Blockholding, ownership horizon, and firms' ESG performance: Nordic evidence

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Abstract

This paper investigates whether the size of blockholding and the horizon of blockholding influence firms' environmental, social, and governance (ESG) performance. Using voting and capital share percentages as measures of blockholding in publicly listed firms in the Nordic countries, we find a significant positive relationship between the percentage of voting shares and the ESG performance of the firm. We also provide evidence that long-term ownership, measured by the owner's investment horizon, is positively related to the firms' ESG scores. Further, our results suggest that ownership change in the direction from short-term to long-term positively affects ESG performance.

JEL Classification: G32, G34, M14
Keywords: ESG; Blockholding; Ownership; Long-term ownership; Nordic countries

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1 Introduction

Growing concerns on issues such as climate change and social imbalance have significantly raised public interest in sustainability. Studies have shown that the recent COVID-19 pandemic has further stressed the need to reduce human impact on the environment and reiterate the importance of social intervention and support that ensure inclusiveness and togetherness (e.g., Mao et al., 2021). Investors have intensified efforts to direct investments into firms that align their operations to meet sustainability goals (Krueger et al., 2020). Today, businesses face stiffer demand from stakeholders (consumers, suppliers, employees, investors, and governments) to improve sustainability practices within and outside of the firm (Kolk and Van Tulder, 2010). Thus, the need for business owners to steer firms in the direction of enhanced sustainability performance cannot be underestimated. The owners affect company policies through the board of directors who appoint managers to implement policies that align with the firm's goals (Downs and Sommer, 1999). The impact of investors especially large owners is significant in the efforts of shareholders to influence a firm's ESG performance (Dimson et al., 2021).

The ownership types or structure influencing firm performance has been extensively studied in the literature over the years. For example, Brunzell et al. (2015), classify ownership into long-term and short-term to capture the horizon of owners and investigate the possibility of ownership myopia or short-termism in relation to firm financial performance. Anderson and Reeb (2003), investigate the relation between founding family ownership and firm performance using data on S&P 500 firms, while other studies have predominantly focused on institutional ownership (e.g., Duggal and Millar, 1999; Lin and Fu, 2017). Overall, earlier studies examining ownership influence on firm performance focus on family ownership, public ownership, and particularly institutional ownership (e.g., Ioannou and Serafeim, 2012; Kang and Moon, 2012). Meanwhile, the influence of ownership on a firm's ESG performance has gained more attention. For example, Rees and Rodionova (2015) study the impact of

equity holdings by families on the E, S, and G scores of firms using data from 46 countries over ten years. Wu et al. (2022) examine the moderating role of ownership structure on the relation between a firm's ESG performance and value. Lavin and Montecinos-Pearce (2021) examine the influence of board characteristics and ownership structure on ESG disclosure in emerging markets.

The result on ownership influence on the ESG performance of firms has been mixed. On one hand, studies (e.g., Rees and Rodionova, 2015) found family ownership to be associated with reduced ESG performance, explaining the relationship has evidence that family owners are more keen on maximizing financial wealth against investment in social good. On the other hand, contradictory evidence (see, e.g., Wu et al., 2022) shows that there is a positive relationship between ESG performance and firm value through the moderating role of institutional ownership, which can be explained by monitoring, agency theory, and wealth maximization. This is in line with documented evidence that the management monitoring ability of blockholders ensures that their interests are satisfied (see, e.g., Burkart et al., 1997; Shleifer and Vishny, 1986).

In this study, we investigate whether ownership type affects a firm's ESG performance. Following Brunzell et al. (2015), we classify firm owners by long-term (shareholding for three consecutive years) and short-term (shareholding for less than three consecutive years) as proxies for ownership myopia or short-termism based on observed ownership terms in the data i.e. the number of years stock is held by the largest owners (blockholders). Our concentration on blockholders aligns with the documented evidence (see Barnea and Rubin, 2010) that influential blockholders who have the opportunity to monitor the management are the group of shareholders that have the influence on the firm's ESG investment.

We find that blockholding significantly increases firms' ESG performance, especially with the voting shares of the three largest owners of firms. Our univariate analysis shows a positive and significant difference in ESG scores between long-term and short-term owner samples, implying that long-term owners are more capable of increasing ESG performance than short-

term owners. We further find that the long-term owners of the largest two owner groups are associated with improved ESG performance. Our results suggest that long-term ownership of the largest owner group and the second largest owner group increases ESG performance by 1.7% and 3.3% respectively. This result is further confirmed when we examine changes in ownership horizon. We document that ESG performance is improved when the ownership horizon is changed from short to long-term firms (i.e. where a short-term owner has been replaced by a long-term owner). Overall, our finding supports the established conclusion (see, e.g., Bénabou and Tirole, 2010) that sustainability curbs short-termism and allows the company's management to take a long-term perspective and maximize inter-temporal profits.

This study contributes significantly to existing research on firm ownership and sustainability. First, we add knowledge on the significance of large shareholding and shareholder engagement in firms' ESG performance by looking at two categories of shares. We show that indeed the Nordic dual-class (voting and capital) share model is designed to allow owners different influences on corporate decisions (Gilson, 2014), and firm sustainability which is significantly important to corporate growth, especially for the long-term (Aboud and Diab, 2022), has a similar positive relationship with mainly the voting class of shares. Second, this study examines the relationship between ownership horizons from a different perspective by identifying owners' horizons by their holding periods, observable from the data. We differ from earlier studies (e.g., Wang et al., 2023) that follow generalized trading patterns of different institutional investors or (e.g., Gloßner, 2019), that used negative portfolio churn ratios to sort investors into terciles at each quarter-end in categorizing owners into short or long-term investor groups. Our classification allows for a robust conclusion through time to verify the largely predominant view that investors' horizons are positively associated with higher ESG performance in firms (Boubaker et al., 2017).

Finally, data on Nordic countries used in this study provide a good sample for testing ownership influence on firm performance as Brunzell et al. (2015) document and more so,

on sustainability. This is due to the well-recognized unique Nordic ESG model that is well connected with the social–democratic, institutional–cultural, and political–economic institutions of countries (Gjølberg, 2013; Strand et al., 2015). Thus, our study tests an essential corporate actors' (i.e. owners) influence on firms' sustainability in a best-in-class setting with the quality Nordic countries' ESG performance that is comparatively of better ESG standards relative to other regions of the world, as Dimson et al. (2021) show that shareholder's engagement is more successful when investors from countries with high social norms are involved.

The rest of the article is organized as follows. The literature review and hypothesis development are discussed in Section 2. Data and research design are discussed in Section 3. Section 4 presents the main empirical results and additional considerations with intuitions. Section 5 concludes the paper and offers suggestions for further research.

2 Literature review and hypothesis development

The conversation on ownership influence on firm performance can be examined from different angles, one of which is the challenge of short-termism or managerial myopia stemming from the extreme urge of managers for short-term profit at the expense of the long-term value of the firm (Gloßner, 2019). This study considers two fundamental issues in developing testable hypotheses. First, the effect of equity blockholding and the channels of influence on a firm's ESG performance are discussed. Second, the short-term and long-term orientation of owners' effect on ESG performance is considered.

2.1 Equity blockholding and ESG performance

The agency theory suggests that owners and managers do not align on goals when managers have incentives to build perks, and empires or enjoy other personal benefits including moral

satisfaction. Such actions of the managers would result in a lack of motivation to invest in positive NPV projects or earnings manipulation (Graham et al., 2006). However, even when managers' and owners' interests align, myopia is still a concern where owners have a short-term focus (Brunzell et al., 2015).

The desire of managers to over-invest in projects for self-satisfaction falls in the agency theory challenges and especially explains why firms' investment to improve ESG activities and performance generates a conflict of interests between managers, large shareholders, and the general shareholders (Cespa and Cestone, 2007). The cost of investment in ESG activities is borne by large shareholders (Cox et al., 2004) and this might inform their desire to promote or constrain ESG initiatives by management (Rees and Rodionova, 2015). Barnea and Rubin (2010) showed from an agency theory perspective that managers may overinvest in ESG-aligned projects for the favorable professional reputation and other personal interests. These investments in ESG activities may have a negative net present value (NPV). The negative NPV project investment may lead to agency problems that institutional investors have been said to avoid through short-term pressures on managers to deliver profit. Studies (see e.g., Shleifer and Vishny, 1986; Gillan and Starks, 2003) on monitoring the management of firms, show that large shareholders majority of whom are institutional owners, have a greater incentive to monitor in order to protect their interests, and ensure value is delivered for the investment. This sometimes results in actions leading to pressure on managers to deliver biased short-term benefits (e.g. profits, and improved market value).

Earlier studies have considered the relationship between ownership concentration and firm performance with contrary evidence. On one hand, Demsetz and Lehn (1985) in their analysis of over 500 US firms, find no evidence of a significant relationship between accounting profit rates and ownership concentration. On the other hand, Morck et al. (1988) showed that ownership threshold matters as they examine the relationship between management ownership and firm valuation captured in Tobin's Q. They find that depending on the threshold of management ownership, a positive or negative relationship exists with firm valuation. According

to Aboud and Diab (2022), the relationship between equity concentration and firm value is positive. This is based on a study conducted on companies listed in the Egyptian Corporate Responsibility Index between 2007 and 2016. They documented evidence of majority shareholder influence on corporate development, especially where ownership concentration is high.

Edmans and Holderness (2017), in an attempt to explain the role of blockholder in corporate action develop a model unifying both the voice (direct intervention) and exit (selling one's shares) theories of blockholder governance. According to them, these theories are the two fundamental channels through which blockholders affect corporate decisions. This implies that investors can influence the company's decision through voting and cash flow rights as the proxies for voice and exit respectively. This is sometimes through individual dominant investors or tacit collusion by a group of investors. Both channels are evidenced in earlier studies documenting the positive influence of active investors (Dimson et al., 2015) when they considered how engagement successfully addresses ESG concerns and the increased chance of engagement success with coordinated engagements (Dimson et al., 2021). This aligns with the conclusion of Silvola and Landau (2021) that investors' alliance could increase the weight of their engagement and efficient use of resources. This is why this study has considered the voting and capital shares of the three largest owners in a Nordic setup where there is better social trust and overall higher standards on ESG objectives. The significant and well-rooted adoption and improvement of ESG standards have been accredited to a shareholder-oriented governance model that puts stakeholders at the forefront of corporate decision-making (Hansen, 2023). Ultimately, the large shareholders (blockholders) are expected to have a significant influence on the performance of firms in ESG. Thus, we state our first hypothesis as:

H1: *Blockholding is positively related to ESG performance of firms.*

2.2 Ownership horizon and ESG performance

Although all listed firms typically have a long-term focus, the orientation of the large equity owners sometimes may or may not be for the long-term. Thus, firms that set and pursue long-term goals through e.g., ESG activities like innovation and improved corporate governance, have the largest owners with long-term orientation (Gao et al., 2018; Harford et al., 2018). This group of owners has been classified on their tendency to hold on to the stock of the company for longer than average time. Similarly, Brunzell et al. (2015) categorized firms that put less pressure on managers to deliver short-term profits as those with certain characteristics. For example, family owners and state owners hold stock of firms longer for 'socioemotional wealth' (Villalonga and Amit, 2020) and strategic reasons like social objectives (Bai and Xu, 2005) or political objectives (Boycko et al., 1996) with relatively less desire for immediate profitability. However, other owners e.g., pension funds, banks, and endowments that have exhibited active management and less myopia have been classified as long-term owners with (David et al., 2001).

Overall, the structure of ownership and its characteristics affect the corporate performance of firms (Wu et al., 2022). The influence of owners on the ESG activities of firms is directly linked to the ability of the large shareholders to monitor management (as suggested by Burkart et al., 1997) in a bid to satisfy their interests which may or may not align with the long-term focus of ESG projects. In ensuring a sustainable global economy, future-oriented owners consider investment in non-financial performance projects like ESG as an efficient channel (Boubaker et al., 2020; Becchetti et al., 2018). However, in explaining the link between ownership and performance of firms (financial and non-financial), the principal-agent theory is employed in the field of finance, economics, and management (Shleifer and Vishny, 1997). Despite the challenges that ensue due to information asymmetry between the principal(owners) and agent(managers), it is understood that majority shareholder(s) with sufficient control can effectively monitor the executive team and supervise the company's operation thereby decreasing the agency cost (Wu et al., 2022). Thus, the oversight and

overriding capability of the owners would direct the operations of the company through adequate control of management. This suggests that by and large, the direction of the company in financial and non-financial activities is influenced by the owners' orientation.

In another consideration, Hahn and Scheermesser (2006) argue from a strategic perspective, owners' motivation for encouraging their firm's improvement in ESG activities as for both instrumental and institutional advantage. The instrumental advantage perspective suggests that through ESG initiatives, a firm's (especially in Nordic countries, which are well-versed and informed about the benefits of ESG) profitability is improved and maintained (Aguilera et al., 2007). Similarly, the institutional advantage perspective results from institutional pressures on firms to increase their engagement in ESG initiatives. This corroborates the conclusion of Davis (1973), that legitimacy criteria have been redefined with the increasing demand for ESG values in order for firms to maintain public support.

Recent studies have shown that short-term-oriented institutional investors have over time transitioned to long-term-oriented investors for the purpose of corporate development (Ganguli et al., 2020). This is an indication that conditioning owners on certain categories based on traditional perceptions of short-term and long-term focus may be misleading in establishing the relationship of such horizon with the financial and non-financial performance of firms. Wu et al. (2022), attributes the transformation of some institutional investors' focus from short to long-term to improvements in financial markets and changes in the investment philosophy of these investors. This is evidence that with market and stakeholder demands ever growing towards corporate responsibility, owners have a duty to redefine focus to align with sustainability which is long-term focused. Thus this study expects that has owners hold stock of firms for a longer time, the ESG performance of the firm improves as a sign of their commitment towards long-term corporate development. Hence, we state our second hypothesis as:

H2: *Long-term ownership is positively related to ESG performance of firms.*

3 Research design

3.1 Data

To analyze the influence of ownership type on firms' ESG performance, we use ownership data from publicly listed firms on the Nordic (Denmark, Finland, Iceland, Norway, and Sweden) stock exchange for the period from 2010 to 2019. We obtained ownership data from the Center for Corporate Governance – Copenhagen Business School. According to the Center, the data were collected through various data sources and methods, harmonized and quality checked.[1] ESG scores and financial data of the firms are from Thomson Reuters Eikon's database for the ownership sample period. Overall, our sample consists of about 3315 firm-year unbalanced observations for 593 firms (of which Denmark has 69 firms, Finland 70, Iceland 5, Norway 92, and Sweden 357).

3.2 Empirical design

3.2.1 Variables

Our main variables of interest are ESG (Environmental, Social, and Governance) scores and the ownership in our sample firms. To understand how the horizon of owners can affect firms' ESG performance, we classify the owners into long-term and short-term. We define long-term owners as the shareholders who have held the company's shares for at least three consecutive years and short-term owners as those with less than three years of holding a company's shares.[2] Other variables related to ownership type are *VotingShare* and *CapitalShare* as proxies for blockholding. *VotingShare* and *CapitalShare* are the percentage of voting and capital shares, respectively, of each of the three largest owners of the sample

[1] The Centre provides a detailed data description including sources and collection methods available on request.

[2] The classification of short-term and long-term owners in a current year is based on the shares held by owners for the three previous consecutive years.

firms.

We use several firm characteristics that may affect a firm's ESG performance as control variables. Return on assets *ROA*, a proxy for financial performance is calculated as the earnings before interest and taxes over the total assets of the firm (e.g., Alshorman et al., 2022; Vitezić et al., 2012), the natural logarithm of the book value of total assets of the firm as a measure of *Firm Size* (e.g., Buallay, 2019), the natural logarithm debt-to-equity ratio as a measure of *Leverage* (e.g., Grewal et al., 2008), tangible assets (property, plant, and equipment) of a firm over its total assets as a measure of *Tangibility*, and cash and short-term investments of a firm over its total assets as a measure *Cash Holding* (e.g., Hu and Zhang, 2021). Finally, *Sales growth*, calculated as the percentage change in a firm's sales, captures improvement in firm revenue which can quickly afford the firm to access cash for investment in activities such as ESG (e.g., Brush et al., 2000). *GDP_Growth* is the change in gross domestic product in the country where a firm is listed. We also include country-fixed effects to control for other factors that can affect a firm's ESG performance in countries of listing.

3.2.2 Model specification

First, we investigate whether blockholding by owners has an influence on a firm's ESG performance. We do so using panel linear regression models as follows.

$$ESG_{it} = \beta_0 + \beta_1 VotingShare_{it} + X'\beta Controls_{it} + \gamma firm_i + \delta year_t + \theta country + \epsilon_{it}$$

where ESG_{it} is the overall score based on pillar (environmental, social, and governance) scores which are the relative sum of the category weights in a firm i at time t. The overall score is based on Refinitiv's magnitude matrix and is aggregated on 10 category weights which are the magnitude of a category divided by the sum of the magnitude of all categories.[3] The

[3] The magnitude matrix is calculated using numeric and boolean data points. See Refinitiv ESG score methodology for more details.

Overall *ESG* scores are replaced with pillar scores (E, S, and G) in other models for detailed examination. *VotingShare* is the percentage of voting shares for the three largest owners in a firm i at time t estimated in different models. A similar model is estimated but with capital shares of owners across the three largest owner groups. $X'Controls$ are the control variables described above. Regressions are estimated with firm and year-fixed effects as well as country dummy.

Since the main focus of this study is to examine the impact of owners' investment horizons on the ESG performance of firms, we re-estimate the above model using an indicator variable of owner horizon (long-term vs. short-term) as the main explanatory variable. In further analysis, we examine the effect of change in the ownership horizon in a firm on the ESG performance next period. *ShortToLong* (*LongToSHort*) is a dummy variable equal to one if the horizons based on the short-term (long-term) horizon defined according to the prior three years of ownership have changed from short to long-term (long to short-term), and zero otherwise. This model is re-estimated for horizons in the second and third-largest owner groups in the firms.

4 Empirical Results

4.1 Descriptive statistics

Table 1 shows the summary statistics for the variables used in this paper. The average ESG score of sample firms is 54.29 while the average environmental, social, and governance pillar scores are 53.47, 57.74, and 50.64, respectively. Environmental pillar scores are not available for all ESG-scored firms all years; for these firms, Refinitiv has reported as zeros for the year. The ownership horizon in our sample of firms is 34% for long-term and 66% for short-term owners, respectively in the largest owner group. We also find similar patterns of ownership for the second and third-largest owner groups. The standard deviations, between 20 and

28, of ESG and pillar scores provide us with an interesting starting point for the analysis it shows a widespread cross-sectional dispersion in the data, indicating that the ratings cover a wide range. Particularly, this allows for robust conclusions on the influence of owner types on ESG performance because the scores of sample firms are not concentrated in the high or low percentiles. The financial performance captured by the return on assets, cash holding, and revenue of the sample firms on average is 5%, 13%, and 2% respectively. The cash holding percentage suggests that the firms on average have slack resources that can allow for substantial investment in sustainability projects (Aguilera-Caracuel et al., 2015).

Insert Table 1 approximately here

The Pearson correlation matrix is presented in Table 2. Results show that there is a positive (negative) correlation between the long-term (short-term) owners and ESG as well as pillar scores (except governance) for all owner groups. The test of multicollinearity using the variance inflation factors (VIF) shows lower than five for all the models. This implies an absence of multicollinearity between the variables (Hair et al., 2012).

Insert Table 2 approximately here

Since we examine whether ownership type influences a firm's ESG performance, it is important to observe the pattern of the data for the variables among the three owner groups. We report the summary statistics of the variables according to owner type in Table 3. On average firms' ESG and pillar (except governance) scores are higher with long-term than short-term largest owners. The same pattern is observed in owner types in the second and third-largest owner groups. Firms with long-term owners across the three largest owner groups are more profitable on average. This is an interesting observation considering documented evidence (see, e.g., Brunzell et al., 2015) of short-termism and its positive impact on firm profitability. Firms with short-term owners on average are marginally bigger than firms with long-term owners on average across the largest owner groups.

Insert Table 3 approximately here

4.2 Equity blockholding impact on ESG performance

We estimate, as a first test, OLS regressions of the firm's ESG performance on blockholding since they have strong incentives to monitor the firm's management so that firm value increases (Burkart et al., 1997). We measure blockholding by the combined volume of voting or capital shares of the largest three owners of a firm. Table 4 presents the results of the regressions where the dependent variable is the ESG scores. Our key explanatory variables of interest are the number of voting and capital shares. In Model 1, The combined volume of voting shares of the three largest owners is positively and significantly related to ESG performance, implying that blockholding increases the firm's activities in sustainability. This result confirms the findings of previous studies (e.g., Barnea and Rubin, 2010). In particular, the combination of the largest owners' shareholding is motivated by Dimson et al. (2021) study, which is in line with their conclusion that a two-tier engagement strategy where lead investors combine with supporting investors results in improved environmental and social performance in firms. Contrary to the notion of potential reverse causality outlined in Demsetz (1983), it is noteworthy to say that voting and capital shares within the significant ownership categories already possess a vested interest in shaping corporate decisions. Therefore, owners' acquisition of these shares is not solely driven by firms' ESG performance considerations. This implies a more deliberate motivation behind the large owners' shareholdings.

In Models 2 to 4, we consider voting shares of the three largest owner groups separately. We find that the voting shares of owners are positively related to firms' ESG performance. More interestingly, the relationship is economically more significant with the two other large owners. This implies that where voting shares exist in firms, owners especially, those with less volume of this class of shares see it as a good avenue to improve the firm's ESG performance. This finding supports the studies (e.g., Dimson et al., 2015) suggesting that

investors (institutional) influence the ESG activities of firms through engagements such as voting. It further reiterates the conclusion that investor engagement is a more powerful tool for achieving a sustainable capital market (Ringe et al., 2022).

Insert Table 4 approximately here

We run similar regressions in Models 5 to 8 but our key variable of interest is the blockholding measured by capital shares of the owners. The total volume of capital shares held by the large owners is positively related to firms' ESG performance. However, the result of individual large owner's analysis suggests otherwise. We find that the capital shares of these owners on their own are negatively related to the firm's ESG performance. This finding can be explained by earlier findings (Berk and Van Binsbergen, 2022; Broccardo et al., 2022) arguing that engagement is more effective than divestment in investors' push for an improvement in a firm's ESG performance. Nevertheless, the positive and significant relation between the capital share total suggests that when owners' (especially the blockholders) interests align, their role in improving the ESG performance of the firm as well as other corporate actions is apparent. Thus further confirming the finding of (Dimson et al., 2021) that a successful influence on a firm's ESG performance is effectively achieved when large owners combine.

Generally, our findings support prior studies' conclusion that large owners have motives to positively influence the firm's ESG performance. The motivations have been ascribed to the urge for advancement in operational performance (Edmans, 2011) and competitive advantage (Aguilera et al., 2006). Some of these competitive advantages include strategic benefits that strengthen the relationship between the firm and stakeholders (e.g., Siegel and Vitaliano, 2007; Bénabou and Tirole, 2010).

4.3 Univariate analysis

As a baseline analysis for owners' horizon relationship with the firm's ESG performance, we consider the difference in sustainability and financial performance across the three largest owner groups based on their horizon (short-term or long-term). As shown in Table 5, there is a positive although not statistically significant difference in the average overall ESG performance of firms where the largest owner is either short-term or long-term oriented. The positive difference suggests that firms with long-term-oriented owners perform better in sustainability. In addition, firms with long-term-oriented owners have higher environmental and social performance than those with short-term owners. This finding supports the conclusion that owners who are in for the long haul have an incentive to exhibit higher ESG involvement to improve and maintain the firm's corporate image and attract new funds (Godfrey et al., 2009). This is more essential for firms owned by institutions such as pension funds which face pressures from beneficiaries who increasingly demand ESG investment (Cumming and Johan, 2007). Interestingly, firms with short-term-oriented largest owners have better governance performance than firms with long-term-oriented owners. This would mean that in the meantime, the owners put a better management team in position, are more active shareholders, and have an effective corporate social responsibility strategy. All of these are reasonable outcomes for owners who have an urgent need for corporate success (short-term-oriented owners) and do so by appealing to all spectrum of stakeholders.

Additionally, we find the firms with long-term-oriented largest owners are significantly bigger with significantly large tangible assets, more profitable, and use less leverage. However, they have less cash holding and generate less revenue compared to those with short-term-oriented owners.

Insert Table 5 approximately here

Though the impact of the second and third largest owners of the firm may be debatable, it is sometimes significant especially, where the largest owner is a short-term investor or a

less active investor. Thus, the result of the difference in the average performance of firms in the sub-owner groups according to owner horizons is presented in columns 6 and 9. There is an improved ESG and pillar score performance where the second largest owner is a long-term investor. This means in the absence of the largest owners, the firm will do well in sustainability with owners with the second largest stake if they are long-term oriented. A similar performance is seen in the overall ESG and environmental and social performance of firms when we consider the third largest owner group of the firm. However, the firm will do better in governance if the owners in this category are short-term oriented as they show more aggressive governance as described in the analysis on the largest owners. The mixed influence of largest owner groups is consistent with Brunzell et al. (2015), who argue that some large owner categories are not too keen on the long-term focus of the firm of which ESG investments fall.

On average, firms are more profitable with long-term owners. Interestingly, in the second large owner group, the firms have a higher return on assets on average than short-term owners. Though the firms are bigger with long-term-oriented owners, they use less leverage and record less revenue. Contrarily, firms benefit from long-term-oriented owners in the third category of largest owners by posing better profit. However, they are more leveraged and record fewer sales with relatively smaller cash and short-term investment ratios to their total assets.

4.4 The impact of ownership horizon on ESG performance of firms

In this study, we identify the difference in ownership style according to their horizon and examine the influence of the long-term and short-term orientation of the owners on the ESG performance of firms. The result of this analysis is presented in Table 6[4]. The ESG performance of firms is enhanced where the largest and second-largest owners are long-term

[4] We re-estimate the models classifying owners into short or long-term based on the three-year holding period already in the first year. The result available on request, is basically the same with higher economic significance.

oriented. The implication is that this type of owner supports operations and projects (that are typically over several years) that focus on improving the ESG performance of the firm. This finding supports the conclusion that owners with a future orientation see promoting ESG investment as a tool to maintain sustainable corporate growth (Boubaker et al., 2020). The impact of long-term owners in the third category of largest owners is insignificant suggesting inconsequential influence from this group of owners. It could be argued that this category of owners would have less influence on the corporate action of the firm especially where the largest and the second-largest owners have the most significant stake and are actively involved in the corporate actions of the firm.

Insert Table 6 approximately here

As a closer look into the issues of sustainability that may interest the owners more especially for institutional and instrumental purposes of corporate success as earlier described in this paper, we consider the influence of owners' horizon on the environmental, social, and governance performance of the firm. The consideration of the E, S, and G scores is also motivated by the need to understand the driver of ESG improvement in firms with different owner types since each pillar score has a different focus and weight in the ESG score calculation.

As shown in Table 7, the presence of long-term-oriented largest owners in firms improves the environmental and social performance of the firm. This is particularly in line with the differentiation strategy that owners may use to appeal to stakeholders especially where there is a need to avoid economic reactions to environmental and social challenges as a result of weak ESG performance (Gjessing and Syse, 2007). For this category of owners, governance is not significantly improved. However, the environmental performance of the firm is decreasing where the second largest owner group is long-term oriented. This implies that short-term-oriented owners in this category are more interested in environmental performance, an indication that supports the idea that for some categories of owners especially,

institutional investors who may have obligations to invest in sustainable companies and deliver profit to beneficiaries, environmental sustainability will be important. The social and governance performance of the firm is enhanced with long-term-oriented owners. The latter is an indicator of this group of owners' interest in representative corporate performance. The influence of the third category of largest owners shows that their influence may not be as important especially where the two largest owners have the most significant voting shares. The negative influence of long-term-oriented owners in this group may be an indication of their disinterest in CSR issues.

Insert Table 7 approximately here

4.5 Additional Considerations and Robustness Tests

The link between owner orientation and ESG performance is not always linear especially considering the different characteristics of blockholders. This is as Edmans and Holderness (2017) suggested, when they argue that there is an empirical challenge in studying exogenous effects in identifying causal effects involving blockholders. They suggested a narrow focus on the specific question(s) around blockholder causal effects. To this end, we try to address the challenge of externalities based on owners' characteristics in establishing the relationship between their horizons and the ESG performance of firms by studying the effect of change in owners' horizons on subsequent ESG performance of the firm.

Insert Table 8 approximately here

As shown in Table 8, there is an improvement in the next period ESG performance of a firm where the horizon of the largest owner has changed. However, the improvement is only significant where short-term-oriented owners have been replaced by long-term-oriented

owners. This further confirms our initial finding that long-term ownership is positively influencing the ESG performance of firms. A similar relationship is shown in the second-largest owner group and the ESG performance of the firm except that the significant impact of change in owners' horizon is positive(negative) where the short-term (long-term) horizon of owners is replaced by the long-term (short-term) horizon of owners. An opposite-direction replacement is having a negative impact on the ESG performance of firms among this category of owners. Interestingly, in the least large owner group, the change in owners' horizon is significantly affecting ESG performance in both directions of the change. This is a possible indication that this category of owners supports the existing direction of the firm in issues of ESG based on larger owners' horizons as (Dimson et al., 2021) suggest.

5 Summary and conclusion

Using data on publicly listed Nordic firms, we investigate whether ownership structure affects a firm's sustainability performance. Our examination shows that firms perform better in ESG where the owners are long-term oriented. The result is stronger for the largest owner groups. We also provide consistent evidence for the changes in the ownership horizon. Our result suggests that firms with more long-term owners have better ESG performance.

Our study contributes to a body of research on ownership and ownership horizons. Our construction of ownership horizon is different from that of previous studies in the sense that we focus on observed ownership horizon from the sample data. Previous studies define ownership categories as short and long-term based on owner characteristics (e.g., investment strategies or style, clientele, or beneficiaries). Using voting and capital shares as measures of equity blockholding, we further contribute to the literature by showing that the former which breeds engagement has an impact on ESG performance.

However, this study is not without limitations. The most important of which is the gap in observation of ownership in some firms, which means the impact of the horizon can not be

studied as it requires continuity in stock holding. In addition, the data provide no information on the type of owners other than the names. This leads to difficulty in performing robustness analysis since our ownership horizon measure should be compared with other measures, for example, family ownership, state ownership, mutual funds, etc., that capture characteristic differences in previous studies. Hence, a further study on this topic would benefit more from comprehensive data that allows such tests.

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Table 1: Sample descriptive statistics

This table shows the descriptive statistics. ESG, Env, Soc, and Gov are sustainability performance scores. Longowner and Shortowner are indicator variables that captures owner's horizon. Voting(Capital) share is the percentage of voting(Capital) share. ShortToLongHorizon(LongToShortHorizon) is an indicator variable that shows change in ownership horizon from the previous year. ROA, Firm_Size, Leverage, Tangibility, CashHolding, and Sales_Growth are firm characteristic variables.

Summary statistics								
Panel A: ESG	N	Mean	St. Dev.	Min	Median	Max	Skewness	Kurtosis
ESG	3315	54.29	20.28	1.24	55.26	92.52	-0.35	-0.5
Env	3250	53.47	27.45	0	57.94	97.25	-0.31	-1.13
Soc	3315	57.74	22.68	0.63	61.39	96.41	-0.46	-0.64
Gov	3296	50.64	22.27	1.24	51.58	95.15	-0.03	-0.87
Panel B: Ownership and Financial	N	Mean	St. Dev.	Min	Median	Max	Skewness	Kurtosis
Longowner1	2364	0.34	0.47	0	0.0	1	0.67	-1.55
Shortowner1	2364	0.66	0.47	0	1	1	-0.67	-1.55
Longowner2	1975	0.25	0.43	0	0	1	1.13	-0.71
Shortowner2	1975	0.75	0.43	0	1	1	-1.13	-0.71
Longowner3	1761	0.21	0.41	0	0	1	1.41	-0.01
Shortowner3	1761	0.79	0.41	0	1	1	-1.41	-0.01
VotingShare1	2469	0.21	0.20	0	0.10	0.80	1.25	0.36
VotingShare2	2186	0.07	0.06	0	0.05	0.63	2.35	9.65
VotingShare3	2014	0.05	0.04	0	0.04	0.22	1.45	3.65
CapitalShare1	2469	0.17	0.15	0	0.10	0.80	1.39	1.32
CapitalShare2	2183	0.07	0.05	0	0.05	0.40	1.91	5.53
CapitalShare3	2022	0.05	0.04	0	0.04	0.50	4.75	7.72
ShortToLongHorizon1	2347	0.02	0.16	0	0	1	7.18	49.56
LongToShortHorizon1	2327	0.02	0.13	0	0	1	6.09	35.15
ShortToLongHorizon2	1988	0.01	0.12	0	0	1	8.29	66.71
LongToShortHorizon2	1964	0.01	0.10	0	0	1	9.54	89.15
shortToLongHorizon3	1780	0.01	0.11	0	0	1	9.31	84.63
LongToShortHorizon3	1751	0.01	0.12	0	0	1	8.31	67.13
ROA	3311	0.05	0.13	-2.03	0.04	0.97	-2.69	39.46
Firm_Size	3315	21.98	1.89	15.38	22.09	27.04	-0.2	0.41
Leverage	3315	0.01	0.11	-0.06	0.01	5.71	47.03	2402.01
Tangibility	3308	0.2	0.21	0	0.12	1.34	1.3	1.24
CashHolding	2789	0.13	0.16	-0.03	0.08	2.67	3.94	30.32
Sales growth	2606	0.02	0.25	-3.53	0	2.97	-1.49	62.78

Table 2: Correlation matrix

ESG, Env, Soc, and Gov are sustainability performance scores. ROA, Firm_Size, Leverage, Tangibility, CashHolding, and Sales_Growth are firm characteristic variables. Voting(Capital) share is the percentage of voting(Capital) share.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)ESG															
(2)Env	0.847***														
(3)Soc	0.903**	0.730***													
(4)Gov	0.719***	0.409**	0.463**												
(5)ROA	0.105**	0.073***	0.171*	-0.051											
(6)Firm_Size	0.505***	0.535**	0.420	0.368**	0.430**										
(7)Leverage	0.005***	0.005**	0.006***	0.010	-0.007	0.105									
(8)Tangibility	0.087***	0.159	0.060**	-0.033	0.086	-0.030***	-0.001								
(9)CashHolding	-0.035***	-0.086**	-0.044	0.073***	-0.304	-0.033***	-0.001***	1.000							
(10)Sales_Growth	-0.072***	-0.079**	-0.077*	-0.039**	-0.035**	-0.064***	0.002	-0.063**	0.021*						
(11)VotingShare1	-0.151**	-0.150**	-0.084	-0.097*	-0.116*	-0.308**	-0.064***	-0.082*	0.147***	0.059					
(12)VotingShare2	-0.176***	-0.196**	-0.109**	-0.092*	-0.124	-0.324**	-0.063***	-0.095	0.156	0.065***	0.886*				
(13)VotingShare3	-0.104***	-0.154	-0.031	-0.047	-0.097***	-0.309***	-0.063	-0.089*	0.148	0.043	0.804**	0.795			
(14)CapitalShare1	-0.114**	-0.118***	-0.060	-0.073*	-0.116***	-0.307	-0.063**	-0.077	0.142*	0.049***	0.968	0.869	0.800**		
(15)CapitalShare2	-0.177	-0.191**	-0.109***	-0.108	-0.113***	-0.321	-0.065*	-0.084	0.143**	0.062	0.880***	0.949*	0.790	0.897***	
(16)CapitalShare3	-0.113	-0.157	-0.034	-0.067*	-0.089	-0.309*	-0.067**	-0.079	0.121	0.043	0.826**	0.805	0.955***	0.830	0.826

Table 3: Descriptive statistics by owner groups

This table shows the three largest owners' descriptive statistics by the long-term and short-term horizon based on the number of years as an owner. ESG, Env, Soc, and Gov are sustainability performance scores. ROA, Firm_Size, Leverage, Tangibility, CashHolding, and Sales_Growth are firm characteristic variables.

Panel A: Largest owner groups

	Long-term						Short-term					
	N	Mean	St. Dev.	Min	Median	Max	N	Mean	St. Dev.	Min	Median	Max
ESG	805	57.16	18.89	59.82	5.21	89.42	1559	55.97	20.05	56.11	1.24	92.52
Env	798	58.47	25.63	61.47	0.00	92.50	1537	54.93	27.56	60.51	0.00	95.72
Soc	805	61.24	21.34	66.17	1.33	96.41	1559	59.21	22.40	62.94	0.64	95.95
Gov	798	50.47	20.38	51.66	2.20	94.82	1550	52.15	22.83	53.08	1.24	94.40
ROA	3028	0.03	0.13	0.03	-1.29	0.83	6179	0.002	0.18	0.02	-2.09	0.97
Firm_Size	3037	20.07	2.39	20.13	12.09	26.79	6252	20.11	2.57	20.25	8.87	27.04
Leverage	2407	0.01	0.03	0.01	0.00	0.78	5090	0.02	0.03	0.01	-0.28	0.51
Tangibility	2970	0.19	0.22	0.10	0.00	0.99	6130	0.15	0.22	0.05	-0.01	1.02
CashHolding	2377	0.13	0.18	0.07	0.00	0.99	4582	0.15	0.19	0.09	0.00	2.56
Sales_Growth	2263	0.03	0.28	0.00	-4.30	3.94	4132	0.03	0.38	0.00	-5.23	5.99

Panel B: Second largest owner groups

	Long-term						Short-term					
	N	Mean	St. Dev.	Min	Median	Max	N	Mean	St. Dev.	Min	Median	Max
ESG	500	60.04	19.89	8.72	61.37	92.35	1475	56.01	19.05	1.37	55.89	92.52
Env	490	63.25	24.53	2.48	69.04	95.72	1457	55.29	27.54	0.00	60.19	95.54
Soc	500	63.02	22.74	6.09	68.26	96.41	1475	59.43	21.28	0.64	62.54	95.95
Gov	497	52.53	23.71	9.12	50.95	94.40	1470	51.96	21.94	2.09	53.19	94.82
ROA	1786	0.03	0.14	-1.41	0.03	0.71	6331	0.002	0.17	-2.09	0.02	0.97
Firm_Size	1791	19.88	2.38	12.80	19.76	26.79	6390	20.13	2.49	8.87	20.31	27.04
Leverage	1410	0.01	0.02	-0.28	0.01	0.12	5291	0.02	0.03	-0.22	0.01	0.78
Tangibility	1756	0.21	0.23	0.00	0.14	1.00	6277	0.15	0.21	-0.01	0.05	1.02
CashHolding	1586	0.14	0.19	0.00	0.07	1.35	4638	0.15	0.18	0.00	0.09	2.56
Sales_Growth	1465	0.03	0.28	-3.52	0.00	5.09	4219	0.03	0.38	-5.23	0.00	5.99

Panel C: Third largest owner groups

	Long-term						Short-term					
	N	Mean	St. Dev.	Min	Median	Max	N	Mean	St. Dev.	Min	Median	Max
ESG	373	60.02	18.20	59.92	17.05	92.52	1388	57.05	19.68	57.52	1.37	92.35
Env	373	63.78	25.12	69.34	0.83	95.54	1362	57.28	27.23	63.74	0.00	95.72
Soc	373	64.47	20.36	68.26	14.50	96.41	1388	60.27	22.02	63.48	0.64	95.95
Gov	371	49.00	20.66	48.69	7.34	93.93	1382	52.75	22.84	52.97	2.09	94.82
ROA	1243	0.03	0.15	0.03	-1.99	0.83	5688	0.01	0.17	0.02	-2.09	0.97
Firm_Size	1248	20.20	2.32	20.33	12.80	26.28	5723	20.02	2.45	20.06	12.09	26.86
Leverage	1019	0.01	0.01	0.01	0.00	0.07	4817	0.01	0.03	0.01	-0.28	0.78
Tangibility	1216	0.20	0.21	0.13	0.00	0.99	5643	0.15	0.21	0.06	-0.01	1.02
CashHolding	1005	0.13	0.19	0.07	0.00	1.75	4508	0.15	0.18	0.09	0.00	2.56
Sales_Growth	938	0.02	0.34	0.00	-3.52	5.09	4073	0.03	0.36	0.00	-5.23	5.99

Table 4: Equity holding and ESG performance of firms

This table shows the impact of the voting and capital shares of the three largest owners on the ESG performance of the firm. ESG is the overall score (i.e. weighted average of the environmental, social, and governance pillar scores). Sum_voting_share(Sum_capital_share) is the sum of the voting(capital) share percentage of the three largest owners and voting_share_1(capital_share_1), voting_share_2(capital_share_2) and voting_share_3(capital_share_3) are the percentage for each owners groups. Control variables are; ROA i.e. the return on asset calculated as the earnings before interest and taxes over the total assets of the firm, Firm_Size i.e. the natural log of total assets, Leverage i.e. the debt-equity ratio of the firm, Tangibility i.e. the ratio of plant property and equipment to total asset, CashHolding i.e. the cash and short-term investment ratio over the total asset, Sales_Growth i.e. the percentage change in sales of the firm and GDP i.e. the change in the gross domestic product in the country where a country is listed. The last rows include the firm, and year, fixed effects, the number of observations in the models estimated, and adjusted R^2. Firm-level clustered standard errors are reported in parentheses. *** (**, *) denotes significance at the 1% (5%, 10%) level (two-sided test).

	ESG							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sum_voting_share	0.054***							
	(0.012)							
Voting_share1		0.084***						
		(0.015)						
Voting_share2			0.134**					
			(0.054)					
Voting_share3				0.442***				
				(0.090)				
Sum_capital_share					0.027*			
					(0.016)			
Capital_share1						–0.163***		
						(0.021)		
Capital_share2							–0.409***	
							(0.085)	
Capital_share3								–0.164*
								(0.087)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,787	1,859	1,662	1,551	2,787	1,868	1,659	1,559
Adjusted R^2	0.449	0.544	0.544	0.553	0.445	0.551	0.552	0.546

Table 5: Mean comparison across owner horizon

This table shows the two-sample t-test comparing firm sustainability and financial performance based on long-term and short-term owners across the three largest owner groups. ESG is the overall environmental, social, and governance score, and Env, Soc, and Gov are the respective pillar scores. ROA is the earnings before interest and taxes over the total assets of the firm, Firm_Size is the natural logarithm of total assets, Leverage is the debt-to-equity ratio, Tangibility is the plant, property, and equipment scaled by total assets, CashHolding is the value of cash and short-term investment scaled by total assets, and Sales_Growth is the change in firm sales.

	Largest owner group			**Second largest owner group**			**Third largest owner group**		
	Long-term	Short-term	Diff in means (1)-(2)	Long-term	Short-term	Diff in means (4)-(5)	Long-term	Short-term	Diff in means (7)-(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
N.of Obs.	604	1140		437	1068		314	1060	
ESG	60.50	59.00	1.50	62.40	58.00	4.40***	61.40	59.10	2.30*
			(1.51)			(4.06)			(1.92)
Env	61.30	57.00	4.30***	64.40	56.20	8.20***	65.20	58.20	7.00***
			(3.52)			(5.94)			(4.43)
Soc	65.10	62.90	2.20*	65.40	62.20	3.20***	66.20	62.70	3.50***
			(2.08)			(2.59)			(2.65)
Gov	51.60	53.70	-2.10*	54.00	52.50	1.50	48.80	53.70	-4.90***
			(1.91)			(1.14)			(3.45)
ROA	0.09	0.07	0.02**	0.06	0.07	-0.01**	0.07	0.06	0.01
			(2.60)			(2.15)			(1.50)
Firm_Size	21.90	21.80	0.01*	22.20	21.70	0.50***	22.0	21.8	0.20*
			(1.96)			(6.14)			(1.92)
Leverage	0.006	0.007	-0.001***	0.00686	0.00688	-0.00002	0.006	0.007	-0.001
			(2.57)			(0.04)			(1.18)
Tangibility	0.29	0.18	0.11***	0.27	0.19	0.08***	0.29	0.19	0.10***
			(12.20)			(6.66)			(8.68)
CashHolding	0.09	0.15	-0.06***	0.11	0.13	0.02**	0.09	0.14	-0.05***
			(10.70)			(2.22)			(8.44)
Sales_Growth	0.015	0.026	-0.011	0.014	0.023	-0.009	0.01	0.02	-0.01
			(1.10)			(0.863)			(1.45)

Table 6: Owners horizon and ESG performance of firms

This table shows the impact of owners' horizons on the ESG performance of the firm. ESG is the overall score (i.e. weighted average of the environmental, social, and governance pillar scores). Longterm_Owner is a dummy that is 1 if the owner in each of the three largest owner groups is long-term oriented i.e. holds the shares of the company for at least three consecutive years and zero otherwise. ROA is the return on asset calculated as the earnings before interest and taxes over the total assets of the firm, Firm_Size is the natural log of total assets, Leverage is the debt-equity ratio of the firm, Tangibility is the ratio of plant property and equipment to total asset, CashHolding is the cash and short-term investment ratio over the total asset, Sales_Growth is the percentage change in sales of the firm and GDP is the change in the gross domestic product in the country where a country is listed. The last rows include the firm, and year fixed effects, the number of observations in the models estimated, and adjusted R^2. Firm-level clustered standard errors are reported in parentheses. *** (**, *) denotes significance at the 1% (5%, 10%) level (two-sided test).

	ESG		
	(1)	(2)	(3)
Longterm_Owner1	0.031***		
	(0.008)		
Longterm_Owner2		0.028***	
		(0.010)	
Longterm_Owner3			0.014
			(0.010)
ROA	-0.037*	-0.025	-0.017
	(0.022)	(0.023)	(0.024)
Firm_Size	0.116***	0.112***	0.104***
	(0.007)	(0.008)	(0.009)
Leverage	-1.469***	-1.465***	-1.579***
	(0.357)	(0.368)	(0.371)
CashHolding	0.041	0.038	0.022
	(0.032)	(0.034)	(0.035)
Tangibility	-0.006	-0.017	-0.022
	(0.026)	(0.027)	(0.027)
Sales_Growth	-0.006	-0.003	-0.004
	(0.008)	(0.008)	(0.009)
GDP_Growth	-0.351***	-0.357***	-0.331***
	(0.049)	(0.050)	(0.050)
Firm and Year FE	Yes	Yes	Yes
Observations	1,800	1,635	1,507
Adjusted R^2	0.088	0.061	0.026

Table 7: Owners horizon and E,S and G performance of firms

This table shows the impact of owners' horizons on the E, S, and G pillar scores of the firm. Env is the environmental score, Soc is the social score, and Gov is the governance score of a firm. Longterm_Owner is a dummy that is 1 if the owner in each of the three largest owner groups is long-term oriented i.e. holds the shares of the company for at least three consecutive years and zero otherwise. ROA is the return on asset calculated as the earnings before interest and taxes over the total assets of the firm, Firm_Size is the natural log of total assets, Leverage is the debt-equity ratio of the firm, Tangibility is the ratio of plant property and equipment to total asset, CashHolding is the cash and short-term investment ratio over the total asset, Sales_Growth is the percentage change in sales of the firm and GDP is the change in the gross domestic product in the country where a country is listed. The last rows include the firm, and year fixed effects, the number of observations in the models estimated, and adjusted R^2. Firm-level clustered standard errors are reported in parentheses. *** (**, *) denotes significance at the 1% (5%, 10%) level (two-sided test).

	Env	Soc	Gov	Env	Soc	Gov	Env	Soc	Gov
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Longterm_Owner1	0.029**	0.028**	0.009						
	(0.011)	(0.010)	(0.014)						
Longterm_Owner2				-0.067***	0.066***	0.057***			
				(0.012)	(0.017)	(0.019)			
Longterm_Owner3							0.055***	0.014	0.036*
							(0.013)	(0.016)	(0.019)
ROA	0.013	0.046	-0.153***	-0.009	0.044	-0.131***	0.003	0.032	-0.111***
	(0.037)	(0.030)	(0.036)	(0.026)	(0.031)	(0.037)	(0.027)	(0.032)	(0.039)
Firm_Size	0.113***	0.166***	0.083***	0.087***	0.154***	0.083***	0.092***	0.133***	0.073***
	(0.003)	(0.010)	(0.012)	(0.009)	(0.011)	(0.013)	(0.010)	(0.013)	(0.015)
Leverage	-5.953***	-2.101***	-1.412**	-1.014**	-1.874***	-1.635***	-1.265***	-2.063***	-1.534**
	(0.401)	(0.483)	(0.579)	(0.414)	(0.491)	(0.587)	(0.415)	(0.504)	(0.602)
CashHolding	0.018	0.202***	-0.080	-0.016	0.191***	-0.081	-0.032	0.170***	-0.107*
	(0.031)	(0.044)	(0.053)	(0.039)	(0.046)	(0.055)	(0.040)	(0.048)	(0.057)
Tangibility	0.193***	0.032	-0.118***	0.057*	0.045	-0.161***	0.057*	0.049	-0.184***
	(0.022)	(0.036)	(0.043)	(0.031)	(0.036)	(0.043)	(0.030)	(0.037)	(0.044)
Sales_Growth	-0.055***	0.010	-0.005	-0.014	0.012	-0.004	-0.015	0.013	-0.006
	(0.019)	(0.011)	(0.013)	(0.009)	(0.011)	(0.013)	(0.010)	(0.012)	(0.014)
GDP_Growth	0.023	-0.480***	-0.169**	-0.335***	-0.508***	-0.176**	-0.324***	-0.483***	-0.144*
	(0.154)	(0.066)	(0.079)	(0.057)	(0.067)	(0.080)	(0.056)	(0.068)	(0.081)
Firm and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,794	1,800	1,800	1,629	1,635	1,635	1,501	1,507	1,507
Adjusted R^2	0.499	0.480	0.345	0.512	0.473	0.341	0.541	0.476	0.338

Table 8: Change in ownership horizon and the impact on ESG performance of firms

This table shows how changes in ownership horizons affect the ESG performance of firms. ESG is the overall score (i.e. weighted average of the environmental, social, and governance pillar scores). ShortToLong(LongToShort) is a dummy that is one if the orientation in each of the three largest owner groups of the firm has changed from short-term to long-term (long-term to short-term) or zero otherwise. Control variables are; ROA i.e. the return on asset calculated as the earnings before interest and taxes over the total assets of the firm, Firm_Size i.e. the natural log of total assets, Leverage i.e. the debt-equity ratio of the firm, Tangibility i.e. the ratio of plant property and equipment to total asset, CashHolding i.e. the cash and short-term investment ratio over the total asset, Sales_Growth i.e. the percentage change in sales of the firm and GDP i.e. the change in the gross domestic product in the country where a country is listed. The last rows include the firm, and year, fixed effects, the number of observations in the models estimated, and adjusted R^2. Firm-level clustered standard errors are reported in parentheses. *** (**, *) denotes significance at the 1% (5%, 10%) level (two-sided test).

	ESG					
	(1)	(2)	(3)	(4)	(5)	(6)
shortToLong1	0.022**					
	(0.010)					
LongToShort1		0.016				
		(0.010)				
shortToLong2			0.024**			
			(0.011)			
LongToShort2				-0.030**		
				(0.014)		
shortToLong3					0.026**	
					(0.013)	
LongToShort3						0.024*
						(0.013)
ROA	0.006	0.012	0.030	0.063**	0.015	0.063**
	(0.026)	(0.026)	(0.029)	(0.030)	(0.030)	(0.031)
Firm_Size	0.099***	0.099***	0.100***	0.101***	0.100***	0.102***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Leverage	-3.804***	-3.981***	-3.619***	-4.043***	-3.707***	-4.043***
	(0.286)	(0.291)	(0.287)	(0.296)	(0.290)	(0.300)
CashHolding	0.184***	0.183***	0.214***	0.203***	0.219***	0.207***
	(0.021)	(0.021)	(0.023)	(0.023)	(0.024)	(0.024)
Tangibility	0.044***	0.047***	0.025	0.060***	0.029	0.071***
	(0.016)	(0.016)	(0.017)	(0.016)	(0.018)	(0.018)
Sales_Growth	-0.046***	-0.031**	-0.044***	-0.029*	-0.046***	-0.028*
	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.016)
GDP_Growth	0.098	0.082	0.172	0.112	0.115	0.155
	(0.110)	(0.112)	(0.113)	(0.114)	(0.114)	(0.117)
Firm and Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,788	1,774	1,628	1,646	1,505	1,528
Adjusted R^2	0.579	0.582	0.587	0.581	0.591	0.590

Appendix: Variable definition

ESG variables	
ESG	The overall environmental, social, and governance score.
Env	The environmental pillar score of a firm's ESG.
Soc	The social pillar score of a firm's ESG.
Gov	The governance pillar score of a firm's ESG.
Ownership variables	
Longowner(Shortowner)	Indicator variables that equal one if a firm's owner is long-term(short-term) and zero otherwise across the three largest owner groups.
Voting(Capital) Share	The percentage of Voting(Capital) share of each of the three largest owners.
ShortToLong	Indicator variable that equals one if the ownership horizon has changed from short to long-term from the previous year.
LongToShort	Indicator variable that equals one if the ownership horizon has changed from long to short-term from the previous year.
Financial variables	
ROA	The earnings before interest and taxes over the total assets of the firm is the measure of profitability.
Firm_Size	The natural logarithm of total assets of the firm.
Leverage	The debt-to-equity ratio of the firm.
Tangibility	The plant, property, and equipment scaled with the total assets of the firm.
CashHolding	The value of cash and short-term investment scaled with the total assets of the firm.
Sales_Growth	The change in firm sales.
Country control	
GDP_Growth	The change in the gross domestic product of the country where the firm is listed.