

ERASMUS UNIVERSITY ROTTERDAM

ERASMUS SCHOOL OF ECONOMICS

MSc Economics & Business

Specialization Financial Economics

The Influence of Green CEOs on the ESG Performance of Firms



Author: L.J. Andela
Student number: 579062
Thesis supervisor: Dr. J.J.G. Lemmen
Second reader: Dr. K. Ji
Finish date: May 10, 2023

PREFACE AND ACKNOWLEDGEMENTS

First, I would like to express my gratitude towards Dr. Jan Lemmen for his critical view, helpful insights and quick responses throughout the thesis. Next to this, I would like to thank the second reader for taking the time to review my thesis and finally, I would like to express my appreciation for the support of my family and friends.

The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

ABSTRACT

In this research, I look deeper into the effects of the two main political spectra in the United States: Republican vs Democratic-leaning CEOs and whether this difference in political ideology has an effect on the ESG performance of firms listed on the S&P 500 over the period 2010-2021. My results show that there exists a positive and significant relationship between more Democratic-leaning CEOs and the ESG score of firms. Moreover, I do not find evidence for the effect of oil prices on this relationship, however the political ideology of the governor of the state in which the firm is headquartered seems to have an amplifying effect. Finally, my results suggest that CEO Democratism has a significant negative effect on the firm performance, when proxied by ROA, and no significant effect when proxied by Tobin's Q.

Keywords: Political Ideology, ESG, CEO, Democrats, Republicans, Firm Performance

JEL Classification: G30, G40, P28, Q50

TABLE OF CONTENTS

PREFACE AND ACKNOWLEDGEMENTS	2
ABSTRACT.....	3
LIST OF TABLES	5
LIST OF FIGURES.....	5
CHAPTER 1 Introduction.....	6
CHAPTER 2 Literature review	9
2.1 Theoretical background.....	9
2.1.1 Environmental, Social and Governance	9
2.1.2 Political Ideology	11
2.1.3 Oil price	12
2.1.4 Firm performance.....	13
2.2 Hypotheses development	14
CHAPTER 3 Data	18
3.1 Sample selection	18
3.2 Dependent variables.....	19
3.2.1 ESG.....	19
3.2.2 Environmental score.....	20
3.2.3 Financial performance.....	21
3.3 Independent variables	21
3.3.1 Political contributions	21
3.3.2 Oil price	24
3.3.3 Political ideology governor	24
3.4 Control variables.....	25
3.5 Summary statistics	26
3.6 Correlation table	29
CHAPTER 4 Methodology	30
4.1 The effect of political contributions on the ESG score	31
4.2 The effect of an oil price increase on ESG scores	31
4.3 The effect of an oil price increase on E.....	32
4.4 The influence of oil prices on ESG	33
4.5 The influence of oil prices on E.....	33
4.6 The impact of the ideology of the governor	34
4.7 The effects on firm financial performance	34
CHAPTER 5 Empirical results.....	36
5.1 Regression results	36
5.2 Robustness tests and endogeneity	42
5.3 Additional tests	45
CHAPTER 6 Conclusion.....	47
CHAPTER 7 Discussion	49
References	51
Appendix.....	59

LIST OF TABLES

Table 1	Sample selection process for firms	Page 18
Table 2	Refinitiv Eikon's ESG diagram	Page 20
Table 3	Summary Statistics	Page 28
Table 4	OLS regression results of political contributions, oil prices and governor ideologies on ESG performance	Page 39
Table 5	OLS regression results of political contributions, oil prices and governor ideologies on firm performance	Page 40
Table 6	Hypotheses overview	Page 48

LIST OF FIGURES

Table 1	Sample selection process for firms	Page 23
---------	------------------------------------	---------

CHAPTER 1 Introduction

Over the past 20 years, environmental, social and governance (ESG) scores have become an indispensable investment criterium in financial markets, and an increasing trend can be seen in investment strategies focused on ESG (Pollard et al., 2018; Gillan et al., 2021). In the second quarter of 2020, one third of fund sales in Europe is accountable to ESG funds. Moreover, according to Morningstar, globally \$70 billion of new money was invested in ESG funds by investors in 2021 and \$51.1 in 2020, which is twice as much as in 2019 and almost ten times as much compared to 2018 (Diaz et al., 2021; Hale, 2021). Accordingly, Socially Responsible Investment (SRI) is gaining momentum and firms' strategies need to put emphasis on ESG to meet the demand of investors (Cumming and Johan, 2007).

A firm's engagement in ESG could be the consequence of management's own interest, supported by norms and values, to behave in a more corporate socially responsible way (Benabou and Tirole, 2010; Azjen and Fishbein, 1980). This reasoning is supported by the agency theory¹, which states that agents have the tendency to engage in activities² that serve their own interests instead of the owners' interests, and the upper echelons theory, entailing that people exert their own values and beliefs into decisions. Therefore, it is of importance to put emphasis on whether values and beliefs of managers are injected in their (strategic) decisions (Jensen and Meckling, 1976; Linder and Foss, 2013; Hambrick and Mason, 1984). In this line of thought, a limited strand of literature found evidence for a positive relation between Democratic-leaning environments within firms and firms' CSR performance (Chin et al., 2013; Di Giuli and Kostovetsky, 2014; Borghesi et al., 2014; Borghesi, 2018). Findings on the effect of political ideologies on firm performance³ are more ambiguous and there is only limited research into the different components of the CSR/ESG score. The question whether political ideologies of CEOs matter in the decision to engage in CSR/ESG related activities and its effect on firms' financial performance leads to my research question:

Do Democratic-leaning CEOs positively affect the ESG performance of firms? And what is the effect on firms' financial performance?

By answering this research question, my research contributes to the reliability of existing literature focusing on the political ideology – CSR/ESG relationship as I use a different database for ESG performance. Mostly, the ratings of Kinder, Lydenberg and Domini (KLD) are used as proxy for CSR performance, whereas I used Eikon Refinitiv's DataStream to acquire the ESG scores of firms.

¹ According to the agency theory, ownership and control are separated and agents (managers) behave on behalf of the principals (owners) and actions performed by the agents should be aligned with the interests of the principals (Jensen and Meckling, 1976).

² Examples of such activities are empire building, risk aversion or short-term investment preferences (Linder and Foss, 2013).

³ See section 1.1.4

Second, the research adds to a strand of literature that focusses on external political factors influencing firms' decision making, specifically related to CSR/ESG engagement (Di Giuli and Kostovetsky, 2014; Rubin, 2008). Di Giuli and Kostovetsky (2014) and Rubin (2008) respectively measure the external political environment by the voting patterns and the results of presidential elections of communities of the state in which the firm is headquartered. Conversely, I will proxy the political environment by the ideology of the governor of the state in which the firm is headquartered and add it as an interaction term to see whether a Democratic-leaning governor amplifies the effect of a more Democratic-leaning CEO on the ESG score.

Third, I contribute to the literature focusing on macroeconomic drivers affecting the degree of CSR engagement (Krajnakova et al., 2018; Cai et al., 2016; Bernatonyte et al., 2009; Campbell, 2007). Whereas these papers focus more on economic indicators (inflation rate, consumer confidence, unemployment rate, per capita income), I will look whether a relatively large oil price increase will have an effect on the ESG performance of firms. Additionally, I add it as an interaction term, to see whether higher oil price levels amplify the effect of a more Democratic-favoring CEO on the ESG score. I expect that rising oil prices increase the demand for alternatives of oil as a fuel and as input factor for the production of products (i.e., plastics). The use of "greener" alternatives of oil would beneficially affect the ESG score of a firm, specifically the environmental dimension, and I expect that when CEOs are more Democratic-leaning, they would be more easily triggered to pursue ESG activities when oil becomes more expensive.⁴

Fourth, I add to existing literature focusing on the aggregate CSR/ESG scores, as next to the overall ESG score, I regress the three different dimensions of ESG on the political contributions to gain more specific insights. Finally, my research would add to the ongoing debate whether Democratic-leaning CEOs positively or negatively affect firm value.

The findings of my research show that Democratic-leaning CEOs are positively associated with the ESG score of a firm. Next to this, higher oil price levels positively affect the ESG score of a firm, however this effect is not larger for the E score and no significant evidence can be found for the regression of ESG scores and E scores on the interaction term of oil prices. Moreover, the effect of a Democratic-leaning CEO on the ESG performance will be amplified by the presence of a Democratic-leaning governor, by means of an interaction term. Additionally, I find empirical evidence that a more Democratic-leaning CEO negatively affects the financial performance of firms, proxied by return on assets (ROA). Finally, my results suggest that the ideology of the governor interacted with political contributions significantly and positively affects firm performance, proxied by Tobin's Q.

⁴ This as Democrats put more emphasis on social and environmental concerns, whereas Republicans focus on individualism, the free-market principle and the protection of property rights (Jost, 2006).

The remainder of this paper continues as follows: in chapter 2, I will discuss the literature background and accordingly the development of my hypotheses. Chapter 3 covers the data used to construct the regressions for my hypotheses. Chapter 4 describes the methodology used to perform the regressions and Chapter 5 discusses the empirical findings. Finally, Chapter 6 concludes the research and chapter 7 covers the discussion.

CHAPTER 2 Literature review

This chapter captures theoretical literature and can be separated into two parts. The first part will discuss relevant literature in the field of ESG (and the drivers of ESG), different political ideologies, specifically the Democratic-Republican spectrum, oil prices and firm financial performance. Accordingly, in appendix A and B, the meta table of the key literature is presented. The second part of this chapter will describe the development and the construction of my hypotheses, supported by existing literature.

2.1 Theoretical background

2.1.1 Environmental, Social and Governance

Environmental, Social and Governance (ESG) can be specified to the degree to which firms behave ethically towards environmental, social and governance concerns and the corresponding actions taken. Moreover, ESG has gained much attention among researchers and has been related to many topics over the last few years (Gillan et al., 2021). A predecessor of, but in close proximity to ESG, is the more heavily researched assessment of a firm's social responsibility, Corporate Social Responsibility (CSR). Corporate social responsibility behavior translates to actions performed on behalf of widespread stakeholders, including the wider society (Chin et al., 2013). While both CSR and ESG focus on the impact on society, a crucial difference between ESG and CSR is that they differ in the treatment of governance related aspects. While ESG incorporates governance as individual factor, CSR incorporates governmental issues implicitly leading to ESG being a more comprehensive indicator of the impact on society (Gillan et al., 2021). Despite this difference, CSR and ESG are often used interchangeably in related literature, but for my research I will focus on ESG specifically. The environmental dimension (E) covers all aspects related to how firms behave towards the environment. For example, the actions performed to reduce global warming, pollution and waste, the use of raw materials and the creation of opportunities which positively affect the environment. The social component (S) refers to the management of employees and the broader community and focusses on employment conditions, civil rights, equity, diversity, health and safety guarantees and inclusion within the firm. Finally, the governance dimension (G) tackles questions related to the structure used to operate, regulate and control (the management of) a firm such as board composition (i.e., the presence of inside/outside directors), compensation schemes, firm regulations, corruption and lobbying (Lee and Suh, 2022).

The increase of incorporation of CSR/ESG into corporate strategies and the increased availability of CSR/ESG information resulted in a comprehensive amount of research. The question of how and when firms value the interest of stakeholders versus the entrenched profit-maximization mentality, and the

factors that contribute to this tradeoff remains of large interest among researchers (Carroll, 1991; Freeman, 1984; Gupta et al., 2017).

A large strand of research focusses on the relation between CSR and external market factors, which are mostly related to country-, state- or industry-level characteristics. Including but not limited to product-market competition (Flammer, 2015), country economic development, autonomy, civil and political rights (Cai et al., 2016) and social capital (Jha and Cox, 2015), all positively associated with CSR. Internal factors related to CSR/ESG have been studied to a lesser degree and stems from the idea that the size, reputation and the strategy of the firm shape the degree of stakeholder pressure on the firm and consequently the engagement in CSR (King, 2008). For example, different board, ownership, and leadership characteristics have been linked to CSR. A strand of literature focusses on CSR and board features such as gender (Borghesi et al., 2014; McGuinness et al., 2017), size (Chams and Garcia-Blandon, 2019), composition (Naciti, 2019) and age (Borghesi et al., 2014). Moreover, Borghesi et al. (2014), Gillan et al. (2010) and Nofsinger et al. (2019) find evidence for a relation between the size of institutional ownership and CSR and McGuinness et al. (2017) and Boubakri et al. (2019) confirm that state ownership has a significant effect on the CSR performance of firms. Concerning leadership, CEOs have gained much attention among researchers within this strand of literature, due to the power he or she can exert on the firm's strategy and day-to-day decisions. Hegde and Mishra (2019) find positive evidence for married CEOs and CSR performance, specifically on the diversity and employee relations dimensions of CSR. Moreover, a strand of literature finds empirical evidence that female CEOs are more likely to score better on CSR performance than male CEOs (Borghesi et al., 2014; McGuinness et al., 2017; Cronqvist and Yu, 2017). The same authors suggest that age is positively associated with CSR as well. A more controversial topic is CEO pay, Joubert (2019) conclude that a higher CEO pay slice⁵ is positively associated with CSR, indicating that higher pay has a positive effect on the CSR performance of a firm. Moreover, according to Berrone and Gomez-Mejia (2009), long-term pay is an important driver of limiting environmental concerns. Conversely, Borghesi et al. (2014) find evidence for a negative but insignificant effect of CEOs total compensation on the total CSR level, but a significant and negative relation between the CEOs total compensation and employees related matters within CSR. This indicates that CEO pay negatively affects employee related concerns. Alternatively, Deckop et al. (2006) suggest that short-term CEO pay has a negative effect on CSR and long-term pay positively affects the CSR performance of a firm.

Instead of looking at (general) characteristics of CEOs, it is more meaningful to look at more personal attributes such as, executives' beliefs and norms and values. CEOs' values, which are in close proximity to political ideology following Tedin (1987), influence political behavior and corporate decision-making, including their attitudes towards CSR (Layman, 1997; Chin et al., 2013).

⁵ CEO pay slice is the percentage of the compensation that goes to the CEO over the total compensation to the top five executives in a firm (Joubert, 2019).

2.1.2 Political Ideology

Following the agency theory of Jensen and Meckling (1976) and the upper echelons theory of Hambrick and Mason (1984) described in the paper of Chin et al. (2013), executives' values and preferences are inherent in decision making and consequently in firms' corporate strategies.

Directly, executives make choices and subsequently perform actions which are in alignment with his or her values. Indirectly, executives may search explicitly for information that confirms his or her values and perceive the information in a biased (individually shaped) way (England, 1967). According to England (1967), values are entrenched and constant in nature and more generic compared to attitudes and are often seen in close proximity to ideologies and philosophies.

Political affiliations in particular are perceived as influential enough to affect a firm's strategic behavior due to the relatively steady and rooted nature of political preferences. Within political ideologies, the most prominent spectrum refers to the liberal-conservative continuum (Schwartz, 1996; Jost, 2006). Liberalism, which is more in alignment with Democratic parties, is characterized by civil rights and social concerns are at the core of the ideology. Examples of social concerns are diversity, individual freedom, environmental issues and social change. These topics shape liberalism and consequently Democratic-leaning parties (Schwartz, 1996; Chin et al., 2013). Furthermore, people following a liberal mindset are viewed as more open to ambiguity and holding a more positive view towards change (Jost et al., 2003). On the other side of the spectrum, conservatives, which are more pronounced in Republican parties, belief in individualism and limited governmental interference (the "free market mechanism") and value private properties, status quo and hierarchy within businesses (Jost et al., 2003; Detomasi, 2008). According to Jost et al. (2003) and contrary to the liberal mindset, conservatists are more prone to uncertainty avoidance (accompanied by a greater fear of losses) and resistant to change (Giddens, 1998).

According to Rubin (2008), the principles of socially responsible investment (SRI) are more aligned with the values of the Democratic parties than the values of the Republican parties. For example, Republicans favor low government spending and low tax rates and profits are deemed for shareholders and not allocated to social purposes (Tavares, 2004; Rubin, 2008). Democratic parties on the other hand, care about the firm's social engagement and protect employees (and consumers) by means of the implementation of widespread principles relating to labor and the environment. Additionally, Democrats aim to improve the rights of minorities and the ability for employees to establish a union (Rubin, 2008; Chin et al., 2013).

The interest among researchers has grown and a small number of researchers researched the relationship between Democratic and Republican parties and CSR engagement. Chin et al. (2013) and Jeong and Kim (2019) find a positive relation between liberal CEOs and CSR performance and Di Giuli and Kostovetsky (2014) found a positive relationship between Democratic-leaning board members, CEOs

and founders and CSR and higher CSR scores for firms headquartered in Democratic-favoring states. Moreover, Gupta et al. (2017) performed research into the ideologies of employees within the organization and find that firms with a higher share of liberal employees show higher CSR performance. Contributing to this finding, Rubin (2008) finds that firms located in more Republican-favoring areas (measured by votes for President Bush) show lower CSR performance.

2.1.3 Oil price

The rise in interest in CSR and the availability of public information about CSR has resulted in a large stream of literature focusing on the drivers of CSR. As described above, external and internal microeconomic drivers have gained much attention over the past decade. Macroeconomic effects on the other hand, have been researched to a lesser extent. Yet, macroeconomic influences can have major consequences for economies and firms specifically, and affect firms' strategies and decisions, including decisions towards the engagement in CSR (Krajnakova et al., 2018). For example, Cai et al. (2016) found that the economic development within a country, proxied by income per capita, is positively associated with the CSR performance of a firm. Moreover, during times of worse economic conditions, associated with inflation and high unemployment rates, CSR development decreases (Bernatonyte et al., 2009; Campbell, 2007). In light of the macro-level perspective, commodity prices play a large role in the real economy and financial markets and have real economic and financial consequences. For example, oil is a very important source and commodity and is therefore tightly linked to real economic activities and financial markets (Song and Yang, 2022). Oil price volatility can be used to explain changes in stock returns (Xiao et al., 2018), real GDP (Gross Domestic Product) and real fixed-asset investment levels (Cheng et al., 2019). Moreover, Henriques and Sadorsky (2008) expect that changes in the stock prices of stocks related to alternative energy are partly driven by the movements in oil prices. On firm-level, Phan et al. (2019) and Chen et al. (2020) find empirical evidence for the relation between corporate investment and oil price volatility. The negative relation found by Phan et al. (2019) could be explained by the real option theory. Following this theory, firms rather wait with investments until uncertainty is resolved as with uncertainty, the option value of waiting to invest increases (Pindyck, 1991, Dixit and Pindyck, 1994). In this line of thought, firms rather postpone long-term irreversible investments in CSR when the oil price volatility is high (Phan et al., 2019). Moreover, Fan et al. (2021) performed research into the effect of oil price volatility on leverage and Hasan et al. (2022) relate demand driven and supply driven oil shocks to CSR behavior. Hasan et al. (2022) found that an oil price shock driven by demand, accompanied by an increase in oil prices, higher oil production levels and global economic activity, has a positive effect on CSR. Conversely, oil price shocks driven by supply, accompanied with an increase in oil prices, higher input costs, lower production outputs and inflation has a negative effect on CSR. The positive effect of demand driven oil shocks can be mainly explained

by the higher growth and future cash flows leading to more investments in activities related to communities, diversity and corporate governance to reduce CSR concerns. In line with the finding of Henriques and Sadosky (2008) but contrary to the reasoning of Hasan et al. (2022), I expect that an increase in oil prices would provide a clear incentive to switch to relatively greener alternatives of oil. Green alternatives of oil as a fuel (using energy generated by natural resources instead generated by oil plants, or biofuels) and alternatives of oil as a raw material for production of plastics (i.e., biobased materials) become relatively less expensive when oil prices rise. Consequently, a switch to these alternatives will boost the ESG performance, and especially the environmental performance of firms.

2.1.4 Firm performance

Firm value has been researched extensively due to its inference about internal business operations, efficiency and external environment (Kazlauskiene and Christauskas, 2008; Nguyen et al., 2021). Accordingly, it is of importance to know what drives firm value. Internally, firm value has been associated with leverage (Vithessonthi and Tongurai, 2015; Dang et al., 2019; Adenugba et al., 2016), profitability (Dang et al., 2019; Endri and Fathony, 2020; Rizqia and Sumiati, 2013), capital expenditures (Rizqia and Sumiati, 2013), liquidity (Aggarwal and Padhan, 2017; Nguyen and Bui, 2020) and firm size (Aggarwal and Padhan, 2017; Dang et al., 2019; Endri and Fathony, 2020; Rizqia and Sumiati, 2013). Externally, interest rates (McNamara and Duncan, 1995; Pangestuti and Tindangen, 2020), inflation (Maimunah and Patmawati, 2018; Suzulia et al., 2020), and GDP (McNamara and Duncan, 1995) have been linked to firm performance.

Due to the meaningfulness of political beliefs within a firm, an upcoming stream of literature focused on the relation between political ideology and firm performance. Ovtchinnikov and Pantaleoni (2012) find empirical evidence that individual political contributions attributed to economically relevant politicians, positively affect firm operating performance, measured by ROA and the market-to-book ratio. Supporting these results, Claessens et al. (2008) find that political contributions are positively related to firms' future abnormal (stock) returns and according to Unsal et al. (2016), the abnormal stock returns are the highest for Democratic-leaning firms. Furthermore, Santa and Valkanov (2003) found higher excess returns in the stock market in periods of Democratic presidencies compared to Republican presidencies, mostly explained by the difference in unexpected returns, instead of expected returns, which leaves this finding puzzling. Moreover, Cooper et al. (2010) constructed a political index⁶ consisting of four proxies, to measure the extent of firm support to candidates and link this to future returns. Higher amounts of corporate political contributions towards candidates which are located in the same state as the company is headquartered and firms which contributions were transferred towards

⁶ The four proxies are: the number of supported candidates, the strength of the relationships between candidates and the contributing firm, the ability of the candidates to help the firm, and lastly, the power of the candidate (Cooper et al., 2010).

House and Democratic candidates, show the most pronounced effect on future abnormal returns (Cooper et al., 2010). Literature focusing on Tobin's Q specifically as proxy for firm performance, found similar results. Kashmiri and Mahajan (2017) suggest that Tobin's Q, is positively related to the liberalism of CEOs. This as liberal CEOs tend to invest more in (new) innovative products than Republican-leaning CEOs, which has a positive effect on the value of the firm. Furthermore, Unsal et al. (2016) found that Republican-leaning CEOs exhibit more lobbying activities, resulting in higher lobbying expenditures and subsequently higher agency costs. Consequently, the Tobin's Q of the Republican-leaning firm is negatively affected. This does not hold for Democratic-leaning firms, which Tobin's Q remains unchanged. On the contrary to this stream of literature, Aggarwal et al. (2012) find that political contributions have a negative effect on future excess returns, which can be partly explained by worse corporate governance and by the larger amount of (bad) acquisitions engaged in, measured by worse cumulative abnormal announcement returns. Ansolabehere et al. (2004) conclude that there is no relation between the amount of soft money⁷ contributed and firm value. Moreover, firms with CEOs who have political connections underperform the market by 37 percent more compared to firms with CEOs without political connections and obtain a significant lower ROA (Fan et al., 2007; Bertrand et al., 2005). As can be seen from previous literature, the effect of political affiliations and contributions on firm performance remains ambiguous.

2.2 Hypotheses development

Literature focusing on the political ideology existing in a firm and its relation to a sustainability measure has been performed on a small scale in recent years. Following Di Giuli and Kostovetsky (2014), there exists a positive relationship between Democratic-leaning CEOs, directors and owners and CSR performance. Moreover, the papers of Jeong and Kim (2019) and Chin et al. (2014) find a positive association between CEO liberalism and the CSR performance of a firm. These findings provide evidence that political preferences and the accompanying values and beliefs of executives are taken into the strategy of the firm. Following Jost (2006), Democrats focus more on social concerns and environmental issues, whereas Republicans put more emphasize on individualism, the free-market principle and the protection of property. That said, I expect that a CEO who is more Democratic-leaning, will perform more ESG related activities and have higher ESG scores, leading to hypothesis one.

***Hypothesis 1:** A relatively greener CEO, will lead to higher ESG scores.*

Relatively few literature strands have performed research into the effect of movements in oil prices on the demand for alternative energy sources. Hasan (2022) found evidence that oil price shocks driven by

⁷ Soft money refers to unregulated donations to political parties coming directly from corporate funds (Ansolabehere et al., 2004).

demand (characterized by simultaneous upwards trends in oil prices, oil production and global economic activity) have a positive influence on the CSR score of a firm. This positive relation can be mainly explained by the higher economic growth and expected future cash flows resulting in more investments to reduce CSR concerns. Particularly investments in aspects related to communities, diversity and corporate governance, in order to reduce CSR concerns. Following Henriques and Sadosky (2008), movements in the stock prices of alternative energy related stocks can be partly explained by the movements in oil prices. More specifically, oil price shocks have a positive effect on the stock prices of alternative energy related stocks, and thereby increasing the value and demand for these stocks. This finding suggests that changes in oil prices have a positive effect on the interest in ESG related matters. In line with Henriques and Sadosky (2008), when the economy experiences an increase in oil prices, I expect that alternatives of oil will become more attractive, and so firms will be more interested into green energy and green sources for production, leading to higher ESG scores. Therefore, I expect that especially the environmental aspect within ESG scores will increase, leading to hypotheses two and three.

***Hypothesis 2:** An increase in oil prices, will lead to an increase in ESG scores.*

***Hypothesis 3:** An increase in oil prices, will lead to a larger increase in E scores.*

As I expect that higher oil prices affect the ESG score of a firm positively, it would be interesting to see whether the effect of a more Democrat-leaning CEO on ESG performance would be strengthened when the oil price increases. I assume that political contributions are positively related to ESG performance, and so a higher oil price level would strengthen this effect. The following hypothesis is constructed.

***Hypothesis 4:** A higher oil price level will strengthen the relationship between a Democratic-leaning CEO and the ESG score of a firm.*

In the same vein as hypotheses (2) and (3), I would like to see whether this effect of the interaction term is even stronger for the environmental score specifically. Accordingly, the next hypothesis is constructed.

***Hypothesis 5:** A higher oil price level will strengthen the relationship between a Democratic-leaning CEO and the E score of a firm more heavily.*

Next to macroeconomic factors, it is important to take into account other factors the firm is exposed to, that could influence the effect of political ideologies on ESG performance. For example, the political

environment in which the firm is located could be of influence in how a CEO acts and the degree to which he or she pursues ESG related activities. Di Giuli and Kostovetsky (2014) state that the external political environment of a firm, proxied by voting patterns of the state in which the firm is located, is associated with the level of CSR practices within a firm. More specifically, more Democratic-leaning external environments show higher CSR performance. Moreover, Rubin (2008) finds that firms located in areas where the political views of the stakeholders are more Republican-leaning, the CSR performance of a firm deteriorates. This leads to the sixth hypothesis.

Hypothesis 6: A Democratic-leaning governor will strengthen the relationship between a Democratic-leaning CEO and the ESG score of a firm.

Finally, it is of importance to perform research into the question whether being more Democratic-favoring, and so socially responsible driven, pays off financially. Kashmiri and Mahajan (2017), find evidence that liberal CEOs manage to get higher firm value, in terms of Tobin's Q, compared to conservative CEOs. Additionally, Unsal et al. (2016) conclude that Republican-leaning firms exhibit lower Tobin's Q as they experience higher agency costs coming from higher lobbying activities and expenditures. Moreover, many studies confirm the positive relationship between the sustainability performance of a firm and firm (financial) performance. For example, Gillan et al. (2010) find that ESG focused firms operate more efficiently, generate higher firm value and obtain higher operating performance, measured by the return on assets. In line with this finding, Fernando et al. (2010) conclude that firms with lower environmental performance are associated with a lower market valuation, measured by Tobin's Q. In a similar vein, following Orlitzky et al. (2003), corporate social and environmental performance is positively associated with financial performance, measured by return on assets, return on equity and earnings per share. As I expect that more Democratic-leaning CEOs have a positive effect on the ESG performance and ESG is positively related to firm performance, it is reasonable to expect that Democratic-leaning CEOs have a positive effect on firm performance as well. In line with Kashmiri and Mahajan (2017) and Unsal et al. (2016), I expect a positive relationship between Democrat-leaning CEOs and firms' financial performance, leading to hypothesis 7.

Furthermore, it would be interesting to see whether the interaction terms of oil prices and the ideology of governors would amplify the positive effect of a more Democrat-leaning CEO on firms' financial performance. According to Dhaoui and Khraief (2014) and Henriques and Sadosky (2008) oil price increases can negatively affect cash flows of a firm directly, as oil serves as a substantial input for production. Indirectly, cash flows become lower as the discount rate for cash flows increases as response to the higher oil price. The higher oil price may have induced inflation and consequently, an increase in (real) interest rates. Dhaoui and Khraief (2014) also found evidence for a negative relation between oil price shocks and firms' stock returns, but a positive association between oil price shocks and the

volatility of returns. To the contrary, Wong and Hasan (2021) conclude that oil price shocks driven by demand factors have positive effects on cash flows, investments, and corporate payouts. Higher demand for oil, increases oil prices, but also the production levels and economic activity, leading to higher cash flows which positively affect net income and thereby the financial performance of firms (Wong and Hasan, 2021). However, in line with Dhaoui and Khraief (2014) and Henriques and Sadorsky (2008), I expect that an increase in oil prices will dampen the positive effect a Democratic-leaning CEO has on the financial performance of a firm. Consequently, I expect that the lower oil price level in 2020, will more positively affect firms' performance, compared to the higher oil price level in 2021. Additionally, firms operating in the oil industry would benefit from higher oil prices, however as only 1 firm of my 221 firms is active in this industry, this view is disregarded.

The political environment of a firm is of high importance for a CEO's decision-making, including decisions related to CSR activities, but also for value creation of firms (Di Giuli and Kostovetsky, 2014; Rubin, 2008). According to Rajwani and Liedong (2015), corporate behavior related to politics has a positive influence on firms' performance. This effect is most pronounced when political behavior translates to actions related to relationship building with politicians, such as providing them board positions or maintaining informal relationships. This indicates that political affiliations are of importance for the value of a firm. In this line of thought, I expect that when the governor of the state in which the firm is headquartered is Democratic-leaning as well, the effect of a Democratic-leaning CEO on firm performance will be amplified. Taking together the expected amplifying effect of the lower oil price level in 2020 and the Democratic-leaning governor, hypothesis 8 is constructed.

Hypothesis 7: *A relatively greener CEO, will lead to higher firm financial performance.*

Hypothesis 8: *A Democratic-leaning CEO strengthened by a Democratic-leaning governor and the oil price level in 2020 respectively, will lead to higher firm financial performance.*

CHAPTER 3 Data

This section first describes the process of my sample construction. Afterwards, the data gathering of my dependent, independent and control variables are described. Finally, I analyze the variables by means of a summary statistics table and correlation table.

3.1 Sample selection

This section describes the data sources used to construct my data sample and my variables. In Appendix C, an overview of all variables, descriptions and sources can be found. My research covers the period 2010-2021, this range is chosen as from 2009 onwards more data on ESG performance is available and 2021 needs to be included in my sample as the oil price increase was strongest from 2020 to 2021. My final sample consists of the political behavior of 289 CEOs among 221 firms and 905 firm-year observations. Table 1 shows an overview of the sample selection process of the firms.

Table 1. Sample selection process for firms

Sample criteria	N
Initial sample of the S&P 500 from Morningstar	500
Data for which ESG and pillar scores are available in Eikon Refinitiv DataStream	409
Dataset for which all the financial control variables are available. Specifically, I lost 5 firms for incomplete data on total assets	404
Data excluding a duplicate firm	403
Dataset for which contributions to Democrats and Republicans by CEOs is available. Specifically, 123 firms held data on contributions to PACs or unknown/unavailable destinations	280
Dataset for which CEO data is available in ExecuComp, including non-financial control variables (age, gender and tenure), salary and identifier variables (ISIN, Ticker Symbol, CUSIP, ID number of CEO)	221

This table provides the selection process for the firms included in my sample, where N represents the number of firms left in the sample. Based on the sample criteria, the final sample set covers 221 firms.

As can be seen from table 1, I used the Standard and Poor 500 as a base for my sample. This base covers 500 large publicly traded companies in the United States, and as I expect that CEOs in large firms are more likely to contribute (and larger amounts), I chose this base as my data foundation. I used Morningstar to get all firms listed on the S&P500 and I ended up with 409 firms for which ESG data was available in Eikon Refinitiv DataStream and 403 after removing firms which had missing data for the control variable *LogTotalAssets* and one duplicate firm.

Thereafter, I gathered contributions data to Democratic and Republican-favoring parties by CEOs for 280 firms. For the data on political contributions, I made use of the website of the Federal Election Commission (FEC). The FEC is the independent regulatory agency of the United States, which (among others) registers all political contributions above \$200 dollar made by North American citizens. I excluded contributions made to PACs⁸ as I would have had to manually check whether donations to PACs were destined for Democratic or Republican-leaning candidates/campaigns. Finally, I matched the CEOs I got from the FEC database to CEO characteristics. More specifically, I gathered salary, gender, age, tenure, ID number and company identifiers (ISIN, Ticker Symbol and CUSIP) via ExecuComp. By doing this I ended up with my final sample which consists of 221 firms and 289 CEOs. Moreover, in my sample there are more CEOs than firms, as some firms may have had more CEOs over the 12-year period, so CEO changes have occurred over time. Furthermore, the number of observations used for my regressions is 904. This is one less than the total amount of observations in my sample. This is the case as one singleton observation has dropped, which is an observation that only occurs once within a certain fixed effects group. In my case, when controlling for state fixed effects, only one (firm-year) observation was found in the state District of Colombia⁹.

3.2 Dependent variables

3.2.1 ESG

To measure how well a firm performs within the field of ESG, a common way is to look at the ESG score of that specific firm. I used Eikon Refinitiv DataStream to gather these ESG and separate pillar scores. I chose this database as it is a comprehensive database which has data on 10.000 stocks and captures more than 500 firm-level ESG measures, of which 186 dominate the scoring process, and translates this into (publicly disclosed) ESG scores. ESG scores are constructed by Eikons 350 analysts and assessment of the relative ESG scores are based on an underlying ESG database (Thomson Reuters, 2017). The scores are based on three pillars, each pillar consists of multiple categories, as presented in Table 2 and Appendix D shows the detailed (weighted) category scores.

⁸ Political Action Committees (PAC) are political committees that is established for the goal of acquiring contributions of members and spending them on campaigns for or against candidates. Mostly, PACs are no party/ authorized committees of candidates but are often founded by and linked to companies or labor organization (FEC, 2023).

⁹ The reason that singleton observations must be dropped from the regression is that it can lead to incorrect inference of the results. More specifically, for calculation of the coefficients, the within group average must be subtracted from each estimate. This is not possible with one observation, as the within group transformation would be zero.

Table 2. Refinitiv Eikon’s ESG diagram

Pillar	Category
Environmental	Resource Use, Emissions, Innovation
Social	Workforce, Human Rights, Community, Product Responsibility
Governance	Management, Shareholders, Corporate Social Responsibility (CSR) strategy

This table represents Refinitiv Eikon’s ESG diagram. The first column describes the three different pillars and the second column describes the different categories within these pillar.

The pillar scores are relative, meaning that the category score assigned to a firm depends on the number of firms with a better, worse or equal score within an industry for the environmental and social pillars and within a country for the governmental pillar. For the aggregate ESG score, all pillar scores need to be weight-adjusted. The weight of each pillar depends on the weights of all the categories within the pillar. More specifically, each category’s weight is based on the number of useful measures within the category (Thomson Reuters, 2017). For example, the category Resource Use has 20 measures, while Human Rights has only eight and so Human Rights will be assigned a lower weight than Resource Use. Thus, the overall ESG score is calculated by multiplying each of the pillar scores by the pillar weights. Finally, the scores take a value within the range 0-100. Firms with scores between 0 and 25 can be seen as relatively poor ESG performers, firms with scores greater than 25 up to 50 have relatively satisfactory ESG performance, firms with scores greater than 51 up to 75 are relatively good ESG performers and lastly, scores greater than 75, up until 100, indicate relatively excellent ESG performance. It must be mentioned that firms in the United States are not obliged to disclose ESG data and that no regulation exists that captures the transparency and precision of it. Yet, the ESG base constructed by Eikon Refinitiv DataStream is frequently used and can be considered as a reliable database for ESG data.

3.2.2 Environmental score

The third and fifth hypotheses measure the effect of oil prices and the interaction term of oil prices and political contributions on the environmental score specifically. The proxy I take for the environmental score will be the environmental pillar, as described in section 3.2.1. This pillar consists of three main categories: Resource Use, Emissions and Innovation, with each category consisting of multiple measures. Similarly, each category score is the equally weighted sum of all the measures within that category. To get to the environmental score, all category scores are adjusted for weight (based on the

amount of measures) and summed up. The environmental pillar score has values between 0 and 100, with 0 being the lowest possible environmental score and 100 the highest possible score.

3.2.3 Financial performance

To answer the seventh and eighth hypotheses, I need proxies to measure the financial performance of firms. The first proxy used will be similar to a market-to-book ratio, namely the Tobin's Q measure. This formula is derived by dividing the market value of a firm by the replacement value of the firm and indicates whether a firm is relatively over- or undervalued. Both the market capitalization and the total value of the assets are gathered from Eikon Refinitiv DataStream. This measure will be calculated as:

$$Tobin's\ Q = \frac{Market\ Value\ of\ a\ Firm}{Total\ Value\ of\ Assets}$$

The second proxy used is the return on assets (ROA). ROA is the ratio of net income over total assets and I used Eikon Refinitiv DataStream to gather both the net income variable and the total assets.

Leading to the following formula:

$$ROA = \frac{Net\ income}{Total\ Assets}$$

3.3 Independent variables

3.3.1 Political contributions

To answer hypotheses (1), (4), (5), (6) and (7) and (8), I need a proxy to measure the greenness of CEOs. More specifically, political contributions of North American CEOs from the S&P500 index are used.

I used the database of the FEC (Federal Election Commission) to gather data on the political contributions, the receiving party and contributor information over the period 2010-2021. Concerning the contributor information, the FEC provides data on the political contributions made per employee, including personal information and his or her function within the company.

Yet, the names of the CEOs in the FEC database have to be linked to CEOs' characteristics reported in ExecuComp, which could be slightly different due to nicknames for example. I solved this issue by using a matching function to check for middle and last names, and employer. Additionally, for extra validation I made use of Mergent Online, company websites and other online sources, such as LinkedIn.

Moreover, the recipient party can be linked to a Democratic-favoring party, a Republican-favoring party, a PAC or none of these / not available. As said, I exclude PACs from my sample as I was unable to link the destinations of PACs' contributions to either Democrat or Republican-leaning candidates. After having classified each recipient party Republican or Democratic, I can conduct an index to measure the extent to which a CEO can be classified as more Democrat-leaning, based on his or her political contribution behavior. This is done by four different measures conducted by Chin et al. (2013). The first method calculates the amount of donations in numbers made to Democratic-favoring parties by the CEO over the total amount of donations made. The second method calculates the ratio of the total contributions made in dollar value to Democratic-favoring parties over the total amount of contributions (Democratic and Republican parties) made by a certain CEO. The third indicator calculates the number of years donations are made to Democrats relative to the total number of years donations were made to both Democrats and Republicans. Lastly, the fourth indicator measures the ratio of distinct Democratic committees the CEO made contributions to over the total distinct committees of both parties. I will take the average of these four ratios to conduct the final measure of political contributions. These ratios will have a value between 0 and 1 and the higher this ratio, the more Democratic-leaning the CEO. Scores above 0.5 indicate a more Democratic-leaning CEO and ratios below 0.5 suggest a more Republican-leaning CEO. To clarify this, an example is displayed. A CEO contributes four times \$1000 dollars to three different Republican-leaning parties over four distinct years, and twice \$2000 dollars to two distinct Democratic-leaning parties both in the same year. The ratios become:

$$\text{Democratic-leaning in number of contributions} = \frac{2}{6} = 0.33$$

$$\text{Democratic-leaning in dollar value of contributions} = \frac{4000}{8000} = 0.5$$

$$\text{Democratic-leaning in number of contributions-year} = \frac{1}{5} = 0.20$$

$$\text{Democratic-leaning in number of recipients} = \frac{2}{5} = 0.4$$

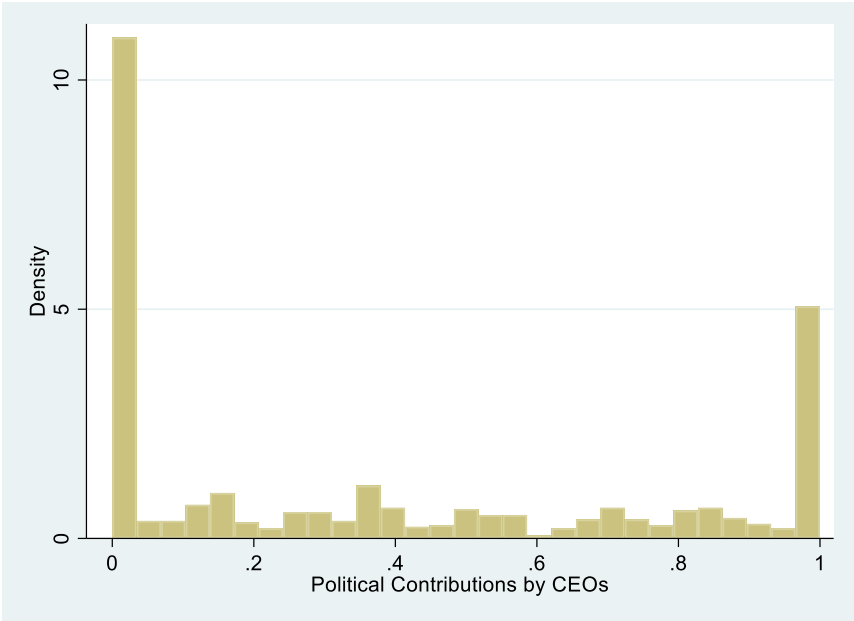
The average would then be 0.36, which is below 0.5 and so this CEO can be considered as a relatively Republican-leaning and as a relatively less green CEO. The distribution of the contributions is presented in figure 1. From which can be seen that the two extreme cases occurred most: most CEOs have a score of 0, indicating that only contributions were made to Republicans, and none to Democrats, followed by scores of 1, indicating the opposite.

Some firms in my sample have multiple CEOs in the same year. However, as I use age and gender of CEOs as a control variable and no average gender or age can be taken, I need one "leading" CEO per firm-year. In case one year has multiple CEOs, the leading CEO is chosen by looking at the salary of the CEO. The one with the highest salary will be the leading CEO and the other CEO will be deleted out of the sample. In case the CEOs have similar salaries, the oldest CEO becomes the leading CEO.

It must be noted that it is of course possible to have more CEOs for a specific firm over the twelve years in my sample. For example, CEO A is the CEO from 2011-2015 and CEO B is CEO from 2016-2021. In this case, this firm has two CEOs over the whole sample period.

To calculate the political contributions ratio of a certain CEO, I looked at all contributions made over the period 2010-2021. As described above, it occurs that a firm-year of a CEO is deleted as he or she is not the leading CEO in that specific year. This contribution is then deleted which leaves the CEO with less contributions than he or she actually made. For example, if CEO A is CEO in 2011 and 2012 and made political contributions in these years, and CEO B is CEO in 2012, 2013 and 2014, then there must be a leading CEO chosen for the year 2012. If CEO A earns a higher salary than CEO B, CEO A will be the leading CEO, and CEO B's political contribution in 2012 will be deleted, and the contributions made in 2013 and 2014 will be kept in the sample. However, each year in which the CEO made contributions are included in the calculations for the four ratios, also the ones that are deleted because of the multiple CEO problem. Otherwise, I would get a mislead image on how much and how often a CEO has actually contributed. After the ratios are calculated, I deleted the observations of the non-leading CEO in the years there are multiple CEOs, as this would contradict to the control variables gender and age.

Figure 1. Distribution of the political contributions of CEOs



3.3.2 Oil price

To answer hypotheses (2) and (3) it is relevant to gather data on the crude oil prices in the period 2010-2021. Via the Energy Information Administration (EIA) I have access to the West Texas Intermediate (WTI-Cushing) oil prices, which serves as a reference for pricing crude oil, among others, and which is traded at the domestic spot market of Cushing, Oklahoma. I will use the WTI spot prices, which are derived by the EIA and are calculated by looking at the unweighted daily averages. The EIA gathered these prices via Eikon Refinitiv.

As I will investigate the effect of an increase in oil prices on the ESG performance of a firm, I will have to look at a significant increase. I am unable to look at huge oil price increases, such as the increase in 1973 during the oil crisis, and the increase in 2008 during the financial crisis, as my dataset is limited to the years 2010-2021. Therefore, I will specifically look at the (relatively moderate) increase in oil prices between 2020 and 2021. In this period, the WTI spot price experienced an increase of 74% from 2020 to 2021. In 2020, the spot price was \$39.16 dollars per barrel and in 2021 the spot price was \$68.13 dollars per barrel. Again, these spot prices are calculated as the averages of the daily spot prices within the specific year.

3.3.3 Political ideology governor

For the sixth hypothesis, I want to know whether the state in which the firm is headquartered, is Democratic-leaning or Republican-leaning. I proxy for this by determining whether the state has a Republican-leaning or Democratic-leaning governor. I use an indicator variable, which has a value of 1 in case the governor is more Democratic-leaning and a value of 0 in case the governor is more Republican-leaning. Data on governors is gathered via the National Governors Association (NGA), which is a prominent resource for governor related data. Moreover, I choose to look at governors specifically as they are consistently chosen for a period of four years and function as the chief executive officer of a specific state. Governors function as a linkage between the state and the federal government and next to pursuing state laws, they have the duty to implement and improve new and revised policies and plans. Next to the legislative role of governors, they possess substantial appointment and clemency power, they are allowed to issue executive orders and are responsible to take emergency actions when needed (NGA, 2023).

3.4 Control variables

The use of control variables will mitigate possible other (external) explanations for changes in my dependent variables. Control variables are necessary to get valid results and limit the omitted variable bias as much as possible. To account for all other effects on the dependent variable, which are not covered by the control variables, I will add multiple fixed effects. Fixed effects are included to account for time-invariant firm characteristics and so for unobserved heterogeneity. I will use year, industry and state fixed effects by means of indicator variables. Concerning my control variables, I made a distinction in financial and non-financial control variables. My control variables are as follows:

- Firm size (*LogTotalAssets*): firm size is measured by taking the log function of the total assets. I control for firm size, as I expect that bigger firms are more likely to have the resources to obtain a higher ESG score and larger firms might be more concerned with reputation (and so are more likely to care about ESG related matters). Therefore, I expect the sign of this variable to be positive (Borghesi et al., 2014; Di Giuli and Kostovetsky, 2014).
- Profitability (*ROE*): the profitability of a firm is measured by looking at the return on equity (ROE) of the firm. I will add profitability as a control variable as a more profitable firm, will have more financial resources available to invest in ESG related activities, and so obtain a higher ESG score (Borghesi et al., 2014; Jeong and Kim, 2019). This said, I expect the coefficient of ROE to be positive.
- Leverage (*DEratio*): the variable leverage is constructed by dividing total debt over total equity. By adding the debt-to-equity ratio as a control variable, I will account for the effect leverage may have on the ESG performance of a firm. A firm with a higher leverage ratio, will have more debt payment obligations and will have less financial resources left to invest in ESG related activities, which will result in a lower ESG score (Chams and Garcia-Blandon, 2019; Di Giuli and Kostovetsky, 2014; Chin et al., 2014). Hence, I will expect a negative relationship between the ESG score of a firm and the leverage ratio.
- Investment (*ScaledCapex*): the investment level of a firm is measured by the capital expenditures of a firm scaled by the total assets. A firm with higher capital expenditures, will be more likely to invest in ESG related activities as well, which is reinforced by the long-term nature of both capital expenditures and ESG investments (Ferrell et al., 2016). Therefore, I expect the sign to be positive.
- Gender (*Gender*): In my sample, I will adjust for gender as firms with female leaders are more likely to have better ESG scores than firms with male leaders (Borghesi et al., 2014; Jeong and Kim, 2019; Di Giuli and Kostovetsky, 2014). The variable gender is an indicator variable, for which a 0 will be assigned to a male CEO and a 1 will be assigned to a female CEO.

- Age (*LogAge*): I control for age as relatively young CEOs tend to be less conservative and more focused on shareholder value than relatively old CEOs and so more likely to invest in ESG related activities (Borghesi et al., 2014). I take the log of age and add one to it. Hence, I expect age to be negatively related to ESG performance.
- Tenure (*LogTenure*): the variable *LogTenure* is a control variable that measures the amount of days the CEO has been in his or her position as CEO. The end date is subtracted from the start date and in case the CEO is still operating as the CEO, I put the 15th of December as end date. This is the date I finalized my dataset. I expect that a CEO with a longer tenure, will be more involved in the company, will have more experience and will have a greater interest of acting in the right way for the firm (Gupta et al., 2017). Therefore, I expect the relationship between ESG performance and tenure to be positive.
- President (*President*): the variable *president* will look at which president served during the specific year. As my sample covers 2010-2021, there are three possible options. Barack Obama served in the years 2010 – 2016, Donald Trump in the years 2017 – 2020 and Joe Biden served in the year 2021. Barack Obama and Joe Biden are members of the Democrat party and Donald Trump was politically affiliated to the Republicans. This category variable will be an indicator variable, and I will assign a 0 when the president is Republican-leaning and 1 if the president is Democratic-leaning. More specifically, in the years that Barack Obama or Joe Biden served, I will assign a 1 and in the years Donald Trump was president I assign a 0. I expect that when the president is Democratic-leaning, there will be more opportunities for firms to improve its ESG performance and it will be easier to pursue ESG related activities. In line with this thought, Liao et al. (2020) conclude that local governments in which the majority of the political body consists of Republican-leaning politicians, will pursue less ESG related activities than when the majority of the political body consists of more Democratic-leaning politicians. This confirms the findings of Rubin (2008) and Di Giuli and Kostovetsky (2014), leading to an expected positive relationship between a Democrat-leaning President and the ESG score of the firm.

3.5 Summary statistics

Table 3 describes the descriptive statistics of my sample. My final sample consist of 905 firm-year observations and covers 221 firms and 289 CEOs of firms listed on the S&P 500 index in North America, between the period 2010-2021. *ESGscore* has a mean of 58.31 with a standard deviation of 18.85 and minimum and maximum values between respectively 1.90 and 95.16. Moreover, *ESGscore* is moderately normally distributed as the mean (58.31) is relatively close to the median (62.04), however as the mean is smaller than the median, the distribution is slightly left-skewed. As the mean is above 50,

the overall firms in my sample have relatively good ESG performance. Similarly, the mean and standard deviation of the environmental pillar score comes down to 53.66 and 26.86 respectively. This mean is above 50 as well, which indicates that the overall environmental pillar score of the 221 firms is relatively good. This variable is slightly less normally distributed than *ESGscore*, and with a mean of 53.66 and median of 59.91, it follows a slightly negatively skewed distribution as well.

My third dependent variable *Tobin's Q* has a mean of 1.33 and a standard deviation of 1.36 and is weakly / not normally distributed based on the difference between the mean and median. Different than the *ESGscore* and *EScore*, this variable is positively skewed as the mean (1.33) is larger than the median (0.95). As *Tobin's Q* provides insights into the relationship between the market value and book value of a firm, this mean coefficient states that overall, the firms in my sample are 33% overvalued in the market. The other proxy for firm performance is *ROA* and has a mean of 6% which indicates that for every dollar in assets, the company earns \$6 cents per year in profit. *ROA* is quite strongly normally distributed with a mean and median of 0.06 and 0.05 respectively.

Concerning my independent variables, the political ideology measure has a mean of 0.38. As 0.38 is lower than 0.5, this indicates that CEOs in this sample are more Republican-leaning than Democratic-leaning on average. Looking at the distribution of *PolContrCEO* in figure 1 in section 3.3.1, it can be argued that the variable is relatively skewed to the right due to the many observations at the value of zero. This indicates that many CEOs did not contribute to Democrats at all (and so only contributions to Republicans were made), leading to a value of zero. The standard deviation of the political contributions is 0.39. With respect to *Oilprice*, it does not make sense to discuss the mean, standard deviation and the distributions of the oil price levels in 2020 and 2021. This as both indicator variables take a value of 1 only for the year 2020 and 2021 respectively and 0 for all other years. This leads to zeros being much more present resulting in many observations assigned a zero. For the indicator variable *IdeoGov* it does make sense to analyze the summary statistics, as both 1 and 0 can be assigned to one group only. More specifically, a 1 is assigned to more Democratic-favoring governors and a 0 to more Republican-favoring governors.

IdeoGov has a mean of 0.51 and a standard deviation of 0.50. This mean indicates that there are as much / slightly more Democratic-leaning governors than Republican-leaning governors. Moreover, *IdeoGov* follows a left-skewed distribution, and so more values of 1 are assigned compared to 0s.

With respect to the control variables, for firm size, the logarithm of the total assets is taken and has an average of 10.49 and a standard deviation of 0.62 and is normally distributed with a median of 10.45. Profitability is measured by *ROE*, which is winsorized at the 5th and 95th percentile in order to deal with outliers and has a mean of 15% and a standard deviation of 12%. Without winsorization the mean level is 0.17, so by winsorizing the distribution became less right-skewed as the mean (0.15) became closer to the median (0.12). *DEratio* is winsorized at the 10th and 90th percentile to overcome extreme outliers and has a mean and standard deviation of 0.90 and 0.61 respectively, and a median of 0.81. The mean indicates that overall firms have 1/10 more equity than debt in their firms. Similarly, the distribution of

DEratio became relatively less right-skewed with winsorization, as without winsorization the mean level equals 0.50.

Concerning the investment level of a firm, *ScaledCapex* is winsorized at the 5th and 95th percentiles to adjust for outliers as well, and has a mean and standard deviation of 0.04 and 0.04 respectively. This means that overall, 4% of total assets are assigned to capital expenditures. Without winsorization the mean level is 0.05, indicating that the mean level (0.04) and median (0.03) have converged with winsorization, which contributes to a normal distribution. The indicator variable *Gender* has a mean of 0.03 which indicates there are much more (almost only) male CEOs than female CEOs. The median (0) is smaller than the mean (0.03) allowing for a right-skewed distribution and so relatively more males in the sample. Moreover, *LogAge* is the logarithm of age plus 1, and has a mean of 2.78 and a standard deviation of 0.05 and is perfectly normally distributed (median = mean = 2.78). *LogTenure* is the logarithm of the amount of days a CEO is active as CEO in the specific company, and is averaged at 8.30 days (5062 days (13,9 years) without taking the logarithm). *LogTenure* is overall normally distributed but slightly skewed to the left. Finally, the indicator variable *President* has a mean of 0.70 and a standard deviation of 0.46, indicating that over the period 2010-2021, there was more often a Democratic-favoring president than a Republican-favoring president. This is supported by the fact that the median level (1) is higher than the mean value (0.70) indicating a left-skewed distribution.

Table 3. Summary Statistics

Variables	Observations	Mean	Std. Dev.	Quintiles				
				Min	0.25	Median	0.75	Max
Dependent variables								
ESGscore	905	58.31	18.85	1.90	45.25	62.04	72.48	95.16
EScore	905	53.66	26.86	0.00	35.50	59.91	76.25	97.66
Tobin's Q	905	1.33	1.36	0.04	0.53	0.95	1.62	10.25
ROA(%)	905	0.06	0.06	-0.49	0.02	0.05	0.09	0.38
Independent variables								
PolContrCEO	905	0.38	0.39	0.00	0.00	0.27	0.80	1.00
Oilprice ₂₀₂₀	905	0.07	0.26	0.00	0.00	0.00	0.00	1.00
Oilprice ₂₀₂₁	905	0.06	0.23	0.00	0.00	0.00	0.00	1.00
IdeoGov	905	0.51	0.50	0.00	0.00	1.00	1.00	1.00
Control variables								
LogTotalAssets	905	10.49	0.62	8.89	10.05	10.45	10.90	12.53
ROE (%)	905	0.15	0.12	-0.07	0.08	0.12	0.21	0.45
DEratio (%)	905	0.90	0.61	0.16	0.38	0.81	1.23	2.09
ScaledCapex (%)	905	0.04	0.04	0.00	0.01	0.03	0.07	0.13
Gender	905	0.03	0.17	0.00	0.00	0.00	0.00	1.00
LogAge	905	2.78	0.05	2.61	2.74	2.78	2.81	2.95
LogTenure	905	8.30	0.79	4.03	7.97	8.37	8.77	9.87
President	905	0.70	0.46	0.00	0.00	1.00	1.00	1.00

This table provides the descriptive statistics of all the variables used in my sample. More specifically, the number of observations, the mean, the standard deviation and the five quintiles of my dependent-, independent- and control variables. My sample covers 905 firm-year observations, 221 firms and 289 CEOs over the period 2010-2021.

3.6 Correlation table

The correlation table can be found in Appendix E. The correlations in this table are checked on multicollinearity. Multicollinearity exists when explanatory variables are highly correlated, which would result in biased estimates (Yoo et al., 2014). Looking at the correlation table, the coefficients of explanatory variables are all below a value of 0.7, which can be seen as a common threshold to detect collinearity (Dormann et al., 2013). Based on this, I can assume that there exists no multicollinearity in my model. To find additional support for this assumption, I used the Variance Importance Factors (VIF) estimator to detect potential multicollinearity issues. By looking at VIF values, an indication about the degree of interdependence of the independent variables is given. Moreover, VIF provides insights into the extent to which the variances of coefficients are biased upward under this linear interdependent relation, relative to when there does not exist collinearity between the independent variables. Yoo et al. (2014) argue that any VIF value under 10 indicates small / no significant collinear issues. As my explanatory variables all have VIF values between 1.03 and 3.02 and the mean of these variables is 1.5, I do not worry about multicollinearity in my models.

Concerning the correlations between my variables, the main dependent variable *ESGscore* is weakly but positively correlated with the independent variable *PolContrCEO* at the 5 percent significant level, and has a correlation coefficient of 0.069. This indicates that when the political contributions of CEOs increase, the ESG score will slightly increase as well. Looking specifically at *PolContrCEO* and *EScore*, I find a stronger correlation coefficient of 0.111, also significant at the 5 percent level. The ESG score has a correlation of 0.124 with the oil price level in 2020 and 0.160 in 2021 respectively, both at the 1 percent significant level. Relating the oil price levels to the environmental pillar score specifically, I get a coefficient of 0.084 in 2020 and 0.105 in 2021, significant at the 5 and 1 percent respectively. Concerning interaction terms, both oil price levels do not show significant results, however *Oilprice₂₀₂₀* is slightly negatively correlated (-0.062) and *Oilprice₂₀₂₁* (0.017) is positively correlated with *PolContrCEO*. Additionally, *IdeoGov* is both significantly and positively correlated with *ESGscore* (0.066) at the 5 percent level and with *PolContrCEO* (0.203) at the 1 percent level. With respect to the financial performance proxies, it can be observed that there exists a positive but weak correlation between *PolContrCEO* and the two proxies *Tobin's Q* and *ROA*, with coefficients of 0.056 and 0.024 respectively. Concerning the correlative power of the control variables, all financial control variables are positively correlated with the *ESGscore*, at the 1 percent significance level. More specifically, *ESGscore* is positively correlated with *LogTotalAssets* (0.355), *ROE* (0.150), *DERatio* (0.124) and *ScaledCapex* (0.084). Concerning the non-financial characteristics, *Gender* (0.052) and *LogAge* (0.053) are insignificantly and positively correlated with *ESGscore*, whereas *LogTenure* and *President* have significant and negative correlation coefficients of -0.223 and -0.205 respectively.

CHAPTER 4 Methodology

This chapter describes the research methodology used and regressions performed to test the eight hypotheses.

I will perform my analyses on the dependent, independent and control variables using cross section regressions. This as I work with panel data and I look at each firm individually for each of the years between 2010-2021. More specifically, I will run pooled OLS and fixed effects regressions for each hypothesis, which will result in 10 regressions, and I will make use of STATA to run these regressions. Hypotheses 7 and 8 are split into two sub regressions due to the fact that I have two different proxies for firm performance. I performed a Hausman test on each regression to determine whether I should use a fixed effect model or a random effects model. This test indicated that I should use the fixed effects model for each regression and so I will control for year, industry and state fixed effects to account for time-invariant characteristics and unobserved heterogeneity. By accounting for year fixed effects, all possible effects that are due to fluctuations across years are excluded from the model. Similarly, by accounting for state fixed effects, I eliminate differences between states and so only focus on within-state variation. Finally, I control for time-invariant characteristics between industries and so differences across industries are taken out. Moreover, I will add control variables to enhance the validity of my regressions and limit external explanations as much as possible. In order to make sure that the error term $\mu_{y,c,t}$ has a constant variance across observations, I perform a Breusch-Pagan test to test whether heteroscedasticity is persistent in the error term. When present, the variance of the residuals is non-constant. This test indicated that heteroscedasticity indeed persists in my error term and so robust standard errors are used to get unbiased standard errors of the predicted estimates. Moreover, I use the correlation matrix and perform a VIF test to detect any multicollinearity in my model. The VIF test measures whether and to what extent independent variables are linearly related to each other (Yoo et al., 2014). As all my VIF values are below 10, I can assume that there exists no significant collinearity in my model. Similarly, all correlation coefficients of the independent and control variables are below a value of 0.7, which can be seen as the threshold for collinearity (Dormann et al., 2013). In this section I will describe the eight different hypotheses and the regressions belonging to these hypotheses. All regressions are controlled for year, industry and state fixed effects, robust standard errors and control variables.

4.1 The effect of political contributions on the ESG score

The first hypothesis tests more Democratic-leaning CEOs show higher ESG performance in the firm they are CEO of. More specifically, whether CEOs political contribution behavior towards Democratism translates into higher ESG scores. The degree to which a CEO's political contributions behavior is Democrat-leaning, is captured by four different measures, presented in the data section, chapter 3.3.1. The regression to test this hypothesis, is presented as follows:

Hypothesis 1: A relatively greener CEO, will lead to higher ESG scores.

$$ESGscore_{y,t} = \beta_0 + \beta_1 PolContrCEO_{c,t} + \beta_2 FinancialCharacteristics_{y,t} + \beta_3 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} + \mu_{y,c,t}$$

The dependent variable $ESGscore_{c,t}$ represents the overall index score based on the scores of each of the three pillars (environmental, social and governmental) for a given firm y in a specific year t . Moreover, β_0 denotes the constant, and is the same for all firms. The independent variable $PolContrCEO_{i,t}$ represents the CEO's aggregated Democratism score based on four measures, and is denoted for each CEO c in year t . As explained in section 3.4, I add control variables to the model to eliminate alternative explanations on the results, in which I make a distinction between financial characteristics and non-financial characteristics. $FinancialCharacteristics_{y,t}$ represents the financial control variables of an entity y at year t and represents: $LogTotalAssets$, ROE , $DEratio$ and $ScaledCapex$, which is scaled by the total assets of the firm.

The variable $NonFinancialCharacteristics_{c,t}$ describes non-financial characteristics, consisting of $LogAge$ and $LogTenure$ for a given CEO c at time t , $Gender$ for a given CEO c and $President$ at time t . Moreover, $FE_{t,i,s}$ indicates the year t , industry i and state s fixed effects and $\mu_{y,c,t}$ denotes the within-firm idiosyncratic error term, across time.

I expect that a CEO who is perceived as more Democratic-leaning, is more likely to invest in ESG related activities. Therefore, I will test whether $\beta_1 > 0$, which entails a positive sign and a one-tailed t-test.

4.2 The effect of an oil price increase on ESG scores

The second hypothesis tests whether an increase in oil price, has an effect on the ESG performance of a firm. The variable $Oilprice_t$ is the variable of interest and represents the relatively lower oil price level in 2020 leading to $Oilprice_{2020}$ or when at the relatively higher level in 2021, $Oilprice_{2021}$ is presented. For this, I will conduct a regression with an indicator variable for year 2020, in which a 1 is assigned to

the year 2020 and 0 otherwise. In the same regression, I conduct an indicator variable for the year 2021 and similarly, a 1 is assigned to the year 2021 and 0 otherwise. This way, I can see the different effects a lower oil price level in 2020 has relative to the higher oil price level in 2021. In this regression the same control variables of financial and non-financial characteristics are added to the equation. Moreover, the same year, state and industry fixed effects are used. The coefficient of relevance is $\beta_1 Oilprice_t$ and I expect $\beta_1 > 0$, when the oil price is at the 2021 level ($Oilprice_{2021}$). Additionally, when the oil price is at the 2020 level, $Oilprice_{2020}$, I would expect less positive or even negative results, leading to $\beta_1 > 0$ (but smaller than the β_1 estimated with the oil price level at 2021) or $\beta_1 < 0$. I expect that an increase in oil prices will have a positive effect on the ESG score of a firm, leading to the following regression to test the hypothesis:

Hypothesis 2: *An increase in oil prices, will lead to an increase in ESG scores.*

$$ESGscore_{y,t} = \beta_0 + \beta_1 Oilprice_t + \beta_2 FinancialCharacteristics_{y,t} + \beta_3 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} + \mu_{y,c,t}$$

4.3 The effect of an oil price increase on E

The third hypothesis is similar to the second hypothesis, except for the dependent variable. This hypothesis will test the effect of an increase in the oil price on the environmental score specifically, denoted as $Escore_{y,t}$. I expect that the environmental score of a firm will be most affected by an oil price increase, as more expensive oil results in higher attractiveness of alternatives of oil. For example, green energy generated by natural resources, wind or sun, for example or the use of biobased materials for production purposes. This regression is corrected for control variables and fixed effects and expectations concerning β_1 are similar to the regression belonging to hypothesis 2. The regression to test this hypothesis is as follows:

Hypothesis 3: *An increase in oil prices, will lead to a larger increase in E scores.*

$$Escore_{y,t} = \beta_0 + \beta_1 Oilprice_t + \beta_2 FinancialCharacteristics_{y,t} + \beta_3 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} + \mu_{y,c,t}$$

4.4 The influence of oil prices on ESG

More interesting to see would be to gain insights into the effect of oil prices on the relationship between a relatively green CEO and the ESG score of a firm. More specifically, I expect that a relatively green CEO, strengthened by an increased oil price, would result in a larger effect on the ESG performance of a firm. This as I expect that both Democrat-favoring CEOs and oil prices are positively related to ESG performance, and so a higher oil price would amplify this effect. All variables used in this regression are variables already used in previous regressions. I expect the coefficient of $PolContrCEO_{c,t} * Oilprice_t$ to be larger than zero, when the oil price is at the 2021 level and $\beta_3 > 0$ or $\beta_3 < 0$ when the oil price level is at the 2020 level. This results to the following regression:

Hypothesis 4: A higher oil price level will strengthen the relationship between a Democratic-leaning CEO and the ESG score of a firm.

$$ESGscore_{y,t} = \beta_0 + \beta_1 PolContrCEO_{c,t} + \beta_2 Oilprice_t + \beta_3 PolContrCEO_{c,t} * Oilprice_t \\ + \beta_4 FinancialCharacteristics_{y,t} + \beta_5 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} \\ + \mu_{y,c,t}$$

4.5 The influence of oil prices on E

My fifth hypothesis is similar to the fourth hypothesis, however now the environmental pillar score is taken as the dependent variable. This as I expect that the effect will specifically influence the environmental pillar score of the ESG score, similar to the reasoning for the third hypothesis. All other variables in the regression have been specified in the previous regressions. The same financial and non-financial characteristics variables are added, as well as the fixed effects and similar expectations for β_3 are formed. This leads to the fifth regression:

Hypothesis 5: A higher oil price level will strengthen the relationship between a Democratic-leaning CEO and the E score of a firm more heavily.

$$Escore_{y,t} = \beta_0 + \beta_1 PolContrCEO_{c,t} + \beta_2 Oilprice_t + \beta_3 PolContrCEO_{c,t} * Oilprice_t \\ + \beta_4 FinancialCharacteristics_{y,t} + \beta_5 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} \\ + \mu_{y,c,t}$$

4.6 The impact of the ideology of the governor

To gain deeper insights in whether political affiliations have an effect on the ESG performance of a firm, I add another interaction term to the first regression. More specifically, I will test whether the relation between a more Democratic-leaning CEO and the ESG score of a firm is strengthened when the ideology of the governor of the state in which the firm is headquartered, is also Democratic-leaning. This variable is denoted as $IdeoGov_{s,t}$ and for specific state s and year t . The variable represents an indicator variable, which takes the value of 1 in case the governor is more Democratic-leaning and a 0 in case the governor is more Republican-leaning. Similarly, this regression controls for the same factors as the previous regressions and I expect $\beta_3 > 0$. This leads to the following regression:

Hypothesis 6: *A Democratic-leaning governor will strengthen the relationship between a Democratic-leaning CEO and the ESG score of a firm.*

$$\begin{aligned} ESGscore_{y,t} = & \beta_0 + \beta_1 PolContrCEO_{c,t} + \beta_2 IdeoGov_{s,t} + \beta_3 PolContrCEO_{c,t} * IdeoGov_{s,t} \\ & + \beta_4 FinancialCharacteristics_{y,t} + \beta_5 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} \\ & + \mu_{y,c,t} \end{aligned}$$

4.7 The effects on firm financial performance

Finally, two hypotheses are constructed to gain deeper insights into the effect of a relatively green CEO on the financial performance of firms. This dependent variable is denoted as $FinPerf_{y,t}$ in the regression and has two proxies. I will measure the financial performance of firms by looking at *Tobin's Q* and the return of assets (*ROA*) of a firm, both calculations described in section 3.2.3. I expect that a more Democrat-leaning CEO will have a positive effect on the financial performance of firms, reflected by hypothesis and regression 7 in which I expect $\beta_1 > 0$.

Moreover, I expect that lower oil prices (higher oil prices) would strengthen (weaken) the positive effect of a more Democrat-leaning CEO on firms' financial performance and the ideology of governor to strengthen the relationship. This is reflected by hypothesis and regression 8. When $Oilprice_t$ represents the 2020 level, I expect $\beta_4 > 0$ and in case $Oilprice_t$ represents the 2021 level, I expect $\beta_4 < 0$. Furthermore, I expect $IdeoGov_{s,t}$ to positively affect the relationship, indicating $\beta_5 > 0$. Since I have multiple proxies for the dependent variable, I will conduct two regressions for each hypothesis. For hypothesis 7, two regressions will be performed, the first with *Tobin's Q* as proxy for financial performance and the second regression takes *ROA* as proxy. The same is done for regression 8. The main regressions for the two hypotheses are as follows:

Hypothesis 7: *A relatively greener CEO, will lead to higher firm financial performance.*

$$\begin{aligned} FinPerf_{y,t} = & \beta_0 + \beta_1 PolContrCEO_{c,t} + \beta_2 FinancialCharacteristics_{y,t} \\ & + \beta_3 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} + \mu_{y,c,t} \end{aligned}$$

Hypothesis 8: *A Democratic-leaning CEO strengthened by a Democratic-leaning governor and the oil price level in 2020 respectively, will lead to higher firm financial performance.*

$$\begin{aligned} FinPerf_{y,t} = & \beta_0 + \beta_1 PolContrCEO_{c,t} \\ & + \beta_2 Oilprice_t + \beta_3 PolContrCEO_{c,t} * Oilprice_t + \beta_4 IdeoGov_{s,t} \\ & + \beta_5 PolContrCEO_{c,t} * IdeoGov_{s,t} + \beta_6 FinancialCharacteristics_{y,t} \\ & + \beta_7 NonFinancialCharacteristics_{c,t} + FE_{t,i,s} + \mu_{y,c,t} \end{aligned}$$

CHAPTER 5 Empirical results

In this chapter I will first discuss the empirical findings of my hypotheses, supported by my methodology. In the second section I will perform multiple tests to check for the robustness of my results and discuss potential endogeneity concerns. In the last section I will perform additional tests.

5.1 Regression results

To test the hypotheses, I have constructed multiple regressions which I will test in STATA. I will run pooled OLS regressions with year, industry and state fixed effects and robust standard errors to account for the present heteroskedasticity. All regressions have 904 observations and a constant term.

To compare the goodness-of-fit of the different models, I look at the adjusted R^2 (instead of the R^2) to account for the possibility that adding variables explains variance in the dependent variable partly by chance. The adjusted R^2 takes into account the number of observations and the amount of predictors, in order to get a more reliable outcome than under the traditional R^2 , which artificially inflates the fit of the model due to the presence of an extra predictor.

The first column (1) of Table 4 aims to find more insights into the effect of a relatively green CEO on the ESG performance of a firm, controlled by multiple variables. As can be seen from the table, CEOs' aggregated Democrat-leaning score has a positive effect on the ESG score of a firm, significant at the 1 percent level. More specifically, if a CEO becomes one percentage point more Democrat-leaning, the ESG performance of the firm will increase by 5.466 unit points. This finding supports the first hypothesis and is confirmative with the findings of Chin et al. (2013) and Jeong and Kim (2019), who both find a positive relationship between political liberalism of CEOs and CSR performance.

The second column (2) shows the results of the effect of the oil prices on the ESG performance. The oil price level in 2020 has a positive and slightly significant effect on the ESG performance of a firm, and increases the ESG score on average by 1.057 points. The (higher) oil price level in 2021 is highly significant at the 1 percent level and will increase the average ESG score by 13.507 points. This is consistent with my second hypothesis and the expectation that higher oil prices will more positively affect the ESG score (compared to the lower oil price level) and is in line with the findings of Henriques and Sadosky (2008). Another explanation for this finding is the following. The smaller effect on the ESG (and E) scores for the oil price level in 2020 could be explained by the fact that during 2020, COVID-19 hindered economic growth and the global economy came into a recession. Consequently, lower production levels lead to less environmental damage and so less need to invest in ESG related concerns and also, relatively lower oil prices decrease the incentive to switch to more environmental-friendly alternatives of oil. Conversely, the larger effect of the oil price level in 2021 on the ESG (and

E) scores could be explained by the fact that during 2021, COVID-19 started to saturate, economies started to recover from the pandemic and the war in Ukraine induced higher oil prices on a global scale. Subsequently, the higher production and oil price level increased the need for investing in ESG concerns and made greener alternatives of oil relatively cheaper.

Regarding the third column (3), the effect of the oil price on the environmental score is presented. This, as the effect of the oil prices is expected to be strongest when focusing specifically on the E score. Similar to the effect on the overall ESG score, the effect is positive and of a higher economic significance for the oil price level in 2021 relative to the oil price level 2020. This is in line with my expectations, as I expect that the higher the oil price level, the more beneficial green alternatives of oil become and so the larger the effect on the E and ESG score would be. Yet, compared to the effects on the ESG score, the coefficients of the oil price levels in the third regression are smaller than the coefficients in the second regression and the oil price level in 2020 is insignificant. This is in contrast to my expectations, as I expected that an increase in oil prices would mostly affect the environmental score and to a smaller extent the ESG score, leading to the third hypothesis being rejected. This weaker and less economic significant effect of the higher oil price level in 2021 on the E score may be explained by the fact that higher levels of oil prices, could lead to increased production and consumption levels and so more pollution. Consequently, it could be that the costs (more environmental damage leading to worse E scores) outweigh the benefits of high oil prices (higher need for good ESG performance and increased interest in alternatives of oil leading to higher E scores) (Hasan et al., 2022).

The fourth regression (4) aims to provide insights in the effect of oil prices on the relationship between CEO Democratism and the ESG score of a firm. More specifically, the effect of a more Democratic-leaning CEO on the ESG score increases by 2.208 points when the oil price is at the 2020 level. Similarly, the effect of a more Democratic-leaning CEO on the ESG score increases by 3.485 points when the oil price is at the 2021 level. This finding is in line with my expectation that the effect of the oil prices is larger for higher levels of oil prices. However, as both coefficients are not statistically significant, I fail to accept the fourth hypothesis.

Column (5) regresses the same regression as regression (4) however the E score is taken as the dependent variable. The effect of CEO Democratism on the E score will be weakened when the oil price is at the 2020 level. In other words, if a CEO becomes more Democrat-leaning by one unit, the E score is 0.083 percentage points less, when the oil price is at the 2020 level compared to the other levels. Moreover, for a one unit increase in CEO Democratism, the E score will increase by an additional 0.513 points, when the oil price level is at 2021. I expected a weaker (or even negative) effect when the oil price is at the 2020 level relative to the (higher) 2021 level, and higher levels of economic significance for the E score than for the ESG score. As the latter is not the case and the findings are insignificant, the results do not find evidence for the fifth hypothesis, and the null hypothesis is accepted accordingly.

With respect to regression (6) and in line with Di Giuli and Kostovetsky (2014) and Rubin (2008), the ideology of the governor has a positive and significant effect on the relationship between CEO

Democratism and the ESG performance of a firm. The effect on ESG score of a one unit increase in CEO Democratism is 5.643 points more, in case the ideology of the governor of the state in which the firm is headquartered is more Democratic-leaning as well. The result is statistically significant at the 5 percent level. This finding is confirming my expectation as I expect that when the governor of the state is more Democratic-leaning, there is more room for performing ESG related activities, and it will be easier for CEOs to pursue such activities. Thereby, the 6th hypothesis is accepted and the null hypothesis is rejected.

The regressions in columns (7a) and (7b) in table 5, aim to find an answer on the effect the political contributions measure has on firms' financial performance. More specifically, when the aggregated CEO Democratism score increases by one percentage point, the Tobin's Q will drop by 0.048, at an insignificant level. As a lower Tobin's Q indicates that the market value becomes relatively smaller compared to the value of the assets, Democratism of CEOs will contribute to higher undervaluation of the firm. Column (7b) takes ROA as proxy for firms' financial performance. As can be seen from the table, an increase in the aggregated CEO Democratism score by one percentage point will decrease ROA by 0.008 percentage points, at the significance level of 5 percent. Both findings are not consistent with my expectations as I expected that more Democratic-leaning CEOs would have a beneficial effect on a firm's value. Consequently, hypothesis 7 is rejected. This negative relationship is consistent with Aggarwal et al. (2012), who find that political donations made by CEOs have a negative effect on the future excess returns of firms, and increase agency costs (Bebchuk and Jackson, 2010). Moreover, Ovtchinnikov and Pantaleoni (2010), conclude that higher amounts and more recurring political contributions made to important economic politicians, result in higher ROA and market-to-book ratios. It can be argued that economically relevant politicians are more likely to be active in Republican-leaning parties, due to the higher importance of and focus on economic related matters, indicating that especially contributions made by Republican-leaning CEOs have a positive effect on firm performance.

To determine whether the effect of a Democratic-leaning CEO on firm performance is influenced by oil price levels and the ideology of a governor, regressions (8a) and (8b) are conducted. My findings suggest that relatively lower oil price levels have a positive effect on the relationship between CEO Democratism and the Tobin's Q of a firm. The higher oil price level in 2021 has a negative effect on this relationship. The same holds when ROA is used as proxy for firm financial performance in regression (8b). This is in line with my expectations and Dhaoui and Khraief (2014), who expect that higher oil prices have a negative effect on firm value. Yet, the findings are insignificant. Moreover, the effect of CEO Democratism on Tobin's Q and ROA is positively affected by a Democratic-leaning governor. The effect on Tobin's Q and ROA of a one unit increase in CEO Democratism is 0.261 and 0.006 points more respectively, when the governor is Democratic-favoring. Only the effect on Tobin's Q is significant at the 10 percent level. Hypothesis 8 will be partially accepted as my results only confirm the amplifying effect of the political ideology of the governor when Tobin's Q is taken as proxy for firms' performance, and also the effects of the oil prices are insignificant.

Table 4. OLS regression results of political contributions, oil prices and governor ideologies on ESG performance

Variables	(1) ESGscore	(2) ESGscore	(3) Score	(4) ESGscore	(5) Score	(6) ESGscore
PolContrCEO	5.466*** (1.467)			5.095*** (1.553)	8.801*** (2.278)	8.956*** (2.156)
Oilprice ₂₀₂₀		1.057* (2.286)	0.922 (3.546)	0.575 (2.766)	1.236 (4.016)	
Oilprice ₂₀₂₁		13.507*** (2.572)	7.713** (3.677)	11.712*** (3.318)	6.846 (4.804)	
PolContrCEO*Oilprice ₂₀₂₀				2.208 (4.223)	-0.083 (6.449)	
PolContrCEO*Oilprice ₂₀₂₁				3.485 (4.627)	0.513 (6.886)	
IdeoGov						2.614 (1.913)
PolContrCEO*IdeoGov						5.643** (2.861)
LogTotalAssets	14.195*** (0.928)	14.634*** (0.93)	22.065*** (1.278)	14.185*** (0.929)	21.358*** (1.281)	14.228*** (0.925)
ROE	8.206* (4.423)	8.830** (4.434)	18.230*** (6.639)	8.198* (4.44)	17.228** (6.733)	8.271* (4.408)
DERatio	-0.191 (0.912)	-0.181 (.918)	1.026 (1.343)	-0.208 (0.912)	1.004 (1.331)	-0.179 (0.900)
ScaledCapex	77.810*** (18.133)	72.434*** (17.949)	125.342*** (25.426)	77.905*** (18.167)	134.058*** (25.513)	76.731*** (17.907)
Gender	6.918** (2.884)	8.566*** (2.984)	13.77*** (4.964)	6.940** (2.886)	11.113** (4.841)	6.883** (2.863)
LogAge	35.470*** (10.381)	26.921** (10.724)	30.377* (16.063)	34.952*** (10.406)	44.15*** (15.601)	34.680*** (10.391)
LogTenure	1.063 (0.695)	1.310* (0.723)	1.760 (1.182)	1.060 (0.695)	1.359 (1.138)	1.097 (0.710)
President	-10.845*** (2.462)	-9.549*** (2.328)	-5.362 (3.472)	-9.61*** (2.325)	-5.459 (3.441)	-10.802*** (2.474)
Constant	-198.049*** (30.329)	-180.186*** (30.944)	-282.077*** (46.466)	-197.571*** (30.219)	-312.819*** (45.606)	-197.916*** (30.238)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	904	904	904	904	904	904
R-squared	0.531	0.522	0.519	0.531	0.530	0.533
Adjusted R-squared	0.501	0.493	0.489	0.501	0.499	0.502

This table provides the results for the OLS regressions that examine the effect of political contributions, oil price levels and the political ideology of governors on the ESG score and firm performance of firms. Columns (1), (2), (4) and (6) uses the ESG score as dependent variable and in columns (3) and (5) the environmental pillar score is used. All controls are added and all regressions control for year, state and industry fixed effects and as documented within the parentheses, robust standard errors are used to control for heteroskedasticity. The significance levels are represented by *** p<0.01** p<0.05 and *p<0.10.

Table 5. OLS regression results of political contributions, oil prices and governor ideologies on ESG performance

Variables	(7a) Tobin's Q	(7b) ROA	(8a) Tobin's Q	(8b) ROA
PolContrCEO	-0.048 (0.923)	-0.008** (0.004)	-0.242** (0.107)	-0.011* (0.005)
Oilprice ₂₀₂₀			0.310 (0.271)	-0.008 (0.007)
Oilprice ₂₀₂₁			0.873*** (0.325)	0.003 (0.007)
PolContrCEO*Oilprice ₂₀₂₀			0.579 (0.550)	0.001 (0.009)
PolContrCEO*Oilprice ₂₀₂₁			-0.116 (0.551)	-0.014 (0.012)
IdeoGov			0.008 (0.092)	-0.001 (0.005)
PolContrCEO*IdeoGov			0.261* (0.165)	0.006 (0.006)
LogTotalAssets	-0.803*** (0.067)	-0.011*** (0.002)	-0.810*** (0.067)	-0.011*** (0.002)
ROE	3.540*** (0.421)	0.311*** (0.015)	3.523*** (0.420)	0.311*** (0.015)
DERatio	-0.369*** (0.058)	-0.030*** (0.002)	-0.363*** (0.058)	-0.030*** (0.002)
ScaledCapex	2.039* (1.156)	0.067 (0.035)	2.055* (1.151)	0.067* (0.035)
Gender	-0.203* (0.117)	0.000 (0.004)	-0.199* (0.120)	0.001 (0.004)
LogAge	-3.398*** (0.699)	-0.110*** (0.022)	-3.446*** (0.703)	-0.108*** (0.021)
LogTenure	0.148*** (0.401)	0.003 (0.001)	0.148*** (0.040)	0.003* (0.001)
President	-1.015*** (0.200)	-0.000 (0.005)	-0.517*** (0.172)	-0.008 (0.006)
Constant	18.433*** (2.173)	0.434*** (0.061)	18.160*** (2.165)	0.434*** (0.061)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes
Observations	904	904	904	904
R-squared	0.598	0.753	0.600	0.694
Adjusted R-squared	0.571	0.737	0.572	0.737

This table provides the results for the OLS regressions that examine the effect of political contributions, oil price levels and the political ideology of governors on the ESG score and firm performance of firms. In columns (1) and (2) ROA is used as proxy for firm performance and in columns (3) and (4) Tobin's Q is used. All controls are added and all regressions control for year, state and industry fixed effects and as documented within the parentheses, robust standard errors are used to control for heteroskedasticity. The significance levels are represented by *** p<0.01** p<0.05 and *p<0.10.

With respect to the control variables, I find a significantly positive relation between firm size, *LogTotalAssets* and *ESGscore*, meaning that the larger the firm, the higher the ESG score of a firm. This confirms my expectation that larger firms have more resources available to invest in ESG related activities, confirming the findings of Borghesi et al. (2014) and Di Giuli and Kostovetsky (2014). Moreover, the return on equity (*ROE*) is significantly and positively related to *ESGscore*, an increase of ROE by 1 percent will increase the ESG score of a firm by 8.206 points. This is consistent with the findings of Borghesi et al. (2014) and Jeong and Kim (2019). Additionally, the leverage ratio of a firm has a negative effect on the ESG score of a firm but a positive effect on the E score of a firm, both at

insignificant levels. Although I did not expect different findings for *ESGscore* and *Escore*, the negative relationship suggests that higher debt and interest payments, resulting from higher leverage ratios, decrease financial resources and thereby investment in ESG related activities (Chams and Garcia-Blandon, 2019; Di Giuli and Kostovetsky, 2014; Chin et al., 2013). For the positive relationship it can be argued that a higher leverage ratio, resulting in tight cash¹⁰, induces the incentive to operate more efficiently and engage in long run investments, such as CSR related activities (Ferrell et al., 2016).

Looking at the investment level of a firm, *ScaledCapex*, I find a positive relationship with *ESGscore*, at the 1 percent significance level. Following Broadstock et al. (2019) higher capital spending positively affects the eco-efficiency¹¹ levels of firms, indicating that capital expenditures contribute to a more economically-friendly firm. Moreover, a firm with higher capital expenditures will also be more likely to invest in ESG related activities, which is reinforced by the long-term nature of both capital expenditures and ESG investments (Ferrell et al., 2016).

Furthermore, *Gender* is significantly and positively related to *ESGscore*, implying that ESG scores are higher for firms that have female CEOs (Borghesi et al., 2014; Jeong and Kim, 2019; Di Giuli and Kostovetsky, 2014). For *LogAge*, I find that an older CEO has a more positive effect on the ESG score of a firm, which is against my expectations. This finding may be explained by Fabrizi et al. (2014) who suggest that older CEOs are more willing to invest in CSR, due to the additional experience and knowledge concerning CSR related practices they have gained over the years. Consistent with Gupta et al. (2017), *LogTenure* is positively, but overall insignificantly related to the ESG score, implying that the longer a CEO is active as a CEO, the higher the incentives are for better ESG and E scores. Finally, a negative relationship can be found between the political ideology of the president that is serving the country and the ESG score. More specifically, a Democratic-leaning president has a negative influence on the ESG score. This is against my expectations, but according to Jeong and Kim (2019), CEOs may reduce efforts into CSR related practices when the government has similar political orientations. Namely, CEOs could expect the government to behave and take actions according to the similar social standards. Consequently, the effect on the ESG score could be negative in case both the president and the CEO are more Democratic-leaning (or in case both are more Republican-leaning). This negative result is significant at the 1 percent level for *ESGscore*.

¹⁰ Tight cash refers to less cash and less free cash flows available, less investments in capital expenditures but more dividend and -interest payments.

¹¹ The eco-efficiency level is determined by a score which is based on the CO₂ emission and the revenue level of a firm (which is associated as a negative factor on the environment, as the creation of revenues is mostly alongside environmental pressure). The higher the score, the larger the ability of the firm to limit environmental damage, given the revenue level.

5.2 Robustness tests and endogeneity

First, I will enhance the internal validity of my research by testing my results with a tobit model. Tobit adjusts a linear regression model for the dependent variable, censored at a specific range (Wooldridge, 2010). By means of the tobit model, I will divide the ESG scores in an upper bound and a lower bound, separated by the mean level. The mean level of the ESG scores is centered at 58.3 and so on average, the firms in my sample have ESG scores above 50 (which indicates relatively good ESG performance). It could be argued that the effect of CEO Democratism on the ESG scores is biased, as relatively more firms with good ESG performance are included in my sample. To account for this problem, and to check for the robustness of my results, I divide the ESG scores in two groups. The first group is ranged from 0 to 58.3, meaning that all ESG scores up until 58.3 are included in the regression and ESG scores above 58.3 get assigned the value 58.3. Similarly, the second group covers the ESG firms which have values ranging from 58.3 – 100, and firms with ESG values below 58.3 are assigned the cut-off minimum level 58.3. In this regression, the same control variables are used as in the main regression results in table 4 and 5, and robust standard errors are included as well. By using a tobit model, it is statistically not possible to include fixed effects in the regression. As can be seen in Appendix F, columns (1) and (2) show that an increase of one percentage point in CEO Democratism, will increase the ESG scores of the lower-bound firms by 4.112 and the upper-bound firms by 3.134, both significant at the 5 percent level. The third column (3) is a simple OLS regression and similar to the regression belonging to hypothesis 1 but without the fixed effects. In the third column (3), the ESG values ranging from 0 to 100 are taken into account, and an increase of one percentage point in *PolContrCEO* will increase *ESGscore* by 3.201, significant at the 5 percent level. Although, the effect of CEO Democratism on the ESG scores differs somewhat in economic significance, when comparing the bounded results in regressions (1) and (2) and the non-bounded result in regression (3), the difference is small and as both results are positive, the first hypothesis can be confirmed. Consequently, differences in ESG scores should not be of major importance for the effect of CEO Democratism on the ESG score of a firm. It must be noted that estimates should be interpreted with caution as when looking at firms in the lower bound, all the firms that have a higher value than 58.3 are also included in the regression and got assigned the value 58.3. Consequently, the regressions do not show results of firms that contain ESG scores in the lower bound respectively the upper bound, but it merely shows the effects in case all firms would have relatively low ESG scores (below mean or at the mean) or relatively high ESG scores (above mean or at the mean). Besides, it shows the effects when ESG scores are more converged (differences between ESG scores are now smaller). Nevertheless, the small difference in estimates contributes to the robustness of my results and hence the internal validity of my research.

The second robustness test conducted is the use of a different ESG measure. By using a different measure for the ESG performance of a firm, I check for the validity of my results. A frequent used measure is the KLD (Kinder, Lydenberg and Domini) index measure used by Chin et al. (2013) and Gupta et al. (2017) or the Dow Jones Sustainability Index measure used by Chams and Garcia-Blandon (2019). For the former it is argued that the index is only available at a fee and does not disclose changes made to the index (Hawn, 2018). The latter was available in WRDS CapitalIQ until 2019. I used the CSR Sustainability index which is available via Eikon Refinitiv and reflects the integration of economic, social, and environmental aspects in the firm's strategy. I will test the CSR Sustainability index in hypotheses 1, 2, 4 and 6, as in these regressions the ESG score was previously taken as dependent variable. In these regressions, I control for the same variables and robust standard errors are used as well. As can be seen in Appendix G, the first regression (1) tests the first hypothesis but with the CSR index score as dependent variable and it shows that a one point increase in CEO Democratism, increases the CSR Sustainability index by 10.897, at the 1 percent significance level. This is 5.451 units higher compared to the same regression but with the ESG score as dependent variable (5.446), but both indicating a significant and positive relationship. This leads to the first hypothesis to be confirmed. The second regression shows the effect of the oil prices on the CSR index and shows similar results as compared to the ESG score, but also with higher economic significance. These results find evidence in favor of the second hypothesis, however as the oil price level in 2020 is insignificant the hypothesis cannot be accepted. The third regression finds that the interaction term of oil price level in 2021 weakens the CEO Democratism - CSR relationship, at an insignificant level. This is contrary to my expectations and to the results when the ESG score is taken as dependent variable. This in combination with the insignificant results, leads to the rejection of the fourth hypothesis. Finally, as can be seen in the fourth regression, the effect of CEO Democratism on the CSR score will be amplified by 6.732 points when the governor is more Democrat-leaning, which is similar to the previous findings (5.643). Yet, the effect is insignificant leading to rejection of the sixth hypothesis.

Although I find less significant results leading to rejection of most of the hypotheses and the economic significance of the estimates is higher overall, I can conclude that using the CSR Sustainability Index provides quite similar results and contributes to the robustness of my results.

In line with the internal validity checks, it is of importance to be aware of endogeneity problems present in my sample. Endogeneity happens when the explanatory variable (political contributions) is correlated with the error term, which leads to biased and inconsistent estimates. This problem can occur when important variables are omitted from the model (*omitted variable bias*), when y also affects x instead of x affecting y (*simultaneity*), when a different value for x is obtained due to an error in measuring x , and is correlated with y (*measurement error*) and finally when the selection into the sample is not random (*selection bias*) (Roberts and Whited, 2013; Hill et al., 2021).

To account for missing important variables in the model, I added various control variables to the regression to make sure any change in the ESG score is only the result of changes in my independent variables. I could further eliminate the problem by adding the one-year lagged ESG scores to the regression. It could be argued that the current value of the ESG score is dependent on the past ESG values and so I could adjust for this by adding the previous year's ESG performance. However, adding this autoregressive term is likely to lead to an overly specified model and (downwardly) biased estimates and standard errors of my independent variables and remaining control variables. This could be due to serial correlation (within the error term) and heavy trending in these exogenous variables (which results in dominating results for the lagged term) (Achen, 2000).

Presented in Appendix H, adding the one-year lagged ESG as a control to the regression in column (1), leads to an adjusted R-squared of 0.875, which is much higher than the adjusted R-squared under the main regression, without the lagged ESG score (0.501). So even if I account for the loss of degrees of freedom, the adjusted R-squared increased improbably much by adding the lagged ESG score to the model. Additionally, the estimate of the CEO Democratism score decreased from 5.466 to 1.828 and is only significant at the 5 percent level. The same (downwardly biased) estimates holds for the control variables.

Another problem that can arise in my sample is simultaneity, which is also an endogeneity concern, and occurs when the dependent variable (ESG) is a predictor of the independent variable (political ideology) instead of the response to the independent variable (Roberts and Whited, 2013). To account for this, an instrumental variable could be used, or the independent variable could be lagged by one year.

However, in my sample it is impossible to lag the political contributions due to the unbalanced nature of my dataset: a CEO does not necessarily contribute every year, and so I do not have contributions for each year for each CEO. This means there would be many gaps, which would lead to results which are not representative due to the small sample size.

Moreover, in my research it is difficult to address the measurement concern, which happens when x differs from x^* which is the true, unobserved variable. The fact that I constructed the political contributions variable myself, makes it prone to human errors. To control for this, I run an errors-in-variables regression to see the change in my independent variable for different levels of measurement reliability, which can be found in Appendix I. By making use of the errors-in-variables regression, I omit the control variables, fixed effects and robust standard errors as inclusion of these is statistically not justifiable. As I cannot specifically determine how reliable the measurement of political ideology is, I can experiment with different values of reliability to see the sensitivity of my estimates of the political contributions measure. I use arbitrary reliability levels of 50, 75 and 95 percent to see whether these difference levels affect the coefficient estimate, and compare these levels to the first, standard OLS regression in which I assume there exists estimation error however I do not account for it. In case of variability or measurement error in the political contributions measure, the slope of the estimate will be biased towards zero (and so underestimate the coefficient), also known as the attenuation bias. As can be

seen from the table, the estimate of political contributions increases by 0.175 (3.501-3.326) when I use the 95% reliable level. Using the 75 and 50 percent level of reliability, the estimates of political contributions increase to 4.435 and 6.652 respectively. These findings suggest that the lower the reliability level, and so for the more error you account in the estimates, the higher the estimates will be. For example, in case you assume 95 percent is reliable, you expect that the true estimate is still in a quite narrow range, which is probably not likely. However, when you widen this range, for example you expect that you measured with 75 percent reliability, it is more assumable the true estimate is within this range, leading to a higher estimate. The same holds for the 50 percent reliability level. Consequently, these findings show that different levels of reliability affect the estimates and ignored measurement error in the first regression leads to an underestimated result.

With regard to the selection bias, this bias could be present as I choose to look at the firms within the S&P 500. This index covers 500 large companies which are listed on the stock exchange in the United States. Although I control for firm size, there could be characteristics specific to the S&P 500 firms, that I did not include in my sample, that could have an effect on the CEO Democratism – ESG relationship. Although I am aware of this problem, it is difficult to control for as it is highly probable that it would persist with a different sample as well.

5.3 Additional tests

To complement my research, it would be interesting to see what dimension would be most affected by the political contributions of CEOs. Put differently, is the effect of CEOs' political contributions greater for the environmental, social or governmental pillar, or is there only a small neglectable difference? In Appendix J, I will perform regressions on the first and sixth hypotheses as it would not make sense to test the effect of oil prices / interaction terms with oil prices on the governmental and social pillar scores. Firstly, I perform the regressions supporting hypothesis 1, which aims to find evidence for the relation of political ideology on the ESG score, however now I have split the ESG score into the three pillars, environment, social and governance. The same fixed effects and control variables are used, as well as the robust standard errors. As can be seen from regressions (1), (3) and (5), a CEO's political ideology has a larger effect on the environmental pillar (8.828) than on the social (3.973) and governmental pillar (3.337). The former is significant at the 1 percent level and the latter two are significant at the 5 and 10 percent level respectively. This finding suggests that when a CEO becomes relatively more Democratic-leaning, mostly the environmental score will be positively affected. Similarly, I will test the sixth hypothesis and use the pillar scores instead of the overall ESG score as dependent variable. As can be seen from regressions (2), (4) and (6), the effect on the environment, social and governance score of a one percentage point increase in CEO Democratism is respectively 14.565, 0.590 and 4.037 higher when the governor is Democratic-leaning. Similar to the findings for the first hypothesis, the effect on the

environmental score is of most economic significance and significant at the 1 percent level. The other two estimates are insignificant. This overall larger effect for the environmental score could be due to the higher importance assigned to environmental matters relative to social and governmental issues by more Democratic-leaning CEO's (Dunlap and McCright, 2008).

Additionally, it would be interesting to see whether the ESG score would have an amplifying or worsening effect on the political ideology – firm performance relationship. Inspired by future research recommendations of Chin et al. (2013), it could be interesting to see whether heavy emphasis on ESG performance by Democratic-leaning respectively Republican-leaning CEOs either strengthens or harms the financial performance of a firm. To test this, I will run six regressions, the first three use Tobin's Q as proxy for firm performance and for the last three regressions I use ROA as dependent variable. As can be seen in Appendix K, regression (3), each additional percentage point in the aggregated Democratism score, increases the effectiveness of the ESG score on Tobin's Q by 0.015, significant at the 1 percent level. When using ROA as proxy for firm performance, a similar result can be found, however smaller (0.001) and significant at the 5 percent level. These findings indicate that a more Democratic-leaning CEO who emphasizes ESG performance, is beneficial for a firm's performance. According to Chin et al. (2013) and Surroca and Tribo (2008), a possible explanation for this is the fact that more Democratic-leaning CEOs engage in ESG related activities as it is of high priority in their firm's strategy, which positively affects returns. More Republican-leaning CEOs could focus on ESG for personal, insincere reasons, i.e., to show a better image of themselves towards the rest of the firm or other stakeholders. This could negatively affect payoffs.

CHAPTER 6 Conclusion

Following the upper echelons theory and the agency theory, values and beliefs of people are incorporated into their decision-making (Jensen and Meckling, 1976; Hambrick and Mason, 1984). It is of importance to be aware of this, as this could affect CEOs as well, which are the decision leaders of a firm's strategy and everyday activities. Especially in today's relevant topics, such as socially responsible behavior, it is of importance to gain better insights into the potential effects CEOs' personal values and beliefs can have on the decision-making concerning ESG. Accordingly, this leads to my research question:

Do Democratic-leaning CEOs positively affect the ESG performance of firms? And what is the effect on firms' financial performance?

To analyze this effect, a sample consisting of 289 CEOs and 221 firms listed on the S&P500 in the United States over the period 2010-2021 is used. Furthermore, this question will be answered by means of eight hypotheses, which are presented in Table 6.

First, I find empirical evidence that a more Democratic-leaning CEO will show significantly higher ESG scores, accepting the first hypothesis. This finding supports the upper echelons theory and agency theory and the fact that Democrats are more concerned with social concerns, such as human rights, working conditions, inclusion and environmental issues (Jost, 2003). Furthermore, my study aims to find evidence for the effect of oil prices on ESG scores. My results suggest that higher oil price levels beneficially affect the ESG score of a firm. More specifically, the higher oil price level in 2021 has a larger effect on the ESG score than the oil price level in 2020. This leads to the second hypothesis to be accepted. It can be argued that higher oil prices induce the incentive to use cheaper alternatives of oil as a fuel and input factor. As this mainly concerns an environmental issue, I expected the environmental score to be affected most. However, I find no evidence for a stronger relationship between the higher oil price level and the E score, compared to the ESG score, leading to a rejection of the third hypothesis.

Additionally, I aimed to find evidence for the additional effect oil price levels have on the effect of political ideology on ESG score and E score respectively. However, I find no significant evidence for the influence of oil prices on both relationships. This leads to the rejection of hypotheses 4 and 5. Next to this, this research finds empirical evidence that a Democratic-leaning governor will strengthen the relationship between a Democratic-leaning CEO and the ESG score of a firm. Consequently, the sixth hypothesis is accepted. A possible explanation for this finding is that there may be more room for CEOs and less constraints to implement ESG related activities within the firm's strategy (Di Giuli and Kostovetsky, 2014; Rubin, 2008). Finally, this research provides evidence for a significantly negative relationship between CEOs Democratism and the firm performance measure ROA. The other proxy for firm performance, Tobin's Q is also negatively associated with CEO Democratism, however at an insignificant level. As this negative relationship is in contrast to my expectations, I reject the seventh

hypothesis. To test the eighth hypothesis, I add interaction terms to the regressions. First, I regress the firm performance measures on the CEO Democratism score strengthened by oil prices. As expected, the oil price in 2020 has a positive effect on the political ideology – firm performance relationship and the higher level in 2021 has a negative effect. However, both at insignificant levels. Concerning the interaction term of CEO Democratism and the political ideology of governors, a significant and positive effect can be found when Tobin’s Q is used as a proxy for firm performance, but no effect when ROA is used as a proxy. Consequently, due to the insignificance of the interaction term related to the oil prices and the insignificant result when ROA is used as a proxy, the eighth hypothesis is only partially accepted.

Taken all the findings together and presented in table 6, I found enough evidence to provide an answer to my research question. I find statistical evidence that Democrat-leaning CEOs positively affect the ESG performance of firms, and are negatively associated with firms’ financial performance (measured by ROA). These findings show to be robust as a different measure for ESG performance (the CSR Sustainability Index) and a different distribution of ESG scores (below mean respectively above mean) leads to relatively similar results. Yet, when the CSR index is taken as dependent variable, the results are of more economic significance.

Table 6. Hypotheses overview

Hypothesis		Conclusion
<i>H₁</i>	<i>A relatively greener CEO, will lead to higher ESG scores.</i>	Accepted
<i>H₂</i>	<i>An increase in oil prices, will lead to an increase in ESG scores.</i>	Accepted
<i>H₃</i>	<i>An increase in oil prices, will lead to a larger increase in E scores.</i>	Rejected
<i>H₄</i>	<i>A higher oil price level will strengthen the relationship between a Democratic-leaning CEO and the ESG score of a firm.</i>	Rejected
<i>H₅</i>	<i>A higher oil price level will strengthen the relationship between a Democratic-leaning CEO and the E score of a firm more heavily.</i>	Rejected
<i>H₆</i>	<i>A Democratic-leaning governor will strengthen the relationship between a Democratic-leaning CEO and the ESG score of a firm.</i>	Accepted
<i>H₇</i>	<i>A relatively greener CEO, will lead to higher firm financial performance.</i>	Rejected
<i>H₈</i>	<i>A Democratic-leaning CEO strengthened by a Democratic-leaning governor and the oil price level in 2020 respectively, will lead to higher firm financial performance.</i>	Partially accepted

This table provides an overview of the hypothesis tested to answer my research question, which are presented in the first column. In the second column the results of the hypotheses are presented, indicated by the acceptance or rejection of the specific hypothesis.

CHAPTER 7 Discussion

Although my findings contribute to existing literature, it must be noted that this study is restricted to several limitations.

First, endogeneity could exist in my findings due to the presence of selection bias. I choose to use firms listed on the S&P500, which are large corporations headquartered in the United States. These firms, and accordingly their CEOs, could not be representative for firms and CEOs in general. For example, CEOs of large and well-known firms are more likely to have political ties and thereby influencing the political contributions to certain parties. This could enhance the probability that contributions are unrelated to the political views of the party, including their views on ESG for example.

Besides, it is reasonable to assume that CEOs of larger firms have less power (than CEOs of smaller / medium-sized firms) to inject their own values and beliefs into ESG related activities due to the many mechanisms (boards, management, shareholders) being able to influence decisions as well. Although I add firm size as a control variable to account for differences between firm size, results could be biased due to the choice of the selection of firms.

Second, my sample is rather small which could lead to biased results as well. Due to the disability to connect all CEOs who made contributions to relevant CEO characteristics in ExecuComp and the unavailability of the political identities of the PACs (which would have increased the number of contributions) the final sample is relatively small.

Third, although ESG scores are commonly used and measured with care, the quality and reliability of the ESG scores disclosed remains ambiguous. This as companies publish the ESG scores themselves and consequently are prone to subjectivity (Duque-Grisales and Aguilera-Caracuel, 2019).

Further research could focus on a larger or differentiated sample, for example focusing on a sample set which includes small and large firms, listed on the Nasdaq Composite Index for example. Alternatively, one could focus on smaller firms only and the Russel 2000 Index could be taken to see whether this yields different results. However, looking at indexes with smaller firms only, would again result in selection bias.

Additionally, it could be interesting to research the effects of the differences in more liberal-leaning and more conservative-leaning CEOs for a different continent and so using a different sample. For example, firms listed on the Euronext or the Shanghai Stock Exchange. This could be interesting as the differences between these two perspectives could be more pronounced in the United States due to the distinct polarization between Democrats and Republicans, which may result in different findings.

Moreover, to study the effect of oil on firms' ESG performance, oil shocks could be analyzed instead of looking at an increase of oil prices. More specifically, an event study could have been performed, in which an oil shock is taken as the event. For example, the explosion of the oil drilling rig "Deepwater Horizon" in 2010, which resulted in huge amount of oil spillage in the ocean (Environment Protection Agency, 2022). Subsequently, the ESG scores pre-shock could be compared to the ESG scores in the

event window. Positive differences in ESG scores could sign that a (negative) oil shock increases the intentions of firms to engage in ESG related activities, which confirms there exists a relationship between oil and ESG.

Finally, additional characteristics of CEOs could be added to the regressions to enhance the isolation of the effect of CEO Democratism on ESG scores. For example, the main ideology of the state in which the CEO is born or the political preferences persistent in the close environment of the CEO (his or her network of friends, neighbors, family) could be added.

References

- Achen, C. H. (2000). Why lagged dependent variables can suppress the explanatory power of other independent variables. The Center of Political Studies of the Institute for Social research, University of Michigan.
- Adenugba, A., Ige, A., and Kesinro, O. (2016). Financial leverage and firms' value: A study of selected firms in Nigeria, *European Journal of Research and Reflection in Management Sciences*, 4 (1), 14-32.
- Aggarwal, R. K., Meschke, F., Wang, T. Y. (2012). Corporate political contributions: Investment or agency? *Business and Politics*, 1 (1), 1-40.
- Aggarwal, D., and Padhan, P. C. (2017). Impact of capital structure on firm value: Evidence from the Indian hospitality industry, *Theoretical Economics Letters*, 7 (4), 982-1000.
- Agrawal, A., and Knoeber, C. R. (2001). Do Some Outside Directors Play a Political Role? *The Journal of Law and Economics*, 44 (1), 179-198.
- Ansolabehere, S., Snyder, J., and Ueda, M. (2004). Do Firms Profit from Soft Money? *Election Law Journal*, 3 (2), 193-198.
- Azjen, I., and Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs: Prentice-Hall.
- Baron, D. P. (2008). Managerial contracting and corporate social responsibility, *Journal of Public Economics*, 92 (1), 268-288.
- Bebchuk, L. A., and Jackson, R. J. (2010). Corporate political speech: who decides? *Harvard Law Review*, 124 (1), 83-117.
- Benabou, R., and Tirole, J. (2010). Individual and Corporate social responsibility, *Economica*, 77 (305), 1-19.
- Bernatonyte, D., Vilke, R., and Keizeriene, E. (2009). Economic crisis impact directions concerning corporate social responsibility in Lithuanian SMEs. *Economics and Management*, 14.
- Berrone, P., and Gomez-Mejia, L. R. (2009). Environmental performance and executive compensation: An integrated agency-institutional perspective, *Academy of Management Journal*, 52 (1), 103-126.
- Bertrand, M., Kramarz, F., Schoar, A., and Thesmar, D. (2005). Politically Connected CEOs and Corporate Outcomes: Evidence from France. Working Paper. University of Chicago
- Borghesi, R. (2018). Employee political affiliation as a driver of corporate social responsibility intensity, *Applied Economics*, 50 (19), 2117-2132.

- Borghesi, R., Houston, J. F., and Naranjo A. (2014). Corporate socially responsible investments: CEO altruism, reputation and shareholder interests, *Journal of Corporate Finance*, 26 (C), 164-181.
- Boubakri, N., Guedhami, O., Kwok, C. C., and Wang, H. H. (2019). Is privatization a socially responsible reform? *Journal of Corporate Finance*, 56 (C), 129-151.
- Broadstock, D. C., Managi, S., Matousek, R., and Tzeremes, N. G. (2019). Does doing “good” always translate into doing “well”? An eco-efficiency perspective, *Business Strategy and the Environment*, 18 (6), 1199-1217.
- Cai, Y., Pan, C. H., Statman, M. (2016). Why do countries matter so much in corporate social performance? *Journal of Corporate Finance*, 41 (C), 591-609.
- Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility, *Academy of Management Review*, 32 (3), 946-967.
- Carroll, A. B., (1991). The pyramid of corporate social responsibility: toward the moral management of organizational stakeholders, *Business Horizons*, 34 (4), 39-48.
- Chams, N., and Garcia-Blandon, J. (2019). Sustainable or not sustainable? The role of the board of directors, *Journal of Cleaner Production*, 226 (21), 1067-1081.
- Chen, X., Li, Y., Xiao J., and Wen, F. (2020). Oil shocks, competition and corporate investment: Evidence from China, *Energy Economics*, 89 (C), 104819.
- Cheng, D., Shi, X., Yu, J., and Zhang, D. (2019). How does the Chinese economy react to uncertainty in international crude oil prices? *International Review of Economics and Finance*, 64 (C), 147-164.
- Chin, M. K., Hambrick, D. C., and Treviño, L. K. (2013). Political ideologies of CEOs: The influence of executives’ values on corporate social responsibility, *Administrative science quarterly*, 58 (2), 197-232.
- Claessens, S., Feijen, E., and Laeven, L. (2008). Political connections and preferential access to finance: the role of campaign contributions, *Journal of Financial Economics*, 88 (3), 554- 580.
- Cooper, M. J., Gulen, H., and Ovtchinnikov, A. V. (2010). Corporate political contributions and stock returns, *Journal of Finance*, 65 (2), 687-724.
- Cronqvist, H., and Yu, F. (2017). Shaped by their daughters: executives, female socialization, and corporate social responsibility, *Journal of Financial Economics*, 126 (3), 543-562.
- Cumming, D. and Johan, S. (2007). Socially responsible institutional investment in private equity, *Journal of Business Ethics*, 75 (4), 395-416.

- Dang, H. N., Vu, V. T., Ngo, X. T., and Hoang, H. T. (2019). Study of the impact of growth, firm size, capital structure, and profitability on firm value: Evidence of firms in Vietnam, *The Journal of Corporate Accounting & Finance*, 30 (1), 144-160.
- Deckop, J. R., Merriman, K. K., and Gupta, S. (2006). The effects of CEO pay structure on Corporate Social Performance, *Journal of Management*, 32 (3), 329-342.
- Detomasi, D. A. (2008). The political roots of corporate social responsibility, *Journal of Business Ethics*, 82 (4), 807-819.
- Dhaoui, A., and Khraief, N. (2014). Empirical linkage between oil price and stock market returns and volatility: Evidence from international developed markets, *Economics Discussion Papers*, 12.
- Di Giuli, A., and Kostovetsky, L. (2014). Are red or blue companies more likely to go green? Politics and corporate social responsibility, *Journal of Financial Economics*, 111 (1), 158-180.
- Diaz, V., Ibrushi, D., and Zhao, J. (2021). Reconsidering systematic factors during the Covid-19 pandemic – The rising importance of ESG, *Finance Research Letters*, 38, 101870.
- Dixit, A. K., and Pindyck, R. S., (1994). Investment under uncertainty. Princeton university press, Princeton.
- Dormann, C. F., Elith, J., Bacher, S., Buchmann, C., Carl, G., Carré, G., Garcia Marquez, J. R., Gruber, B., Lafourcade, B., Leitao, P. J., Münkemüller, T., McClean, C., Osborne, P. E., Reineking, B., Schröder, B., Skidmore, A. K., Zurell, D and Lautenbach, S. (2013). Collinearity: a review of methods to deal with it and a simulation study evaluating their performance, *Ecography*, 36 (1), 27-46.
- Dunlap, R. E., and McCright, A. M. (2008). A widening gap: Republican and Democratic views on climate change, *Environment: Science and Policy for Sustainable Development*, 50 (5), 26-35.
- Duque-Grisales, E., and Aguilera-Caracuel, J. (2019). Environmental, social and governance (ESG) scores and financial performance of multilatinas: Moderating effects of geographic international diversification and Financial Slack, *Journal of Business Ethics*, 168 (2), 315-334.
- England, G. W. (1967). Personal value systems of American managers, *Academy of Management Journal*, 10 (1), 53-68.
- Endri, E., and Fathony, M. (2020). Determinants of firm's value: Evidence from the financial industry, *Management Science Letters*, 10 (1), 111-120.
- Hale, J. (2021, January 28). *A broken record: flows for U.S. sustainable funds again reach new heights*. Morningstar. <https://www.morningstar.com/articles/1019195/a-broken-record-flows-for-us-sustainable-funds-again-reach-new-heights>

Environmental Protection Agency (EPA). (2022). *Deepwater Horizon – BP Gulf of Mexico Spill*. EPA. <https://www.epa.gov/enforcement/deepwater-horizon-bp-gulf-mexico-oil-spill>

Fan, P. H. J., Wong, T. J., and Zhang, T. (2007). Politically-Connected CEOs, Corporate Governance and Post-IPO Performance of China's Newly Partially Privatized Firms, *Journal of Financial Economics*, 84 (2), 330-357.

Fan, Z., Zhang, Z., and Zhao, Y. (2021). Does oil price uncertainty affect corporate leverage? *Energy Economics*, 98 (C), 105252.

Fabrizi, M., Mallin, C., and Michelon, G. (2014). The role of CEO's personal incentives in driving corporate social responsibility, *Journal of Business Ethics*, 124 (2), 311-326.

Federal Election Commission (FEC). (2023). Independent government agency which goal is to enforce campaign finance law in federal elections in the United States. FEC. <https://www.fec.gov/>

Fernando, C., Sharfman, M., and Uysal, V. (2010). Does greenness matter? The effect of corporate environmental performance on ownership structure, analyst coverage and firm value. University of Oklahoma working paper.

Ferrell, A., Liang, H., and Renneboog, L. (2016). Socially responsible firms, *Journal of Financial Economics*, 122 (3), 585-606.

Flammer, C. (2015). Does product market competition foster corporate social responsibility? Evidence from trade liberalization, *Strategic Management Journal*, 36 (10), 1469-1485.

Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Pitman, Boston, MA.

Giddens, A. (1998). *The Third Way: The Renewal of Social Democracy*. Cambridge, UK: Polity Press.

Gillan, S. L., Hartzell, J. C., Koch, A., and Starks, L. T. (2010). Firms' environmental, social and governance (ESG) choices, performance and managerial motivation. Unpublished working paper, Texas Tech University and University of Texas at Austin.

Gillan S. L., Koch, A., and Starks, L. T. (2021). Firms and social responsibility: a review of ESG and CSR research in corporate finance, *Journal of Corporate Finance*, 66, 101889.

Gupta, A., Briscoe, F., and Hambrick, D. C. (2017). Red, blue, and purple firms: Organizational political ideology and corporate social responsibility, *Strategic Management Journal*, 38 (5), 1018-1040.

Hambrick, D. C., and Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers, *The Academy of Management Review*, 9 (2), 193-206.

Hasan, M. M., Wong, B. J., and Mamum, M. A. A. (2022). Oil shocks and corporate social responsibility, *Energy Economics*, 107, 1-15.

- Hawn, O., Chatterji, A. K., Mitchell, W. (2018). Do investors actually value sustainability? New evidence from investor reactions to the Dow Jones sustainability index (DJSI). *Strategic Management Journal*, 39 (4), 949-976.
- He, K., Chen, W., and Zhang, L. (2021). Senior management's academic experience and green innovation, *Technological Forecasting & Social Change*, 166 (2), 120664.
- Hegde, S. P. (2019). Married CEOs and corporate social responsibility, *Journal of Corporate Finance* 58, 226-246.
- Henriques, I., and Sadorsky, P. (2008). Oil prices and the stock prices of alternative energy companies, *Energy Economics*, 30 (3), 998-1010.
- Hill, A. D., Johnson, S. G., Greco, L. M., O'Boyle, E. H., and Walter, S. L. (2021). Endogeneity: A Review and Agenda for the Methodology - Practice Divide Affecting Micro and Macro Research, *Journal of Management*, 47 (1), 105-143.
- Jeong, N., and Kim, N. (2019). The effects of political orientation on corporate social (ir)responsibility, *Management Decisions*, 58 (2), 255-266.
- Jensen, M. C., and Meckling, W. H. (1976). Theory of the firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*, 3 (4), 303-360.
- Jha, A., and Cox, J. (2015). Corporate social responsibility and social capital, *Journal of Banking and Finance*, 60, 252-270.
- Jost, J. T. (2006). The end of the end of ideology, *American Psychologist*, 61 (7), 651-670.
- Jost, J. T., Glaser, J., Kruglanski, A. W., and Sulloway, F. (2003). Political conservatism as motivated social cognition, *Psychological Bulletin*, 129 (3), 339-375.
- Jouber, H. (2019). How does CEO pay slice influence corporate social responsibility? U.S. – Canadian versus Spanish – French listed firms, *Corporate Social Responsibility and Environmental Management*, 26 (2), 502-517.
- Kashmiri, S., and Mahajan, V. (2017). Values that shape marketing decisions: Influence of chief executive officers' political ideologies on innovation propensity, shareholder value, and risk, *Journal of Marketing Research*, 54 (2), 260-278.
- Kazlauskiene, V., and Christauskas, C. (2008). Business valuation model based on the analysis of business value drivers, *Engineering Economics*, 57 (2), 12-31.
- Kim, I., Pantzalis, C., and Park, J. C. (2013). Corporate boards' political ideology diversity and firm performance, *Journal of Empirical Finance* 21, 223-240.

- King, B. G. (2008). A political mediation model of corporate response to social movement activism, *Administrative Science Quarterly*, 53 (3), 395-421.
- Krajnakova, E., Navickas, V., and Kontautiene, R. (2018). Effect of macroeconomic business environment on the development of corporate social responsibility in Baltic Countries and Slovakia, *Oeconomia Copernicana*, 9 (3), 477-492.
- Layman, G. C. (1997). Religion and political behavior in the United States: The impact of beliefs, affiliations, and commitment from 1980 to 1994, *Public Opinion Quarterly*, 61 (2), 288-316.
- Lee, M. T., and Suh, I. (2022). Understanding the effects of Environmental, Social and Governance conduct on financial performance: Arguments for a process and integrated modelling approach, *Sustainable Technology and Entrepreneurship*, 1 (1), Article 100004.
- Liao, L., Warner, M., and Homsy, G. (2020). When Do Plans Matter? *Journal of the American Planning Association*, 86 (1), 60-74.
- Linder, S., and Foss, N. J. (2013). Agency Theory. *International Encyclopedia of the Social and Behavioral Sciences (Second Edition)* 344-350.
- Maimunah, A., and Patmawati, I. (2018). Inflation and Companies' Performance: A cross-sectional Analysis, *Advanced Science Letters*, 24 (6), 4750-4755.
- McGuinness, P. B., Vieito, J. P., and Wang, M. (2017). The role of board gender and foreign ownership in the CSR performance of Chinese listed firms, *Journal of Corporate Finance*, 42, 75-99.
- Naciti, V. (2019). Corporate governance and board of directors: The effect of a board composition on firm sustainability performance, *Journal of Cleaner Production*, 237, Article: 117727.
- National Governors Association (NGA). (2023) The NGA serves as a public policy linkage between the state governments and the federal government. <https://www.nga.org/governors/powers-and-authority/>.
- Nguyen, H. T., and Bui, M. T. (2020). Determinants of firm value in Vietnam: A research framework, *International Journal of Science and Research*, 9 (1), 626-631.
- Nguyen, L., Tan, T. K. P., Nguyen, T. H. (2021). Determinants of Firm Value: An Empirical Study of Listed Trading Companies in Vietnam, *The Journal of Asian Finance, Economics and Business*, 8 (6), 809-817.
- Nofsinger, J. R., Sulaeman, J., and Varma, A. (2019). Institutional investors and corporate social responsibility, *Journal of Corporate Finance*, 58, 700-725.

- McNamara R., and Duncan, K. (1995). Firm performance and macro-economic variables. School of Business Discussion Papers. Paper 66.
- Orlitzky, M. F., Schmidt, L., and Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24 (3), 403-441.
- Ovtchinnikov, A. V., and Pantaleoni, E. (2012). Individual political contributions and firm performance, *Journal of Financial Economics*, 105 (2), 367-392.
- Pangestuti, D. C., and Tindangen, A. M. L. (2020). The influence on internal and external factors on firm value, *European Journal of Business and Management Research*, 5 (5), 370- 376.
- Phan, D. H. B., Tran, V. T., and Nguyen, D. T. (2019). Crude oil price uncertainty and corporate investment: New global evidence, *Energy Economics*, 77, 54-65.
- Pindyck, R. S. (1991). Irreversibility, uncertainty, and investment, *Journal of Economic Literature*, 29 (3), 1110-1148.
- Pollard, J. L., Sherwood M. W., and Klobus R. K. (2018). Establishing ESG as risk premia, *Journal of Investment Management*, 16 (1), 1-12.
- Rajwani, T., and Liedong, T. A. (2015). Political activity and firm performance within nonmarket research: A review and international comparative assessment, *Journal of World Business*, 50 (2), 273-283.
- Rizqia, D. A., and Sumiati, S. A. (2013). Effect of managerial ownership, financial leverage, profitability, firm size, and investment opportunity on dividend policy and firm value, *Research Journal of Finance and Accounting*, 4 (11), 120-130.
- Roberts, M. R., and Whited, T. M. (2013). Chapter 7 - Endogeneity in empirical Corporate Finance, *Handbook of the Economics of Finance*, 2, 494-572.
- Rubin, A. (2008). Political views and corporate decision-making: The case of corporate social responsibility, *The Financial Review*, 43 (3), 337-360.
- Santa-Clara, P., and Valkanov, R. (2003). The presidential puzzle: political cycles and the stock market., *Journal of Finance*, 58 (5), 1841-1872.
- Song, X. and Yang, B. (2022). Oil price uncertainty, corporate governance and firm performance, *International Review of Economics and Finance*, 80, 469-487.
- Schwartz, S. (1996). Value priorities and behavior: Applying a theory of integrated value systems.
- Surroca, J. and Tribo, J., A. (2008). Managerial Entrenchment and Corporate Social Performance, *Journal of Business Finance and Accounting*, 35 (5-6), 748-789.

Suzulia, M. T., Sudjono, Saluy, A. B. (2020). The effect of capital structure, company growth, and inflation on firm value with profit ability as intervening variable (study on manufacturing companies listed on the Indonesia Stock Exchange in the period 2014-2018), *Dinasti international Journal of Economics, Finance and Accounting*, 1 (1), 96-109.

Tavares, J. (2004). Does right or left matter? Cabinets, credibility and fiscal adjustments, *Journal of Public Economics*, 88 (12), 2447-2468.

Tedin, K. L. (1987). Political ideology and the vote, *Research in Micropolitics*, 2 (1), 63-94.

Thomson Reuters. (2017, March). Thomson Reuters ESG scores. https://www.esade.edu/itemsweb/biblioteca/bbdd/inbdd/archivos/Thomson_Reuters_ESG_Scores.pdf

Unsal, O., Hassan, M. K., and Zirek, D. (2016). Corporate lobbying, CEO political ideology and firm performance, *Journal of Corporate Finance*, 38, 126-149.

Vithessonthi, C., and Tongurai, J. (2015). The effect of leverage on performance: Domestically-oriented versus internationally- oriented firms, *Research in International Business and Finance*, 34, 265-280.

Wong, J., and Hasan, M. (2021). Oil shocks and corporate payouts, *Energy Economics*, 99 (C), 1-14.

Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. 2nd ed. Cambridge, MA: MIT Press. 2020. *Introductory Econometrics: A Modern Approach*. 7th ed. Boston: Cengage.

Xiao, J., Zhou, M., Wen, F., and Wen F. (2018). Asymmetric impacts of oil price uncertainty on Chinese stock returns under different market conditions: Evidence from oil volatility index, *Energy Economics*, 74 (C), 777-786.

Yoo, W., Mayberry, R., Bae, S., Singh, K., He., P., and Lillard Jr, J. W. (2014). A study of effects of multicollinearity in the multivariable analysis, *International Journal of Applied Science Technology*, 4 (5), 9-19.

Appendix

Appendix A. Meta table of the key literature on the effect of political ideologies on ESG/CSR

Author(s) (Publication year)	Time period	Region	Method	Control variables	Results
Rubin (2008)	2004	United States	Cross-sectional data set and OLS regressions are used with an instrumental variable approach	Growth (a market-to-book ratio), risk (standard error/volatility of the equity return) firm size, a firm's age, leverage and insiders' and institutional ownership	Firms located in more Republican-leaning areas (measured by the % of votes President Bush received) tend to show lower CSR ratings
Chin, Hambrick and Trevino (2013)	2004-2009	United States	Generalized estimating equations (GEE) within panel data	Industry-average CSR, pre-CEO CSR, PAC Democratic orientation, blockholder ownership, CEO power, CEO tenure, CEO N\$/s' total number of donations, firm size, leverage and performance (a market-to-book measure)	The authors find a positive association between liberal CEOs and CSR performance
Di Giuli and Kostovetsky (2014)	2003-2009	United States	Pooled OLS regressions	Firm size, ROA, cash, dividends, debt, book-to-market, CEO age, CEO tenure, CEO gender and CEO nationality	More Democrat-leaning internal and external environments (measured respectively by the political donations of CEOs, founders and directors and voting patterns in the state in which the firm is located) are positively associated with the CSR performance of firms
Gupta, Briscoe and Hambrick (2017)	2001-2008	United States	Generalized Method of Moments (GMM) within panel data	Average industry CSR, % female executives in industry, prior acceptance of benefits in industry, human capital intensity, CEO tenure, prior year CSR, and female executives, size of top management, female CEO, % female directors, % women in industry, prior year CSR, LGBT measures, size, ROA, leverage, count of donation records, % women's donations, ownership, CEO duality, % stock ownership and board outsider ratio	They find a positive relation between organizational liberalism (measured by the political contributions of employees) and CSR performance

Jeong and Kim (2019)	1994-2005	United States	Panel regression analysis	CEO tenure, CEO gender, CEO age, CEO duality, indicator variables for whether the CEO is the founder or/and outsider, CEO ownership %, CEO long-term pay, CEO retirement, firm size, leverage, ROA, blockholder ownership, # of firm scandals, industry-level discretion and industry-level CSR behavior	Liberal CEOs are positively related to CSR, when interacted with a Democrat-leaning President the effect on CSR is negative.
----------------------	-----------	---------------	---------------------------	--	--

This table provides an overview of relevant literature on the effect of political ideologies on CSR/ESG. The first column shows the authors, the second column describes the time period in which the sample is conducted. Moreover, the region is presented, which refers to the sample and the method used to conduct the research is presented in the fourth column. The control variables supporting the regressions are presented in the fifth column and the findings of the paper are documented in the last column.

Appendix B. Meta table of the key literature on the effect of political ideologies on firm performance

Author(s) (Publication year)	Time period	Region	Method	Control variables	Results
Santa and Valkanov (2003)	1927-1998	United States	OLS regressions	Dividend-price ratio, term spread between the YTM of a Treasury note and bill, default spread between different risk type of bonds and the relative interest rate	The authors show that under Democratic presidencies, excess returns in the stock market are higher compared to periods of Republican presidencies. This can be mostly explained by the difference in unexpected returns
Betrand, Kramarz, Schoar and Thesmar (2005)	1989-2002	France	OLS regressions	Firm size, total employment, leverage, an indicator variable for whether the firm is listed on the "Premier March" (firms with higher trading volume), state ownership, firms active in real estate, insurance or finance, CEOs in the Who's Who (magazine), CEO age	CEOs that maintain political ties with political elite show lower ROA than non-connected CEOs
Claessens, Feijen and Laeven (2008)	1998 and 2002	Brazil	OLS regressions	Firm size, tangible asset ratio, leverage,	The authors find empirical evidence for a

				profitability (EBIT), sales growth and bank debt to total assets ratio	positive relationship between contributions to federal deputies and stock returns of Brazilian firms around the disclosure of the election results
Cooper, Gulen and Ovtchinnikov (2010)	1979-2004	United States	OLS regressions within panel data	Market-to-book ratio, market value of equity and the buy-and-hold returns over a 12-month period	Firm-level political contributions are positively related to stock returns
Ovtchinnikov and Pantaleoni (2012)	1991-2008	United States	Logit, Poisson and Tobit regressions	Industry size, change in market-to-book ratio, change in market capitalization, the change in the number and amount of individual (and corporate) political contributions to economically relevant politicians, the change in the number and amount of individual political contributions to all politicians, the change in capital expenditures and the change in R&D expenses	A positive relation is found between individual political contributions towards important economic politicians and firm performance (measured by ROA and the market-to-book ratio)
Aggarwal, Meschke and Wang (2012)	1991-2004	United States	OLS regressions	Book-to-market ratio, firm performance (ROA), sales growth, FCF, leverage, R&D expenses, investment level, % firm sales (over total industry sales), assets, whether it concerns a target/acquirer, % ownership of insiders, blockholders and institutional shareholders, excess CEO pay and the % of firms that contribute in a specific industry	Firm-level political donations are negatively associated with excess returns
Unsal, Hassan and Zirek (2016)	2000-2012	United States	Panel fixed effect regression and linear logistic regression	Firm size, firm performance (Tobin's Q and ROA), leverage, % tangible assets ,	Republican-favoring CEOs show higher lobbying activity, resulting in

				FCF, firm age and Herfindahl Index (measure of industry concentration)	higher lobbying and agency costs. This in turn, results in lower firm performance (measure by Tobin's Q)
Kashmiri and Mahajan (2017)	2006-2010	United States	Random effects negative binominal regression	Firm age, globalization, firm size, diversification, leverage, CEO age, CEO generalist/specialist score, CEO marketing expertise, presence of a CEO's MBA degree and CEO prior experience	More Democrat-leaning CEOs are associated with higher Tobin's Q and more volatile stock returns. This can be partly explained by more new product introductions (NPIs)

This table provides an overview of relevant literature on the effect of political ideologies on firm performance. The first column shows the authors, the second column describes the time period in which the sample is conducted. Moreover, the region is presented, which refers to the sample and the method used to conduct the research is presented in the fourth column. The control variables supporting the regressions are presented in the fifth column and the findings of the paper are documented in the last column

Appendix C. Variable description

Variable	Definition	Source
Dependent variables		
ESGscore	The ESG score is an overall company score based on by analysts reported information in the environmental, social and corporate governance pillars	Eikon Refinitiv DataStream
Escore	The environmental pillar score is the weighted average relative rating of a company based on the reported environmental information and the resulting three environmental category scores	Eikon Refinitiv DataStream
Tobin's Q	Tobin's Q measures whether a firm is relatively over- or undervalued and is derived by dividing the market value of a firm (market capitalization) by the book value of the assets of the firm. Market capitalization is derived by multiplying the market price - year end times the common shares outstanding. The 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.	Eikon Refinitiv DataStream
ROA	The return on assets represents the profitability of the assets of the firm and is calculated by dividing the net income over the total assets. Net income represents the net income of the company in U.S. dollars using the fiscal year end exchange rate	Eikon Refinitiv DataStream
CSR Sustainability Score	An alternative measure for the ESG score of a firm. The CSR Sustainability Score takes into account the economic, social and environmental factors of a firm's day-to-day decisions.	Eikon Refinitiv DataStream
Independent variables		
PolContrCEO	The political contributions are calculated by looking at the ratio of contributions to Democratic-favoring parties divided over the total contributions made to both Democratic and Republican-favoring parties	Federal Election Commission (FEC)
IdeoGov	The governor of the state in which the headquarter of the specific firm is located	National Governors Association (NGA)
Oilprice	The oil price is calculated by EIA and obtained from Eikon Refinitiv by looking at daily data and taking the unweighted average of the daily closing spot prices of the WTI index	Energy Information Administration (EIA) / Eikon Refinitiv
Control variables		
LogTotalAssets	Firm size is calculated by taking the logarithm of the total assets of a firm	Manually calculated and Eikon Refinitiv DataStream
ROE	The return on equity is a profitability ratio and is derived by dividing the net income over the total shareholders' equity. Shareholders' equity represents the sum of common shareholders equity and preferred stock.	Eikon Refinitiv DataStream
DERatio	Leverage ratio describes the portion of which the assets are funded with debt relative to equity. Equity represents the sum of common equity and preferred stock. Debt represents all interest bearing and capitalized lease obligations. It captures the sum of long- and short-term debt	Manually calculated and Eikon Refinitiv DataStream
ScaledCapex	Capital expenditures is the variable used to display the investment level of a firm. Capital expenditures represent the funds used to acquire fixed assets other than those associated with acquisitions	Manually calculated and Eikon Refinitiv DataStream
Gender	The gender of a CEO	ExecuComp
LogAge	The age of a CEO in years	ExecuComp
LogTenure	The amount of days the CEO is in his or her CEO position	ExecuComp
President	The president that served the United States in a specific year	USA.gov
This table represents the description and the source of all the variables used in my sample.		

Appendix D. ESG category weights

Pillar	Category	Indicators in rating	Weights within pillar	Weights within ESG
Environmental	Resource Use,	19	31%	11%
	Emissions and	22	36%	12%
	Innovation	20	33%	11%
Social	Workforce,	29	46%	16%
	Human Rights,	8	13%	4.5%
	Community and	14	22%	8%
	Product Responsibility	12	19%	7%
Governance	Management,	34	63%	19%
	Shareholders and	12	22%	7%
	CSR Strategy	8	15%	4.5%
Total		178		100%

This table provides an overview of the categories within the pillar scores. Including the number of indicators for each category, the weight of a specific category among all categories within the specific pillar and the weight of a specific category over total amount of categories. For example, within the Environmental pillar, the category Resource Use is constructed by 19 indicators, and accounts for 31% ($\frac{19}{19+22+20}$) of all categories within the environmental pillar score. Moreover, the category Resource Use represents 11% ($\frac{19}{178}$) of all categories.

Appendix E. Pearson Correlation table

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) ESGscore	1.000															
(2) Escore	0.859***	1.000														
(3) Tobin's Q	0.014	-0.048	1.000													
(4) ROA	0.050	0.013	0.706***	1.000												
(5) PolContrCEO	0.069**	0.111***	0.056*	0.024	1.000											
(6) Oilprice ₂₀₂₀	0.124***	0.084**	0.087***	-0.062*	-0.062	1.000										
(7) Oilprice ₂₀₂₁	0.160***	0.105***	0.093***	0.022	0.017	-0.070**	1.000									
(8) IdeoGov	0.066**	0.040	0.184***	0.140***	0.203***	0.053	0.084**	1.000								
(9) LogTotalAssets	0.359***	0.402***	-0.431***	-0.308***	0.081**	0.077**	0.080**	0.020	1.000							
(10) ROE	0.150***	0.138***	0.408***	0.679***	0.052	-0.061*	0.105***	0.114***	-0.092***	1.000						
(11) DERatio	0.112***	0.177***	0.289***	-0.305***	0.055	-0.006	0.040	-0.017	0.193***	0.176***	1.000					
(12) ScaledCapex	0.099***	0.121***	0.014**	0.020	-0.178***	-0.076**	-0.048	-0.193***	-0.131***	-0.106***	-0.040	1.000				
(13) Gender	0.052	0.054	-0.050	-0.055*	0.113***	0.0281	-0.015	-0.017	-0.015	-0.006	0.084**	-0.043	1.000			
(14) LogAge	0.053	0.053	-0.109***	-0.128***	-0.122***	0.110***	0.088***	-0.001	0.153***	-0.080**	-0.070**	-0.081**	-0.073**	1.000		
(15) LogTenure	-0.223***	-0.210***	-0.002	-0.033	0.056	-0.052	-0.056*	0.096***	-0.141***	-0.053	-0.156***	0.028	-0.000	0.132***	1.000	
(16) President	-0.205***	-0.126***	-0.094***	0.025	0.038	-0.431***	0.162***	-0.055*	-0.103***	-0.010	-0.058*	0.069**	-0.033	-0.143***	0.044	1.000

This correlation table provides an overview of the correlation between all my variables. The significance levels are represented by *** p<0.01** p<0.05 and *p<0.10.

Appendix F. Tobit regression

Variables	(1) ESGBM	(2) ESGAM	(3) ESG
PolContrCEO	4.112** (2.073)	3.134** (1.224)	3.201** (1.463)
Constant	-53.792 (55.137)	-33.358 (28.639)	-45.408 (41.571)
Controls	Yes	Yes	Yes
Year fixed effects	No	No	No
Industry fixed effects	No	No	No
State fixed effects	No	No	No
Observations	905	905	905
Pseudo R-squared	0.048	0.040	-

This table provides the results for the Tobit regressions that examine the effect of political contributions on the ESG score of firms, when the ESG scores are split by the mean of all ESG scores. In column (1), the dependent variable ESGBM stands for the ESG scores falling into the below mean group and in column (2), ESGAM covers the firms that fall into the above mean group. In the third column, all ESG scores are taken into account. The same control variables are added to these models, however the regressions do not control for year, state and industry fixed effects. As documented within the parentheses, robust standard errors are used to control for heteroskedasticity. The significance levels are represented by *** p<0.01 ** p<0.05 and *p<0.10.

Appendix G. Regression results political ideology on CSR performance

Variables	(1) CSR	(2) CSR	(3) CSR	(4) CSR
PolContrCEO	10.897*** (2.935)		10.933*** (3.143)	15.073*** (3.910)
Oilprice ₂₀₂₀		2.824 (4.784)	2.819 (5.278)	
Oilprice ₂₀₂₁		22.173*** (4.492)	22.148*** (5.376)	
PolContrCEO*Oilprice ₂₀₂₀			1.220 (8.116)	
PolContrCEO*Oilprice ₂₀₂₁			-1.915 (8.509)	
IdeoGov				-0.051 (3.547)
PolContrCEO*IdeoGov				6.732 (5.387)
Constant	-421.901*** (54.229)	-387.007*** (54.178)	-425.116*** (53.894)	-422.475*** (54.232)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes
Observations	904	904	904	904
R-squared	0.477	0.468	0.477	0.479
Adjusted R-squared	0.444	0.435	0.443	0.444

This table provides the results for the OLS regressions that examine the effect of political contributions, oil price levels and the political ideology of governors on the CSR Sustainability Index. All controls are added and all regressions control for year, state and industry fixed effects and as documented within the parentheses, robust standard errors are used to control for heteroskedasticity. The significance levels are represented by *** p<0.01 ** p<0.05 and *p<0.10.

Appendix H. Lagged ESG score

Variables	(1)	(2)
	ESGscore	ESGscore
PolContrCEO	5.466*** (1.467)	1.828** (0.755)
LaggedESG		0.829*** (0.022)
Constant	-198.049 (30.329)	-33.358 (28.639)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
State fixed effects	Yes	Yes
Observations	905	905
R-squared	0.531	0.883
Adjusted R-squared	0.501	0.875

This table provides the results for the first hypothesis that examine the effect of political contributions on the ESG score of firms. Column (1) represents the standard regression for hypothesis 1 and in the second column the lagged ESG score is added to the model. All control variables and fixed effects are added to both models. As documented within the parentheses, robust standard errors are used to control for heteroskedasticity. The significance levels are represented by *** p<0.01 ** p<0.05 and *p<0.10.

Appendix I. Error-in-Variable regression

Variables	(1)	(2)	(3)	(4)
	100% level	95% level	75% level	50% level
PolContrCEO	3.326** (1.590)	3.501** (1.677)	4.435** (2.125)	6.652** (3.187)
Constant	57.032*** (0.874)	56.965*** (0.903)	56.607*** (1.034)	55.755*** (1.381)
Controls	No	No	No	No
Year fixed effects	No	No	No	No
Industry fixed effects	No	No	No	No
State fixed effects	No	No	No	No
Observations	905	905	905	905
R-squared	0.005	0.005	0.005	0.006

This table provides the results for the Error-in-Variable regressions that examine the effect of political contributions on the ESG score of firms, when the political contributions are measured with 100, 95, 75 and 50 percent reliability. The regressions do not control for year, state and industry fixed effects and no control variables are added. As documented within the parentheses, normal standard errors are used. The significance levels are represented by *** p<0.01 ** p<0.05 and *p<0.10.

Appendix J. Regression results political ideology on the Environment, Social and Governance score

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Escore	Escore	Sscore	Sscore	Gscore	Gscore
PolContrCEO	8.828*** (2.141)	17.849*** (3.026)	3.973** (1.689)	4.330* (2.418)	3.337* (1.933)	5.840** (2.919)
IdeoGov		3.918 (2.731)		2.973 (2.417)		0.425 (2.547)
PolContrCEO*IdeoGov		14.565*** (4.033)		0.590 (3.244)		4.037 (3.676)
Constant	-311.708*** (45.711)	-312.02*** (45.107)	-265.137*** (32.709)	-264.450*** (32.661)	-10.142 (41.724)	-10.381*** (41.709)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	904	904	904	904	904	904
R-squared	0.530	0.538	0.496	0.498	0.249	0.250
Adjusted R-squared	0.500	0.507	0.464	0.464	0.201	0.201

This table provides the results for the OLS regressions that examine the effect of the political contributions on the individual pillar scores and the influence of the ideology of governors on the effect of political contributions on the pillar scores. Columns (1) and (2) use the environmental pillar score as dependent variable, columns (3) and (4) use the social pillar score and in columns (5) and (6) the governmental score is used. All controls are added and all regressions control for year, state and industry fixed effects and as documented within the parentheses, robust standard errors are used to control for heteroskedasticity. The significance levels are represented by *** p<0.01 ** p<0.05 and *p<0.10.

Appendix K. Regression results with interaction term

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Tobin's Q	Tobin's Q	Tobin's Q	ROA	ROA	ROA
PolContrCEO	-0.047 (0.093)		-0.954*** (0.323)	-0.007** (0.037)		-0.026*** (0.008)
ESGscore		0.003 (0.003)	-0.002 (0.003)		-0.000 (0.000)	-0.000 (0.000)
PolContrCEO*ESGscore			0.015*** (0.006)			0.001** (0.000)
Constant	18.433*** (2.173)	18.806*** (2.321)	18.899*** (2.249)	0.434*** (0.061)	0.407*** (0.064)	-10.381*** (41.709)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	904	904	904	904	904	904
R-squared	0.596	0.597	0.603	0.753	0.751	0.754
Adjusted R-squared	0.571	0.571	0.576	0.737	0.735	0.738

This table provides the results for the OLS regressions that examine the influence of the ESG score on the effect of political contributions on firm performance. In columns (1), (2) and (3), Tobin's Q is used as proxy for firm performance and in columns (4), (5) and (6) return on assets (ROA) is used. All controls are added and all regressions control for year, state and industry fixed effects and as documented within the parentheses, robust standard errors are used to control for heteroskedasticity. The significance levels are represented by *** p<0.01 ** p<0.05 and *p<0.10.