010).

3.4. Means to reach profitability

The benefits of firms engaging in CSR can further be justified through the possibility to increase or sustain profitability, by being unique respectively by being legitime. According to Oliver (1997), a unique position in combination with legitimacy are both necessary for long-term financial performance.

3.4.1. Increase profitability by creating a uniqueness

In the strategic management literature two views on how firms' uniqueness can create competitive advantage and increase profitability are presented. The first view, the resource-

based view (RBV), describes how firms' unique strategic resources affect firms' profitability. RBV was developed by Barney (1991) and the model determines which resources can be exploited to create a sustained competitive advantage. The second view to increased profitability was presented by Porter (1985, p. 1): "Competitive strategy aims to establish a profitable and sustainable position against the forces that determine industry competition". By pursuing either a cost leadership or differentiation strategy, Porter (1985) argued that the firm can increase their profitability through lowered costs or increased prices. Through pursuing one of the strategies firms can reach a unique position on the market and by that a competitive advantage that produces higher profitability than its peers. In the light of these views different resources or strategies can be used to establish uniqueness and to increase profitability. As this thesis is not interested in how sustainability leads to higher profitability but rather if it does, this thesis will not go into which source or strategy that is used to increase profitability. Instead, both RBV and Porter's competitive strategy can be seen as theories that create uniqueness which leads to increased profitability.

3.4.2. Sustain profitability by legitimacy

A firm can create legitimacy by aligning their operations with the norms and beliefs of the society (Suchman, 1995; Dowling & Pfeffer, 1975, Lindblom, 1994). Legitimacy is needed as firms can only utilize resources in a social system if they are legitimized by it (Dowling & Pfeffer, 1975). The harmony between the firm and the society's value system create legitimacy, and if that harmony disappears, the firm might do that as well (Lindblom, 1994). To avoid legitimacy issues, firms try to accommodate society's requirements when developing their activities to generate a favorable public picture (Suchman, 1995; Bansal, 2002). Chandler (2017) suggests that legitimacy can be used to sustain profitability as it allows firms to minimize risks and avoid external constraints by meeting the needs of their stakeholders.

3.4.3. Defensive and offensive CSR strategies

As described above, profitability can be increased through uniqueness and be sustained through legitimacy. Firms can in turn use CSR strategies as a mean to fulfil these factors in order to become profitable. Hart and Milstein (1999) proposed that defensive and offensive CSR strategies can be used to increase and sustain profitability in a world where firms are facing

changing demands and creative destruction. A focus on existing products, processes, suppliers, customers and shareholders is the main idea for defensive CSR strategies and it is characterized by incremental improvements (Lubin & Esty, 2010; Hart & Milstein, 1999). Incremental improvements in a defensive strategy are more about creating value from risk reduction and cost savings (Lubin & Esty, 2010), similarly to the benefits of legitimacy theory. Therefore, a defensive strategy can be seen as a way of creating legitimacy and consequently sustain profitability.

On the other hand, offensive CSR strategies focus on emerging technologies, markets, partners, customers and stakeholders and are characterized by more discontinuous improvements that leads to creative destruction in the industry (Hart & Milstein, 1999). Through the creative destruction, firms are able to transform their core business and build new business models that redefine their strategies by creating more value and thus become more profitable (Lubin & Esty, 2010). Sustainable products can then either be charged at a premium price or decrease production costs through the use of an offensive CSR strategy and thus, increase profitability (Lubin & Esty, 2010). The offensive strategy can be seen as a way to create a unique position and increase profitability, similarly to what the theories of Porter and RBV describe.

3.5. Hypotheses formulation

Shareholder theory claim that CSR is creating a cost disadvantage on the expense of shareholders value maximization. On the other hand, stakeholder theory claims that firms need to take all stakeholders into account in order to become profitable. As CSR evolved from the stakeholder theory and that the stakeholder theory have been supported by many previous researchers, we believe higher ESGC Scores will positively affect financial performance. Previous research has also supported a positive impact from CSR on financial performance in both developed and emerging countries. This makes us believe that both the Nordics as well as China will be in line with our assumptions.

Furthermore, RBV and Porter suggests that sustainability can be used as a means to create uniqueness and increase profitability, either by being used as a strategic resource or by creating a favorable position. CSR activities can therefore be seen as a tool to reach higher profitability after creating a competitive advantageous position by being unique. In addition, legitimacy

theory suggests that firms need to be legitimized by its stakeholders to sustain their profitability, which is also suggested by the defensive CSR strategy. Lastly, as low ESGC Scores are an indicator of issues in a firm's CSR activities we believe a firm that perform a low ESGC Score have a greater chance of losing their legitimacy and thus experience decreased profitability.

In line with the discussion on uniqueness and legitimacy, and in accordance with Chandler's (2017) ideas that CSR is based on an economic argument since it enables firms to meet the needs of their stakeholders, we propose the following hypotheses:

3.6. Hypotheses

H₁: There is a positive relationship between the ESGC Score and financial performance.

H₂: There is a positive relationship between the ESG Score and financial performance.

H₃: There is a positive relationship between the Environmental Score and financial performance.

H₄: There is a positive relationship between the Social Score and financial performance.

H₅: There is a positive relationship between the Governance Score and financial performance.

H₆: There is a positive relationship between the Controversies Score and financial performance.

4. Method

4.1. Empirical framework and methodology

As the purpose of this study was to increase the understanding of the relationship between sustainability and profitability by testing the relationship between ESG Scores, ESG Controversies and financial performance, the choice of a quantitative research design was logical. Quantitative research has been defined as “quantifying the problem or research question and establishing the mechanisms through which one or more [quantitative] variable[s] may affect another variable” (MacIntosh & O’Gorman, 2015, p. 155). As the scope of the research and the used variables are quantifiable a deductive approach has been conducted where hypotheses have been constructed from previous theory and tested to be confirmed or rejected (Bryman & Bell, 2013; Creswell, 2014).

4.1.1. Regression model

To be able to test our hypothesis and test the relationship between ESGC Scores and financial performance multiple regression models was conducted for each of our dependent variables. Financial Performance, as our dependent variables, was separated into ROA, ROE, ROS and Tobin’s Q whom are further explained below and presented in Table 3. We conducted two-way error component regression models with fixed effects, as it takes into account both the individual effect of differences between firms and the time effect of differences between each year (Baltagi, 2013). Development of the final regression models and statistical test to diagnose the model will be presented later. Our regression models were conducted using EViews10.

The preliminary regression model is as follows:

$$\begin{aligned} \text{Financial performance (ROA, ROE, ROS, Tobin's Q)}_{it} = & \\ \alpha_{it} + \beta_1 \text{ESGC (ESGC, ESG, E, S, G, C)}_{i, t-1} + \beta_2 \text{TotalRevenue}_{it} + \beta_3 \text{Totalassets}_{it} + & \\ \beta_4 \text{Employees}_{it} + \beta_5 \text{Leverage}_{it} + \beta_6 \text{FINP}_{i, t-1} + \varepsilon_{it} & \end{aligned}$$

Where:

I = individual effect

t = time effect

α = constant

β = coefficient

ε = error term

4.2. Data collection and sample

4.2.1. Data collection method

The data set used for this study was collected from Thomson Reuters database Eikon, which contains secondary data of thousands of company specific, publicly available financial information and ESG Scores (Thomson Reuters, 2019). This allowed us to gather a comprehensive number of statistical high-quality data that could be used to draw conclusions from in an accurate way whether our hypothesis is acceptable or not, thus making it more generalizable (Bryman & Bell, 2013).

The usage of secondary data also made it possible to conduct a longitudinal approach and construct a panel data set (Baltagi, 2013; Bryman & Bell, 2013). One of the benefits of using panel data is that panel data enables control for individual heterogeneity. Panel data see firms and nations as heterogenous and can control for state or time-invariant variables, which cross-sectional and time-series cannot. This is beneficial since it reduces misspecifications of variables that are heterogenous (Baltagi, 2013). Panel data over a time-series of 10 years was chosen as it enables us to examine how changes in a company's ESGC Scores affects its financial performance as well as increase the number of observations (Baltagi, 2013; Creswell, 2014). In contrast to a cross-sectional study, a panel data approach allows the study to deduct the causal direction and to better study the dynamics of time (Baltagi, 2013; Bryman & Bell, 2013). In addition, panel data give more informative data, freedom, efficiency and variability than cross-sectional and time series studies (Baltagi, 2013). This enabled us to study micro panel data on firms which can be measured more accurately and bias from aggregation can be reduced or eliminated. We opted to study the ten most recent years that have been reported on, resulting in the study analyzing the years between 2009 to 2018. Ten years was chosen as it can

count as an acceptable time-series and made it possible to collect a decent number of observations without including too many years with incomplete data (Baltagi, 2013).

4.2.2. Sample selection

To focus our study, we chose to delimit our sample to include all Nordic and Chinese companies listed on the Nordic respectively Chinese stock exchanges who are given an ESGC Score. The Nordic stock exchanges include OMX Stockholm (OMXSPI), Oslo Børs (OSEAX), OMX Helsinki (OMXHPI) and OMX Copenhagen (OMXCPI) while the Chinese stock exchanges include the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE). We conducted two separate panel data sets, one for the Nordics and one for China to be able to compare them later on.

The Nordics are among the countries possessing the highest ESG Scores and are putting a lot of emphasis on acting responsibly while China are one of the worst performers in sustainability and acting responsibly (Yale University, 2019; Robeco, 2018; KPMG, 2017). It is therefore interesting to analyze if CSR activities actually are creating value and to see if there is a difference in the relationship of firms' CSR activities and financial performance between the two geographic areas. For developed economies, such as the Nordics, customers have the purchasing power while firms are meeting the challenge to reduce its corporate footprint (Hart & Milstein, 1999). For firms to survive, the public acceptance level and corporate reputation is an important metric (Hart & Milstein, 1999). This makes it further interesting to investigate the Nordics since one can assume that acting sustainable is highly valued there and that the companies who are not being sustainable suffer negative consequences.

In China however, the importance of being sustainable does not seem to have reached as far. Their poor performance in sustainability is evident as they are for example the largest CO₂ emitter, releasing twice as much CO₂ as USA and five times more than India (World Bank, 2014). They are also the worst offenders in mismanaged plastics and the country are the worst performer when it comes to polluting the oceans with plastics (Statista, 2019; Jambeck, Geyer, Wilcox, Siegler, Perryman, Andrady, Narayan, and Law, 2015). According to Brubaker (2012), China however does not see emissions and pollution as their primary issue since millions remain in poverty (Kaiman, 2013) and reports of child labour (Zuo, 2016) and cancer villages surface

(Kaiman, 2013) and are making social welfare China's most important matter. As the social standard for some of China's inhabitants is still low compared to developed countries a focus on increasing the social welfare is important. This is in line with Mio's (2019) suggestion that China is increasingly focusing on social implications, however Mio moreover argues that environmental implications also have faced increased spotlight. Weber (2014) further discussed that China's political climate have an impact on firms' business ethics as many firms are still state owned in line with their communist regime. Overall, the Chinese efforts in sustainability reporting shows that increased disclosures do not necessarily increase the performance in sustainability. This makes it interesting to study the relationship between CSR efforts and financial performance in Chinese firms, as CSR could be seen as a way to differentiate the firm from its peers.

Altogether, we notice that in the Nordics sustainability is highly valued while in China sustainability is not as developed. Therefore, we found it interesting to analyze two so different regions individually as well as comparing them to each other. Furthermore, limiting our study to the Nordics and China was done as no earlier research has, to our knowledge, compared a developed and an emerging geographic area.

4.2.3. Sample data

Iceland were not represented among the firms provided by Eikon, but due to Iceland's small size we do not believe it substantially affects our analysis. Also, non-public companies and information that is not disclosed were not included in our sample as Eikon only provides publicly available data for public companies. Furthermore, not all Nordic or Chinese firms are given ESGC Scores as sufficient public disclosed information must be available for the providers to generate a score. This implies that only larger firms are included in the analysis. Additionally, several firms had a few years where they lacked ESGC Scores over the last ten years. One limitation of panel data is that there can be a data collection problem, for example incomplete coverage of the population (Baltagi, 2013). To limit this problem, we were only scoping us to larger companies who are present on the stock exchanges in the Nordics and China and who has obtained ESGC Scores for a minimum of three years. Furthermore, the information from Eikon provided a few faulty variable values in terms of negative total revenue, negative

debt and a return on sales value of over 100%. In total, there were less than twenty such nonviable values and these were deleted to not affect the results.

Our sample gave us 144 observable firms in the Nordics and 99 observable firms in China, making our study's sample size large enough to draw conclusions from (Hair, Andersson, Tatham & Black, 1995). According to Hair et al. (1995) the desired level of observations is between 15 to 20 observations per independent variable. Considering our use of six independent variables with a minimum of 841 firm observations for the Nordics and a minimum of 418 firm observations for China (see Table 9 and Table 10), this criterion is fulfilled. Hair et al. (1995) also discusses the problems of either a too large or a too small sample size, which can induce problems of overfitting or too little statistical power. While our sample, as discussed earlier, goes well beyond the minimum criteria, there is a possibility of overfitting due to the sample size. This problem, however, we believe the panel data applied in several industries minimize as it allowed us to examine how the relation changes over time to make sure certain years or certain industries affect the relationship to be overly correlated.

4.3. Variables

The operationalization of the variables is presented in Table 3 and the dependent, independent and control variables are further discussed below.

4.3.1. Dependent variables - Financial performance

Financial performance measurements were chosen to indicate profitability. The financial performance variables we chose to include in our study were accounting based measures in terms of return on assets (ROA), return on equity (ROE) and return on sales (ROS). One market-based measure in terms of Tobin's Q was also selected as a variable of financial performance. The accounting based variables ROA and ROE have been used by many researchers to indicate firms profitability performance and can therefore be seen as an accepted way of measuring financial performance (Baird, Geylani, & Roberts, 2012; Bodhanwala & Bodhanwala, 2017; Chan, Watson & Woodliff, 2014; Eccles, Ioannou & Serafim, 2014; Garcia, Mendes-Da-Silva & Orsato, 2017; Lopez, Garcia & Rodriguez, 2007; Taliento, Favino & Netti, 2019; Velte, 2017). Tobin's Q, who measured market value, was also chosen as many previous researches

has used Tobin's Q as an indicator of financial performance and have compared it to accounting based values (Aouadi & Marsat, 2016; Eccles, Ioannou & Serafim, 2014; Velte, 2017). Accounting based measures is less noisy since it indicates actual events in the firms as well as it is not affected by speculation or a sense of differentiation through the adoption of CSR practices which impacts market value (Lopez, Garcia & Rodriguez, 2007; Bodhanwala & Bodhanwala, 2017). Consequently, we chose to use three accounting performance measures as an indicator of profitability as it is more difficult to adjust beneficially for the firm. In this thesis Tobin's Q is used as a tool to compare firm profitability and the value on the market. Return on sales (ROS) is not commonly used, but according to Lo and Sheu (2007) sustainability have a positive effect on sales growth. In turn we argue that ROS is a good indicator of profitability since growing revenue suggest a firm is performing better over time and thus it was an interesting variable to include.

4.3.2. Independent variables - ESGC scores

To measure a firm's sustainability efforts we, similarly to many other researchers, used ESG Scores as our independent variable. Thomson Reuters ESG Scores (previously called Assets4) were chosen as our rating system, as it is one of the larger and most comprehensive databases on ESG. According to Thomson Reuters (2019) their score is designed to measure companies ESG Scores objectively and transparently. To assess the scores, over 400 company level ESG measures are compromised into 178 critical ESG Measures that are grouped into 10 themes in terms of Environmental Score (resources, emissions and innovation), Social Score (workforce, human rights, communication and product responsibility) and Governance Score (management, shareholders and CSR strategy). Thomson Reuters also include an ESG Controversies Score, which is a measurement based on 23 controversy measures, mainly in terms of number of sustainability controversies published in the media. For an overview of the ESGC Scores see Appendix A. From the database we extracted the aggregated overall ESGC Score and ESG Score as well as the separate Environmental, Social, Governance and Controversies Score as separate independent variables. This allowed us to both analyze the impact extensive CSR efforts have on financial performance and the importance of each individual part of the ESG Score separately. Through this we could discuss whether firms should focus on all-encompassing CSR efforts or if it is enough to only emphasize specific sustainability issues.

Thomson Reuters ESG scores was also chosen due to its inclusion of the ESG controversies score. By using Thomson Reuters ESG Scores it was possible for us to study both sides of a firm's CSR efforts including the efforts that the firm wants to be noticed by and therefore discloses (Environmental, Social and Governance Scores) and the actions which are not disclosed and instead are most commonly uncovered by the media (the Controversies Score). As several authors (Husillos, González & Gil, 2011; Gray, 2010; Milne & Gray, 2013) have found that CSR reports and disclosures are often without any substantial effect, we argued that it is interesting to study if corporations' financial performance is affected by disclosed information and controversies. The ESG Scores are quantified as shown below in Table 2 where A+ is the best score and D- the worse.

Table 2. ESGC Scores and range

Grade	Score Range
A +	0.916666 < score <= 1
A	0.833333 < score <= 0.916666
A -	0.750000 < score <= 0.833333
B+	0.666666 < score <= 0.750000
B	0.583333 < score <= 0.666666
B -	0.500000 < score <= 0.583333
C +	0.416666 < score <= 0.500000
C	0.333333 < score <= 0.416666
C -	0.250000 < score <= 0.333333
D +	0.166666 < score <= 0.250000
D	0.083333 < score <= 0.166666
D -	0.0 <= score <= 0.083333

Source: Thomson Reuters, 2019.

4.3.3. Control variables

To make sure that our study would not find a false relationship between sustainability and financial performance, we decided to include control variables (Bryman & Bell, 2013). To operationalize the first variable, risk, a leverage ratio of total debt to total assets was conducted

in order to partial out the effect risk have on the relationship, which has also been done by other researchers (Velte, 2017; Bodhanwala & Bodhanwala, 2017; Taliento, Favino & Netti, 2019). From our previous research, we found that corporate size could be an important mediator, which explain why we included corporate size (Taliento, Favino & Netti, 2019). Corporate Size was operationalized by several variables indicating size such as total revenue, number of employees and total assets which has also been done by other researchers (Eccles, Ioannou & Serafim, 2014; Velte, 2017; Bodhanwala & Bodhanwala, 2017; Taliento, Favino & Netti, 2019). Lastly, we also chose to include last year's value of the dependent value as a control variable. Since performance is most likely affected by the previous year's value, we wanted that relation to be partialled out. Consequently, when testing the relationship between ROA and ESGC we included ROA (t-1) as a control variable.

Table 3. Operationalization of variables

Variable name	Description
<i>Dependent variables</i>	
Return on assets (ROA)	Ratio of net profit to total assets
Return on equity (ROE)	Ratio of net profit to shareholders equity
Return on Sales (ROS)	Ratio of operating profit to revenue
Tobin's Q (TQ)	Ratio of market capitalization to total assets
<i>Independent variables</i>	
ESGC	ESGC combined Score
ESG	ESG Score
E	Environmental Score
S	Social Score
G	Governance Score
C	Controversies Score
<i>Control variables</i>	
Leverage (LEV)	Risk, total debt/total assets
Corporate Size (CS)	Number of employees (Em), Total Revenue (TR), Total assets (TA).
Dependent variable (-1)	Last year's financial performance measure

4.4. Descriptive statistics and correlation matrix

We started our data analysis by providing a descriptive statistics table (see Table 5 and Table 6) for each region. The tables illustrate an overview of the data for the independent variables (ESGC Scores), dependent variables (financial performance) and the control variables in the two geographic areas. The table gives information about the number of observations for each variable as well as minimum and maximum values for the variables, which allowed us to identify interesting aspects in our data. The descriptive statistics tables were followed up with bivariate correlation matrices (see Table 7 and Table 8). All of our variables were included in order for us to notice any unexpected correlations between the variables. Pearson's R was used as correlation coefficient, which is one of the most commonly used measure of correlation (Bryman & Cramer, 2011). It produces a value between -1 to +1, where -1 indicates a perfect negative relationship and +1 a perfect positive relationship, while 0 indicates no correlation at all. As a rule of thumb, the correlation can be attributed the following descriptions:

- +/- 0-0,19 = very low correlation
- +/- 0,20 - 0,39 = low correlation
- +/- 0,40 - 0,69 = modest correlation
- +/- 0,70 - 0,89 = high correlation
- +/- 0,90 - 1 = very high correlation

Furthermore, the squared Pearson's R give the coefficient of determination (R^2). The coefficient of determination indicates the percentage of how much the variance of one variable is due to the other. For example, a Pearson's R of 0,5 gives an R^2 of 25% which indicates that 25% of the variance of one variable is due to the other. It is important to emphasize the level of statistical significance when analyzing Pearson's R using a large sample, as correlations can be created randomly due to sampling error. The level of significance indicates whether the correlation could have arisen by chance or not. A significance level of for example 0,001 indicates that there is a 1 in 1000 chance that our sample shows a correlation even if there is none (Bryman & Cramer, 2011). However, in our correlation matrix we chose to only indicate whether the correlation has a minimum significant of 10% in order to make it easier to read.

4.5. Regression model construction

4.5.1. *Two-way error component with fixed effect*

Our regression models were conducted using a two-way error component model with fixed effects. A two-way fixed effects model was chosen as it accounts for heterogeneity in both time and individuals (firms) (Baltagi, 2013). We believe that our sample contain heterogeneity between individuals as our sample include firms from different countries and industries which gives every firm special characteristics. Furthermore, it is possible that heterogeneity over time also exist in our sample as sustainability have increasingly gained in importance over the latest years which in turn have brought new rules and standards. Therefore, a two-way error component model was the best choice for us as it takes into account changes over both aspects.

In the choice between random and fixed effects, we argued that fixed effects suit our sample better. Considering our sample contain variables that is most likely affected by omitted constant variables such as the properties of a firm like its history, industry or country, a random effects model would not be suited (Studenmund, 2014; Baltagi, 2013). Since we are also not interested in estimating the effect omitted variables could have on our regression but only controlling for it, a fixed model was better suited for our study (Baltagi, 2013). Additionally, fixed effect regression has also been constructed by researchers previously in this area and can therefore be considered as a valid method (Velte, 2019; Taliento, Favino & Netti, 2019).

4.5.2. *Multiple regression using OLS*

In total, 48 multiple regression analyses were produced, 24 for each region, using individual panel data sets for the regions. Which combinations of independent and dependent variables tested are shown in Table 4. We split our regressions into the two regions as we wanted to be able to make comparisons instead of making one larger dataset where country-specific characteristics would be lost. Furthermore, several authors state that the impact sustainability measures have on profitability is not immediate (Velte, 2017; Choi & Wang, 2009; Scholtens, 2008). In accordance with previous literature we therefore also chose to include a time-lag of one year, matching the values of the dependent variables for year t with the values of the independent variable for year $t-1$. This enables the results to account for the time it takes for

CSR efforts to have an effect on financial performance. To confirm that a time lag of t-1 was appropriate, we also tested our regressions using a time lag of t-0 and t-2. As t-1 showed the highest significance we chose to proceed with t-1, in line with what previous research had suggested.

Table 4. Summary of regression analysis

Regression combinations, dependent variable and independent variable including control variables			
ROA and ESGC	ROE and ESGC	ROS and ESGC	TQ and ESGC
ROA and ESG	ROE and ESG	ROS and ESG	TQ and ESG
ROA and E	ROE and E	ROS and E	TQ and E
ROA and S	ROE and S	ROS and S	TQ and S
ROA and G	ROE and G	ROS and G	TQ and G
ROA and C	ROE and C	ROS and C	TQ and C
Total number of regressions: 48 (24 per region)			

The regressions results were summarized in Table 9 and 10 and we chose to focus on the Beta coefficient, the number of observation and the statistical significance. The Beta coefficient is calculated using OLS and indicates the direction of the relationship between the dependent and the independent variable. It shows the amount of change that occurs in the dependent variable for a one-unit change in the independent variable (Bryman & Cramer, 2011). Beta is also called the simple correlation coefficient, r , and is similar to Pearson’s R as the coefficient is assigned a value between -1 and +1, indicating the strength of the relationship (Studenmund, 2014). In our multiple regressions the Beta coefficient indicate the unique relationship the independent variable has with the dependent variable as the control variables are partialled out. The statistical significance levels we chose to include are 0,10 (90%) indicated by one star*, 0,05 (95%), indicated by two stars**, 0,01 (99%), indicated by three stars***, and 0,001 (99,9%), indicated by four stars****. This allowed us to emphasize our analysis on the regressions that have statistical significance which conclusions can be drawn from. Relationships without statistical significance is not considered valid to draw conclusions from and for such occasions the hypothesis would be rejected (Studenmund, 2014). Furthermore, by limiting our significance levels to 10% we made sure that there is a maximal 10% risk of accepting a false hypothesis (type I error). Even though a decrease of the significance level leads to smaller risk for type I errors, it does make the risk of type II errors significantly higher. We chose to use

10% significance level as it would provide a better balance between type I and type II errors and that several previous researchers used the same level of significance (Taliento, Favino & Netti, 2017; Velte, 2017). Furthermore, in order to minimize the risk of rejecting a true hypothesis (type II error), the Beta coefficient were considered as it gave insights in whether extraordinary correlations exist that is not given statistical significance.

4.5.3. Normal distribution, heteroskedasticity and robustness

Considering our large sample size, outliers in the sample should not have any significant effect on the correlation. Therefore, there should not be any issues if normal distribution is lacking for some of the variables. Due to our large sample size, our coefficients should consequently be fairly precise when having statistical significance (Studenmund, 2014). However, the usage of OLS assumes that neither heteroskedasticity nor autocorrelation is present (Studenmund, 2014). Heteroskedasticity means that the error term does not have constant variance and autocorrelation indicate that the error term for one year is correlated to the previous year's error term (Studenmund, 2014). To avoid this problem, we chose to make our standard errors robust, which makes the error terms unbiased, using the coefficient covariance method White Period. White period makes the error terms robust to autocorrelation and heteroskedasticity within cross-section over time. This method is appropriate for us as it takes into account the two dimensions of time and cross-section and because our sample size is larger than the number of periods included (White, 1980; Arellano, 1987; Millo, 2014).

4.6. Validity and Reliability

4.6.1. Validity

Validity is the ability to measure what is intended to be measured (Bryman & Bell, 2013). Validity can be a problem for quantitative research since difficulties can arise in knowing if meaningful inferences can be drawn from the results (Creswell, 2014). External validity, also referred to as construct validity, are connected to generalization. Construct validity means that hypotheses are deduced from a theory that is relevant to the overall concept and that the hypothesis successfully can test what it claims to do. A problem that can arise is that the theory might be faulty and that the variables can be invalid measures of the concept (Bryman & Bell,

2013; Bryman & Cramer, 2011). To overcome this problem as much as possible we have used variable operationalization in line with previous research for our hypothesis testing, which contribute to higher validity. Regarding the theoretical construct all researchers have based their discussion of the relationship between CSR activities and financial performance on the shareholder and stakeholder theory. Researchers that used legitimacy and uniqueness theories as a proxy to explain the relationship is however limited and contributes to a little weaker validity. Although, by extensively explaining the theoretical construct of profitability by using uniqueness and legitimacy theory, we believe we can strengthen our validity as our hypotheses is carefully connected to the theoretical construct.

Face validity means that the measure reflects the core of the concept that will be investigated (Bryman & Bell, 2013; Bryman & Cramer, 2011). To generate as strong face validity as possible, we have compared many theories and previous research to conduct valid variable operationalizations that capture and measure what they are intended to. This in order to be able to answer our research questions. The dependent variable ROS were the only variable that previous researchers had not used. As explained above we find ROS as a valid measure to use as an indicator for financial performance and profitability and this is also suggested by Lo and Sheu (2007). As we have mainly not developed a new concept, but instead used variables that other researchers have used the face validity is strong as a whole.

4.6.2. Reliability

Reliability means that there should not be troublesome to repeat the study and consistently reach similar results (Creswell, 2014). To reach high reliability the study is done with a transparent methodology which allows for consistency and contributes to high reputability (Bryman & Bell, 2013; Bryman & Cramer, 2011). External reliability is considered with whether the indicators used are consistent or not (Bryman & Cramer, 2011). The external reliability should not be any issue considering the quantitative approach with data that is collected from a reliable source (Thomson Reuters) that is publicly available. In addition, the data provided by Thomson Reuters are consistent and have been legitimized by accountants as it is originally taken from annual reports. However, ESGC Scores can be interpreted as subjective as different actors measure ESGC Scores differently, which contribute to that results can differ depending on which ESGC source that is used. Although, this should not be a problem for the thesis since we

have explained which ESGC Score that have been used and how we have used it. Internal reliability means how related the variables are to each other (Bryman & Bell, 2013). Even though there are interrelations in both our financial performance and ESGC Scores, it should not be a problem since our regressions only use one financial performance measurement and one ESGC Score in each test.

5. Empirical results

5.1. Descriptive statistics

As mentioned above ESGC Scores ranges from 0 to 1. The descriptive statistics of our Nordic sample (see Table 5) shows that of the independent variables, the Controversies Score has the lowest mean, maximum and minimum score, while the Environmental Score has the highest scores on all measures. For our Chinese sample (see Table 6) the Social Score has the highest mean and median of the ESGC factors, whereas they are also possessing the lowest maximum and the lowest minimum score of the ESGC factors.

In general, there is an observed difference between the geographical markets. When comparing the descriptive statistics for the Nordics and China we can see that the Nordic sample has higher means and medians than the Chinese sample on most of the ESGC Scores. Although, for the Controversies and the Governance Score the results are very similar in both regions. China's lowest mean and median is for the Social Score with an average score of C and C- whereas the Nordics lowest mean is for the Controversies Score and the lowest median is for the Governance Score with a rating of C+ respectively B-. For the Environmental Score, the Nordics have a mean and median that counts as a B and B+ which differs substantially from the Chinese Environmental Score that counts as the grade C.

Table 5. Descriptive statistics Nordics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
<i>ESGC performance</i>						
ESGC	0.532661	0.527994	0.879050	0.090058	0.157068	1253
ESG	0.590373	0.610855	0.895819	0.090058	0.153379	1253
E	0.656853	0.685777	0.988466	0.048010	0.190322	1253
S	0.599208	0.620192	0.985741	0.041277	0.201335	1253
G	0.505982	0.505246	0.964026	0.038091	0.211046	1253
C	0.496112	0.579882	0.807692	0.001818	0.201429	1253
<i>Financial Performance</i>						
ROA	0.063933	0.051265	0.751900	-0.590200	0.080393	1174
ROE	0.162068	0.134600	16.95350	-10.31430	0.780633	1303
ROS	0.088731	0.086591	0.999569	-7.625714	0.392208	1163
Tobin's Q	2.529183	0.864929	1143.674	0.000000	33.05879	1335
<i>Control variables</i>						
Total assets	2.17E+10	3.18E+09	7.01E+11	120010.4	7.54E+10	1435
Total Revenue	4.57E+09	2.02E+09	9.13E+10	0.000000	8.07E+09	1353
Employees	18968.98	6389.000	534519.0	12.00000	50447.61	1399
Leverage	0.234304	0.214495	1.214643	0.000000	0.165554	1435

Table 6. Descriptive statistics China

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
<i>ESGC performance</i>						
ESGC	0.372722	0.356454	0.771921	0.073996	0.140755	793
ESG	0.408636	0.388699	0.809193	0.096042	0.157687	793
E	0.397903	0.361512	0.949426	0.064795	0.215521	793
S	0.336274	0.310849	0.813081	0.026518	0.180453	793
G	0.504826	0.526249	0.922496	0.039523	0.208228	793
C	0.516873	0.588768	0.744444	0.011111	0.189997	793
<i>Financial Performance</i>						
ROA	0.039974	0.028145	0.287240	-0.138050	0.042934	708
ROE	0.126447	0.126800	0.774400	-0.441900	0.097818	779
ROS	0.152845	0.088229	0.829498	-1.233466	0.176950	784
Tobin's Q	0.655100	0.427287	8.655565	0.000000	0.808595	949
<i>Control variables</i>						
Total assets	1.51E+11	1.49E+10	3.51E+12	2.31E+08	4.62E+11	949
Total Revenue	1.81E+10	6.49E+09	3.77E+11	93988645	4.37E+10	839
Employees	74188.60	34201.00	552810.0	156.0000	109675.6	926
Leverage	0.253315	0.226689	0.848876	0.000000	0.193919	949

5.2. Correlation matrix results

The Pearson correlation matrix of the variables are presented in Table 7 for the Nordics and in Table 8 for China.

5.2.1. ESGC, Financial Performance and Size correlations in the Nordics

Table 7. Correlation matrix Nordics

Variables	ESGC	ESG	E	S	G	C	ROA	ROE	ROS	TQ	TA	TR	Em	LEV
ESGC	1													
ESG	0.712*	1												
E	0.553*	0.792*	1											
S	0.556*	0.843*	0.625*	1										
G	0.461*	0.627*	0.212*	0.275*	1									
C	0.441*	-0.279*	-0.231*	-0.282*	-0.134*	1								
ROA	0.015	0.055*	0.053*	0.145*	-0.025	-0.034	1							
ROE	0.013	0.008	-0.005	0.017	0.018	0.0148	0.134*	1						
ROS	0.054*	0.081*	0.122*	0.115*	0.034	-0.041	0.572*	-0.061*	1					
TQ	-0.009	-0.023	-0.054*	-0.021	0.012	0.027	0.661*	0.098*	-0.558*	1				
TA	0.114*	0.227*	0.224*	0.110*	0.196*	-0.111*	-0.166*	-0.017	0.051*	-0.021	1			
TR	0.007	0.376*	0.329*	0.343*	0.169*	-0.396*	-0.002	-0.002	0.035	-0.026	0.833*	1		
Em	0.009	0.163*	0.144*	0.142*	0.081*	-0.179*	0.032	0.009	-0.015	-0.053*	0.0316	0.321	1	
LEV	0.049*	0.025	-0.026	-0.011	0.112*	0.017	-0.239*	0.006	0.101*	-0.066*	0.103*	-0.072*	0.081*	1

It is not surprising that the separate Environmental, Social, Governance and Controversies Scores are positively significantly correlated with the total ESGC since ESGC are the aggregated score of the individual factors. However, as the correlation matrix shows, the correlation between the ESGC Scores are not 1 which indicates that they could have different effects on financial performance. The correlation between the Controversies Score and the other ESG Scores is negative, although the correlation is quite low. This shows that firms with higher ESG Scores have a slightly lower Controversies Score.

Our financial performance measurements are all having a relative low correlation to our ESGC Scores. Noteworthy is that ROE and Tobin's Q have very few significant correlations with the ESGC Scores whereas ROA and ROS have several significant, but very low correlations with the ESGC Scores.

Interestingly, the Controversies Score is negatively correlated with all of our size variables whereas all the other ESGC Scores have a positive correlation with size. It is also interesting that most of our financial performance measurements have neither a strong nor significant

correlation to size. ROA is significantly correlated to size and that is a very low correlation exclusively with total assets, probably because ROA is aggregated from total assets measurement. ROS and Tobin's Q also have a significant correlation with total assets respectively employees although it is very close to zero. Furthermore, we notice that leverage have very low significant correlations with the size variables. Leverage does also have few significant results with the other variables, even though there is a significant but quite low negative correlation to ROA and Governance, while they are close to zero for Tobin's Q and the ESGC Scores.

Overall the results show that the ESGC Scores have very low and few significant correlations with financial performance in the Nordics. Although their relationship to size are more present as the majority of the ESGC Scores are significantly correlated with size.

5.2.2. ESGC, Financial Performance and Size correlations in China

Table 8. Correlation matrix China

Variables	ESGC	ESG	E	S	G	C	ROA	ROE	ROS	TQ	TA	TR	Em	LEV
ESGC	1													
ESG	0.848*	1												
E	0.604*	0.767*	1											
S	0.639*	0.803*	0.711*	1										
G	0.488*	0.531*	0.208*	0.337*	1									
C	0.173*	-0.328*	-0.364*	-0.370*	-0.146*	1								
ROA	-0.105*	-0.159*	-0.224*	-0.086*	-0.077*	0.124*	1							
ROE	-0.119*	-0.151*	-0.125*	-0.0886*	-0.222*	0.101*	0.638*	1						
ROS	0.044	-0.026	-0.069*	0.019	-0.053	0.109*	0.401*	0.363*	1					
TQ	-0.156*	-0.195*	-0.237*	-0.166*	-0.115*	0.106*	0.695*	0.236*	0.132*	1				
TA	0.166*	0.317*	0.416*	0.263*	0.068*	-0.229*	-0.206*	0.127*	-0.043	-0.213*	1			
TR	0.088*	0.311*	0.335*	0.268*	0.135*	-0.345*	-0.079*	-0.036	-0.177*	-0.124*	0.584*	1		
Em	0.154*	0.364*	0.367*	0.276*	0.221*	-0.323*	-0.156*	0.049	-0.271*	-0.206*	0.634*	0.822*	1	
LEV	0.031	-0.007	0.008	-0.001	0.004	0.001	-0.297*	-0.317*	-0.008	-0.199*	-0.272*	-0.084*	-0.208*	1

The correlations between the ESGC Scores in China shows similar results to the Nordics, as all the ESGC Scores are significant with each other. Furthermore, the Controversies Score shows negative correlations while the other scores show positive correlation. This shows that firms with higher ESG Scores have a slightly lower Controversies Score. The correlation matrix shows that the ESGC Scores are not 1 and thus, indicates that they could have diverse effects on financial performance, as is also the case in the Nordics.

All correlations between the ESGC Scores and financial performance are negative and significant except for ROS to ESGC and ROS to the Social Score. The correlations are very

low, however the Environmental Score and the financial performance measures are showing the strongest correlation, even though still only low correlations.

All ESGC Scores, except for Controversies Score are positively related to size. This indicates that larger firms have higher ESG Scores and lower Controversies Scores. The financial performance measures to size were also significant, except for ROS to total assets and ROE to total revenue and employees. The significant results are negative which indicates that larger firms have lower financial performance. However, none of the ESGC Scores were significant to leverage while the financial performance measures, except for ROS, were negatively significant to leverage. This indicates that increased risk in a firm decrease their financial performance.

Overall the results show that the majority of the ESGC Scores are significantly correlated to the other variables in China. Only ROS and leverage had non-significant correlations to the ESGC Scores. However, in general the correlations are fairly low.

5.3. Regression results for the Nordics

5.3.1. Summary of the regression results for the Nordics

Our regressions for the Nordics did not find any significant relationship between any of the ESCG Scores and the financial performance variables ROE, ROS and Tobin's Q. However, the results showed two significant results (significance level of 10%) between ROA and the Governance and Controversies Score. Another interesting pattern that occurred was that all the controversies regressions had a positive Beta, even though not significant. All the results from the 24 regressions on the Nordic countries are presented in Table 9.

Table 9. Regression results Nordics

ROA				
Variables	Observations	Beta	Probability	Significance
ESGC	841	0,01671	0,2895	
ESG	841	-0,0367	0,1702	
E	856	-0,0011	0,9653	
S	856	-0,0035	0,8479	
G	856	-0,0202	0,0785	*
C	841	0,028650	0,0854	*

ROE				
Variables	Observations	Beta	Probability	Significance
ESGC	927	0,04138	0,9055	
ESG	927	-0,5287	0,45	
E	948	-0,6454	0,3114	
S	948	0,25308	0,1554	
G	948	-0,2509	0,4779	
C	927	0,21461	0,1827	

ROS				
Variables	Observations	Beta	Probability	Significance
ESGC	861	0,00962	0,8679	
ESG	861	-0,0072	0,9532	
E	887	0,02986	0,8021	
S	887	-0,0431	0,5931	
G	887	-0,0787	0,3059	
C	861	0,02959	0,4998	

Tobin's Q				
Variables	Observations	Beta	Probability	Significance
ESGC	947	0,42044	0,3904	
ESG	947	1,04613	0,3461	
E	947	1,21986	0,21	
S	976	1,0661	0,1558	
G	976	-0,049	0,8859	
C	947	0,02055	0,8964	

5.3.2. ROA

The regression results show that ROA is significant with a 10% level with the Governance Score and the Controversies Score. The governance Score has a very low negative Beta to ROA while the Controversies Score has a very low positive Beta to ROA. The low Betas make the significant results debatable whether there is a relationship at all. Although, considering the 10% significance level we interpret the results as Governance Score have a small negative impact on the financial performance while Controversies Score have a slightly positive impact to financial performance.

5.3.3. *ROE*

The impact of the Social and the Controversies Score on ROE are possibly of interest as the probability is fairly low and Beta fairly strong. However no significant conclusion can be drawn from this.

5.3.4. *ROS*

None of the ESGC Scores have any effect on ROS as Beta is low and they are quite far from significance.

5.3.5. *Tobin's Q*

It is quite likely that the Environmental and the Social Score have an impact Tobin's Q as the Beta is very strong while the probability is fairly low, although not significant. The high Beta indicates that the Environment and Social Scores are quite important for the market, but as there is no significance, no conclusions can be drawn.

5.4. Regression results for China

5.4.1. *Summary of the regression results for China*

Our regression results for China did find significant positive relationships between the Social Score and all of the financial performance measures. In addition, the regressions showed a significant positive relationship between Environmental Score and the market-based measure Tobin's Q. Another interesting pattern that occurred was that all the controversies regressions had a negative Beta, even though not significant. The other ESGC factors did not show any interesting results as they were not significant nor possessing a high Beta. All the results from the 24 regressions on China are presented in Table 10.

Table 10. Regression results China

ROA				
Variables	Observations	Beta	Probability	Significance
ESGC	418	-0,007248	0,7313	
ESG	418	0,013742	0,5451	
E	447	0,003376	0,8569	
S	447	0,029149	0,0477	**
G	447	0,014326	0,2784	
C	418	-0,008447	0,3185	

ROE				
Variables	Observations	Beta	Probability	Significance
ESGC	474	-0,033557	0,4141	
ESG	474	0,021201	0,7261	
E	519	0,050464	0,2133	
S	519	0,096058	0,0205	**
G	519	-0,00405	0,8918	
C	474	-0,024755	0,3122	

ROS				
Variables	Observations	Beta	Probability	Significance
ESGC	557	-0,009156	0,8588	
ESG	557	0,025561	0,6641	
E	603	0,089146	0,1549	
S	603	0,083895	0,0575	*
G	603	0,037342	0,1953	
C	557	-0,020863	0,1418	

Tobin's Q				
Variables	Observations	Beta	Probability	Significance
ESGC	600	0,085446	0,3679	
ESG	600	0,200067	0,1433	
E	645	0,264955	0,0409	**
S	645	0,191049	0,0707	*
G	645	-0,073019	0,5489	
C	600	-0,045864	0,4742	

5.4.2. ROA

The regression results show that ROA have a significant relationship on the 5% level with the Social Score. The Beta is fairly low but as the significance level is strong, we can draw the conclusion that the Social Score have an impact on ROA. A relationship was not found between any of the other ESG Scores and ROA.

5.4.3. ROE

The same pattern between ROA and the ESGC Scores also occurred for ROE. The Social Score has a 5% significance level and the Beta is a bit higher than for ROA, indicating that the Social Score also have an impact on ROE. None of the other ESGC factors showed any significant relationship with ROE.

5.4.4. ROS

ROS also showed a significant relationship to the Social Score, however only with a 10% significance level. None of the other ESGC factors showed any significant relationship with ROE.

5.4.5. Tobin's Q

The results for market value differ slightly from the accounting-based measures as Tobin's Q also has a strong relationship to the Environmental Score. The Environmental Score showed a 5% significant relation with a fairly high Beta and from that a conclusion can be drawn that the Environmental Score has a positive impact on market value. The Social Score also showed a 10% significance level to Tobin's Q with a decent Beta, indicating that the Social Score also have an impact on market value. The other ESGC factors did not show any interesting results.

5.5. Hypotheses results

All hypotheses were compared to the regression results and were either accepted or rejected (see Table 11). In conclusion, all of our hypotheses are rejected for the Nordics. Even though we found statistical significance for both the Governance and the Controversies Score in relation to ROA, none of our other financial performance measurements can support the acceptance of either H₅ or H₆. As no pattern could be seen through the other financial performance measures, no conclusions can be drawn and our hypothesis could not be accepted for the Nordics. For China we could however instead accept H₄ as the Social Score showed a positive and significant relationship on all the financial performance measures. Our hypothesis H₃ were also accepted for the market based financial performance as the Environmental Score were significant with Tobin's Q. Although, the hypothesis was rejected for the accounting-

based measure as no significant relationships were shown, indicating that there are ambiguous results for the Environmental Score.

Table 11. Hypotheses results

Hypothesis	Accepted / Rejected	
	Nordics	China
H ₁ : There is a positive relationship between the ESGC Score and financial performance.	Rejected	Rejected
H ₂ : There is a positive relationship between the ESG Score and financial performance.	Rejected	Rejected
H ₃ : There is a positive relationship between the Environmental Score and financial performance.	Rejected	<i>Accounting based:</i> Rejected <i>Market based:</i> Accepted
H ₄ : There is a positive relationship between the Social Score and financial performance.	Rejected	Accepted
H ₅ : There is a positive relationship between the Governance Score and financial performance.	Rejected	Rejected
H ₆ : There is a positive relationship between the Controversies Score and financial performance.	Rejected	Rejected

6. Analysis

6.1. Empirical analysis of the results in the Nordics

As the few significant relationships we found in our regression model were very weak, and not consistent over the other financial performance measures, we cannot draw any conclusions on the relationship between ESGC Scores and financial performance from the regressions in the Nordics. All of our hypotheses concerning the Nordics are rejected and only two of our regressions were slightly significant, while the other 22 regressions did not come close to significance. Therefore, it is probable that no relationship between CSR and profitability exist in the Nordics. Especially since the regressions does not reach further than the 10% significance level and as those with significance have a very low Beta coefficient.

The Governance Score in relation to ROA is especially interesting as a significant negative relationship is present, considering that many previous researchers found governance to be the most important factor. Our results then might instead indicate that a proficient corporate governance induces costs for the company and thus decrease profitability. Furthermore, the Controversies Score in relation to ROA is instead positively correlated which indicate that negative controversies might create financial complications, albeit very small. This is in line with the suggestions of Taliento, Favino and Netti (2019) and Orlitzky (2013) that negative controversies do decrease financial performance. However, the other researchers analyzing the Controversies Score found there to be no direct relation between controversies and financial performance (Aouadi & Marsat 2016). Since the Controversies score were not significant with the other financial performance metrics, our results cannot reject Aouadi and Marsat's results either.

Even though both ROA and Tobin's Q have a few relationships that is of extra interest considering their significance or their high Beta coefficient, they do not overlap as they do not share any ESGC Score relationships at all. Since ROA is significant with the Governance and Controversies Score while Tobin's Q's have strong Beta, and thus, relationships with the Environmental and the Social Score, any conclusions are hard to defend. This implies that no real conclusions can be drawn from the results and it is likely that the connection between

sustainability and profitability is questionable to say the least. The high Beta for Tobin's Q does however indicate that stakeholders who are active on the market might value firms that are socially and environmentally responsible higher. Considering the greater focus on sustainability overall there seem to be a trend for stakeholders to especially value social and environmental CSR efforts.

Furthermore, the correlation matrix for the Nordics also indicates that there is little relationship between the ESGC Scores and profitability as all of the correlations have very low correlations and a minority of the correlations are significant. However, we found some interesting results in the ESGC Scores correlation with size as all ESGC Scores except the total ESGC Score received significant results. As the ESG Scores are made up of public available information mainly disclosed by the firms themselves, it is possible that larger firms have the strength to influence their own ratings. It is also possible that the larger firms feel that they are subject to more intense scrutiny and have to provide qualitative CSR reports that in turn creates higher ratings for the firms. It is also worth noting that the Controversies Score is the only one negatively correlated with size. This could strengthen Aouadi and Marsat's (2016) belief that larger firms are subject to intense scrutiny which increases the number of controversies found, something that affects the firms' rating in controversies.

6.1. Empirical analysis of the results in China

The majority of the regressions in China are not significant. However, we found that the Social Score had a significantly positive impact on all financial performance measures, which clearly indicates that CSR efforts in terms of social welfare are positively correlated to profitability. Furthermore, the market seems to value both social and environmental efforts as both of them were significantly positive with Tobin's Q. Since the Social Score is significantly positive on all financial performance measures we could accept H₄. The Environmental Score did also have a positive effect on Tobin's Q, indicating that H₃ can be accepted for market-based value, however the hypothesis was rejected for the accounting-based measures. No other hypotheses could be accepted though as we did not find any significant results for the other ESGC Scores.

The Social Score clearly have a positive impact on profitability which follows the argument Brubaker (2012) presents, that China's primary sustainability focus is to increase the social

welfare. The fact that China have social problems in terms of poverty, health and child labour probably makes the society reward firms performing better in the Social Score. Our results in China show that the Social Score is the most important, contradictory to Velte (2017) who suggested that the Governance Score is the most important. Furthermore, we also notice that the market in China not only value social efforts but also environmental. These aspects seem to be more valued in the market since the Beta is higher for both scores with Tobin's Q compared to the accounting-based measurements. This follows Mio's (2019) suggestions that both social and environmental implications have increased in importance in China. Even though Brubaker (2012) argued that China does not see environmental issues as their main focus, it is likely that the market values environmental efforts since China is the top contributor to many environmental issues.

From our correlation matrix we notice that a majority of the ESGC Scores are significantly negatively correlated with the financial performance measures. This indicates that a higher focus on sustainability for Chinese firms induces costs into the business, however when partialling out the effects of the control variables in our regression models, the relation changes to a positive instead. As the correlation matrix shows that financial performance is also negatively correlated to size, it is possible that size affects the relationship between the ESGC Scores and financial performance. Furthermore, we also notice that controversies are negatively related to size, probably because larger firms face higher scrutiny (Aouadi & Marsat, 2016) which we also discussed for the Nordics correlations.

6.2. Developed and emerging regions

When comparing the descriptive statistics from the two regions we notice that the Nordic countries in general have higher ESGC Scores than China, which indicates that the Nordics firms have come further in terms of CSR efforts and sustainability. The difference between the two regions is especially present in the Social and the Environmental Score where Nordics have its highest mean and median scores while China have its two lowest ratings in the same scores. The low Social and Environmental Scores in China is possibly because it is an emerging country where the social welfare has not come as far and that environmental issues has not been prioritized the same way as in developed countries such as the Nordics. The regression results further suggest that firms in China that perform better than its peers in the Social and

Environmental Score can take advantage of this as they are rewarded with increased financial performance when acting more responsible. The difference in terms of profitability goes in line with the findings of Institutional Asset Manager (2018) who found that developed countries have higher ESG performance but fail to generate economic growth.

Even though the two regions have their largest differences in the Social and the Environmental Score, it is also where the two region's regression models are the most similar in terms of market value (Tobin's Q). China have significant results while the Nordics have very high Betas and close to significant results on both the Social and the Environmental Score, which indicate that the market in both regions value similar sustainability efforts. A possible explanation to the market valuing similar ESGC Scores in both a developed region, as the Nordics, and an emerging country, as China, is that globalization might drive markets towards similar standards.

The Controversies Score are also quite similar in the two regions, which could be due to firms in both regions face scrutiny. Another reason for the similar level of Controversies Score might be that as China is a totalitarian communist country, controversies is toned down in the most important firms. Overall it seems as controversies is slightly more important in the Nordics as one of the few positive significant results in the Nordics where between ROA and the Controversies Score. The Controversies Score were also positive, even though insignificant, with all the other financial performance measures for the Nordics, while the Controversies Scores to financial performance in China did all have negative relationship, although insignificant.

Our insignificant results could also provide some interesting aspects to take into consideration, even though no conclusions can be drawn. One should put attention to the fact that none of the aggregated ESGC Scores (ESGC & ESG) are significant with any of the financial performance variables in any of the regions. Considering that, a high ESGC rating overall does not seem to create extra value for firms in terms of higher profitability over its peers in any of the regions. However, specific parts of the ESGC Scores could impact profitability differently in the regions, possibly depending on how far the region have come in terms of sustainability. A possible explanation to why many of our results are insignificant could follow Lopez, Garcia and Rodriguez's (2007) suggestion that the advantages and disadvantages of CSR over time

equals each other out. As our study is done over ten years, it is possible that the effects have corrected themselves during the time period.

6.3. Compare to previous research

In relation to the previous research on sustainability measurements and financial performance, our results on the Nordics sample did find corresponding findings to Garcia, Mendes-Da-Silva and Orsato (2017) and Aouadi and Marsat (2016), who also did not find any direct relationship. In addition, the Nordic countries results also corresponded with Sahut and Pasquini-Descomps (2015) findings in the US and Switzerland, but not in UK. Velte's (2017) results on market-based performance is also similar to ours, but not fully with the accounting-based measures as they found positive relations with the accounting measures. However, as the Nordics showed a few significant results in accounting-based performance, Velte's results could marginally be in line with our results. Our results from using Chinese firms corresponded to several other authors that looked into emerging countries, who all found a positive relationship between ESGC Scores and financial performance (Changhong et al., 2016; Bodhanwala & Bodhanwala, 2017; Bohyun, Lee & Byun, 2018). Although, as not all ESGC Scores had an impact on financial performance in China, the results could also be argued to be similar to what Garcia, Mendes-Da-Silva and Orsato (2017) and Aouadi and Marsat (2016) found. Overall, we notice that all but one of the researchers that studied emerging countries found sustainability to have a positive impact on financial performance, while the research on developed countries show a much more ambiguous relationship.

6.4. Theoretical analysis of results

6.4.1. *The Shareholder and Stakeholder theory*

Our theoretical construct of why ESGC Scores should have a relation to financial performance was grounded in the stakeholder and shareholder theory. In accordance with stakeholder theory a positive relationship between firms ESGC Score and financial performance should have been evident. In accordance to arguments from the shareholder theory a negative relationship between ESGC Scores and financial performance should have appeared.

The empirical results for our research was not significant for the Nordics which instead indicates that there should not be any difference in financial performance, regardless how well a firm performs in terms of sustainability. However, the insignificant results in the Nordics open up for further questions of why firms are engaging in these sustainability activities. As no relationship was found, neither the shareholder theory nor the stakeholder theory can be fully rejected or accepted, and the explanation seems to be more complex than that in the Nordics. However, our empirical results for China instead indicated that there is a difference in financial performance especially in the social but also in the environmental aspect. As positive relationships were found for the Social and Environmental Score in China the results can strengthen the stakeholder theory for these aspects.

In the Nordics, CSR efforts cannot be supported as creating an economic benefit over its peers, while the Chinese results imply that CSR efforts can be supported as creating an economic benefit. This opens up further questions whether CSR have different influences between developed and emerging countries. However, for both the Nordic and the Chinese firms, the results also imply that CSR efforts cannot be supported as creating a cost disadvantage either, which shareholder theory suggests. Therefore, one can argue that the shareholders view on CSR as a cost is faulty since CSR activities does not, according to our results, decrease financial performance in any of the regions.

The Nordic results open up for discussion of whether CSR efforts actually are creating any higher value in the region as the results suggest that CSR has become more of a hygiene factor that is needed to be able to maximize value. CSR as a hygiene factor would then imply that firms in the Nordics are using CSR in order to be able to compete in the market. If these CSR activities then enables firms to compete, and in turn enable firms to maximize value, then managers should focus on those activities, which goes in line with Shareholder theory. Considering the CSV aspect this reasoning can then strengthen that CSR activities are generating both value for the firm's shareholders as they are able to compete, as well as creating value for stakeholders as the firms are operating in a sustainable way. Furthermore, our results cannot support that managers CSR activities generates a principal-agent dilemma as the results was not negative for any of the regions.

The Stakeholder view on whether sustainability leads to higher profits is not supported by the Nordic results as all hypotheses were rejected. The results rather imply that stakeholders do not sanction or reward companies depending on how sustainable they are performing, which is in line with the research of Sahut and Pasquini-Descomps (2015). On the contrary, stakeholder theory is supported by the Chinese results as H₄ was accepted and H₃ was accepted for market value. But as the other hypotheses were rejected stakeholder theory cannot be supported in all aspects. The Chinese results imply that the social factor is highly valued for the stakeholders and one can draw the conclusion that Chinese firms who perform good in terms of the social factor are rewarded by the stakeholders and firms who perform bad are a subject of being sanctioned by their stakeholders. In addition, as the Environmental Score were significant to market value one can draw the conclusion that stakeholders who are influencing the market value are rewarding good environmental performance in China. The accepted hypothesis thus goes in line with the instrumental stakeholder theory who suggest that performance follows the ethical relationship to stakeholders.

It seems as Chinese stakeholders are more active, since they reward and sanction CSR efforts to a greater extent than stakeholders do in the Nordics. However, considering China's lower average ESGC Scores and their social welfare problems, proficient CSR efforts is likely to be more visible and rewarded. Therefore, stakeholders in China most likely do not value sustainability higher than stakeholders do in the Nordics. Nor are sustainable efforts of higher quality in China, it is just easier to appear sustainable since the average sustainability level is lower in China than in the Nordics.

6.4.2. Controversies

When comparing, the Controversies Score, the rejection of H₆ is interesting for both the Nordics and China. This since we initially thought that there would be a difference in financial performance depending on if the information was provided by the firms themselves, in terms of disclosures, or by controversies, who counts for the external view conducted by media. As the Controversies Score was overall not significant with financial performance, we can assume that stakeholders do not sanction public negative controversies and that stakeholders are not as refined as the theory suggests. Another explanation might be that many of the stakeholders already have a preconceived view of the firm as the firms in our sample are all large public

companies and thus familiar to society (Aouadi & Marsat, 2016). Although for the Nordics, ROA in relation to the Controversies Score was slightly positively and significant which imply that the stakeholders in the Nordics might view some controversies as negative and therefore marginally sanction the firms in line with the stakeholder theory in this region. Which is showing that the external point of view on the firms is valued higher in the Nordics. This could indicate that CSR disclosures are more symbolic than substantial as many argue the external view might be more valued than the internal (Michelon, Pilonato & Ricceri, 2015; Husillos, González & Gil, 2011; Gray, 2010; Milne & Gray, 2013). However, China provide conflicting results as CSR disclosures from the firm seem to be of higher value to the stakeholders, particularly considering that the Controversies Score in China only had negative Betas in relation to financial performance. Overall, as few results show a negative relationship between the firms ESG Scores and financial performance the disclosures appear to be credible and therefore provide legitimacy. Although, in more developed countries firm disclosures seem not contributing to much more than legitimacy, which is why stakeholders in those regions do not fully sanction it or reward it.

6.4.3. Uniqueness and legitimacy

Our theoretical construct of why ESGC Scores should have a relation to financial performance was further presented through the possibility to increase profitability via uniqueness and to sustain profitability via legitimacy. If firms CSR activities leads to uniqueness for the firm, the relationship between ESGC Scores and financial performance should have been positive since uniqueness lead to increased profitability. Our results showed that for the Nordic firms who engage in CSR activities, a higher profitability does not necessarily need to occur as the relationship was not significant. The results rather imply that sustainability alone cannot be seen as a means to create a unique position and increased profitability. However, the Chinese results implied that for firms who perform well in terms of the social and environmental aspect are possessing a uniqueness that generates increased profitability over its peers. The difference between the regions results opens up for further questions whether different markets are competing differently in terms of CSR, especially in terms of developed and emerging countries.

As CSR have also been explained in terms of legitimacy, it's important to assess whether legitimacy factors have had an effect on our results. If firms CSR activities generates legitimacy for the firm, the relationship between ESGC Scores and financial performance should be neutral or positive. This since legitimacy creates a harmony with the society's value system which enables the firms to run their operations as they are legitimized by the society. If the relationship between ESGC Scores and financial performance would have been negative, one can argue that the harmony has disappeared and poor financial results would be the outcome. Our Nordic results rather imply that CSR activities generates legitimacy for the firms as the result is neutral. The high ESG scores in the Nordics can then be explained as a hygiene factor in order to be legitimized by the society and to be able to compete. From the results one can assume that CSR efforts are rather a way to create legitimacy and to harmonize economic operations with society's welfare requirements in the Nordics. The results entail that the Nordic firms CSR activities are mainly used as a hygiene factors to be able to sustain profitability and avoid sanctions. The results further suggest that firms in the Nordic region use a defensive, rather than an offensive CSR strategy. Legitimacy was also present in the Chinese results as some of the regressions were neutral and some positive. This implies that gaining firm legitimacy is also important in China. However, as positive relationships were also occurring, we can draw the conclusion that CSR in China works both as a way to generate legitimacy as well as a mean to create uniqueness. This entails that CSR activities for Chinese firms are used both as a defensive strategy to sustain profitability and as an offensive CSR strategy to increase profitability.

6.5. A maximum CSR level to generate profitability

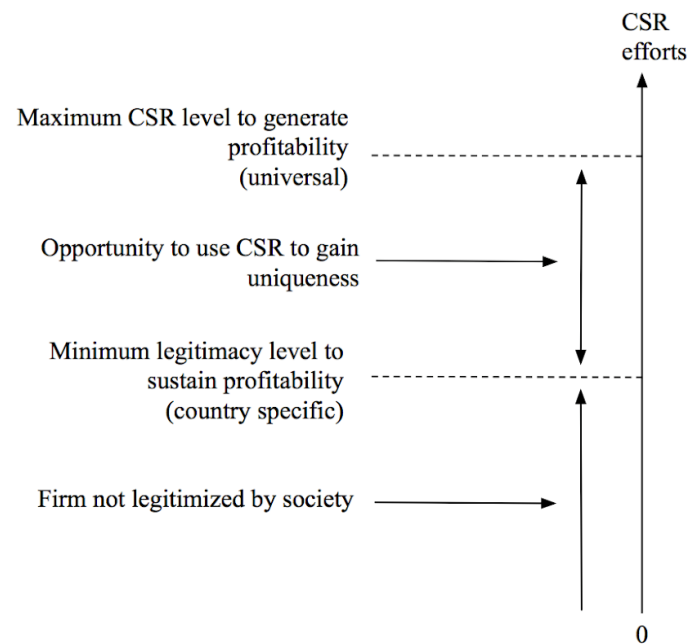
The Nordic countries are leading when it comes to sustainability even though our results suggest that their performance are not rewarded in terms of profitability, while China who are labeled as one of the world's worst sustainability performers are rewarded when acting sustainable. Our results also showed that the average level of sustainability differs substantially between the regions as the Nordics have higher ESGC Score. The result is seemingly contradictory as many researchers suggested a better CSR performance leads to better profitability for the firm.

As China overall have lower ESGC Scores than the Nordics but the results show that CSR in China have a significantly positive impact on financial performance, it is possible that the regions have different CSR approaches and experiences and thus, rewards CSR efforts

differently. Furthermore, the regression results rather imply that the level needed to reach legitimacy for the Nordics are way higher than for China as no positive relationship occurred even though they are possessing higher ESG Scores. This would explain why CSR efforts is seen as a hygiene factor in the Nordics whereas a similar CSR input would, most likely, lead to uniqueness and higher profitability for the Chinese firms. The explanation of the difference between the Nordics and China can be related to the argument of Falkenberg and Brunsael (2011). They argued that CSR efforts leads to a temporary uniqueness that increases profitability, which over time develops into a strategic necessity to remain competitive. Our results suggest that firms in the Nordics already have taken advantage of this temporary uniqueness while Chinese firms still have the opportunity to do this.

The results further indicate that CSR probably have a universal maximum level where it can be used to generate profitability. At the same time all regions have different levels of average sustainability and thus, minimum legitimacy level. A firm is only legitimate when it reaches the average sustainability level of the country, and thus, minimum legitimacy level. When the firm go beyond the average level of sustainability in the region, CSR instead creates uniqueness and increases profitability. In the Nordics the average sustainability level is very high and as the results shows that CSR is more used as a hygiene factor, we draw the conclusion that the Nordic regions average sustainability level are close to the maximum CSR level to generate profitability. This indicates that there is no room for Nordic firms CSR efforts to generate uniqueness as it will not be rewarded more than until the maximum level. Instead, firms use CSR efforts mainly as a hygiene factor as it provides firms with the legitimacy needed to continue with their business. However, in China, the average sustainability level is far from the maximum CSR level, which indicates that the minimum legitimacy level is fairly low. Chinese firms therefore have much more space and opportunity than the Nordic firms to use CSR to create uniqueness and increase profitability, especially in terms of social and environmental efforts. So, the space between the country specific minimum legitimacy level and the maximum level is where firms can use CSR to create uniqueness in relation to its peers and thus increase profitability. To illustrate our suggested findings, we have constructed a conceptual model, see Figure 1.

Figure 1. Conceptual model



Our results suggest that CSR is mostly used to provide firms with the legitimacy needed to be able to compete. This is especially obvious in developed regions as the Nordics since proficient CSR efforts either decreases or increases profitability and, thus, sustains profitability. Nonetheless, in less developed markets such as China, CSR also seem to create uniqueness and increase profitability. This is however most likely related to their low average level of sustainability and as the average increases, the possibility to use CSR to increase profitability decreases. This until the average level of sustainability has become so high so it's only becomes a legitimization tool, as it seems to be in the Nordics. Therefore, CSR is indicated to provide legitimacy in the Nordics, however the Chinese results shows that firms can be uniquely legitime if the average country level of sustainability is below the maximum CSR level and over the minimum legitimacy level. This reasoning also follows Fredericks (2018) argument that the goal of CSR is to harmonize a firm's economic operations with society's requirements, and Chandler's (2017) suggestion that CSR is used in order to be legitime. Using legitimacy to create profitability can also be seen as a strategy that optimizes the use of a firm's resources in accordance with Oliver (1997). Although, our results suggest that CSR can only optimize the use of the resources up to a certain level.

7. Conclusion

To conclude, sustainability tends to have different impact on profitability depending on the region the firms are operating in. In a developed region such as the Nordics, CSR efforts are indicated to work as a hygiene factor as CSR efforts only allows firms to provide legitimacy. On the other hand, in an emerging region such as China, sustainability is instead indicated to have the possibility to be used both as a legitimacy tool to sustain profitability and as providing a uniqueness in order to increase profitability. Our results argue for that firms CSR efforts have a maximum level where they can generate profitability. Since the minimum legitimacy level needed in developed regions are close to that maximum level, CSR alone does not lead to higher profitability. However, in emerging regions the minimum legitimacy level is lower, making it possible for firms in such regions to use CSR efforts to generate higher profits than its peers.

Additionally, the Controversies Score does not seem to impact profitability substantially, possibly because the firms are not fully sanctioned by their stakeholder or that stakeholders already have preconceived ideas about the firms. However, the results imply that negative controversies seem to be more sanctioned in developed regions than in emerging.

Lastly, neither stakeholder, nor shareholder theory was fully supported by our results since our results were mainly insignificant and neutral. It is likely that CSR has become a necessity for firms to continue to operate and to be able to maximize their profits. CSR efforts would then be in accordance with the shareholder theory and not be presented as something that generates costs disadvantages for firms. The results further implied that stakeholders do not reward firms' CSR performance as much as stakeholder theory suggest, however stakeholders seem to value specific CSR efforts more as the Chinese firms social and environmental efforts were rewarded with higher profitability.

7.1. Limitations

The sample used for representing developed and emerging regions was limited to the Nordics and China. This could provide problems in terms of generalizability as firms in developed respectively emerging regions can entail great differences within the groups. Additionally, our

conceptual model was limited to the sample of the Nordics and China and the results might not be generalizable worldwide. However, as there were clear differences between the Nordic and Chinese sample, we believe these regions can provide an indicator on how the relationship between sustainability and profitability may differ overall between developed and emerging regions.

Furthermore, the time lag used in our regression did have an impact on the results. We tested a time lag of zero, one and two years. However, it is possible that the impact sustainability has on profitability could take five or ten years until it is in full effect. Since our tests indicated that the largest significance was found with one-year time lag and that many previous researchers had chosen a similar time lag, we believe our assumption provide a quite accurate statistical model. It is also possible that profitability precedes sustainability, but since our study intended to see if sustainability have a positive impact on profitability we were not interested in studying what precedes sustainability.

Incorporating even more control variables could increase the precision of the statistics. Even though a two-way fixed effects model can take the heterogeneity between both individuals (firms) and time into consideration, the tests could be more accurate if for example country, history, economic fluctuations and industry would each be given their own precise variables. Considering the magnitude and the given time for our study we did not want to include too many variables as it would make the data collection and the statistical models more complex which in turn would decrease the comprehensibility of our study.

7.2. Suggestions for further research

Through the limitations of our study we suggest that further research can be done. By using larger datasets from other regions with various levels of sustainability, a more comprehensive and generalizable study can be done to further increase the understanding of the relationship between sustainability and profitability. This would also be interesting as no previous researchers has compared developed to emerging countries in terms of ESGC scores previously and it would be interesting to see whether our results also could be supported in other similar contexts. Furthermore, a more extensive study can also provide the data necessary to put our conceptual model into testing and see if it is generalizable or not.

As discussed under reliability there is no general rating of firms' sustainability, which mean that the results could differ depending on what measures of sustainability that is used. Therefore, we believe the usage of several different sustainability measures can increase the accurateness of further studies. Including different sustainability measures can also decrease any bias the indicator providers intentionally or unintentionally produced. The precision of further research would also be increased by more comprehensively control for omitted variables bias and by making statistical test for all time-lag combinations in turn to better understand when and how effects occur. It would also be interesting to examine the relationship between ESG Scores and financial performance in other time periods to see whether the results would be the same or not.

We also suggest further research should be conducted using the micro-level data of the ESGC Scores, as each ESGC Score are aggregated from several micro-level measurements, for example the resource use or emissions for the Environmental Score. Our belief is that different parts of the ESGC Scores have larger impact on financial performance than others, which would broaden the understanding of what kind of sustainability increases profitability the most. It is also likely that different regions value sustainability differently which is why a study on several regions with micro-level ESGC Scores could provide deeper knowledge of sustainability in the business world. Furthermore, even though the Controversies Score provide another dimension, one could argue that the score should be taken one step further. For example, the individual ESG Scores could each be given a Controversies Score to make it more accurate such as Environmental Controversies, Social Controversies and Governance Controversies. This would allow further research to see if different controversies also have different impact on profitability, just like the individual ESGC Scores had a differing impact in our results.

Further research using case studies can provide valuable insights into the relationship between sustainability and profitability. By conducting case studies, more in-depth knowledge can be found that increase the understanding of for example causal effects and possible factors that may affect the relationship. Case studies can also increase the understanding of how firms see CSR and what they value internally to shed light on why certain firms focus on certain CSR efforts. Therefore, we believe further research through case studies will provide important in-depth knowledge that cannot be studied through statistical research on a larger set of firms.

Lastly, it would be very interesting if someone could build further on our conceptual model to strengthen or discard our beliefs that there exists a maximum level where CSR can be used to gain profitability.

References

- Aouadi, A and Marsat, S. (2016). Do ESG Controversies Matter for Firm Value? Evidence from International Data. *Journal of Business Ethics*. vol. 151 (no. 4), pp. 1027-1047
- Arellano, M. (1987). Computing Robust Standard Errors for Within-groups Estimators. *Oxford Bulletin of Economics and Statistics*, vol. 49 (no. 4)
- Aupperle, K.E., Carroll, A.B., and Hatfield, J.D. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academic Management Journal*. vol. 28, pp. 446–463
- Baird, P. L., Geylani, P. C. and Roberts, J. A. (2012). Corporate Social and Financial Performance Re-Examined: Industry Effects in a Linear Mixed Model Analysis. *Journal of Business Ethics*, vol. 109 (no. 3), p. 367-388
- Balotti, R. F. and Hanks, J. J. (1999). Giving at the Office: A Reappraisal of Charitable Contributions by Corporations. *The Business Lawyer*, vol. 54 (no. 3), pp. 965-996
- Baltagi, B. H. (2013). *Econometrics Analysis of Panel Data*. 5th ed. Chichester: John Wiley & Sons Ltd
- Bansal, P. (2002). The Corporate Challenges of Sustainable Development. *The Academy of Management Executive*, vol. 16 (no. 2), pp. 122-131
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, vol 17 (no. 1), pp. 99-120
- Bloomberg. (2019). ESG data. Available online: <https://www.bloomberg.com/impact/impact/esg-data/> [Accessed 3 April 2019]
- Blowfield, M. and Murray, A. (2008). *Corporate Responsibility, a critical introduction*. New York: Oxford University Press
- Branco, M. C. and Rodrigues, L. L. (2006). Corporate Social Responsibility and Resource-Based Perspectives. *Journal of Business Ethics*, vol. 69 (no. 2), pp. 111-132
- Brown, W. O., Helland, E. and Smith, J. K. (2006). Corporate philanthropic practices. *Journal of Corporate Finance*, vol. 12 (no. 5), pp. 855-877

- Brubaker, R. (2012). China and sustainability: connecting the dots between economy and ecology. *The Guardian*. Available online: <https://www.theguardian.com/sustainable-business/blog/china-sustainability-economy-environment-ecology> [Accessed 20 May 2019]
- Bryman, A. and Cramer, D. (2011). *Quantitative Data Analysis with IBM SPSS 17, 18 & 19*. New York: Routledge
- Bryman, A. and Bell, E. (2013). *Företagsekonomiska forskningsmetoder*. 2nd ed. Liber
- Bodhanwala, S and Bodhanwala, R. (2018). Does corporate sustainability impact firm profitability? Evidence from India. *Management Decision*, vol. 56 (no. 8)
- Bohyun, Y., Lee, J.H., and Byun, R. (2018). Does ESG Performance Enhance Firm Value? Evidence from Korea. *Sustainability*, vol. 10 (no. 10)
- Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, vol. 30 (no. 1), pp.98-115
- Candriam. (2017). Candriam ESG Country Report. Available online: https://www.indexiq.eu/pdf/CANPRD000034_Paper_Country_Analysis.pdf [Accessed 22 May 2019]
- Cantele, S. and Zardini, A. (2018). Is sustainability a competitive advantage for small businesses? An empirical analysis of possible mediators in the sustainability–financial performance relationship. *Journal of Cleaner Production*, vol. 182, pp. 166-176
- Chan, M. C., Watson, J. and Woodliff, D. (2014). Corporate Governance Quality and CSR Disclosures. *Journal of Business Ethics*, vol. 125 (no. 1), pp. 59-73
- Changhong, Z., Yu, G., Jiahai, Y., Mengya, W., Daiyu, L., Yiou, Z. and Jiangang, K. (2016). ESG and Corporate Financial Performance: Empirical Evidence from China's Listed Power Generation Companies. *Sustainability*, vol. 10 (no. 8)
- Chandler, D. (2017). *Strategic Corporate Social Responsibility*, 4th ed. Thousand Oaks: Sage Publications
- Choi, J. and Wang, H. (2009). Stakeholder Relations and the Persistence of Corporate Financial Performance. *Strategic Management Journal*, vol. 30 (no. 8), pp. 895-907

- Clark, G. L., Feiner, A. and Viehs, M. (2015). From the Stockholder to the Stakeholder: How Sustainability Can Drive Financial Outperformance. *SSRN Electronic Journal*. DOI: 10.2139/ssrn.2508281
- Creswell, J. W. (2014). *Research Design*, 4th ed. Thousand Oaks: SAGE Publications
- Dyllick, T. and Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, vol. 11 (no. 2), pp. 130-141
- Dowling, J. and Pfeffer, J. (1975). Organizational Legitimacy: Social Values and Organizational. *Pacific Sociological Review*, vol. 18 (no. 1), pp. 122-136
- Eccles, R.G., Ioannou, I. and Serafim, G. (2014). The Impact of Corporate Sustainability on Organizational Processes and Performance. *Management Sciences*, vol. 60 (no.11), pp. 2835–2857.
- Esfahbodi, A., Zhang, Y. and Watson, G. (2016). Sustainable supply chain management in emerging economies: Trade-offs between environmental and cost performance. *International Journal of Production Economics*, vol. 181 (Part B), pp. 350-366
- European Commission. (2019). Sustainable finance. Available online: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en#implementing [Accessed 9 April 2019]
- Falkenberg, J. and Brunsael, P. (2011). Corporate Social Responsibility: A Strategic Advantage or a Strategic Necessity? *Journal of Business Ethics*, vol. 99, pp. 9-16
- Financial Times. (2017). Younger consumers drive shift to ethical products. Available online: <https://www.ft.com/content/8b08bf4c-e5a0-11e7-8b99-0191e45377ec> [Accessed 22 April 2019]
- Frederick, W. C. (2018). Corporate Social Responsibility: From Founders to Millennials in Weber, J. and Wasieleski, D. M., *Corporate Social Responsibility (Business & Society 360*, vol. 2), pp. 3-38
- Freeman, R. E. (2010). *Strategic Management*. New York: Cambridge University Press
- Freeman, R. E., Parmar, B. L., Harrison, J. S., Purnell, A. C. and De Colle, S. (2010). Stakeholder Theory: The State of the Art. *The Academy of Management Annals*, vol. 3 (no. 1), pp. 403-445

- Freeman, R. E. and Reed, D. L. (1983). Stockholders and Stakeholders: A New Perspective on Corporate Governance. *California Management Review*, vol. 25 (no. 3)
- Friedman, M. (1970). A Friedman doctrine. *The New York times Magazine*. 13 September. Available from: Times machine. [Accessed 2019-03-27]
- Garcia, S.G., Mendes-Da-Silva and Orsato, R.J. (2017). Sensitive industries produce better ESG performance: Evidence from Emerging Markets. *Journal of cleaner Production*, vol 150, pp. 135-147
- Gerstlberger, W., Praest Knudsen, M., and Stampe, I. (2014). Sustainable Development Strategies for Product Innovation and Energy Efficiency. *Business Strategy & the Environment*, vol. 23 (no. 2), pp. 131–144
- Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability...and how would we know? An exploration of narratives of organisations and the planet. *Accounting, Organizations and Society*, vol. 35 (no. 1), pp. 47-62
- Gružasuskas, V., Baskutis, S. and Navickas, V. (2018). Minimizing the trade-off between sustainability and cost effective performance by using autonomous vehicles. *Journal of Cleaner Production*, vol. 184, pp. 709-717
- Hair, Jr. J. F., Andersson, R. E., Tatham, R. L. and Black, W. C. (1995). *Multivariate Data Analysis with Readings*. 4th ed. New Jersey: Prentice-Hall
- Hart, S and Milstein, M. (1999). Global Sustainability and the Creative Destruction of Industries. *MIT Sloan Management Review*, vol. 41 (no.1)
- Husillos, J., González, C. and Gil, M. (2011). The emergence of triple bottom line reporting in Spain. *Revista Española De Financiación Y Contabilidad*, vol. 40 (no. 150), pp. 195-219
- Institutional Asset Manager. (2018). ASI study presents new way of comparing economic and ESG performance of countries. Available Online: <https://www.institutionalassetmanager.co.uk/2018/11/23/270809/asi-study-presents-new-way-comparing-economic-and-esg-performance-countries> [Accessed 22 May 2019]
- Jambeck, J. R., Geyer, R., Wilcox, C., Siegler, T. R., Perryman, M., Andrady, A., Narayan, R. and Law, K. L. (2015). Plastic waste inputs from land into the ocean. *Science*, vol. 347 (no. 6223), pp. 768 - 771
- Jones, T. M. (1995). Instrumental Stakeholder Theory: A Synthesis of Ethics and Economics. *Academy of Management Review*, vol. 20 (no. 2), pp. 404-437

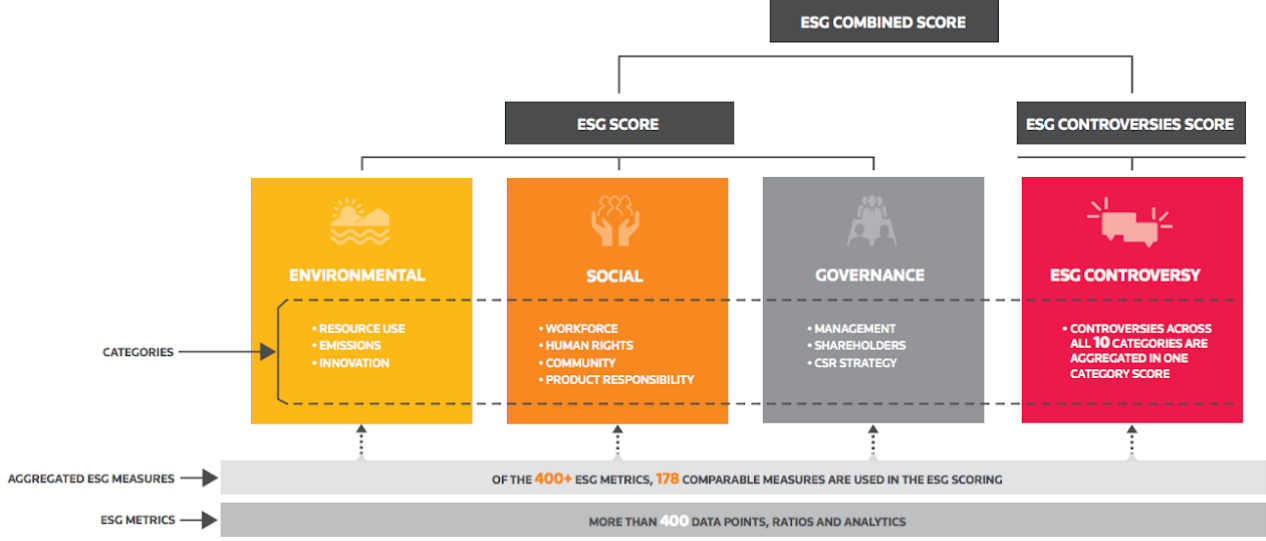
- Kaiman, J. (2013). Inside China's 'cancer villages'. *The Guardian*. Available Online: <https://www.theguardian.com/world/2013/jun/04/china-villages-cancer-deaths> [Accessed 20 May 2019]
- Kamath, R. (2010). ESG Practices Across Developed Markets. *Thomson Reuters*. Available Online: <https://www.thomsonreuters.com/content/dam/openweb/documents/pdf/tr-com-financial/report/esg-practices-across-developed-markets.pdf> [Accessed 22 May 2019]
- KPMG. (2017). The road ahead, The KPMG Survey of Corporate Responsibility Reporting 2017. Available Online: <https://assets.kpmg/content/dam/kpmg/be/pdf/2017/kpmg-survey-of-corporate-responsibility-reporting-2017.pdf> [Accessed 22 April 2019]
- Lal Kidwai, N. (2017). Going green is good for business. *Financial Times*. Available Online: <https://www.ft.com/content/b45860b2-917e-11e7-a9e6-11d2f0ebb7f0> [Accessed 23 April 2019]
- Lindblom, C. K. (1994). The implications of organizational legitimacy for corporate social performance and disclosure. *Critical Perspectives on Accounting Conference*, New York, NY.
- Lo, S-F and Sheu, H-J. (2017). Is Corporate Sustainability a Value-Increasing Strategy for Business? *Corporate Governance*, vol. 15 (no.9)
- Lopez, M., Garcia, A. V. and Rodriguez, L. (2007). Sustainable Development and Corporate Performance: A Study Based on the Dow Jones Sustainability Index. *Journal of Business Ethics*, vol. 75 (no. 3), pp. 285-300
- Lubin, D and Esty, D. (2010). The Sustainability Imperative. *Harvard Business Review*, May Issue 2010
- MacIntosh, R. and O’Gorman, K. D. (2015). *Research Methods for Business & Management: A guide to writing your dissertation*. 2nd ed. Oxford: Goodfellow Publishers Limited.
- Menon, S. and Kahn, B. E. (2003). Corporate sponsorships of philanthropic activities: When do they impact perception of sponsor brand? *Journal of Consumer Psychology*. vol. 13, pp. 316–327
- Michelon, G., Pilonato, S. and Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical Perspectives on Accounting*, vol. 33, pp. 59-78

- Millo, G. (2014). Robust standard error estimators for panel models: a unifying approach. *Munich Personal RePEc Archive*, paper no. 54954
- Milne, M. J. and Gray, R. (2013). W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting. *Journal of Business Ethics*, vol. 118 (no. 1), 13-29
- Mio, V. (2019). The challenges of integrating ESG into Chinese A-shares. *Robeco*. Available Online: https://www.robeco.com/en/insights/2019/02/the-challenges-of-integrating-esg-into-chinese-a-shares.html?fbclid=IwAR2xdnnsydgzgbTKJ4Hc34yNtGOg4dRhjztMUMuK5yMEtqSz1XJz_tt12Q [Accessed 22 May 2019]
- Morrison-Saunders., A. and Pope, J. (2013). Conceptualising and managing trade-offs in sustainability assessment. *Environmental Impact Assessment Review*, vol. 38, pp. 54-63
- MSCI. (2018). MSCI ESG Ratings Methodology [pdf]. Available at: <https://www.msci.com/documents/10199/123a2b2b-1395-4aa2-a121-ea14de6d708a> [Accessed 3 April 2019]
- Oliver, C. (1997). Sustainable Competitive Advantage: Combining Institutional and Resource-based Views. *Strategic Management Journal*, vol. 18 (no. 9), pp. 697-713
- Orlitzky, M. (2013). Corporate social responsibility, noise, and stock market volatility. *The Academy of Management Perspectives*, vol. 27 (no. 3), 238–254. doi:10.5465/amp.2012.0097
- Petersson, Jenny (2018). Experten säger hållbara fonder - bara risk för höga avgifter. *Dagens Industri*. Available Online: <https://www.di.se/hallbart-naringsliv/experten-sagar-hallbara-fonder-bara-risk-for-hoga-avgifter/?variantType=LARGE&loggedin=true> [Accessed 23 April 2019]
- Porter, M. (1985). *Competitive Advantage*. New York: The Free Press
- Porter, M.E. and Kramer, M.R. (2002). The competitive advantage of corporate philanthropy. *Harvard Business Review*, vol. 80, pp. 56–68
- Porter, M. E. and Kramer, M. R. (2011). Creating Shared Value. *Harvard Business Review*, January-February Issue 2011
- Post, J. E., Preston, L. E., and Sachs, S. (2002). Managing the Extended Enterprise: The New Stakeholder View. *California Management Review*, vol. 45 (no. 1), pp. 6–28

- PwC. (2016). Redefining business success in a changing world - CEO Survey. Available Online: <https://www.pwc.com/gx/en/ceo-survey/2016/landing-page/pwc-19th-annual-global-ceo-survey.pdf> [Accessed 22 April 2019]
- Robeco. (2018). Country Sustainability Ranking. Available Online: <https://www.robeco.com/en/key-strengths/sustainability-investing/country-ranking/> [Accessed 8 April 2019]
- Sahut, J-M. and Pasquini-Descomps, H. (2015). ESG Impact on Market Performance of Firms: International Evidence. *International Management*, vol. 19 (no.2)
- Servaes, H., and Tamayo, A. (2013). The impact of corporate social responsibility on firm value: The role of customer awareness. *Management Science*, vol. 59 (no. 5), pp 1045–1061
- Scholten, B. (2008). A Note on the Interaction Between Corporate Social Responsibility and Financial Performance. *Ecological Economics*, vol. 68 (no. 1-2), pp. 46-55.
- Seuring, S. (2013). A Review of Modeling Approaches for Sustainable Supply Chain Management. *Decision Support Systems*, vol. 54 (no. 4), pp. 1513-1520
- Statista. (2019). Annual volume of mismanaged plastic waste worldwide in 2010, by select country (in million metric tons per year). Available Online: <https://www-statista-com.ludwig.lub.lu.se/statistics/952712/plastic-waste-annual-mismanaged-volume-worldwide-by-country/> [Accessed 20 May 2019]
- Studenmund, A. H. (2014). Using Econometrics - A Practical Guide. 6th ed. Harlow: Pearson Education Ltd.
- Suchman, M.C. (1995). Managing legitimacy: strategic and institutional approaches. *Academy of Management Review*, vol. 20 (no. 3), pp. 571-610
- Taliento, M., Favino, C. and Netti, A. (2019). Impact of Environmental, Social, and Governance Information on Economic Performance: Evidence of a Corporate ‘Sustainability Advantage’ from Europe. *Sustainability*, vol.11 (no.6)
- Thomson Reuters. (2019). Thomson Reuters ESG Scores [pdf]. Available at: https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scores-methodology.pdf [Accessed 3 April 2019]
- Valentine, S., and Fleischman, G. (2008). Ethics programs, perceived corporate social responsibility and job satisfaction. *Journal of Business Ethics*, vol. 77, pp. 159–172

- Velte, P. (2017). Does ESG performance have an impact on financial performance? Evidence from Germany. *Journal of Global Responsibility*, vol.8 (no.2), pp.169-178
- Walsh, P. R. and Dodds, R. (2017). Measuring the Choice of Environmental Sustainability Strategies in Creating a Competitive Advantage. *Business Strategy & the Environment*, vol. 26 (no. 5), pp. 672–687
- Watts, J. (2019). Greta Thunberg, schoolgirl climate change warrior: ‘Some people can let things go. I can’t’. *The Guardian*. Available Online: <https://www.theguardian.com/world/2019/mar/11/greta-thunberg-schoolgirl-climate-change-warrior-some-people-can-let-things-go-i-cant> [Accessed 9 April 2019]
- Weber, O. (2014). Environmental, Social and Governance Reporting in China. *Business Strategy and the Environment*, vol. 23, pp. 303-317
- White, H. (1980). A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. *Econometrica*, vol. 48 (no. 4), pp. 817-838
- Winn, M., Pinkse, J., and Illge, L. (2012). Case Studies on Trade-Offs in Corporate Sustainability. *Corporate Social Responsibility & Environmental Management*, vol. 19 (no. 2), pp. 63–68
- World Bank. (2014). CO2 emissions (kt). *The World Bank Group*. Available Online: <https://data.worldbank.org/indicator/EN.ATM.CO2E.KT?end=2014&start=2014&view=map> [Accessed 20 May 2019]
- Yale University. (2019). 2018 EPI Results. Available Online: https://epi.envirocenter.yale.edu/epi-topline?country&order=field_epi_rank_new&sort=asc [Accessed 8 April 2019]
- Zuo, M. (2016). Under 16 and working 16 hours a day ... Chinese clothes factories import cheap child labour from across China. *South China Morning Post*. Available Online: <https://www.scmp.com/news/china/society/article/2048231/clothing-factories-eastern-china-import-child-labour-migrant> [Accessed 20 May 2019]

Appendix A



Source: Thomson Reuters, 2019.