

Value Relevance of Environmental, Social, and Governance (ESG) Performance: Evidence  
from the Nordics

Thesis

Presented in Partial Fulfillment of the Requirements for the Degree Master of Science at the  
Stockholm School of Economics

By

Cheuk Hee Cheung

Graduate Program in Finance

Stockholm School of Economics

2020

Thesis Tutor:

Jan Starmans



Copyright by  
Cheuk Hee Cheung  
2020



Master Thesis for the Degree of Master of Science, M.Sc., in  
Finance  
Stockholm School of Economics, 2020

## Table of Contents

Abstract .....	1
Introduction .....	1
Literature review .....	3
Data .....	8
Empirical strategy .....	9
Hypotheses .....	11
Results and discussion .....	12
Conclusion .....	15
References .....	17
Table 1 .....	22
Table 2 .....	24
Table 3 .....	26

# Value Relevance of Environmental, Social, and Governance (ESG) Performance: Evidence from the Nordics

CHEUK HEE CHEUNG<sup>1</sup>

## Abstract

This study looks at the value relevance of ESG performance factors in Nordic companies during the period 2014 to 2018. Data are collected from the Resiliity Nordic Compass Sustainable Economics Datasets, Finbas and S&P Capital IQ. Relationships of market value of Nordic companies and corporate ESG performance are explored. Results of this study show that companies adopting ESG practices to a greater extent in social and governance dimensions in their company operations perform better in the stock market. Their equities have a higher market value in the stock market where the companies are listed. However, there is no evidence from our study to support the value-enhancing effect of environmental performance. ESG factors has been gaining attention from firms, investors, and the public. The results of this study shed light on the importance of incorporating ESG factors into company operating strategies. Evidence from this study support the theory of adopting corporate social responsibility is beneficial to the long-term sustainability of the business.

**Keywords:** Equity Valuation; Environmental Performance, Social Performance; Governance Performance; Sustainability; Financial Accounting

**JEL Classification:** M14, M41, Q56

## Introduction

Valuation of a company has always been one of the most important aspects of the investment decision-making process. There are many factors that need to be considered in the valuation of a company. Financial performance such as earnings and book value of a company has been

---

<sup>1</sup> Department of Finance, Stockholm School of Economics, P.O Box 6501, SE-113 83 Stockholm, Sweden  
Acknowledgements: The author thanks Jan Starmans, reviewers, and seminar participants at the Department of Finance at the Stockholm School of Economics for their helpful suggestions and comments.

some of the useful information used in fundamental analysis. Other extra-financial information such as environmental, social and governance performance is believed to play a part in explaining the market value of a company (Barth and McNichols, 1994; Bebchuk and Cohen, 2005), especially when demand in corporate social responsibility and ESG investing has been catching attention in recent years (Pinney, Lawrence and Lau, 2019). With the goal of achieving a better and more sustainable future for all, the Division for Sustainable Development Goals (DSDG) in the United Nations Department of Economic and Social Affairs (UNDESA) established 17 sustainable development goals as a blueprint for nations to follow. The demand in ESG investment products has also increased significantly in the last few years. This study aims to investigate the significance of ESG performance as a driver of the market value of a company.

ESG factors and their incorporation into business practices has been gaining traction in the media and the financial market. Investors from developed countries and increasingly from emerging markets and frontier markets are interested in ESG performance of companies and there is a trend for investors to demand companies to disclose their ESG data alongside their financial performance data in regular reports (Landau et al., 2020). Even in emerging markets like Brazil, Miralles-Quirós, Miralles-Quirós and Gonçalves (2018) find that the market generally positively values ESG performance. It is generally believed that ESG sensitive companies care more about their business impacts on the environment and the welfare of their employees and other stakeholders in the society. Companies with high standards of ESG performance are well respected in the community and believed to be better managed in general. Coupled with an increased interest in ESG factors from investors, various ESG certifications and investment products have been created. The United Nations Principles for Responsible Investment (PRI) is one of the most well-known organizations that aims to promote the incorporation of environmental, social, and governance factors into investment decision making. More than 2,000 financial institutions have become signatories to the PRI's and promised to adhere to its key principles in their businesses. According to statistics from the Forum for Sustainable and Responsible Investment (US SIF), global investors hold \$11.6 trillion assets in 2018 according to ESG criteria, representing a significant 43% increase from just two years prior. The Nordics have been in the forefront of the ESG innovation. According to a report from Nordea in 2018, the Nordics investment universe ranked higher than its European and North American peers in terms of MSCI ESG ratings. The leading awareness of

ESG factors in the Nordics raises the question of whether ESG performance translates into higher market value, which is what this study aims to explore.

Our study contributes to the literature on ESG research in two ways. Firstly, we look at the contribution of environmental, social, and governance performance on the market value of companies, as we believe market value of companies are not only explained by financial performance of the business. Extra-financial intangible information such as ESG performance could also affect the valuation of a company in the stock market because such information may reveal additional information on the future risks undertaken by these companies. Our findings show that better social and governance performance in general give rise to higher company market value. Secondly, our study investigated the more granular dimensions of ESG value drivers such as the sub-dimensions in each of the environmental, social, and governance aspects, in contrast to a more aggregated ESG assessment. Such disaggregated assessment is possible with the disaggregated performance data available from the dataset our study uses. This study is one of the first studies to use the Resiliency data to investigate the value relevance of extra-financial information. Thus, the results of this study could possibly reveal a more specific ESG sub-dimensional value driver compared with other ESG studies. Indeed, our study find that nuanced company directives such as anti-corruption policy in the social performance dimension can be a firm value driver.

This paper begins with a literature review on the relationship between environmental, social, and governance performance and firm market value. Then, data and research method are described. Next, results of this study are presented and discussed. Finally, we present the implications of this study and conclusion, including the limitations of the current study and suggestions for future research.

## Literature review

The relationship between environmental, social, and governance practices and financial market performance has been shown to be relevant in previous studies (Barth and McNichols, 1994; Bebchuk and Cohen, 2005; Bird et al., 2007; Core, Holthausen and Larcker, 1999; Daniel and Titman, 2006; Di Giuli and Kostovetsky, 2014; Haque and Ntim, 2020; Miralles-Quirós, Miralles-Quirós and Gonçalves, 2018; Yoon, Lee and Byun, 2018). ESG information can be treated as extra-financial information of a corporation that gives investors ideas on how the firm would deal with internal and external business operational risks. However, the direction

of association between ESG performance and firm market value has not been very clear cut in previous research. Both positive and negative association between ESG factors and firm market value have been reported. Positive association between ESG factors and firm market value conforms to the value-enhancing theory of ESG factors. Firms that are ESG compliant are rewarded economically by investors in the financial market by being conferred higher market value (Miralles-Quirós, Miralles-Quirós and Gonçalves, 2018). Firms that are ESG non-compliant are regarded as having higher operational risks and thus penalized economically in the financial market. In contrast, shareholder expense theory has been used to explain the negative association between ESG performance and its economic impact on firm market value. In reality, both value-enhancing and shareholder expensing theories could be in play simultaneously. The extent to which ESG factors affect firm market value largely depends on the relative significance of the two opposite forces.

Several studies investigated the relationship between environmental, social, and governance related performance and firm market value, and found firms with better ESG performance have higher market value. Using cross-sectional data of eco-efficiency scores from 1997 to 2004, Guenster et al. (2011) find that environmental performance is positively associated with operating performance and market value. Eco-efficiency was defined in their study as the ability to create more value while using fewer environmental resources, such as water, air, oil, coal and other limited natural endowments. They also suggest that there is no need for corporate managers to trade off between being eco-efficient and having good financial performance. In another study, Semenova, Hassel, and Nilsson (2010) find firm market value is positively associated with environmental and social performance, including community and supplier relations in listed companies on OMX Stockholm. Ionescu et al. (2019) find that ESG factors, especially governance factor seems to have the most significant influence on firm market value of companies in the travel and tourism industry during 2010 to 2015, regardless of geographical location of the companies. Bird et al. (2007) show that firms that are viewed as devoting significant resources in corporate social responsibility activities would be rewarded in the marketplace. Edmans (2011) find that employee satisfaction is associated with excess market return. In another study, Capelle-Blancard and Petit (2019) show that negative ESG events are associated with drop in firm market value. Similarly, Barth and McNichols (1994) show that environmental liabilities are negatively related to share price. Bebchuk and Cohen (2005) find that staggered board brings about a reduced firm value, especially for staggered boards that are set up in the firm charter than that established in the company's bylaws. Core,

Holthausen and Larcker (1999) show that firms with poor governance structure have worse stock return performance. Additionally, Cremers and Nair (2005) find portfolios invested in firms with good external and internal governance generate abnormal returns for investors. Doh et al. (2010) report that firms labelled as doing worse in social performance experience decline in stock price. Ghoul et al. (2011) find that firms with better corporate social responsibility scores have cheaper equity financing, whereas firms engaging in tobacco and nuclear power sectors have higher cost of equity. In particular, cost of equity is reduced with increase in investment in responsible environmental policies, employee relations and product strategies. Fatemi, Fooladi and Tehranian (2015) show that commitment to corporate socially responsible expenditures can lead to shareholder value creation. Gompers, Ishii and Metrick (2003) find that buying firms with strongest shareholder rights and shorting firms with the weakest shareholder rights would generate abnormal investment returns. Also, weaker shareholder rights are associated with lower sales growth, higher capital expenditures, higher amount of corporate acquisitions and lower profits. Kim (2009) shows that corporate social responsibility activities are associated with higher market value. Moreover, Hong and Kacperczyk (2009) show that sin stocks are less held by norm-constrained investors such as pension plans compared with other natural arbitrageurs. Kim, Li and Li (2014) find that corporate social responsibility performance is negatively associated with future crash risk. Lins, Servaes and Tamayo (2017) show that during the 2008 to 2009 financial crisis, firms with high corporate social responsibility intensity had higher returns than firms with low social capital. They believe trust between a firm and its stakeholders and investors is established through investments in social capital. That trust would then pay off in times of crisis. Michaely, Thaler and Womack (1995) find that dividend omission is negative associated with share price while dividend initiation is positively associated with share price.

In contrast to the beneficial effects of environmental, social, and governance performance on market value revealed in previous studies, there is research evidence showing no effect or opposite effect (Di Giuli and Kostovetsky, 2014; Johnson, Moorman and Sorescu, 2009; Krueger, 2015; Landau et al., 2020; Renneboog, Horst and Zhang, 2008). These studies found no or a negative association between environmental, social, and governance performance and firm market value. They explained that initiatives on environmental, social, and governance issues create extra expenditure to the firm and thus could have a negative effect on profitability and market value. Krueger (2015) show that investors respond strongly negatively to negative corporate social responsibility events but also weakly negatively to positive events.



Renneboog, Horst and Zhang (2008) find that socially responsible investment funds in the US, the UK, and in many European and Asia-Pacific countries except some countries such as Sweden, France and Japan underperform their domestic benchmarks, consistent with the suggestion that investors pay a price for ethics. Landau et al. (2020) find that integrated reporting of nonfinancial information within the annual report has a negative influence on the market value. Di Giuli and Kostovetsky (2014) show that increases in firm corporate social responsibility ratings are associated with negative future stock returns and decreases in firm return on asset, suggesting that corporate social responsibility is a direct expense of firm value though it brings benefits to stakeholders. Another support for negative association between ESG factors and firm market value is that implementation of socially responsible practices could restrict business activities, thus reduce firm revenue. Capelle-Blancard and Petit (2019) find firms gain no market value on average from positive ESG news announcements. Ionescu et al. (2019) find negative influence of environmental performance on market value of US companies from travel and tourism industry. Moreover, they also find a negative association between social factors and market value. Moorman and Sorescu (2009) find that there are no long-term abnormal returns for investment portfolios sorted on governance.

The relationship between ESG performance and firm market value can also vary across geographical regions as suggested by previous research. Ionescu et al. (2019) find the positive association between environmental factor and firm market value stronger in Europe than Asia. They suggested that possible explanations can be differences in regulatory framework in different jurisdictions resulting in varying levels of incentives and sanctions for non-compliance. Firm market value thus reflects stakeholders' varying levels of appreciation of the importance of ESG performance to sustainability of the business. Investors in countries where regulatory incentives are stronger for ESG compliant firms and sanctions are stronger for ESG non-compliant firms would penalize non-compliance to a greater extent than their counterparts in countries where rules and regulations on ESG factors are less clear or stringent. Another factor that may explain the geographical differences in ESG performance's relationship with firm value could be people's awareness of ESG issues. When stakeholders are more aware of the ESG attributes of the firms, ESG performance can exert a greater effect on firm market value. People's ESG awareness can be affected by factors such as proximity, investor attention, media publication, and free flow of information among people's in the society (Huberman and Regev, 2001; Ivkovic and Weisbenner, 2005; Tetlock, 2007). Engelberg and Parsons (2011) indeed show that local media coverage predicts local trading. Aouadi and Marsat (2018) find

that firm social performance is positively associated with market value only for high-attention, larger, better performing companies, which are located in area with greater press freedom, more searched on the internet, and more followed by financial analysts. Da, Engelberg and Gao (2011) linked information flow and stock prices by showing an increase in investor attention predicts higher stock prices in the short run. Drake, Roulstone and Thornock (2012) show that abnormal Google search increases about two weeks before the earnings announcement, suggesting free flow of information enables investors to acquire information about firms. DellaVigna and Pollet (2009) find that investor inattention reduces immediate response and increases delayed response from investors. Grinblatt and Keloharju (2001) suggest that investors are more likely to hold, buy, and sell the stocks of firms which are located nearer to the investor, which have chief executives of the same cultural background, and which communicate in the investor's native language. Similarly, Huberman (2001) finds that investors tend to invest in the familiar. Hirshleifer, Lim and Teoh (2009) find that distraction from unrelated news reduces immediate price and volume reaction to a firm's earning surprise. Political ideology can also affect ESG investments. Hong and Kostovetsky (2012) show that mutual fund managers who make campaign donations to Democrats hold less of their portfolios in companies that exhibit worse social responsibility. Besides geographical location, sector in which a firm operates can also affect the relationship between ESG factors and firm market value. Firms in the energy and manufacturing sectors for example receive more scrutiny on their business operations' impact on the environment than firms in other industries. It can be predicted their ESG performance would attract more investor attention and have relatively greater impact on the firm's market value. Time could be another factor that can affect the relationship between ESG factors and firm value. Bird et al. (2007) show that diversity, employment and environmental issues were of the greatest interest closer to the study period in their study.

Our findings are consistent with the literature's view that ESG performance, especially social and governance performance are in general positively associated with higher firm value. However, our results are also compatible with the possibility described by literature that costs associated with ESG implementation can be costly, and the initial expenditure may prevent the positive effect of ESG from shining through the income statement in the short run.

## Data

Data about environmental, social and governance performance are collected from the Resility Nordic Compass Sustainable Economics Datasets, while data on the general information of the companies and balance sheet items such as market value, book value of equity, net income and book value of total asset are obtained from the Finbas and S&P Capital IQ databases.

The Resility Nordic Compass Sustainable Datasets are a collection of data rich in ESG performance information of companies collected by Resility. Resility is a Stockholm-based company that concentrates on corporate environmental, social, and governance research and sustainability consulting. It has collaborations with corporations, academic institutions, and non-profit organizations to advance ESG data disclosure and integrate ESG into firm analysis. The Resility Nordic Compass data used in this study contain ESG data on publicly traded Nordic companies. Resility's data collection team collects ESG data from company reporting and disclosures and put in a format that is harmonized and standardized so that data can be compared across different years and companies. Data are presented in different formats according to the nature of the variables. For example, dichotomous variables are presented as "Y/N", while variables concerning numbers and percentages are presented as numerical values. This study uses ESG data from 2014 to 2018, which contain all the yearly data available. Companies are added and removed from the dataset by Resility and the number of companies in each year may not be the same. The number of companies in each year varied mildly, ranging from 255 to 475. Our ESG dataset consists of 550 companies, which were present in the Resility Nordic Compass Sustainable Economics survey from 2014 to 2018 at least once.

ESG performance is used as an independent variable in this study and it contains rich data from three broad areas of assessment, namely environmental, social, and governance. Environmental datapoints include information such as CEO sustainability, environmental policy and assessment, increased usage of renewable energy, disclosure of raw material consumption, disclosure of water discharges, total GHG emissions, transportation emissions, total water withdrawal, and targets associated with efficient use of resources, etc. Social datapoints include information such as number of female employees, number of female senior executives, board size including employee representatives, equal opportunity policy or statement, training and education spending, number of fatalities of employees and contractors on the job, accidents per millions hours worked, pandemic policy, supplier guidelines, health

and safety policy, health and safety risk assessment, supplier assessment for human rights, whistleblower mechanisms, human rights policy or statement, social impact assessment on local communities, and community investments, etc. Governance datapoints include information such as CEO and chairman of the board separation, written statement on why CEO-chair is in best interests of shareholders, number of independent directors, board meeting attendance, block shareholding's voting power, unequal voting rights, CEO compensation, audit fees, and number of members of remuneration committee, etc. The dataset also contains general information about the companies such as company name, company stock ticker, industry, and headquarters country.

Other independent variables and the dependent variable of this study are generated from firm market value, book value, net income, sales growth, and total asset. Data on these variables are extracted from Finbas and S&P Capital IQ databases. Finbas is a financial database which contains daily end-of-day stock price data, corporate actions and fundamentals from the Nordica Stock Exchanges, MTF's and OTC markets. S&P Capital IQ database contains company balance sheet, income statement, statement of cash flows, and other corporate activities information. The data from different years are collected and combined into a panel dataset for analyses.

### Empirical strategy

This study uses the Feltham and Ohlson valuation model (Feltham and Ohlson, 1995; Ohlson, 1995; Ohlson, 2001) to incorporate extra-financial information into firm valuation. Ohlson (1995) proposed a valuation model for which market value of a firm is a function of the firm's financial information and other relevant unspecified non-financial information. ESG performance is one such piece of non-financial information that can be used in the model to test its value relevance. Ohlson valuation model has been used widely in the accounting literature to assess effects of extra-financial information on firm valuation (Ionescu et al., 2019; Ittner and Larcker, 1998; Landau et al., 2020; Semenova, Hassel, and Nilsson 2010). Market value of a company is expected to be reflection of current book value of equity, earnings, and other extra-accounting information that are deemed value relevant. Extra-accounting information can be represented by different way depending on the format and availability of the data under investigation. Previous ESG studies have used aggregated data such as an ESG index provided by a third-party organisation (Miralles-Quirós, Miralles-Quirós and Gonçalves,

2018; Semenova, Hassel, and Nilsson, 2010) and specific ESG dimensions such as availability of sustainability reporting as the extra-accounting information (Berthelot, Coulmont, and Serret, 2012; Cardamone, Carnevale, and Giunta, 2012). Both approaches have their respective merits. Using aggregated data such as an index can include a broader set of ESG information while using information focused on a more specific area of ESG performance can reveal impact on a more granular level. Our study chose to analyse the impact of ESG factors on a more granular level. The relationship between market value of the companies and ESG performance factors is tested using the following empirical formula:

$$\frac{MV_{i,t}}{A_{i,t}} = \beta_0 + \beta_1 \frac{BV_{i,t}}{A_{i,t}} + \beta_2 \frac{NI_{i,t}}{A_{i,t}} + \beta_3 ESG_{i,t} + \beta_4 C_{i,t} + u_i + e_{i,t} \quad (1)$$

The proposed empirical equation regresses market value of companies against book value of companies, net income, ESG performance measurements and sale growth as the controlling variable using panel data from 2014 to 2018 using fixed effects regressions. Sales growth is used to control differences in growth phase differences of companies.  $MV_{i,t}$  is the market value of company  $i$  at 3 months after fiscal year end  $t$ . Time  $t$  is fiscal year end 2014 to 2018.  $A_{i,t}$  is the book value of total asset of the company  $i$  at fiscal year end  $t$ .  $BV_{i,t}$  is the book value of equity of the company  $i$  at fiscal year end  $t$ .  $NI_{i,t}$  is the net income of the company  $i$  at fiscal year end  $t$ . The market value, book value, and net income variables are scaled by dividing the respective variables by the book value of total asset, to control for company size differences.  $ESG_{i,t}$  is one of the ESG performance measurements of the company at fiscal year end  $t$ .  $C_{i,t}$  is the of control variable sales growth at fiscal year end  $t$  comparing sales growth from the prior fiscal year.  $u_i$  is the random variables representing unobserved company  $i$  specific fixed effects.  $e_{i,t}$  is the random errors of company  $i$  at fiscal year end  $t$ .

We believe that there could be overlap of the effect of each of the environmental, social, governance factor on the firm's market value. Therefore, we decided to run a series of regressions of the market value of equity on each of the important constituent subdimensions in environmental, social, and governance aspects to study the individual contribution of the ESG subdimension to market value of equity.  $\beta_3$  is expected to be positive for factors that improves market value for equity while negative for factors that reduces market value of equity.

Data of the companies in this study is pooled over several time periods from 2014 to 2018. Using panel data by pooling data from several years can increase the size of the data compared with using just cross-sectional data from one year. However, performing regression

using pooled data over several years may introduce correlation in the error term of the regression model (Petersen, 2009). Standard errors could be underestimated, and t-statistics may be inflated if we do not deal with the error term correlation phenomenon in the panel data. Clustering method is used in this study to correct serial correlation in the error term so that the estimates produced in the panel data regression model would be consistent. Longitudinal data allow us to study the impact of extra-financial information on market value of equity using fixed-effects estimations. Not controlling for unobservable characteristics would cause ordinary least squares (OLS) estimates suffer from omitted variable bias, as other unobserved factors mentioned in the literature section such as information flow, investor attention, and media publication may affect the accuracy of the estimates. Endogeneity could be a concern if the independent variables are correlated to the error terms. In this study's context, a standard explanation between ESG and value could be that more successful companies can afford to invest more in ESG, such that ESG's value-enhancing effects are actually driven by other factors. In order to mitigate this endogeneity issue, this study employ a fixed effects regression approach in analysing the data.

### Hypotheses

Hypothesis 1: Companies which perform better in environmental subdimensions in their operations have higher market value compared with their counterparts. This hypothesis is based on equation (1) and the null hypothesis is  $\beta_3 = 0$ .

Hypothesis 2: Companies which perform better in social subdimensions in their operations have higher market value compared with their counterparts. This hypothesis is based on equation (1) and the null hypothesis is  $\beta_3 = 0$ .

Hypothesis 3: Companies which perform better in governance subdimensions in their operations have higher market value compared with their counterparts. This hypothesis is based on equation (1) and the null hypothesis is  $\beta_3 = 0$ .

Companies with better ESG performance is expected with better market outcomes because of the various benefits of ESG brings to the firm. Among others, Akerlof (1982) suggests that companies may pay more than the market minimum to their employees in the gift-exchange model. Nowadays, companies provide different perks to employees such as gym membership, tuition reimbursement, and personal development programs. Employees could

work harder and avoid being fired from jobs they find satisfying. Such higher employee productivity would turn into better customer services and higher sales. Also, companies that have higher employee satisfaction could find it easier to retain more motivated and skilled employees. In summary, good ESG practices can accelerate top-line growth, enhance control environments, reduce firms' cost of capital, and streamline investment and asset allocation, giving the firm with high ESG standards a long-term competitive edge.

However, it is possible that firms with better ESG performance would lag behind in firm market value because of the shareholder expense theory explained earlier. Firms aiming at improving ESG performance may need to put in extra resources in the short run. Those extra resources may reduce overall company earnings in the first few years before the benefits exceed the implementation costs of ESG practices. The time it takes for companies to reach the state in which benefits exceed costs could vary among companies, depending on factors like company culture, hierarchy and size. So, it is possible that the  $\beta_3$  in equation (1) is negative, indicating the negative impact of ESG performance on firm market value.

## Results and discussion

Table 1, 2, and 3 present the coefficients and standard errors of the OLS fixed-effects regressions of firm market value on variables related to environmental, social, and governance performance. These regressions correspond to equation (1) of the empirical model.

The estimates in table 1 showed that firm market value is not significantly associated with companies adopting environmental policy and assessment, disclosing targets or ambitions associated with environmental performance, taking steps to reduce negative environmental impact, and reporting increased usage of renewable energy since the previous year ( $\beta_3 = 0.045$ , t-value = 0.24;  $\beta_3 = 0.007$ , t-value = 0.09;  $\beta_3 = 0.051$ , t-value = 0.35;  $\beta_3 = -0.012$ , t-value = -0.22 respectively). The lack of significant association between environmental performance and firm market value is consistent with the shareholder expense theory or simply indicates that there is no relationship between environmental performance and firm market value. Increased environmental performance may not be necessarily appreciated by market participants could be due to the perception that better environmental performance may not pay off in the short term, and that it takes time for investments in environmental performance to improve sales figures. On the contrary, market participants may perceive increased costs of implementing environmental policies, reduction in energy usage, and transitioning into greener energies could

impede profit maximization of the firm in the immediate to medium term. However, environmental performance is not necessarily a bad thing in the long run. There is no evidence in the results showing environmental performance is value-destroying.

Table 2 presents the results of regressions of firm market value on social performance indicators of the companies. Having training and/or education policy is negatively associated with firm market value ( $\beta_3 = -0.189$ , t-value = -1.71) while the other social performance indicators including anti-corruption policy, social impact assessments, and local community development programs show positive association with firm market value. Consistent with the shareholder expense theory, providing training and education to employees could increase the initial cost to the company. The increased cost may include purchasing educational course materials through external vendors and hiring external training consultants to give lectures and workshops to the employees. The increased cost could reduce the short-term profitability of the company. However, the skills and knowledge acquired by the employees may increase the competitiveness of the products and services provided by the company in the long run. The willingness of the company to have a clear training or education policy could send a signal to employees that the company is committed to their long term personal and professional development. Such a commitment on employee human capital development may reap longer-term market return through increased employee satisfaction (Edmans, 2011). Anti-corruption policy is positively associated with firm market value ( $\beta_3 = 0.292$ , t-value = 1.65), which is consistent with the value-enhancing theory of good social performance. If the company has an anti-corruption policy or specific statement including policies or statements for extortion and bribery, it would reduce the probability of the company engaging in corrupt business practices. Companies engaging in corrupt business practices face increased business risks because of regulatory sanctions and legal prosecutions, which are viewed negatively by market participants. Results also reveal having social impact assessments and local community development programs are positively associated with firm market value ( $\beta_3 = 0.117$ , t-value = 2.02;  $\beta_3 = 0.194$ , t-value = 2.08 respectively), which are consistent with value-enhancing theory of good social performance. Companies having social impact assessments on local communities care about the impact of their businesses on the people and environment. Such impact assessments provide regular important feedback and guidance to the management of the company so that direction and strategy of the business can be adjusted promptly to avoid negative social externalities, which may result in fines and regulatory sanctions. Therefore, having social impact assessments in place can reduce business risk and enhance market value.



Similarly, companies having local community development programs show commitment in improving the quality of living and making positive impacts in people's lives. Such initiatives can reduce business risks and increase employee satisfaction, therefore should be viewed positively by market participants. Results show that magnitude of the value-enhancing effect of anti-corruption policy is larger than that of local community programs, which is in turn larger than that of having social impact assessments in place. It could imply that implementing action-based policies has a larger impact on firm value than merely carrying out an ESG assessment.

Concerns about endogenous effects of firm properties such as company culture and firm success that may have driven the positive impact of ESG factors on firm value by using fixed effects regressions. Fixed effects remove the effect of those time-invariant factors so that the net effect of ESG performance on firm value can be assessed. One may argue that fixed effects are too restrictive and leave out time-invariant variables that may be interesting to look at. However, some variables describing those individual firm characteristics that may or may not influence the ESG variables may not be available in the dataset thus could lead to omitted variable bias. On balance, benefits of using fixed effects outweigh undesirable outcomes in our analyses. Moreover, application of Hausman tests revealed fixed effects are preferable compared with random effects ( $\text{Prob} > \text{chi-squared} < 0.05$ ) in all the regressions.

Table 3 presents the results of regressions of firm market value on governance performance indicators of the companies. Results show that number of members of the nomination committee who are on the board of directors and dependent on the major shareholders, but independent of the company is negatively associated with firm market value ( $\beta_3 = -0.291$ ,  $t\text{-value} = -2.11$ ), which is quite surprising and contrary to the existing literature on corporate governance. Having independent directors on the board should be viewed positively as they can bring objectivity and independent directors are better able to hold management and other directors accountable with less probability of being subject to internal company politics. Nonetheless, our result is consistent with the stakeholder theory that good governance should enable the voice of all shareholders to be heard, as well as the stewardship theory that assumes management put the long-term interest of all the shareholders instead of a few major shareholders. The result suggests a value-destroying effect of having members of the nomination committee that may be biased towards a few major shareholders of the company. On the other hand, results show that number of members of the remuneration committee (or compensation committee) that are independent directors is positively associated with firm market value ( $\beta_3 = 0.135$ ,  $t\text{-value} = 2.15$ ), which is consistent with the agency theory that

assumes the friction of interests between the different parties involved in a company. Independent board members on the remuneration committee can be a way to mitigate risk of the agency problem and structure compensation schemes that align interest of the management and that of all shareholders. Similarly, number of members of the remuneration committee and percentage of directors on the audit committee that are independent directors are positively associated with firm market value ( $\beta_3 = 0.126$ , t-value = 1.89;  $\beta_3 = 0.497$ , t-value = 1.98 respectively). Independence enables the committee members to discharge their duties in the best interest of all shareholders. These duties include overseeing the financial reporting and disclosure process, monitoring choice of accounting policies and principles, overseeing hiring, performance and independence of the internal and external auditors, monitoring the internal control process, discussing risk management policies and practices with management, and oversight of regulatory compliance, ethics, and whistleblower activities. All these functions are vital to the long-term sustainability of the business. Market value-enhancing effects of having independent board directors attempting to reduce agency conflicts are consistent with the agency theory of corporate governance. The results highlight the gravity of independence of the board as the magnitude of the value-enhancing effect of percentage of independent directors on the audit committee is larger than that of number of independent directors on the remuneration committee, which in turn is larger than that of the number of members of remuneration committee.

In summary, our findings are largely consistent with the literature on the beneficial effects of good ESG practices. However, thus far we do not find evidence suggesting higher environmental performance has a direct beneficial impact on market value. Our finding found no supportive evidence for Hypothesis 1. This finding of the lack of value-enhancing effect of environmental factors worth further exploration in future research. On the other hand, we found supportive evidence for Hypothesis 2. Better social performance increased firm market value. Finally, we also detected supportive evidence for Hypothesis 3, since good company governance practices seemed to have positive significant impact on firm market value. The findings reveal that companies having better social and governance performance are trading at a premium.

## Conclusion

This study is limited by the scope of investigation. Mainly companies in the Nordics are included in this study and there could be a country-wise or regional differences in how extra-financial information affects firm market value. Also, investors in different parts of the world may hold different opinions about environmental, social, and governance issues, and their relationship with firm value. Such differences in the value placed upon the importance of environmental, social, and governance performance can be due to regional differences in legal, educational, institutional, and public policy implementations. The financial markets in different parts of the world, however, has become increasingly interconnected through globalization. It could be a matter of time for investors across different markets to realize the importance of environmental, social, and governance performance on the long-term sustainability of business operations. With better ESG performance, firms would enjoy higher customer loyalty, more employee satisfaction, fewer sanctions from government, labour unions, and consumer-advocacy organizations, lower cost of capital, better financial performance, and higher valuation. Even though efforts made on environmental, social, and governance initiatives may carry their initial costs, these expenditures should be short-term compared with the gain to the overall profitability and sustainability of the firm over a long horizon.

## References

- Akerlof, G. (1982). Labor Contracts as Partial Gift Exchange. *The Quarterly Journal of Economics*, 97(4), 543–569.
- Aouadi, A., & Marsat, S. (2018). Do ESG Controversies Matter for Firm Value? Evidence from International Data. *Journal of Business Ethics*, 151(4), 1027–1047.
- Barth, M. E. and McNichols M. F. (1994) Estimation and market valuation of environmental liabilities relating to superfund sites, *Journal of Accounting Research*, 32 (Supplement), pp. 177–209.
- Bebchuk, L. A., & Cohen, A. (2005). The costs of entrenched boards. *Journal of financial Economics*, 78(2), 409–433. <https://doi.org/10.1016/j.jfineco.2004.12.006>
- Berthelot, S., Coulmont, M., & Serret, V. (2012). Do Investors Value Sustainability Reports? A Canadian Study. *Corporate Social Responsibility & Environmental Management*, 19(6), 355–363.
- Bird, R., Hall, A., Momente, F., & Reggiani, F. (2007). What corporate social responsibility activities are valued by the market? *Journal of Business Ethics*, 76(2), 189–206.
- Bohyun Yoon, Jeong Hwan Lee, & Ryan Byun. (2018). Does ESG Performance Enhance Firm Value? Evidence from Korea. *Sustainability*, 10(10), 3635.
- Capelle-Blancard, G., & Petit, A. (2019). Every Little Helps? ESG News and Stock Market Reaction. *Journal of Business Ethics*, 157(2), 543–565.
- Cardamone, P., Carnevale, C., & Giunta, F. (2012). The value relevance of social reporting: evidence from listed Italian companies. *Journal of Applied Accounting Research*, 3, 255.
- Core, J. E., R. W. Holthausen and D. F. Larcker (1999). ‘Corporate governance, chief executive officer compensation, and firm performance’, *Journal of Financial Economics*, 51, pp. 371–406.
- Cremers, K., & Nair, V. B. (2005). Governance mechanisms and equity prices. *The Journal of Finance*, 60(6), 2859–2894.

Da, Z., Engelberg, J., & Gao, P. (2011). In search of attention. *The Journal of Finance*, 64(5), 1461–1499.

Daniel, K. and Titman S. (2006) Market reactions to tangible and intangible information, *The Journal of Finance*, LXI(4), pp. 1605–1643.

DellaVigna, S., & Pollet, J. M. (2009). Investor inattention and Friday earnings announcements. *The Journal of Finance*, 64(2), 709–749.

Di Giuli, A., & Kostovetsky, L. (2014). Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics*, 111(1), 158–180.

Doh, J. P., Howton, S. D., Howton, S. W., & Siegel, D. S. (2010). Does the market respond to an endorsement of social responsibility? The role of institutions, information, and legitimacy. *Journal of Management*, 36(6), 1461–1485.

Drake, M. S., Roulstone, D. T., & Thornock, J. R. (2012). Investor information demand: Evidence from Google searches around earnings announcements. *Journal of Accounting Research*, 50(4), 1001–1040.

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, 101(3), 621–640.

El Ghouli, S., Guedhami, O., Kwok, C. C., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking & Finance*, 35(9), 2388–2406.

Engelberg, J., & Parsons, C. (2011). The causal impact of media in financial markets. *The Journal of Finance*, 66(1), 67–97.

Fatemi, A. M., Fooladi, I. J., & Tehranian, H. (2015). Valuation effects of corporate social responsibility. *Journal of Banking & Finance*, 59, 182-192.  
<https://doi.org/10.1016/j.jbankfin.2015.04.028>

Feltham, G. A., & Ohlson, J. A. (1995). Valuation and Clean Surplus Accounting for Operating and Financial Activities. *Contemporary Accounting Research*, 11(2), 689–731.

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *The Quarterly Journal of Economics*, 118(1), 107-156.  
<https://doi.org/10.1162/00335530360535162>

Grinblatt, M., & Keloharju, M. (2001). How distance, language, and culture influence stockholdings and trades. *The Journal of Finance*, 56(3), 1053–1073.

Guenster, Nadja and Bauer, Rob and Derwall, Jeroen and Koedijk, Kees G., The Economic Value of Corporate Eco-Efficiency (September 2011). *European Financial Management*, Vol. 17, Issue 4, pp. 679-704.

Haque, F., & Ntim, C. G. (2020). Executive Compensation, Sustainable Compensation Policy, Carbon Performance and Market Value. *British Journal of Management*, 31(3), 525–546.

Hirshleifer, D., Lim, S. S., & Teoh, S. H. (2009). Driven to distraction: Extraneous events and underreaction to earnings news. *The Journal of Finance*, 64(5), 2289–2325.

Hong, H., & Kostovetsky, L. (2012). Red and blue investing: Values and finance. *Journal of Financial Economics*, 103(1), 1–19.

Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, 93(1), 15-36.  
<https://doi.org/10.1016/j.jfineco.2008.09.001>

Huberman, G. (2001). Familiarity breeds investment. *Review of Financial Studies*, 14(3), 659–680.

Huberman, G., & Regev, T. (2001). Contagious speculation and a cure for cancer: A nonevent that made stock prices soar. *The Journal of Finance*, 56(1), 387–396.

Ionescu, G. H., Firoiu, D., Pirvu, R., & Vilag, R. D. (2019). The Impact of Esg Factors on Market Value of Companies from Travel and Tourism Industry. *Technological & Economic Development of Economy*, 25(5), 820–849.

Ittner, C. D., & Larcker, D. F. (1998). Are Nonfinancial Measures Leading Indicators of Financial Performance? An Analysis of Customer Satisfaction. *Journal of Accounting Research (Wiley-Blackwell)*, 36(3), 1–35.

Ivkovic, Z., & Weisbenner, S. (2005). Local does as local is: Information content of the geography of individual investors' common stock investments. *The Journal of Finance*, 60(1), 267–306.

Johnson, S. A., Moorman, T. C., & Sorescu, S. (2009). A Reexamination of Corporate Governance and Equity Prices. *Review of Financial Studies*, 22(11), 4753–4786.

Kim, C.-S. Corporate social responsibility and firm value. *Korean J. Financ. Stud.* 2009, 38, 507–545.

Kim, Y., Li, H., & Li, S. (2014). Corporate social responsibility and stock price crash risk. *Journal of Banking & Finance*, 43, 1–13.

Krueger, P. (2015). Corporate goodness and shareholder wealth. *Journal of Financial Economics*, 115(2), 304–329.

Landau, A., Rochell, J., Klein, C., & Zwergel, B. (2020). Integrated reporting of environmental, social, and governance and financial data: Does the market value integrated reports? *Business Strategy & the Environment* (John Wiley & Sons, Inc), 29(4), 1750–1763.

Lins, K. V., H. Servaes and A. Tamayo (2017). 'Social capital, trust, and firm performance: the value of corporate social responsibility during the financial crisis', *Journal of Finance*, 72, pp. 1785–1824.

María Mar Miralles-Quirós, Miralles-Quirós, J. L., & Luis Miguel Valente Gonçalves. (2018). The Value Relevance of Environmental, Social, and Governance Performance: The Brazilian Case. *Sustainability*, 10(3), 574.

Michaely, R., Thaler, R. and Womack, K., 'Price reactions to dividend initiations and omissions', *Journal of Finance*, Vol. 50(2), 1995, pp. 573–608.

Ohlson, J. A. (1995). Earnings, Book Values, and Dividends in Equity Valuation. *Contemporary Accounting Research*, 11(2), 661–687.

Ohlson, J. A. (2001). Earnings, Book Values, and Dividends in Equity Valuation: An Empirical Perspective. *Contemporary Accounting Research*, 18(1), 107–120.

Petersen, M. A. (2009) Estimating standard errors in financial panel data sets: comparing approaches, *Review of Financial Studies*, 22, pp. 435–480.

Pinney, C., Lawrence, S., & Lau, S. (2019). Sustainability and Capital Markets—Are We There Yet? *Journal of Applied Corporate Finance*, 31(2), 86–91.

Renneboog, L., Horst, J. T., & Zhang, C. (2008). The price of ethics and stakeholder governance: The performance of socially responsible mutual funds. *Journal of Corporate Finance*, 14(3), 302–322. <https://doi.org/10.1016/j.jcorpfin.2008.03.009>

Semenova, N., Hassel, L. 1950, & Nilsson, H. (2010). The value relevance of environmental and social performance: evidence from Swedish SIX 300 companies. *The Finnish Journal of Business Economics*, 3(10), 265–292.

Tetlock, P. (2007). Giving content to investor sentiment: The role of media in the stock market. *The Journal of Finance*, 62, 1139–1168.



Table 1

This table shows the results from fixed effects regressions regressing firm market value scaled by total asset on a constant, firm book value scaled by total asset, net income scaled by total asset, and an environmental performance variable with and without control for sales growth. The robust standard errors are in parentheses. (\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .)

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
	MV/A	MV/A	MV/A	MV/A	MV/A	MV/A
BV/A	4.336*** (0.698)	1.402*** (0.209)	4.437*** (1.282)	2.489*** (0.833)	4.438*** (1.281)	2.497*** (0.835)
NI/A	4.673 (3.083)	-1.659 (2.876)	4.290 (3.761)	1.515 (3.855)	4.293 (3.759)	1.521 (3.860)
Sales growth	-0.038* (0.022)		0.108 (0.181)		0.108 (0.181)	
Environmental policy and assessment			0.045 (0.186)	0.477 (0.361)		
Disclose targets associated with environmental performance					0.007 (0.076)	0.117 (0.082)
Steps taken to reduce negative environmental impact						
Increased usage of renewable energy						
Constant	-0.563 (0.464)	1.400*** (0.018)	-0.832 (0.887)	0.134 (0.621)	-0.796 (0.934)	0.486 (0.597)
<i>Observations</i>	2384	2416	1824	1845	1823	1844
<i>R</i> <sup>2</sup>	0.389	0.963	0.282	0.283	0.282	0.282
<i>Adjusted R</i> <sup>2</sup>	0.210	0.953	0.281	0.282	0.281	0.280

Table 1 (Continued)

Dependent variable	(7)	(8)	(9)	(10)
	MV/A	MV/A	MV/A	MV/A
BV/A	4.434*** (1.277)	2.498*** (0.833)	4.442*** (1.281)	2.496*** (0.837)
NI/A	4.296 (3.754)	1.530 (3.859)	4.292 (3.761)	1.521 (3.864)
Sales growth	0.108 (0.181)		0.108 (0.181)	
Environmental policy and assessment				
Disclose targets associated with environmental performance				
Steps taken to reduce negative environmental impact	0.051 (0.144)	0.187 (0.183)		
Increased usage of renewable energy			-0.012 (0.054)	-0.024 (0.048)
Constant	-0.832 (0.969)	0.408 (0.622)	-0.786 (0.954)	0.571 (0.601)
<i>Observations</i>	1823	1844	1809	1830
<i>R<sup>2</sup></i>	0.282	0.282	0.282	0.281
<i>Adjusted R<sup>2</sup></i>	0.281	0.281	0.281	0.280

Table 2

This table shows the results from fixed effects regressions regressing firm market value scaled by total asset on a constant, firm book value scaled by total asset, net income scaled by total asset, and a social performance variable with and without control for sales growth. The robust standard errors are in parentheses. (\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .)

Dependent variable	(1)	(2)	(3)	(4)
	MV/A	MV/A	MV/A	MV/A
BV/A	4.431*** (1.280)	2.482*** (0.832)	4.445*** (1.276)	2.501*** (0.840)
NI/A	4.258 (3.754)	1.402 (3.881)	4.300 (3.744)	1.522 (3.857)
Sales growth	0.108 (0.181)		0.111 (0.180)	
Training and education policy	-0.189* (0.111)	-0.292** (0.148)		
Anti-corruption policy			0.292* (0.177)	0.198 (0.163)
Social impact assessments				
Local community development programs				
Constant	-0.637 (0.940)	0.800 (0.609)	-1.044 (1.038)	0.390 (0.693)
<i>Observations</i>	1824	1844	1822	1843
<i>R</i> <sup>2</sup>	0.283	0.284	0.284	0.282
<i>Adjusted R</i> <sup>2</sup>	0.281	0.282	0.282	0.281

Table 2 (Continued)

Dependent variable	(5)	(6)	(7)	(8)
	MV/A	MV/A	MV/A	MV/A
BV/A	4.431*** (1.279)	2.494*** (0.836)	4.436*** (1.276)	2.496*** (0.837)
NI/A	4.308 (3.761)	1.538 (3.859)	4.307 (3.756)	1.527 (3.863)
Sales growth	0.108 (0.180)		0.108 (0.181)	
Training and education policy				
Anti-corruption policy				
Social impact assessments	0.117** (0.058)	0.196** (0.088)		
Local community development programs			0.194** (0.093)	0.148 (0.094)
Constant	-0.833 (0.953)	0.489 (0.607)	-0.896 (0.965)	0.481 (0.614)
<i>Observations</i>	1813	1834	1816	1837
<i>R<sup>2</sup></i>	0.283	0.282	0.283	0.282
<i>Adjusted R<sup>2</sup></i>	0.281	0.281	0.282	0.281

Table 3

This table shows the results from fixed effects regressions regressing firm market value scaled by total asset on a constant, firm book value scaled by total asset, net income scaled by total asset, and a governance performance variable with and without control for sales growth. The robust standard errors are in parentheses. (\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .)

Dependent variable	(1) MV/A	(2) MV/A	(3) MV/A	(4) MV/A
BV/A	4.373*** (1.279)	3.720*** (1.086)	4.235*** (0.845)	2.603*** (0.968)
NI/A	4.721 (4.024)	3.102 (4.085)	2.707 (2.151)	1.731 (4.179)
Sales growth	0.114 (0.186)		1.797 (1.195)	
Major shareholder dependent members of the nomination committee	-0.291** (0.137)	-0.280** (0.140)		
Number of independent directors on remuneration committee			0.135** (0.063)	0.125* (0.072)
Number of members of remuneration committee				
Percent of independent directors on audit committee				
Constant	-0.697 (0.937)	-0.092 (0.710)	-2.841 (1.816)	0.247 (0.767)
<i>Observations</i>	1693	1710	1654	1669
<i>R</i> <sup>2</sup>	0.294	0.350	0.426	0.279
<i>Adjusted R</i> <sup>2</sup>	0.292	0.349	0.424	0.278

Table 3 (Continued)

Dependent variable	(5) MV/A	(6) MV/A	(7) MV/A	(8) MV/A
BV/A	4.099*** (0.819)	2.587*** (0.951)	4.485*** (0.986)	2.582*** (0.969)
NI/A	2.677 (2.124)	1.658 (4.097)	2.567 (2.079)	1.671 (4.165)
Sales growth	1.795 (1.189)		1.907 (1.265)	
Major shareholder dependent members of the nomination committee				
Number of independent directors on remuneration committee				
Number of members of remuneration committee	0.126* (0.067)	0.128 (0.098)		
Percent of independent directors on audit committee			0.497** (0.250)	0.166 (0.181)
Constant	-2.804 (1.848)	0.140 (0.886)	-1.273 (0.829)	0.411 (0.753)
<i>Observations</i>	1703	1719	1638	1655
<i>R<sup>2</sup></i>	0.422	0.278	0.433	0.273
<i>Adjusted R<sup>2</sup></i>	0.420	0.277	0.431	0.271