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Institutional Investors' Influence on ESG Endeavours: *A Study on the Nordic Market*

Bachelor thesis in Finance 15 credits

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Spring 2022

Abstract

This study examines whether institutional ownership has an effect on the ESG performance of firms on the Nordic market. In order to accomplish this, the study uses linear regression analysis. The final dataset which was examined consisted of data on 362 Nordic companies collected in the measurement period of 2011-2020. The results from the main model were ambiguous and it could not be stated with certainty whether or not institutional ownership affects the ESG performance one way or another, or perhaps not at all. However, a sensitivity test which featured each individual pillar of ESG tested against institutional ownership gave significant results, indicating a negative relationship between the Environmental pillar and institutional ownership. This agrees with the theory of sustainable investments as an agency cost. Nonetheless, the main insights provided are that the true nature of the relationship between ESG performance and institutional ownership persists in being elusive on the Nordic markets during recent years as well.

Acknowledgment

We would like to express our utmost gratitude to our supervisor Zelalem Abay for all his guidance and support. His assistance and engagement proved to be invaluable. Further gratitude is also expressed for the advice given by our opponents during the seminars.

Table of Contents

1. Introduction	4
1.1. Background	4
1.2. Problem description and analysis	6
1.3. Purpose	8
2. Theoretical framework	9
2.1. Agency theory	9
2.2. Stakeholder theory	10
2.3. Shareholder activism	11
3. Previous research	13
3.1. Summary of relevant articles and research	13
3.2. Hypothesis development	16
4. Method	17
4.1. The method in general	17
4.2. Model specification	17
4.3. Variable descriptions	18
4.4. Standard errors	19
5. Data	20
5.1. Data collection	20
5.2. Cleaning the data	23
5.3. Descriptive statistics	24
6. Empirical results	27
6.1. Initial model	27
6.2. Final model	29
6.3. Sensitivity tests	30
7. Discussion	34
7.1. The results	34
7.2. The limitations	36
8. Conclusion	38
9. Bibliography	39

1. Introduction

In this introductory chapter, a rather broad background regarding the area of the topic in general is first presented to the reader. This broader background is subsequently followed by a problem description section which is more niched and specific to the thesis' subject. It initially problematises the subject and introduces the reader to the two main theoretical standpoints as regards the herein studied relationship. Then it presents the reader with motivation and justification for this study as well as the research question. Finally, the purpose of the study is defined and clearly stated.

1.1. Background

ESG Investing, also known under other names such as sustainable investing, socially responsible investing and impact investing, has progressed quickly during the recent years. ESG (Environmental, Social and Governance) are criteria that measure and score firms according to their sustainability practices. It is a useful tool for sustainability-aware investors to screen among different investments. The three pillars, environmental, social and governance each examines different aspects of sustainability¹: The environmental criteria display how well the firm manages its production and activities with regards to emissions, pollution, waste, natural resources depletion and more. It also evaluates how well the firm manages environmental risks they might face. The social criteria examines how the firm handles its business relations, for example if it has high regard for worker safety, and how it engages with human rights issues and its social community. Governance score assesses if the firm has sustainable leadership and management that protects shareholder rights and handles conflicts in a sustainable way. There are various different frameworks that report ESG ratings, therefore the exact content and requirements may differ somewhat, but the final score is always a compilation of the three criterias and similar to a credit score.

The idea that betterment of ESG factors can all affect the performance and market value of companies positively is becoming yet more pervasive and accepted. The number of publications detailing observations supporting the idea is ever increasing. For instance, it has been observed that ESG companies' stocks outperform their counterparts in both having less

¹ Sustainable Investing Glossary (no date), *What is ESG?*, Robeco

volatility yet higher returns.² Not surprisingly, an ever increasing number of investors, institutional and retail alike, consider sustainable investing a subject of importance and practice it widely, embracing techniques and approaches that consider ESG factors in their maximising of risk-adjusted returns. ESG investing certainly is becoming more or less mainstream as it is being increasingly integrated and supported through various legislative works and regulations. It is also being spread more widely and equally between diverse age groups, and not solely constrained to the open minds of the environmentally aware youth.³

A common and useful practice that investors apply regarding sustainable investing is that of negative and positive screening. In modern times, it began with religious groups wanting to ensure that their investment portfolios followed ethical practices. They developed instruments to use negative screening to screen away “sin” stocks, id est stocks that dealt with matters such as alcohol, tobacco and gambling. It then continued to expand to more investors and to a broader set of concerns, such as investors divesting from South Africa in the 1980s due to apartheid.⁴ Since then, sustainable investing has become more developed with financial criterias such as CSR (corporate social responsibility) and ESG.

While previous sustainable investing tools have removed “bad” stocks through negative screening, a benefit of ESG is that it also uses positive screening to find the stocks with the best practices in a particular area.⁵ For example, an investor who is concerned about global warming and climate change can use positive screening to find the investment with the lowest carbon footprint, instead of just screening away the firms with the highest carbon emissions. Thus, ESG serves as a tool for investors to have the possibility of rewarding sustainable firms.

Sustainable investment has without a shadow of a doubt come a long way. Since 1995 the value of sustainable assets and investments has increased more than 25 times and this growth has been remarkably consistent but even more hasteful as of recent years, for instance the yearly flow of cash of sustainable funds increased to twice its size between 2019 and 2020

² Kumar et al. (2016), *ESG factors and risk-adjusted performance: a new quantitative model*, Journal of Sustainable Finance & Investment Vol. 6, No. 4, Pages 292–300.

³ Uzsoki (2021), *Sustainable Investing: Shaping the future of finance*, International Institute for Sustainable Development

⁴ Liu (2020), *The history of sustainable investing*, Morningstar

⁵ Collin (2021), *Positive Vs Negative Screening*, FinancialEdge

and by 1000% since 2018.⁶ This growth is also expected to continue consistently in the future years to come. For instance, it is forecasted that an approximate of one third of the total number of global assets under management will be having ESG mandates by the year 2025. The sustainable investment sector is expected to increase more than 400% in the period 2018-2036 as well, which would leave the total global assets included at a value of \$160 trillion.⁷ A significant amount of this growth is expected to be attributed to institutional investors as, for example, 83% of institutional investors located in Europe have stated that ESG investment has increased in importance for them.⁸ It is developments and perspectives such as this that will propel the growth of sustainable finance in the years to come, and with it studies related to the subject will become increasingly and undeniably relevant, if the case is not so already.

Further, it comes as no surprise that the Nordic countries in particular have historically been, and also currently are, at the forefront of the developments and spreading of ESG and Sustainable investing. It is not by happenstance that the Nordic countries are broadly considered the leading nations as regards sustainability. For instance, they are ranked in the top of many major ESG charts and in the SDG Index of 2020, which details the various levels of progress different countries have made towards reaching all 17 SDGs. The five Nordic countries - Sweden, Norway, Denmark, Finland and Iceland - are all in the top.⁹ The Nordic countries have also from a historical perspective maintained a protracted tradition of encouraging development in matters of sustainability together, both nationally as well as internationally. For instance, the United Nations Environment Programme was authored as a consequence of the Stockholm conference in 1972 and the publication of the first Sustainable Regional Development in the Nordic Countries report back in 2001.¹⁰

1.2. Problem description and analysis

With respect to the ever increasing interest of institutional investors pertaining to sustainable investing, a question of certain interest is how the relationship between the ESG score of various companies and the investing patterns of institutional investors expresses itself, or whether such a relationship even exists in the first place. When taking previous research of

⁶ Milinchuk (2021), *The Growth of Sustainable Investing*

⁷ Uzsoki (n 3)

⁸ Uzsoki (n 3)

⁹ Sachs et al (2020), *The Sustainable Development Goals and COVID-19. Sustainable Development Report 2020*, Cambridge University Press.

¹⁰ Scanlon (2020), *Nordics are pioneering the future of ESG*, ESG Investing

the topic into account in order to answer this question, reaching a definitive conclusion proves to be elusive. Namely, the results of various authors differ quite profoundly. As such, there is no unambiguous answer to the posed question at the time of writing this thesis. For instance, Dyck et al find that greater institutional ownership is associated with higher environmental and social scores and they argue that institutional investors actually drive firms to increase their score.¹¹ However, Nofsinger et al imply that investors are by and large driven by economic incentives and use ESG scores as a financial instrument to utilise negative screening and remove firms with bad scores solely because those firms carry more downside risk.¹²

The question is whether there exists a causal relationship and, if so, which variable is the cause and which is the effect. Given that the awareness of sustainability issues is increasing in society, institutional investors, although themselves driven by economic incentives, may be pressured by clients to choose more sustainable investments. Therefore, ESG scores may have an effect on institutional ownership. However, if the relationship points in the other direction, then institutional investors that are themselves socially and environmentally aware will not only choose firms with already higher ESG scores but also be a driving force to improve the sustainability practices of their investments. There is also the possibility that institutional investors have an opposite standpoint to the matter. According to classical economic theory, sustainable activities in a firm are a form of agency cost, and increasing sustainable practices are a value trade-off for shareholders' financial returns.¹³ Investors with the scope of maximum returns should therefore not regard sustainability in their investment decisions. Yet, more recent empirical research¹⁴ challenges this idea and rather suggests that improving sustainability practices is value enhancing for a firm.

So then, does ESG score and institutional ownership have a causal relationship, or is there only correlation? Is there a trade-off for institutional investors to improve the ESG score and thus something they would avoid, or is it rather value enhancing and thus something they

¹¹ Dyck et al (2019), *Do institutional investors drive corporate social responsibility? International evidence*, Journal of Financial Economics, Vol. 131, Issue 3, Pages 693-714

¹² Nofsinger et al (2019), *Institutional investors and corporate social responsibility*, Journal of Corporate Finance, Vol. 58, Pages 700-725

¹³ Friedman (1970), *The Social Responsibility of Business Is to Increase Its Profits*, The New York Times

¹⁴ Friede et al (2015), *ESG and financial performance: aggregated evidence from more than 2000 empirical studies*, Journal of Sustainable Finance & Investment, Vol. 5, Issue 4, Pages 210-233

would embrace? A contribution to the collection of research dedicated to elucidating these questions is what this thesis aims to provide.

We intend to accomplish authoring this contribution through two concepts. Firstly, by approaching these questions from the perspective of the Nordic countries, and using data from companies who originate from these, whereas a significant proportion of other studies into the topic have been approaching it from disparate points of departure. Furthermore we observe said data in a more recent measurement period relative to most previous research. This is of utmost relevance considering the above mentioned rapid development as regards sustainable investing. Withal, certain changes and additions to the model specification compared to those of previous studies, detailed in later sections, is bound to reinforce the contribution further. In summary, our research question is as follows:

Are institutional investors a driving force for ESG development in Nordic companies?

1.3. Purpose

The purpose of this thesis is to contribute towards elucidating how the relationship between the ESG performance of companies and the degree of institutional ownership is expressed. It aims to do this by investigating the hypothesis that institutional investors drive ESG scores upward. This point of departure is something this research shares with Dyck et al and, as will become evident in the sections below, they will serve as an inspiration of sorts in this attempt to provide substantiation regarding the true nature of this relationship. Regardless of whether the results of this thesis arrive at the same conclusion as Dyck et al or not, this research will have satisfied its purpose in providing some form of contribution towards elucidating the relationship whatever shape such a contribution might take.

2. Theoretical framework

Within this section the reader is presented with rudimentary explanations of the economic theory which acts as the foundation for much of the concepts used and analysis performed in the subsequent chapters. This chapter will thus facilitate the reader's understanding of said subsequent chapters. The theories accounted for are that of agency theory, stakeholder theory and shareholder activism and they are described in the order stated here. Note that the terminology of CSR and ESG are used interchangeably in previous research and this is mirrored in this thesis.

2.1. Agency theory

Developed by Jensen & Meckling, agency theory describes the relationship between the so-called principals and agents in a firm, where the principals are the owners and agents the management¹⁵. The focal point is often on the discrepancy of incentives between the firm's shareholders and managers and how this can lead to conflict. Both the principal and the agent seek value maximisation and problems may arise since what is value maximising actions for the agent may not be optimal for the principal, and so the agent might act in a way not in line with the best interests of the principal. This leads to agency costs that follow the hiring of agents, such as monitoring, that large investors can utilise to safeguard their investment.¹⁶

It has been debated whether engagement in CSR/ESG is a form of agency cost. In line with classical agency theory, Milton Friedman argued that sustainable activities are simply selfish ways for the management to build up their public image at the cost of the shareholders.¹⁷ In agreement with this view, Barnea & Rubin¹⁸ argues that managers have an interest to over-invest in sustainability activities, possibly at the cost of shareholders, to obtain private benefits of good social reputation.

¹⁵ Jensen & Meckling (1976), *Theory of the firm: Managerial behavior, agency costs and ownership structure*, Journal of Financial Economics, Vol. 3 Issue 4, Pages 305-360

¹⁶ Jensen & Meckling (n 15)

¹⁷ Friedman (n 13)

¹⁸ Barnea & Rubin (2010), *Corporate Social Responsibility as a Conflict Between Shareholders*, Journal of Business Ethics Vol. 97, Pages 71-86

However, other studies suggest that sustainable practices are actually value enhancing rather than agency costs. Li et al¹⁹ argues that if managers would have an interest in over-investing in CSR activities, then those activities would increase with more CEO power. Their empirical tests show to the contrary that engagement in CSR activities are negatively correlated with CEO power and also that firm value increases with more sustainable activities. The conclusion is shared by Jo & Harjoto²⁰, who also find that engagement in CSR activities positively affects financial performance. They provide support for the conflict-resolution hypothesis, that managers engage in sustainability activities to resolve conflicts among the firm's stakeholders, rather than the argument of over-investment as an agency cost.

2.2. Stakeholder theory

This theory delves deeper into who dictates a firm's actions. The usual contrast is between managers and shareholders, managers are employed to direct with regard to the shareholders who hold portions of the firm and can influence with their voting rights. But a firm's actions may and often do affect other groups than the shareholders themselves. To better identify all the different groups that have a stake in the firm, this theory refers to stakeholders. Stakeholders can be defined as groups that are affected by and/or may affect the firm's decisions and practices.²¹ Thus, stakeholders are those that carry an interest in the firm and its activities. In a firm there may be many individual stakeholders that have different opinions on how the activities should be conducted.

With regards to socially responsible investing, it was previously assumed that socially responsible stakeholders had an adverse relationship with the firm's profit maximisation goals, and thus they were omitted from the early literature of stakeholder theory.²² Social responsibility literature has therefore contributed to broadening stakeholder analysis and illuminating managers on the importance of building relationships.

According to traditional economic theory, the purpose of the firm's existence is to generate profit to the shareholders. Stakeholder theory views profit maximisation as a part of the entire

¹⁹Li et al (2016), *CEO Power, Corporate Social Responsibility, and Firm Value: A Test of Agency Theory*, International Journal of Managerial Finance, Vol. 12, Pages 611-628

²⁰Jo & Harjoto (2012), *The Causal Effect of Corporate Governance on Corporate Social Responsibility*, Journal of Business Ethics, Vol. 106, Pages 53-72

²¹Carroll & Buchholtz (2016), *Business & society: Ethics and Stakeholder Management*, Page 72

²²Freeman et al (2010), *Stakeholder Theory: The State of the Art*, The Academy of Management Annals, Vol. 3, Pages 403-445

scope of the firm. The firm is embedded in a larger social context and its actions affect people in more ways than monetary. Though this does not necessarily mean an adverse relationship. There are several studies in stakeholder theory that suggest that the corporation should generate additional value and increase profits by regarding and satisfying its stakeholders. In his article “Stakeholder theory: The State of the Art” Freeman summarises some of these studies that highlight the benefits that stakeholder management can have on financial performance for a firm.²³ By maintaining mutually beneficial stakeholder relationships the firm can enhance its wealth creating capacity, create greater organisational flexibility as well as enhanced adaptability through effective management of multilateral contracts. Strong and healthy stakeholder relationships makes the firm more attractive in the marketplace by earning great reputation, avoids potential negative outcomes and reduces transaction costs by increased trust. Also, having a larger business relationship network results in greater competitive advantage and makes stakeholders more likely to reveal valuable information that can increase efficiency and innovation. There lies therefore value for a firm to listen to its stakeholders, not only investors as shareholders but as stakeholders as a whole, including both present and potential investors.²⁴

2.3. Shareholder activism

The role of shareholder activism stems from the conflict of interests between managers and shareholders. By exercising their right as partial owners, shareholder activists seek to influence the company’s behaviour on certain matters. Even though they may not be majority shareholders there still exists different methods to pressure the board and other stakeholders for changes.

Reasons for shareholder activism can be corporate raiding, wanting to return the company to the path to profitability or seeking responsibility for social issues. The last part being the reason that investors push firms toward improving their ESG score. With regard to influencing firms on ESG policies, institutional investors can use the method of Exit and Selection or Voice to make an impact. Exit and selection involves investors using negative screening to sort out firms with low ESG scores when considering their investment options, thus accounting for social responsibility in their selection. It also involves investors using the threat of exiting the firm, if they do not improve their practices. Investors can also use their

²³ Freeman et al. (n 20)

²⁴ Freeman et al. (n 20)

Voice as a method to influence the firm, which seems to be more of the investors preference according to theoretical literature. Voice can either be used publicly, such as through shareholder proposals or voting, or privately through private channels between investors and firms. Studies show that private behind-the-scenes discussions are the most common engagement investors use and could be the most effective type of shareholder activism.²⁵

²⁵ McCahery et al. (2016), *Behind the Scenes: The Corporate Governance Preferences of Institutional Investors*, The Journal of Finance, Vol. 71, Pages 2905-2932

3. Previous research

In this chapter the reader is first presented with a summary of relevant articles and research. These are fundamental to this thesis and to the two main theoretical standpoints as regards the topic of study presented throughout the thesis. Based on this summary, the reader is then presented with a section that details the development of the hypothesis investigated herein.

3.1. Summary of relevant articles and research

The body of literature that investigates the relation between institutional ownership and firms' ESG/CSR-endeavours have reached different and somewhat conflicting conclusions. They also differ in their point of departure regarding the direction of causality. Either that investors simply utilise screening and choose investments based on the firms' ESG-score, or that they are actively trying to improve the practices of the firms they invest in. While some papers suggest that institutional investors carry an interest and influence the firm to improve its ESG-related policies, others find that the shareholders seem to be averse or indifferent to high ESG-scores. These conflicting inferences reflect the debate within agency theory, of whether ESG-matters is to be seen as an agency cost for investors or as value enhancing for the firm and therefore a preference.

In line with the former view of ESG/CSR-matters as agency cost, Borghesi et al²⁶ find that firms with greater percentage of institutional ownership are less likely to invest in CSR and that firms that are subjected to greater scrutiny from institutional investors have lower CSR investments. Fernando et al²⁷ focuses on ranges of environmental scores and find that institutional investors are hesitant to invest in both firms with low scores and those with high scores, rather preferring firms with neutral environmental scores. They argue that firms with low scores are less attractive to investors since they have a higher risk exposure connected to their environmental profile with potential future costs such as litigation and penalties that can lower investor returns. Additionally, they find that investors that are unconstrained by social norms also shun firms with high scores which suggests that high 'greenness' does not increase shareholder value. On norm-constrained investors however, they find no significant effect whereby they suggest that penalties for deviating from social norms play a larger role

²⁶ Borghesi et al (2014), *Corporate Socially Responsible Investments: CEO altruism, reputation and shareholder interests*, Journal of Corporate Finance, Vol. 26, Pages 164-181

²⁷ Fernando et al (2017), *Corporate Environmental Policy and Shareholder Value: Following the Smart Money*, The Journal of Financial and Quantitative Analysis, Vol. 52 No.5, Pages 2023-2051

in their decision-making, in line with stakeholder theory. Chava²⁸ also shows that firms with worse environmental profiles have lower institutional ownership and have fewer banks participating in their loan syndicate. Lenders also charge a significantly higher interest rate to firms with environmental concerns. His findings suggest that bad environmental profiles impact the firm's cost of capital. In agreement with Chava and Fernando et al, Nofsinger et al find that institutional investors avoid firms with low environmental and social scores. Though in contrast with Fernando et al their results show that investors are indifferent to high scores and thus have asymmetric preferences to environmental and social issues, and that the pattern is stronger for institutions with longer time-horizon. Nofsinger et al argue that the pattern is driven by economic incentives, bad scores reflect downside risks in the form of higher stock return skewness and probability of eventual bankruptcy and delisting. They discuss that professional investment managers would not likely pursue social objectives at the expense of economic considerations and that the managers at large consider ESG/CSR information as financial material for investment performance, information they use predominantly to determine investment risk and not for ethical motives. Consequently, by use of negative screening institutional investors minimise their exposure to negative idiosyncratic event risk and firms that may have lower long-term returns because of high probabilities of adverse social events such as litigation expenses and reputational damage.

As for the view of ESG as value enhancing, Dimson et al²⁹ analyse CSR engagements and find that successful engagements are followed by positive abnormal returns in the firm yet no adverse reaction for unsuccessful engagements. The firms of successful engagements experience increased institutional ownership, as well as improved governance and accounting performance. They also test for a reverse causality explanation, the possibility that an increase in the firms' stock price triggers CSR-changes, but find no evidence supporting it. Gloßner³⁰ find that longer investor horizon leads to significantly more CSR, though the effect is moderated by large blockholders that exhibit negative relation to CSR. Hoepner et al³¹ demonstrate that engagement in ESG issues, especially environmental issues such as climate change, reduces firms' downside risks and can thus bring value to the business. Dyck et al³²

²⁸ Sudheer Chava (2014), *Environmental Externalities and Cost of Capital*, Management Science, Vol. 60, No. 9

²⁹ Dimson et al (2015), *Active Ownership*, The Review of Financial Studies, Vol. 28 Issue 12, Pages 3225-3268

³⁰ Gloßner (2019), *Investor Horizons, Long-term Blockholders, and Corporate Social Responsibility*, Journal of Banking & Finance, Vol. 103, Pages 78-97

³¹ Hoepner et al (2022), *ESG Shareholder Engagement and Downside Risk*, European Corporate Governance Institute - Finance working paper No. 671/2020

³² Dyck et al (n 11)

examines whether institutional investors drive firms to increase their corporate social responsibility, and not just choose investments in firms with already established high environmental and social profiles. They find that greater institutional ownership is associated with higher E&S (environmental and social) scores, with the results being statistically significant. To further explore this and support their findings with causal interpretation, they conduct a quasi-natural experiment by studying the effects of the 2010 BP Deepwater Horizon oil spill. They argue that firms with greater institutional ownership at the time of the shock would react stronger to improve their E&S performance, if investors have a causal effect on the firms by pushing them to adopt broader environmental policies. The experiment showed that firms with greater institutional ownership did increase their environmental score to a larger degree than firms with less institutional investors, but not the social scores. Chen et al³³ also conduct quasi-natural experiments and find that higher level of institutional ownership leads to better CSR ratings and reduces issues connected to bad CSR-practices. Issues that might lead to lawsuits or penalties due to unsafe workplaces or non-compliance with environmental regulations. In addition, they find that investors use CSR-related proposals to influence firms, in accordance with the shareholder activism theory of ‘voice’.

Dyck et al discusses motivations that investors have for E&S improvement. Either financial, social or a combination of both. Financial motivations can be product market differentiation or as a form of insurance against event risk. Social motivations can influence investors because of social pressures by their community to live up to norms and ideals. Following these norms can bring utility to investors, but can also cause them to overinvest in E&S performance in a level that exceeds the level of maximum financial return. They perform additional cross-sectional tests across countries ranked by high or low social norms, and find that institutional investors from high social norm areas have a significant effect on firms E&S performance while investors from low social norm areas do not. Lastly, they replicate the analysis on US firms and find that domestic investors do not have a significant impact on firms E&S performance. However foreign investors from high social norm areas do, in line with their previous tests.

³³ Chen et al (2020), *Institutional Shareholders and Corporate Social Responsibility*, Journal of Financial Economics, Vol.135 Issue 2, Pages 483-504

3.2. Hypothesis development

Following the discussion of Dyck et al regarding social norms and their findings that investors from high social norm areas have an effect on firms' E&S scores, as well as the findings of Fernando that social norms play a larger role in the decision making of norm-constrained investors, it is fairly reasonable to believe that institutional investors on the Nordic markets should have an effect on the ESG-score of Nordic companies. As stated in the introduction, the Nordic countries are at the forefront of ESG investing and they are considered leading nations on sustainability. It should then be theoretically reasonable to assume that institutional investors have an effect on the ESG scores of the companies in our dataset. However, a similar line of arguing can naturally be established based on other studies mentioned above but for the purpose of this study we chose to investigate the former. Therefore, the null hypothesis that will be tested through the regressions below is the following:

H_0 : Institutional ownership has no effect on ESG score.

4. Method

In this chapter the reader is first presented with general information about the method used herein. Thereafter, the specification of the selected model(s) is detailed and abbreviations are explained. Following that, the reader is presented with detailed variable descriptions as well as motivations as to why the specific variables in question were selected to be a part of the chosen model(s). Subsequently, a short section elaborating on the matter of standard errors is also presented.

4.1. The method in general

To reiterate, the purpose of this research is to investigate the possible effect institutional ownership has on companies' ESG performance and we use a linear regression model in order to do this. The best linear prediction is estimated by Ordinary Least Squares (OLS) and in so doing the first four OLS assumptions are assumed to hold. Specifically these are the functional form, exogeneity, full rank and random sampling assumptions. Note that homoscedasticity is not assumed and thus heteroscedasticity will be allowed and naturally robust (clustered) standard errors are calculated as a consequence. The collected data sample (see below) is entered into STATA in order to execute the regression analysis.

4.2. Model specification

The selected template model has the following specification:

$$ESG_{i,t} = \beta_0 + \beta_1 IO_{i,t-1} + \beta_j CV_{i,t-1} + F + \varepsilon_{i,t}$$

where $ESG_{i,t}$ is the dependent variable consisting of the ESG score of firm i at year t which acts as the proxy for ESG performance, β_0 is the intercept, $IO_{i,t-1}$ is the independent variable and consists of the one year lagged value of the percentage of Institutional Ownership in firm i , $CV_{i,t-1}$ is a set of values for a group of firm-level control variables of firm i in year $t-1$, F is a combination of zero to three (see the various regressions below) of the following: the one year lagged fixed effects of the the industry as well as country of origin of firm i in addition to the year fixed effects, and finally $\varepsilon_{i,t}$ represents the unobserved component of the model.

4.3. Variable descriptions

We lag the independent variable, i.e. percentage of institutional ownership, with the reasoning that institutional investors that engage with company directors to improve the firms' ESG policies are most likely to do so through discussion.³⁴ This kind of persuasion takes time and therefore the effects of an increased or decreased influence from institutional investors will be reflected in the ESG score with some delay. Naturally, the magnitude of this delay is not constrained such as to necessarily materialise as a one year period. This topic, regarding the exact nature of this delay, is further investigated under section 6.

As regards the firm-level control variables included in the $CV_{i,t-1}$ variable, we first control for firm size by using the natural logarithm of the respective firm's total assets as a proxy. We do this with the reasoning that since larger firms are exposed to more external pressure as expectations regarding the sustainable practices of such a firm will be stricter, it is reasonable to assume that such firms would have a higher ESG score on average.³⁵ Further, Hong et al has previously found the environmental and social aspects of ESG score to be correlated with financial slack, potentially due to that firms with less strict financial slack have more leeway to pursue improvements regarding sustainability and would thus have higher ESG scores on average, or as Hong et al puts it "firms are more likely to do good when they do well".³⁶ Consequently, we control for the circumstances regarding the firm specific credit availability through the tangibility of the specific firm's assets, in addition to the leverage ratio of the firm. Likewise, we control for performance and profitability aspects by using return on assets. Furthermore, we also control for the volatility of the firm's stock as previous research has found a significant relationship between stock volatility and the ESG score of a firm in that firms whose stocks have low volatility tend to also have higher ESG scores on average.³⁷

As regards the fixed effects, where it is relevant (see the various regressions below) the firm specific industry and country of origin with respect to the company in question are both controlled for. This is done with the reasoning that the conditions relevant to ESG matters will differ across industries as well as countries and as such this variation in ESG score as a result of these differences need to be controlled for. In certain regressions the year fixed

³⁴ McCahery et al. (n 25)

³⁵ Dyck et al. (n 11)

³⁶ Hong et al. (2012), *Financial Constraints on Corporate Goodness*, NBER Working Paper No. 18476

³⁷ Sloggett (2016), *A Practical Guide to ESG Integration for Equity Investing*, Principles for Responsible Investing

effects are also controlled for because of the year to year differences in the underlying economic circumstances.

While inspiration is taken from Dyck et al in using tangibility of assets, log of total assets, profitability and leverage for firm-level control variables³⁸, there is deviation in that this model uses return on assets instead of Tobin's Q because previous research into the topic indicates that the relationship between Tobin's Q and ESG score is of insignificant importance, while also indicating that the relationship between return of assets and ESG score is of significant importance.³⁹ Further difference is found in that the firms' stock volatility is also controlled for, which is something the model of choice in Dyck et al does not.

4.4. Standard errors

As regards the standard errors of the regressions, since it is reasonable to assume that there will be time-variant serial correlation between the observations for each company, all regressions done in the scope of this thesis are done with clustered (on the firm level) standard errors to account for this likely serial correlation.

³⁸ Dyck et al. (n 11)

³⁹ Barbarić (2021), *ESG scores and financial performance of Swedish-listed companies – Is there a link?*, Jönköping University

5. Data

In this chapter the reader is first presented with an elaboration regarding the data collection process and various intricacies related to it as well as motivation for the chosen measurement period in addition to a table which details variable names, definitions, database from which they were retrieved and variable codes. The reader is then presented with an account for the data cleaning process which is subsequently followed by various relevant descriptive statistics.

5.1. Data collection

Our data sample was collected from a combination of the Refinitiv Eikon, Datastream and Bloomberg databases. We started with 565 firms from Refinitiv Eikon while filtering for companies whose headquarters were located in the Nordic countries and who had reported an ESG score. Data regarding the percentage of institutional ownership was not available in Refinitiv Eikon and was instead collected from Bloomberg. The firm level control variables were all retrieved from Datastream with the exception of the volatility and the return on assets which was retrieved from Bloomberg and Refinitiv Eikon respectively. The country and industry fixed effects were both acquired from Refinitiv Eikon.

The final sample takes the cross-sectional time-series (panel) data type and consists of data for 362 Nordic (Swedish, Norwegian, Danish, Finnish and Icelandic) companies. The data details the companies' ESG score, percentage of institutional ownership and values for various firm level control variables (see above) during the period 2011-2020 (lagged period 2010-2019 for independent variable and control variables) measured once per year. Thus each company will contain a maximum of ten observations for each variable in each respective year in the measurement period. Regarding the exact names, definitions and eventual codes of the variables that were collected see Table 1 below.

When collecting data for institutional ownership, the option was available to collect data for A-shares or B-shares of the company's stock. We primarily collected A-shares on the reasoning that engaging investors are more interested in A-shares that include greater rights than B-shares. We collected B-shares for those companies that did not have available public data on A-shares. Furthermore, in a few companies the founder holds all the A-shares resulting in investors potentially seeking to influence the management are holding B-shares.

Regarding the reason why we chose to have our data sample only consist of data from Nordic companies in addition to having the specific measurement period 2011-2020. The former is, as mentioned in the introductory section of this thesis, because the Nordic countries are leaders when it comes to matters of sustainability it should be reflected in their ESG scores. Further, according to Dyck et al⁴⁰ investors from high social norm countries have an effect on the environmental and social performance of companies. Also, in most previous research within the subject the usage of non-Nordic data is essentially ubiquitous and as such we reasoned that using Nordic data could broaden the perspective and assist the thesis in providing further value. Regarding the latter, that specific period was chosen to avoid interference in the economic circumstances of the global financial crisis in one end of the period and the outbreak of Covid-19 in the other, capturing a less turbulent time period that was not as affected by crises, which is beneficial in regards to preserving the representativeness of the study.

Table 1: Variable names, definitions and relevant codes

Variable	Variable definition	Variable name (code)
ESG	Refinitiv ESG Score is an overall company score based on the self-reported information in the environmental, social and corporate governance pillars. (Collected from Refinitiv Eikon)	ESG Score (TR.ESGScore)
Institutional Ownership (IO)	Measured as a percentage (Collected from Bloomberg)	EQY_INST_PCT_SH_OUT
Firm size (Total Assets, TA)	Total Assets represent the sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets. (Collected from Datastream, measured in Euro)	Total Assets (WC02999)
Return on assets (ROA)	This value is calculated as the Income After Taxes for the fiscal period divided by the Average Total Assets and is expressed as percentage. Average Total Assets is the average of Total Assets at the beginning and the end of the year. (Collected from Refinitiv Eikon)	ROA Total Assets, Percent (TR.ROATotalAssetsPercent)

⁴⁰ Dyck et al. (n 11)

Variable	Variable definition	Variable name (code)
Leverage ratio (TDTE)	Defined as (Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) / Total Capital + Short Term Debt & Current Portion of Long Term Debt) * 100 (Collected from Datastream)	Total Debt % Total Capital (WC08221)
Tangibility	Manually created and defined as Property, Plant and Equipment (net) divided by Total Assets Property, Plant and Equipment (net) represents Gross Property, Plant and Equipment less accumulated reserves for depreciation, depletion and amortisation. For Total Assets definition, see Firm Size. (Components collected from Datastream)	Property, Plant and Equipment (net) (WC02501) Total Assets (WC02999)
Volatility	(Collected from Bloomberg)	Volatility_360D
Country fixed effect	Country Code for Organisation Headquarters, ISO 3166 standard. Also known as Country of Domicile. (Collected from Refinitiv Eikon)	Country ISO Code of Headquarters (TR.HQCountryCode)
Industry fixed effect	Primary Global Industry Classification Standard (GICS) Sector Code. GICS classifies companies with increasing granularity by Sector, Industry Group, Industry and Sub-Industry. (Collected from Refinitiv Eikon)	GICS Sector Code (TR.GICSSectorCode)
Environmental Pillar	The environmental pillar measures a company's impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems. It reflects how well a company uses best management practices to avoid environmental risks and capitalise on environmental opportunities in order to generate long term shareholder value. (Collected from Refinitiv Eikon)	Environmental Pillar Score (TR.EnvironmentPillarScore)

Variable	Variable definition	Variable name (code)
Social Pillar	The social pillar measures a company's capacity to generate trust and loyalty with its workforce, customers and society, through its use of best management practices. It is a reflection of the company's reputation and the health of its licence to operate, which are key to factors in determining its ability to generate long term shareholder value. (Collected from Refinitiv Eikon)	Social Pillar Score (TR.SocialPillarScore)
Governance Pillar	The governance pillar measures a company's systems and processes, which ensure that its board members and executives act in the best interest of its long term shareholders. It reflects a company's capacity, through its use of best management practices, to direct and control its rights and responsibilities through the creation of incentives, as well as checks and balances in order to generate long term shareholder value. (Collected from Refinitiv Eikon)	Governance Pillar Score (TR.GovernancePillarScore)

Table 1 details the variable names, variable definitions, the database from which the variable was retrieved and the variable code. For a source to the names, codes, and definitions see which database the variable was retrieved from.

5.2. Cleaning the data

From the initial sample of 565 firms, the dataset was cleaned by removing all firms that did not contain data on ESG score or percentage of Institutional Ownership for at least one year in the selected time period, in order to keep only relevant observations. A subset of the dataset was then winsorized at the 1 percent level, changing the data points above the 99th percentile and below the 1th percentile to their nearest extreme value, in order to remove extreme outliers that might affect the results and damage the validity of the conclusion. The variables that were winsorized were the independent variable institutional ownership and the control variables which had the most extreme outliers. Before winsorization some data points in Institutional ownership were over 100 percent, which is impossible, likely because of

inconsistencies in the database connected to delay in updates or short selling.⁴¹ Thus, by winsorizing the dataset it helped to create a better distribution that presents a fairer view.

5.3. Descriptive statistics

Our dataset contains 362 companies in total. 183 of which are Swedish, 60 are Finnish, 59 are Norwegian, 56 are Danish and finally 4 are Icelandic. Below there is a table and a set of figures to provide further in depth descriptive statistics. Table 2 covers a general summary of various statistics related to the dependent and independent variables as well as the controls used in the regressions. It covers the number of observations, the mean, the standard deviation as well as the minimum and maximum value observed for the variable in question. For explanations of the abbreviations, as well as other information about the variables themselves, see Table 1 above. Table 2 details these statistics for both pre- and post-winsorised versions of the variable where relevant. That a variable has been winsorised is portrayed with a “w” before the name of the variable. Figure 1, Figure 2 and Figure 3 below show a histogram of the number of observations collected from each country, GICS industry sector, or year in the measurement period respectively, with regards to the dependent variable.

⁴¹ Loth (2021), *How Can Institutional Holdings Be More Than 100%?*, Investopedia

Table 2: Summary of various statistics for the variables pre- and post-winsorisation.

Descriptive Statistics					
Variable	Obs	Mean	Std. Dev.	Min	Max
ESG	1577	53.486	19.3	1.34	93.331
IO	2871	48.895	26.525	0	147.131
TA	3245	10349028	52016845	416	7.189e+08
ROA	3108	2.437	24.392	-608.747	82.793
TDTE	3241	36.116	28.531	0	685.05
Tangibility	3245	.223	.256	0	.995
Volatility	2787	35.711	21.388	12.484	416.268
wIO	2871	48.793	26.28	.003	100.874
wTA	3245	8685312.5	36494936	3236	2.787e+08
wROA	3108	3.003	15.097	-78.844	37.042
wTDTE	3241	35.526	24.447	0	97.35
wTangibility	3245	.223	.256	0	.979
wVolatility	2787	35.138	16.293	15.496	112.717

Table 2 details, for each variable, the total number of observations, the mean of the observations, the standard deviation, as well as the minimum and maximum observed values for the specific variable, both pre- and post winsorisation where relevant. That a variable has been winsorised is displayed by a “w” before the variable's abbreviation. For explanations of the abbreviations and definitions of the variables, the reader is referred to Table 1.

Figure 1: Number of observations based on country

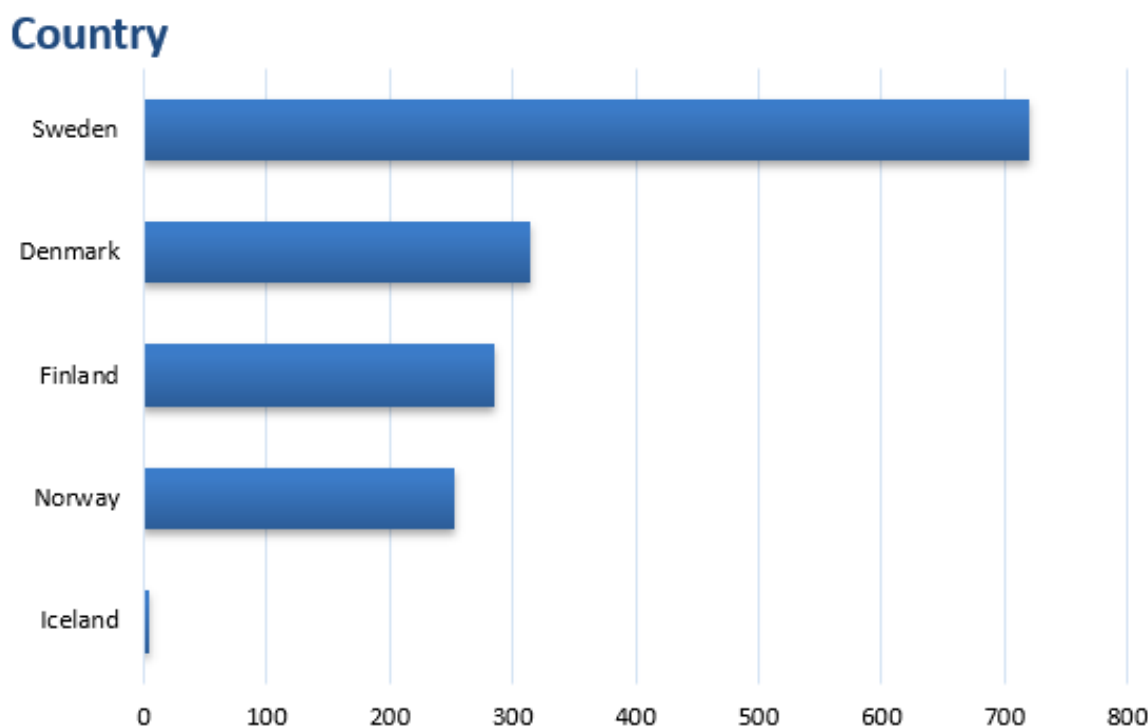


Figure 1 details the number of observations collected from each country with regards to ESG Score.

Figure 2: Observations based on GICS Sector

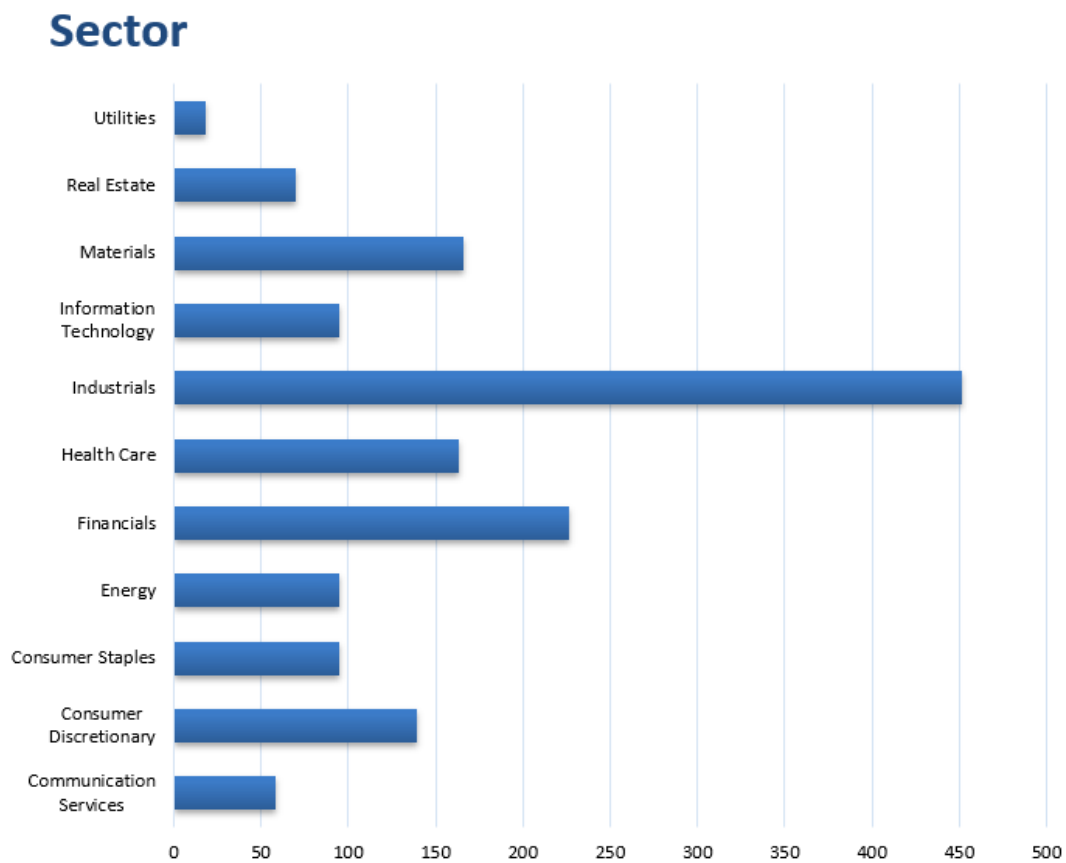


Figure 2 details the number of observations collected from each GICS sector with regards to ESG Score.

Figure 3: Number of observations based on year

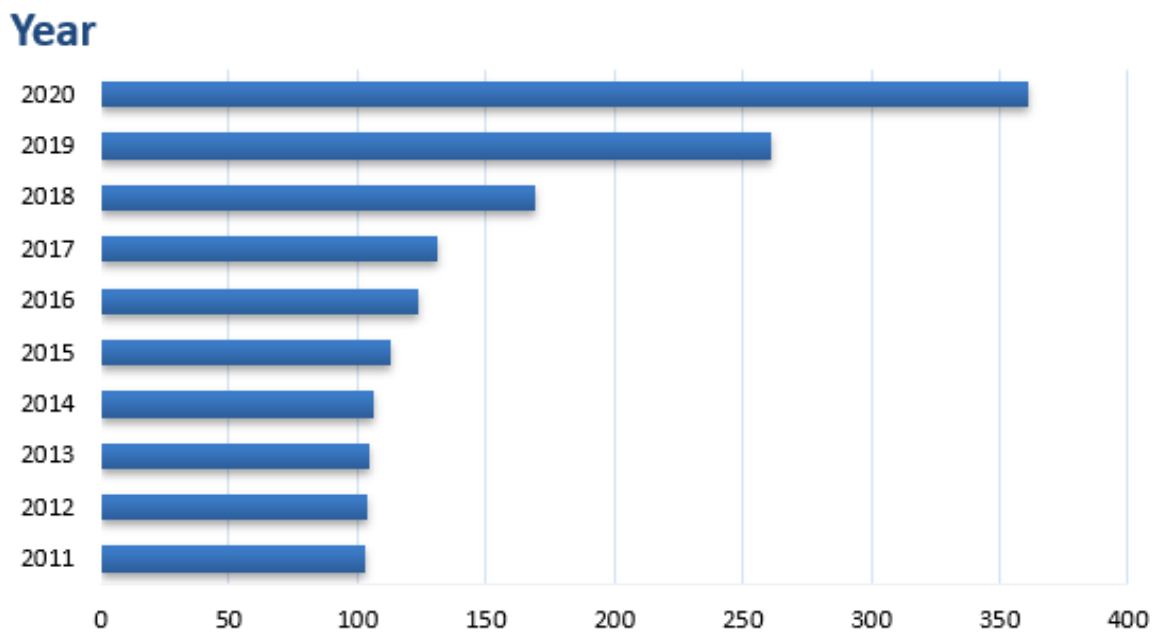


Figure 3 details the number of observations collected from each year with regards to ESG Score.

6. Empirical results

In this chapter the reader is first presented with a section detailing the initial model used prior to any tests as regards the suitability of said model being performed. Thereafter, said tests and their results as well as subsequent conclusions are accounted for and the reader is presented with the final model, being brought about as a consequence of said conclusions. Succeeding that is a section accounting for various sensitivity tests and comparative analysis.

6.1. Initial model

The regressions were run using a panel data model that captures the variability in time. As mentioned in the method section, the variable institutional ownership, as well as the control variables, is lagged one year to examine if it might affect the future ESG-score. The results are presented in Table 3 below:

Table 3: Regression results from using random-effects models with one year lag

	(1) ESG	(2) ESG	(3) ESG	(4) ESG
Institutional Ownership	.137*** (.024)	.115*** (.023)	.106*** (.022)	.018 (.022)
Total Assets		5.55*** (.515)	7.295*** (.626)	7.505*** (.634)
Return on Assets		.022 (.036)	-.004 (.036)	.012 (.036)
Leverage		-.007 (.035)	.01 (.032)	-.011 (.025)
Tangibility		11.596*** (3.382)	5.026 (4.816)	-1.086 (4.234)
Volatility		-.028 (.044)	-.035 (.048)	-.006 (.046)
_cons	38.35*** (1.645)	-38.453*** (6.703)	-61.824*** (9.871)	-64.821*** (10.284)
CountryFE	No	No	Yes	Yes
IndustryFE	No	No	Yes	Yes
YearFE	No	No	No	Yes
Observations	1556	1510	1510	1510

Standard errors are in parentheses

**** $p < .01$, ** $p < .05$, * $p < .1$*

Column 1 displays the regression results from the random-effects model using only ESG and one-year lagged institutional ownership, column 2 includes the control variables, column 3 includes the control variables and adds the country and industry fixed effects. Lastly column 4 also adds the year fixed effects. All regressions, as stated above in 4.4, were run with standard errors clustered on the firm level. The values reported for Total Assets are those of the natural logarithm of Total Assets. Further, all numbers are rounded to the third decimal.

Both the first and second regression including the control variables find a positive relation that is statistically significant at a significance level of 1%. When adding the country and industry fixed effects variables in the third model, most of the fixed effects input classifications were omitted due to collinearity. The coefficient is slightly smaller at 0.106 but still strongly significant. The fourth model that adds the year fixed effect has a lower coefficient of 0.018 and is no longer significant, even at a level of 10%. To test the importance of using the year fixed effect variable, a PARM test was conducted. The test looks at whether a time fixed-effect is necessary to be included in the model or not. The results of this test concluded that, indeed, the year fixed-effect was necessary to take into account and as such it is included in the final version of the model.

The initial model was run using a random-effects regression model for panel data. The options for panel data models were the default random-effects regression model, a fixed-effects model and a pooled regression model. Pooled regression is used for situations where the variable of interest is time-invariant, which was not relevant in this study considering that the percentage of institutional ownership varies across the measurement period. A Hausman test was performed which detects endogenous regressors in a regression model and aids in determining between using a fixed-effects model or the random-effects model. The test concluded that it could not be stated with statistical certainty that the random-effects estimators would be the better option and thus the fixed-effects option was more appropriate for the model of choice in this study. Thus, the regressions were run again using the fixed-effects model.

6.2. Final model

The results of the regression using the fixed-effects model are presented in Table 4 below:

Table 4: Regression results from using fixed-effects models with one year lag

	(1) ESG	(2) ESG	(3) ESG	(4) ESG
Institutional Ownership	.12*** (.026)	.099*** (.026)	.099*** (.026)	-.009 (.024)
Total Assets		6.882*** (2.511)	6.882*** (2.511)	3.25** (1.433)
Return on Assets		-.012 (.055)	-.012 (.055)	.032 (.043)
Leverage		.022 (.04)	.022 (.04)	.008 (.03)
Tangibility		13.338* (8.055)	13.338* (8.055)	1 (5.254)
Volatility		-.045 (.052)	-.045 (.052)	-.028 (.036)
_cons	46.908*** (1.452)	-56.102 (36.483)	-56.102 (36.483)	-1.811 (21.409)
CountryFE	No	No	Yes	Yes
IndustryFE	No	No	Yes	Yes
YearFE	No	No	No	Yes
Observations	1556	1510	1510	1510
R-squared	.055	.141	.141	.431

Standard errors are in parentheses

**** $p < .01$, ** $p < .05$, * $p < .1$*

Column 1 displays the regression results of the fixed-effects model using only ESG and one-year lagged institutional ownership, column 2 includes the control variables, column 3 includes the control variables and adds the country and industry fixed effects. Lastly column 4 also adds the year fixed effects. All regressions, as stated above in 4.4., were run with standard errors clustered on the firm level. The values reported for Total Assets are those of the natural logarithm of Total Assets. Further, all numbers are rounded to the third decimal.

Using the fixed effects model, the coefficient for the variable of interest in column 1 to 3 have decreased compared to the random-effects model while still being statistically significant. Since most of the country and industry fixed effects were omitted due to collinearity, the coefficients of column 2 and 3 remain the same in this fixed-effects model. In the fourth column the results are, as in the random-effects model, still not statistically significant and the coefficient has been estimated to be slightly negative with a result of -0.009. A brief glance at the first 3 columns suggests an agreement with our hypothesis, an

increase of institutional ownership by one unit would increase the ESG score by 0.099 the subsequent year. However, the full model in column 4 contradicts this by having a slightly negative coefficient, though it is not statistically significant even at a 10% significance level and as such the null hypothesis cannot be rejected with confidence using this model.

As regards the control variables, only total assets and tangibility are statistically significant in the fixed-effects version of model 3 with one-year lag at a 1% and 10% significance level respectively, both having a positive coefficient. Further, the leverage ratio has a positive coefficient while return on assets and volatility have a negative one, though none of them are statistically significant even at a 10% significance level in the same model. In model 4, only total assets display significance at a 5% significance level while all other control variables are insignificant.

Since many of the control variables were insignificant by themselves a series of joint significance tests were conducted to see their value as a group. The joint significance test performed on model 3 rejected the null, and thus the control variables were jointly significant for our third model. For model 4, where the year fixed-effect control was introduced, the null could not be rejected and thus it could not be stated with confidence that the control variables are jointly significant.

6.3. Sensitivity tests

For further thoroughness the same regressions were also run using a balanced version of the dataset used above in order to investigate whether the results would vary or simply remain largely the same. It was observed from the results of those regressions that the case was the latter and that there were no impactful changes when using the balanced dataset compared to the unbalanced one.

Since the amount of time it takes for institutional investors to influence firms is uncertain, a second set of regressions were fit using a two year lag for the variable of interest as well as the control variables. A PARM test was conducted for this model as well, which yielded the same result as the previous one, namely that a year fixed effect is necessary. The results are presented in Table 5 below:

Table 5: Regression results from using fixed-effects models with two year lag

	(1) ESG	(2) ESG	(3) ESG	(4) ESG
Institutional Ownership	.145*** (.023)	.117*** (.022)	.117*** (.022)	-.001 (.02)
Total Assets		7.582*** (1.867)	7.582*** (1.867)	3.588*** (1.349)
Return on Assets		.044 (.029)	.044 (.029)	.064*** (.018)
Leverage		-.007 (.052)	-.007 (.052)	.006 (.033)
Tangibility		-7.67 (10.619)	-7.67 (10.619)	-3.143 (6.424)
Volatility		-.091** (.045)	-.091** (.045)	-.035 (.028)
_cons	45.83*** (1.232)	-59.308** (28.093)	-59.308** (28.093)	-4.587 (20.224)
CountryFE	No	No	Yes	Yes
IndustryFE	No	No	Yes	Yes
YearFE	No	No	No	Yes
Observations	1435	1383	1383	1383
R-squared	.089	.173	.173	.436

Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Column 1 displays the regression results of the fixed-effects model using only ESG and two-year lagged institutional ownership, column 2 includes the control variables, column 3 includes the control variables and adds the country and industry fixed effects. Lastly column 4 also adds the year fixed effects. All regressions, as stated above in 4.4., were run with standard errors clustered on the firm level. The values reported for Total Assets are those of the natural logarithm of Total Assets. Further, all numbers are rounded to the third decimal.

By increasing the lag to a two-year period the coefficients of column 1 to 3 have increased, becoming to a higher degree positive and are still strongly significant, while the coefficient of the full model in column 4 has increased such that it is closer to zero yet is still not significant even at a 10% level. Though the simpler models point to a stronger effect, we cannot reject the null hypothesis with statistical certainty using our full model. As for the control variables, the variable Total Assets is still statistically significant throughout all columns at a 1% significance level. In column 2 and 3 volatility is now significant with a negative coefficient, which agrees with previous findings⁴² and tangibility is no longer significant as in the model with one-year lag. All the coefficients of the control variables have decreased compared with

⁴² Sloggett (n 37)

the one-year lag model, with the exception of Return on Assets which is now positive in column 2 and 3, and in column 4 it is now strongly significant with a coefficient of 0.064.

As the dependent variable used thus far, ESG Score, is a proxy for the true ESG performance it naturally has certain limitations (see 7.2 for further discussion). Thus, for further clarity and added insight as regards the investigated relationship, a proxy of each individual “pillar” of ESG, namely Environmental Score, Social Score and Governance Score (also retrieved from Refinitiv Eikon), were tested against the institutional ownership using the final model, id est the model featured in column 4 of Table 4. The results of those regressions are presented in Table 6 below:

Table 6: Regression results from testing each individual pillar proxy

	(1) Environmental	(2) Social	(3) Governance
Institutional Ownership	-.059** (.029)	0 (.034)	.016 (.031)
Total Assets	3.008 (1.928)	3.868* (1.98)	1.764 (2.095)
Return on Assets	.008 (.058)	.09 (.06)	.027 (.067)
Leverage	.051 (.038)	-.032 (.05)	.039 (.041)
Tangibility	9.678 (7.378)	-1.264 (8.262)	1.319 (8.21)
Volatility	-.048 (.045)	-.03 (.051)	-.041 (.065)
_cons	1.121 (28.739)	-9.337 (28.963)	17.315 (31.701)
CountryFE	Yes	Yes	Yes
IndustryFE	Yes	Yes	Yes
YearFE	Yes	Yes	Yes
Observations	1521	1521	1521
R-squared	.152	.385	.262

Standard errors are in parentheses

**** $p < .01$, ** $p < .05$, * $p < .1$*

Column 1 presents the regression results of testing Environmental Score against Institutional Ownership, column 2 presents the regression results of testing Social Score against Institutional Ownership, and column 3 presents the regression results of testing Governance Score against Institutional Ownership. All tests were performed using the final model, id est the fixed-effects model featuring one-year lag and all the control variables and fixed effects.

While most of the results of these tests were not of much particular insight one result that is indeed insightful is that of the Environmental Score test illustrated in column 1 of Table 6. There the coefficient of Institutional Ownership has been estimated to be of a slightly negative value while also being statistically significant on the 5% significance level. This is of some interest considering the two main theoretical standpoints presented throughout this thesis. For further discussion of this see 7.1. below.

7. Discussion

7.1. The results

The results of our models show that the effect of institutional ownership on firms' regarding ESG is not entirely clear. As can be seen from the tables detailing the regression results above, the random-effects models seem to imply that institutional ownership has a positive effect on ESG score, however the results in column 4 of Table 3 featuring the year fixed effects model are insignificant. Meanwhile, the results from the fixed-effects models are even more ambiguous. The models not featuring the year fixed effects imply the same as the random-effects models but once the year fixed effects are introduced in the later model, the relationship is implied to be slightly negative but also insignificant. This is the case both in the fixed-effects models featuring a one-year lag and those featuring a two-year lag.

Naturally, though, by introducing another control the model is also made more strict, which has both benefits as well as negatives. Controlling for another factor does not necessarily make a model more accurate with respect to portraying the true relationship. However, as per the results of the PARM test mentioned above, a year fixed effect in these models is recommended. Further, it is also important to keep in mind that the Hausman test implies that the fixed-effect models would be more suitable compared to the random-effects models when analysing these ambiguous results.

Our results in the first, less strict, models not including the year fixed effect seem to suggest similar conclusions as drawn by Dyck et al that institutional investors are a driving force for ESG-matters. The effect is stronger for the two year lag when more time is taken into account. These results fit with the theoretical view of ESG being value enhancing for firms as it is something investors pursue, maybe not necessarily for financial reasons but nonetheless something they value in their decision making such as taking into account the majority of stakeholders. As to why the two year lagged institutional ownership results in a stronger positive effect, an argument can be made that the process of investors persuading firm management takes time, perhaps longer than one year depending on for instance the prior sentiment of the management regarding ESG issues or the structure and size of the share ownership of the institutional investors. Previous research has also revealed that the selected method of persuasion is an important factor to the efficiency in affecting management choices. Institutional owners can influence ways such as through voting, media or behind the

scenes discussion, with the latter being most common and effective according to McCahery.⁴³ Depending on the choice of method, investors may have varying rates of success which might be reflected in our results.

In our final stricter model with the year fixed effect, the results are slightly negative, though even less so with two year lag, which seem to be more in line with the view of ESG as an agency cost and something that institutional investors are averse or indifferent to, as per the results of Nofsinger et al. Though our results for that model are insignificant, so we cannot draw the same conclusion for our main model. However, in our additional tests with the separate ESG pillars, the environmental pillar has a stronger negative effect and is significant at the 5% level. This speaks against our initial hypothesis and seems to suggest that institutional investors on the Nordic market during this time period are more likely to view firms' investments in environmental issues as an agency cost. Since this model is also using a lagged independent variable, it implies that the institutional investors act as a regressive force as regards further developments in the environmental sustainability of the firms. A potential explanation for this could be made based on agency theory. Institutional investors may believe that managers of firms decide to make investments towards environmental sustainability on other grounds than that of profit maximising. Thus they may eventually exit such companies which could potentially explain these results, which imply that when institutional ownership decreases, the firm's environmental score increases the subsequent year.

It is also important to note that there are several factors that might be underlying our ambiguous results. Firstly, institutional investors are not a monolithic group. They themselves can have different attitudes and incentives regarding ESG-issues depending on the kind of institution. It is possible that the different findings of previously conducted research is a result of this. Also, while our inspiration Dyck et al found that institutional ownership had a positive effect on firms environmental scores, they purposefully examined turbulent times to examine if investors would react and consider the environmental profiles of their investments. It is possible that since we chose to observe a less turbulent time period, we could not capture the same effect, which would suggest that institutional investors are more likely to consider ESG investment when faced with potential crises. Furthermore, even if the majority of institutions in our sample have an incentive for ESG, our dataset only covers the

⁴³ McCahery (n 25)

total percentage of Institutional ownership for the selected firms, but does not reveal the structure of the number and size of individual institutions. It is reasonable to assume that a large institutional shareholder has a larger chance of influencing the management than a smaller shareholder.

When using the appropriate fixed-effects model, the significance of our results disappear when introducing the year fixed effect variable and the coefficient turns slightly negative. This implies that there are other factors responsible for the change in ESG that are captured by the year variable. As the Nordic countries are leaders of sustainability, and the importance of sustainable assets and investments are growing every year, the awareness and focus on sustainability likely permeates the communities. Thus, there may be many reasons and motivations that are causes of change in ESG. Firms can be pressured by sustainability aware consumers, various laws and regulations or competitors. In the last few years especially, ESG-scores have seen a large increase and even though institutional investors may have played a part in its growth, it cannot with certainty be proven with the models accounting for year fixed effects contained within this study. Despite these circumstances pertaining to ESG Score, the results regarding the Environmental Score are slightly less ambiguous in its significance but they do however contradict our initial hypothesis and instead agree with the theory of ESG as an agency cost which does complicate matters further.

7.2. The limitations

As regards any potential limitations of this study, one quite important but perhaps not as obvious as could be expected is that of the nature of the chosen independent variable, namely the measurement of the institutional ownership. It is rather limited in that it only portrays the state of the percentage of institutional ownership at the end of each year. This means that the variable does not capture eventual variation in the percentage, nor does it capture whether the institutionally owned shares switched hands during the period or if they rather are consistently held by the same investor over a longer period of time. Further, it does not portray whether the institutionally owned shares are held by one or a couple highly invested investors, or if the shares are instead held by more numerous institutional investors, albeit with each individual investor holding a lesser position. As a byproduct of this the intentions of the institutional investors, id est whether they intend to hold the shares for the long-term or if their investment is solely for the short-term, is not portrayed either. Naturally, given the point of departure of this study, the predicament raised above is a rather significant matter to

be aware of. However, as a slight disclaimer, this was not necessarily by choice as it was simply the most appropriate variable that this study had access to. As such, there is of course the possibility that there is a for this study inaccessible database that could contain a more suitable variable for the purpose of capturing the effects of institutional ownership.

Another potential limitation to be aware of is that of the dataset. First of all, the majority of the observations of the dependent variable are collected from the most recent years in the measurement period, where many firms lacked ESG data for the earlier years altogether. Naturally, this implies that the circumstances that were present during those years might not be as represented in the study as they should. Further, the dataset only uses data of public companies that have reported ESG information. Thus private companies, as well as those companies that simply have not reported their ESG information, are not represented in the dataset whatsoever. Also it is important to note that what has been tested is a proxy of ESG performance, id est ESG Score as provided by the Refinitiv Eikon database, and not ESG performance itself. Thus other results may be obtained should one retrieve the proxy from another database or use a completely different proxy altogether.

8. Conclusion

The original aim of this study was to contribute towards elucidating the eventual relationship between ESG score and institutional ownership, as well as answering the research question of whether or not institutional investors are a driving force for ESG development in Nordic companies. However, unfortunately no such definitive statement can be made. Although the initial, less restricted models did agree with our main source of inspiration, Dyck et al, the additional tests proved it not to be so straightforward. Though the variable of interest was inclined to agree with the opposite theoretical view, it cannot support it since the model was no longer statistically significant. The results that were arrived at do not provide any unambiguous statistically significant support for either of the main theories which were presented throughout the scope of this thesis. As such, the chief insights that this thesis has provided the current body of research with is to confirm that the true nature of the eventual relationship between ESG score and institutional ownership indeed does persevere in being elusive and enigmatic even during the most recent years on the Nordic market.

As regards suggestions for further research there is potential in investigating a similar hypothesis while using an independent variable that is more suitable to capture the possible effects of institutional ownership on the ESG scores of various firms, whatever shape such a variable might take. Should such a suitable candidate be found or constructed the true nature of the eventual relationship between ESG score and institutional ownership may yet be elucidated.

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