

An Exposition on CEO Traits that Affect Corporate Decision Making

by

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Abstract

Jensen & Meckling (1976) state that managers make decisions to maximize their personal utility, and their utility function differs from that of their firm. This possibility implies that a manager's characteristics that affect their utility also sway their firm-level decisions away from value-maximizing optimality. I obtain a set of CEO personal characteristics reported on their public records and investigate how those characteristics affect their professional decision-making.

The first chapter investigates how CEOs political beliefs affect their firm's corporate social responsibility. CEOs hold diverse social and economic ideological beliefs that their political party affiliation might not accurately represent. I obtain a CEO's party affiliation through their voter registrations and separately measure the CEO's social and economic ideological beliefs by choosing which United States Congresspersons to support financially. Then, I investigate whether a CEO's party or ideology relates to their firm's corporate social responsibility (CSR), as measured by MSCI. There is no relation between a CEO's party and their firm's CSR, but firms with a more conservative CEO have lower CSR. Specifically, firms led by a more economically conservative CEO score lower in the environmental pillar. In addition, firms with a more socially conservative CEO have lower scores in the environmental and employee pillars. Further tests indicate that these ideological effects are separate from the CEO's party and suggest that capturing managerial politics through party-based measurements does not accurately represent their ideological drivers.

Secondly, I investigate whether experience in natural environments affects the firm's environmental performance. CEOs who participate in hunting and fishing benefit both by

appreciating natural environments and through permanently consuming natural resources. We examine whether CEOs who hunt and fish make different environmental decisions and find that firms led by CEOs who obtain the most hunting and fishing licenses have lower environmental performance as measured by MSCI-KLD. This effect is strongest in the environmental category of climate change, but also extends to pollution, waste, and the protection of natural capital. Furthermore, firms led by CEOs with the most hunting and fishing licenses are significantly more likely to pay a regulatory settlement for an environmental regulatory infraction.

The third chapter investigates if a CEO's relative age, assigned by a mandatory start of school cutoff when they enter the schooling system, affects their career performance. The relative-age effect suggests that older individuals within a cohort are more successful. This study investigates if the relative-age effect exists for CEO's in the S&P 1500 by analyzing the distribution of their relative age. We utilize an identification strategy that allows us to calculate a CEO's relative age in months and enables us to resolve known identification problems. We find no support for the existence of the relative-age effect for CEOs either by season of birth or relative age in months. On the whole, the distribution of CEO birth dates is similar to the US population.

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Table of Contents

Abstract.....	2
Acknowledgments.....	4
List of Tables	7
List of Figures.....	8
List of Abbreviations	9
1. CEO Politics and Corporate Social Responsibility: Ideology Trumps Party	10
1.1 Introduction.....	10
1.2 Literature Review and Hypothesis Development	15
1.3 Sample and Data	19
1.3.1 Sample.....	19
1.3.2 CSR Data	20
1.3.3 Lexis Nexis Public Records (LNPR).....	20
1.3.4 CEO Ideology	22
1.3.5 Firm and CEO-level Controls	24
1.3.6 Correlation Matrix	25
1.4 Empirical Results	26
1.4.1 CEO Voter Registration Party Versus Contribution-Implied Party.....	26
1.4.2 CEO Registered Party and Firm CSR.....	27
1.4.3 CEO Party and Firm CSR Pillars.....	29
1.4.4 CEO party and Firm CSR Summary.....	30
1.5 CEO Ideology and Firm CSR	30
1.5.1 Determinants of Ideology	30

1.5.2 Political Ideology on Firm CSR.....	34
1.5.3 Political Ideology on CSR Pillars	36
1.6 Instrumental Variable Analysis.....	38
1.7 Robustness	40
1.7.1 Ideology and party are Independent on Firm CSR	40
1.7.2 State Political Factors	41
1.7.3 Alternative Means of Constructing the Dependent Variables	42
1.8 Conclusion	43
2 Hunting and Fishing CEOs: Environmental Plunderers or Saviors?.....	75
2.1 Introduction	75
2.2 Literature Review and Hypothesis Development	77
2.3 Data	80
2.4 Empirical Results	86
2.5 Regulatory Settlement.....	94
2.6 Robustness Tests.....	96
2.7 Conclusion	100
3 Reexamining the Relative-age Effect and Career Success	121
3.1 Introduction.....	121
3.2 Measuring Relative Age	123
3.3 Empirical Analysis.....	125
3.4 Conclusion	127
References.....	132
Appendices.....	142

List of Tables

1.1 Summary Statistics	48
1.2 Correlation Matrix	50
1.3 CEO Party Affiliation on Firm CSR Performance	54
1.4 CEO Political Party on Firm CSR Pillar Performance	56
1.5 Determinants of and Differences in CEO Ideologies	58
1.6 CEO Political Ideology on CSR	60
1.7 CEO Political Ideology on Firm CSR Pillar Scores	62
1.8 CEO Instrumented Political Ideology and CSR	64
1.9 CEO Ideology and Party Affiliation on Firm CSR Score.....	66
1.10 CEO Political Ideology and Firm Headquarters State Politics on Firm CSR Score	68
1.11 CEO Political Ideology on Firm CSR Scores – Alternative CSR Measurement.....	71
2.1 Summary Statistics.....	101
2.2 Correlation Matrix	103
2.3 CEO Sporting Activity on Firm Environmental Score	106
2.4 CEO Sporting Activity on Firm Environmental Strengths and Concerns	108
2.5 CEO Sporting Activity on Environmental Categories.....	110
2.6 CEO Sporting Activity on Environmental Regulatory Settlements	112
2.7 CEO Sporting Activity and Political Registration on Firm Environmental Score	114
2.8 CEO Sportsmen and Firm Environmental Performance – Matched Sample.....	116
2.9 Change in Firm Environmental Score Surrounding CEO Turnover.....	120
3.1 Analysis of CEO Relative Age	131

List of Figures

Figure 1.1 Ideology of Congressional Representatives who served in the 95th – 117th Congress by the Congressperson’ Party 45

Figure 1.2 Ideology of CEOs who contribute to Congressional Representatives by the CEO’s Party 46

Figure 1.3 Political Party Confusion..... 47

Figure 3.1 Distribution of state-by-year SSY Cutoffs by Month..... 129

Figure 3.2 Cumulative Distribution of CEO Births 130

List of Abbreviations

Adj	Adjusted
CEO	Chief Executive Officer
CSR	Corporate Social Responsibility
ESG	Environmental Social and Governance
FEC	Federal Electoral Commission
FF	Fama-French
IVA	Instrumental Variable Analysis
KS	Kolmogorov-Smirnov
LN	Natural Logarithm
LNPR	Lexis-Nexis Public Records
MSCI	Morgan Stanley Capital International
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PAC	Political Action Committee
PETA	People for the Ethical Treatment of Animals
R-sq	r squared
ROA	Return on Assets
SSY	Start of School Year
S&P	Standard & Poors
UCLA	University of California at Los Angeles
USA	United States of America
2SLS	Two-stage Least Squares

Chapter 1

CEO Politics and Corporate Social Responsibility: Ideology Trumps Party

1.1 Introduction

What factors affect a firm's engagement and commitment to corporate social responsibility (CSR)? One possibility that researchers find regular support for is the politics of its management. The Upper Echelons theory denotes that managerial views set the tone at the top and influence the firm's internal environment (Hambrick & Mason, 1984). This theory implies that a manager's political beliefs influence corporate outcomes congruently with their views. The firm's size and the manager's authority leverage the effect of their decisions into outsized results that are more easily recognizable than most individuals' actions. Since the CSR decisions a firm's management makes often address underlying ideological issues, they are the ideal decision set to test the effect of managerial politics.

Existing research that investigates the relation between CEO politics and CSR uses the manager's political contributions to identify those who give more than a certain threshold to Democratic candidates as either a member of the Democratic party (e.g., Di Giuli & Kostovetsky, 2014; Borghesi, Johnson & Naranjo, 2014) or holding liberal ideological views (e.g., Chin, Hambrick & Trevino, 2016; Gupta et al., 2019). That methodology suffers from identification issues, including the ability of CEOs to contribute to candidates from any party, and party affiliation may be a poor indicator of belief-driven choice (Converse, 1964). However, until now, the potential extent of the misidentification problem is unknown.

This study revisits the effect of managerial politics on CSR, as measured by MSCI, with two hand-collected datasets that do not suffer from the above identification issues. First, each CEO's

voter registrations provide a non-imputed measure of their party affiliation with either the Republican or Democrat party. Second, their congressional contributions are matched with the recipient's ideology from UCLA's Voteview database and provide a measure of the CEO's social and economic ideological views separate from their party affiliation. In this sample of 951 CEOs who led S&P 1500 firms between 2003 and 2018, over forty percent of CEOs who give most of their congressional contributions to Democrats register as a Republican. Additionally, a CEO's registered party explains less than one-quarter of the variation in their ideological beliefs for the entire sample. These percentages imply that cross-party contributions significantly impair the accuracy of using political contributions to identify party affiliation and that a CEO's party affiliation on record is a poor indicator of their diverse ideological beliefs.

Voter registration officially records the registrant's name, address, and other demographic information with local election authorities. Most states allow the registrant to choose a party, and many states require a party selection. Over eighty percent of in-sample CEOs register with the Republican party, while the remainder selects the Democratic party. The main advantage of using registrations over contributions to identify party affiliation is that each CEO can only register with one party at a time. In contrast, they can and do contribute to candidates from both parties.

The Federal Election Commission (FEC) database provides each CEO's contributions to United States congresspersons which are used to grade each CEO's ideology. Each contribution is assigned the recipient congressperson's economic and social ideological values, as reported by UCLA's Voteview database. Voteview assigns each congressperson separate economic and social ideological values based on their historical propensity to support related legislative proposals. Then, each CEO's social and economic ideologies are calculated as the contribution-

weighted average of their recipients' ideologies. Individually assigning ideological values via contributions provides two benefits over using the recipient's party in gauging the contributor's beliefs. First, measuring ideology on distinct economic and social dimensions allows for separating the effects of those differentiated beliefs. Second, since neither the recipient's nor the contributor's party determine the ideological values, this measure enables separate and joint tests of the effects of managerial party affiliation versus their actual ideological views on corporate social responsibility.

Ideology refers to an individual's beliefs on various economic and social topics and identifies the individual's views along a liberal-conservative spectrum.¹ Wilson (1973) states that conservative individuals are more resistant to change, cautious, moderate, and hold regard for the existing order. They are also more risk-averse (Jost, 2003) and prefer familiar versus unfamiliar stimuli (Glasgow and Cartier, 1985). Conversely, liberal individuals are more likely to welcome change and innovation, especially toward egalitarian principles (Wilson, 1973). Many of these ideological characteristics directly relate to CSR, indicating that ideological values might influence CSR decisions.

However, an important note is that despite a positive correlation between an individual's social and economic ideology, the same individual can hold liberal views on social topics and more conservative beliefs on economic issues, or vice versa. For example, an individual may hold conservative economic views promoting discretionary spending caution. At the same time, that individual may also have liberal social beliefs promoting engaging in non-mandatory social initiatives, which require costly capital expenditure. This individual experiences conflicting motivational forces when faced with an option to invest in a social project. Their liberal social

¹ Henceforth, the following terms are used interchangeably: ideology, views, and beliefs.

views promote expending discretionary funds to receive the social benefit from the project. Conversely, their conservative economic ideology deters spending on unrequired projects. This example corresponds with the research, which implies that at least the two dimensions of social and economic beliefs are necessary to accurately capture varied individual views (e.g., Lilie & Maddox, 1981; Swedlow, 2008). Only considering one dimension or the other provides an incomplete representation of the CEO's ideological drivers.

Consistent with that research that implies an individual's political party is a poor proxy for their beliefs, the results indicate no relation exists between a CEO's party affiliation and their firm's CSR. These results are robust to controlling for firm and CEO-level factors that researchers show affect CSR, along with industry commonality, time trends in CSR, and firm, headquarters, and state-level trends. Subsequent tests verify there is no party effect in any of the six pillars that constitute the firm's CSR: environmental, diversity, employee, community, product, and human rights. These tests ensure that there are no specific categorical effects that cancel out.

However, similar tests determine that firms led by a more conservative CEO, either economically or socially, have worse corporate social responsibility. The magnitude of the ideology effect is that a one standard deviation change in a CEO's economic ideology is associated with a 14.5% variation in their firm's overall CSR performance versus the median in-sample firm. A similar change in the CEO's social ideology yields a 16.8% difference in their firm's CSR performance. Subsequent tests investigate if the effect centers on any of the six individual pillars and implies that firms with a more conservative CEO, either economically or socially, have decreased environmental performance. Firms led by a more socially conservative manager also have lower employee performance.

Next, instrumental variable analysis (IVA) tests imply that a CEO's ideology effect on CSR is not spurious. Research shows that an individual's ideological views form early in life, and the most significant influencers of those beliefs are family, friends, and peers. Therefore, the social and economic ideologies the CEO experienced during childhood, as measured by the average congressional ideology for the CEO's birth state during their childhood, act as instruments. The results of the instrumental variable analysis agree with the main results and support that a CEO's ideology does influence corporate social responsibility.

This study's primary contribution to the literature is to clarify the discrepancy between managerial politics and firm CSR, which Gillan, Koch & Starks (2021) noted. Di Guili & Kostovetsky (2014) report that 45% of their broad pool of firm managers are Democrats, significantly higher than the 19.5% of CEOs in this study.² They also find that firms with a higher proportion of Democrat-leaning senior managers have better CSR than firms with more Republican-leaning management. Conversely, Borghesi et al. (2014) determine that firms led by CEOs from neither party outperform CSR-wise the other in their CEO-only sample. This study's results find that liberal ideological views correspond with higher CSR and, on average, Democrats have more liberal economic beliefs than Republicans. The combination of these two points implies that the higher proportion of Democrats in the Di Guili & Kostovetsky (2014) sample drives at least a portion of the party-based differences between their results and those in Borghesi et al. (2014).

Additionally, the differences in this analysis between the party-based and ideological results imply that researchers should consider ideological views rather than party affiliation when investigating how managerial politics affects decision-making. Since most corporate decisions

² Borghesi et al. (2014) do not list the percentage of CEOs in their sample who lean Democrat.

have associated financial costs and many hold social implications, considering managers economic and social beliefs as drivers of their decision-making is an attractive methodology for many research questions.

More broadly, these results also contribute to the line of literature investigating the effect of managerial traits on corporate decision-making (e.g., Bertrand & Schoar, 2003; Malmendier & Tate, 2008, 2011) and, more specifically, on ESG or CSR decisions (e.g., Cronqvist & Yu, 2017; Hedge & Mishra, 2019). Since a large part of CSR regards investment in programs designed to improve the firm's environmental or social impact, these results also help document how a manager's ideological beliefs affect the firm's operational decisions.

1.2 Literature Review & Hypothesis Development

A growing body of literature considers how a manager's party affiliation or ideology affects corporate decision-making. However, that literature generally identifies liberal or Democrat managers as those who give above a certain threshold of their political contributions to Democrats. Likewise, it classifies a CEO who contributes more to Republican recipients as a conservative or Republican manager. Due to no intra-party differentiation, this methodology implicitly assumes that all members of and contributions to a party are ideologically homogenous. Thus, that research identifies a manager's ideology independent of any specific values but only on indirect party-based trends. Furthermore, to the best of this author's knowledge, no existing study considers separate party affiliation and ideology measures of a manager's politics.

Research suggests that a manager's political party relates to risk aversion. Democrat CEOs engage in more corporate tax sheltering due to decreased risk aversion, while conversely, Republicans are associated with less tax avoidance (Christensen, Chaliwal, Boivie, and Graffin,

2015). In similar findings, firms with Democrat CEOs have higher audit risk than those led by Republicans (Bhandari, Golden, and Thevenot, 2020). Additionally, firms led by Republican CEOs have higher credit ratings due to the rating agencies viewing a manager's affiliation with that party as a signal of fiscally conservative policies (Bhandari and Golden, 2021). These results, on the whole, imply that party-based differences in managerial risk aversion affect firm outcomes.

Other researchers find that managerial politics exerts an impact on firm CSR. Two studies investigate if a manager's party affiliation affects their firm's CSR but arrive at different conclusions. Di Giuli & Kostovetsky (2014) consider CEOs, directors, founders, and other managers in their sample and determine that firms with a higher proportion of Democrat managers have better CSR. Borghesi et al. (2014) only consider CEOs in their sample and determine no difference in firm CSR based on the CEO's party. Gillan et al. (2021) note three potential reasons for driving the disparate results: differences in years covered, the two samples contain different firms, and one sample only considers CEOs while the other considers a broad pool of executives.

Another possibility as to why the research reports conflicting results on the relation between managerial politics and firm CSR is that a manager's party affiliation might not accurately represent the beliefs that affect their ideologically motivated decisions. The political psychology literature provides three reasons why the party that a CEO registers with might not accurately represent their ideological beliefs. First, individuals in the same party orient differently across the social and economic dimensions (Layman and Carsey, 2002, Treier and Hillygus, 2009). This logic is consistent with the notion that a uni-dimensional identifier, such as a political party, cannot capture multi-dimensional beliefs. Swedlow (2008) verifies the

framework of Lillie and Maddox (1981), which shows that separate social and economic dimensions are the minimum required to represent complex ideological beliefs accurately. Second, individuals often adopt ideological affiliations, such as a party, for purely symbolic reasons (Ellis and Stimson, 2012). This explanation indicates that party affiliation is a signal that carries social rather than ideological information. A third possibility is that various individuals prescribe their views on what is actually liberal or conservative (Zumbrunne and Gangl, 2009), indicating that a party's actual average ideology often does not correctly represent expectation.

Two studies investigate whether a manager's ideology affects corporate social responsibility and determine that a CEO's ideology does relate to their firm's CSR. First, Chin, Hambrick, and Trevino (2013) determine that firms with a liberal CEO have higher CSR than those led by a conservative. While the authors do not differentiate economic from social beliefs, their channel of prioritizing social topics implies that social ideology drives the difference. In a closely related study, firms are more likely to adopt socially, or environmentally-responsible initiatives after a conservative peer CEO paves the way by adopting a similar policy (Gupta, Fung & Murphy, 2018). The latter finding operates on the ideological differentiator of openness to change, indicating that a manager's social beliefs drive the results.

There are possible alternative hypotheses describing how a CEO's economic ideology could affect their firm's CSR decisions. On the one hand, research shows that CSR includes a hedging feature for the firm (e.g., Godfrey et al., 2009). The hedge comes from CSR accruing moral goodwill with the firm's stakeholders. This goodwill can offset stakeholder reactions to future adverse firm events, such as poor financial performance or negative media attention.

Hedging is an economically conservative action operating on the risk-avoidance nature of conservative ideology since it reduces the likelihood or severity of downside outcomes. Hutton et

al. (2014) determine that conservative managers make less risky investments. Those managers also conduct more tax sheltering (Francis et al., 2016) and less tax avoidance due to the associated legal risk (Christensen, Dhaliwal, Boivie, and Graffin, 2015). These results indicate that a manager's political ideology influences corporate decision-making through risk aversion. Consequently, the following hypothesis posits that the effect of a manager's economic ideology on their risk aversion extends to CSR decisions:

H1a: Firms with more economically conservative (liberal) CEOs have better (worse) CSR as it hedges against future risks.

On the other hand, a manager's economic beliefs could affect their firm's corporate social responsibility decisions through precaution towards discretionary spending. Conservative managers conduct fewer mergers and acquisitions and prefer to use cash when engaging in those activities (Elnhas & Kim, 2017). They also apply less investment toward research & development (Hutton et al., 2014). These results denote that more economically conservative managers prefer less discretionary and risky spending than more liberal managers.

Many CSR projects require a costly upfront and discretionary investment that does not provide a realized return until future periods. This delayed return on investment alters a manager's willingness to undertake CSR projects, as displayed by board members weighing the costs and benefits of various CSR initiatives (Iliev and Roth, 2022). Furthermore, starting or changing CSR programs affects the firm's overall investment strategy (Cappucci, 2018), indicating that managers must rebalance other projects to accommodate a new CSR initiative. Therefore, the following hypothesis posits that a manager's economic ideology influences their spending precaution, which extends to their CSR decisions and directly competes against H1a:

H1b: Firms with more economically conservative (liberal) CEOs have worse (better) CSR due to precaution against the upfront investment costs of enacting CSR.

As noted above, the literature generally finds a positive relation between managers with liberal social views through social channels and their firm's CSR. Ruggie (2003) noted that liberalism seeks to "reconcile the efficiency of markets with the values of social community." This goal indicates that more liberal individuals believe businesses should promote those values since business operations conflict with community values through economic rent extraction. Therefore, the following hypothesis operates on a CEO's social ideology:

H2: Firms with more socially conservative (liberal) CEOs have worse (better) CSR through their decreased commitment to social causes.

With both hypotheses 1 and 2, there is the possibility that the null is true, and a firm's CSR is not affected by its CEO's ideology. There is also the possibility that H1a and H1b are simultaneously true. In that sense, the tests within only determine the extent to which a hedging or spending precaution effect outcompetes the other.

1.3 Sample and Data

1.3.1 Sample

The dependent variables come from the MSCI ESG database commonly employed in the CSR literature.³ Each CEO's political contributions are from the Federal Electoral Commission (FEC) website.⁴ Lexis Nexis Public Records (LNPR) provides each CEO's voter registrations, residence history, birth state, and birth year. Firm-level controls are from Compustat, BoardEx, and the Thompson Reuters 13F database, while CEO-level controls come from Execucomp. The

³ See for example: Borghesi et al. (2014), Chin et al. (2013), Di Giuli & Kostovetsky (2014), Gupta et al. (2019).

⁴ <https://www.fec.gov/data/>.

sample is the intersection of the above sources and contains 951 CEOs across 818 different firms for 5,128 firm years. The remainder of this section discusses the creation of the dependent and explanatory variables alongside the selection of control variables. Table 1.1 presents summary statistics for those variables, and appendix A1 defines each.

[*Insert Table 1.1*]

1.3.2 CSR Data

MSCI reports CSR performance for firms using strength and concern factors covering environmental, social, and governance topics. However, consistent with existing research, the dependent variables only include the environmental and social factors that classify into six pillars: environmental, diversity, community, employee, human rights, and product. To create the dependent variables, a sum of all strength factors adds one for each strength the firm has in that year. A sum of concerns counts the concern factors similarly. The primary dependent variable, *CSR Score*, is the netted value of strengths minus concerns across all six pillars. Next, each pillar also receives a similar netted score. Finally, consistent with other research (e.g., Cronqvist and Yu, 2017), each score is normalized with a minimum of zero to facilitate the ease of interpreting the results.

Panel A of Table 1.1 shows the summary statistics for the dependent variables. *CSR Score* has a median value of 9 and a maximum of 23. Its separate components, the strengths and concerns, each have a median value of 1 and respective maximums of 17 and 15. The environmental, employee, and product pillars have a median score of 4 each, followed by the diversity pillars, with a median score of 3. Last, the community and human rights pillars both have a median score of 2.

1.3.3 Lexis Nexis Public Records (LNPR)

The LNPR database aggregates public records on individuals from various governmental agencies. Each CEO is identified in the LNPR system by querying via their name and then identifying their records through their professional role(s) (e.g., President, Chief Executive Officer) listed on various state-level regulatory filings of their firm.⁵ In this analysis, LNPR provides each CEO's voter registrations alongside their birth state, birth year, and historical addresses of record.

Voter registration with local election authorities enables the registrant to participate in local, state, and federal elections. Registration occurs only in the county of residence, and registrants do not need to re-register unless they move to a new residence. Thirty-one states (including the District of Columbia) allow the registrant to select a specific party or remain independent, while the remaining twenty states do not require a party (Cook, 2018). Additionally, each state has a regulation determining whether its voter register is a public record. The LNPR database includes registers from twenty-four states that both require a party and consider their registry a public record.

Inferring a CEO's party affiliation from voter registrations is not explicitly dichotomous. While most CEOs register to either the Republican or the Democrat parties, several do not list a party, and a few CEOs list a third party.⁶ Therefore, only registrations with the Republican or Democrat parties determine a CEO's party in this study. Also, the sample only contains CEOs who register with a party at least twice to ensure there is no spurious party identification. Next, the dummy variable *Democrat CEO* captures CEOs who register to that party and takes the value

⁵ Due to LNPR having a 50-record reporting restriction, I identify a few CEOs through their other employers and associated roles, which I obtain from the Bloomberg terminal system. Business licenses are an example of identifying regulation.

⁶ In my sample there are 10 third-party registrations and 78 that do not list a party across 47 different CEOs; my party identification methodology classifies 31 of those.

of one if the CEO registers with the Democrat party and zero otherwise. CEOs who register as Republicans act as the mutually exclusive and exhaustive reference group. Table 1.1 Panel B shows that nineteen and one-half percent of CEOs are Democrats, which denotes that eighty and one-half percent are Republicans.⁷

1.3.4 CEO Ideology

The Federal Election Commission (FEC) website reports all individual federal contributions of \$200 or more to candidates in federal elections. The records include the contributor's name, employer or profession, city, state, and zip code for most records. Each CEO's contributions are identified by matching the contributor's name (including common permutations) and employer (or profession) listed on the contribution.⁸ Additionally, the zip code listed for the contributor's address is matched against the CEO's address of record on the contribution date, as reported by LNPR. This identification method requires three different criteria (name + employer + zip code), which reduces the risk of assigning an incorrect contribution to a CEO.⁹

Only contributions made directly to United States congresspersons in the 95th-115th congressional sessions are retained to calculate each CEO's ideology. Each contribution is matched with its congressional recipient's social and economic ideologies from UCLA's Voteview database (Lewis, Poole, Rosenthal, Boche, Rudkin & Luke, 2022).¹⁰ Voteview uses roll-call voting logs and the spatial logit model of Poole & Rosenthal (1985) to assign each congressperson social and economic ideological values. Those values range between -1 (always liberal) and +1 (always conservative), and a congressperson's propensity to support economic or

⁷ In my sample, only 4.8% of CEOs ever register with the democrat party and the republican party on separate voter registrations, and none of those CEOs change parties during their in-sample tenure.

⁸ I also verify against each CEO's other employers, as reported by the Bloomberg terminal system.

⁹ Multiple contributions from a CEO to the same congressperson are counted individually.

¹⁰ Voteview only contains the ideological values of United States Congresspersons and, thus, limits the scope of the contributions used to calculate each CEO's ideology.

social legislation determines their values. Aiken, Ellis & Kang (2020) use Voteview to determine that more liberal Congresspersons *put their money where their mouths are* and invest in more socially responsible firms.

[*Insert Figure 1.1*]

Figure 1.1A shows the two-dimensional ideology for each congressperson serving in the 95th – 115th congressional sessions. Economic ideology is plotted on the horizontal axis, while the vertical axis shows social ideology. Conservative economic ideological values are to the right of the vertical axis, while liberal ones are to the left. In a similar split, conservative social ideological values are above the horizontal axis, and liberal ones are below. The blue and red plots represent the two-dimensional ideology of Democrat and Republican congresspersons, respectively. At the same time, the lines are the slope of economic on social ideology, while the diamonds are the respective multivariate party means.

Both parties' members' social ideology span almost the entire observed range, with Democrats slightly more conservative than Republicans on average. However, significant differences appear between the two parties in economic ideology. Republicans concentrate on the right as conservative, and Democrats on the left as liberal. This difference implies that congresspersons from different parties vary more economically than socially.

Next, equation 1 calculates a CEO's economic and social ideology separately as the contribution value-weighted average of the same ideology dimension from all congresspersons the CEO contributes to:

$$Ideology_j^{els} = \sum_{c_j=1}^{z_j} w_{c_j} \times Ideology_{c_j}^{els}$$

(1)

Where j indexes the CEO, e and s represent either the economic or social ideology, c is the contribution, z is the number of contributions CEO j makes, and w is the value percentage that contribution c composes of CEO j 's total congressional contributions. The sample only includes CEOs who make at least two Congressional contributions to avoid assigning spurious ideology values. Panel B of Table 1.1 shows that the median CEO has a conservative economic ideology of 0.289 and a slightly liberal social ideology of -0.035.

There are three reasons why a CEO's contributions directly to Congresspersons are a valid proxy of their ideology. First, congresspersons campaign on their ideological positions, and their historical voting record for or against social and economic proposals determine their ideological values. Both are public records that CEOs can view to discern each politician's respective position on social and economic topics before contributing. Second, CEOs make political contributions using their wealth, which measures personal commitment to social and economic topics through their support for a congressperson. Several studies find that the behavioral consistency principle applies to managers' corporate decisions and suggests they make similar decisions across different arenas (Cronqvist & Yu, 2017; Song et al., 2018). This notion implies that CEOs' ideologically based contributions are a valid predictor of their ideologically influenced corporate decisions. Third, contributions directly to Congresspersons do not have intermediaries (e.g., political action committees (PACs), parties) that muddle or diversify the receiving ideologies. This last point enables each contribution to receive exact ideological scores and allows for analysis beyond the recipient's party.

1.3.5 Firm and CEO-level Controls

Several firm-level variables control for factors known to affect firm corporate social responsibility. Less financially constrained firms have better CSR (Hong, Kubik & Schenkman,

2012). Therefore, the *Cash-to-Assets* ratio controls a firm's liquidity, while *Book Leverage* controls its default risk. Several studies (e.g., Gillan et al., 2010; Albuquerque et al., 2019) find a positive relation between firm value and CSR, which *Tobin's Q* proxies. The natural log of the board size controls for internal monitoring of the CEO. *Institutional Ownership %* and the *Blockholder* indicator control for the outside monitoring of the CEO. Panel C of Table 1.1 lists the summary statistics for firm-level control variables.

Also included are several CEO-level control variables that research shows relate to their CSR decisions. Firms led by females have better CSR than those led by their male peers (Borghesi et al., 2014; Cronqvist and Yu, 2017), and the *Female CEO* dummy accounts for their gender. Panel D of Table 1.1 shows that 1.8% of the 951 in-sample CEOs are female. A CEO's power in the firm relates positively to the firm value they receive from engaging in CSR initiatives (Li, Gong, Zhang & Koh, 2018) and the natural log of a CEO's tenure controls for their power. *CEO Ownership %* controls for the direct financial impact of a CSR investment on the CEO's wealth. Last, a CEO's age negatively relates to CSR performance (Borghesi et al., 2014). The median in-sample CEO is 57 years old, while the oldest is 88 and the youngest is 32.

1.3.6 Correlation Matrix

[*Insert Table 1.2*]

Table 1.2 presents correlation coefficients. The two CEO ideological variables positively correlate with each other at 0.134. *CEO Economic Ideology* correlates negatively with *CSR Score* and strengths and positively with *CSR Concerns*, while their social ideology negatively correlates with both strengths and concerns. These correlations imply that more economically conservative CEOs lead firms with lower CSR. In contrast, the negative social ideology correlations suggest that firms with more socially conservative CEOs have fewer strengths and

concerns. Additionally, the correlations between the two ideology variables and the party dummies indicate that Democrats are less conservative in both dimensions. *Democrat CEO* correlates positively with *CSR Score* and negatively with *CSR Concerns*, indicating that firms led by a Democrat manager have higher CSR than those with a Republican.

1.4 Empirical Results

1.4.1 CEO Voter Registration Party Versus Contribution-implied Party

Previous studies that consider a relation between a CEO's party affiliation and decision-making use the CEO's contributions to infer their party. This methodology can misidentify the CEO's party due to their capacity to contribute to candidates from either party. Most researchers determine that many CEOs contribute to recipients from each party. Therefore, they identify a CEO as a Democrat or Republican based on the party affiliation of a dollar-weighted majority of the CEO's contributions. However, the extent of misidentification caused by imputing a contributing CEO's party from their contribution recipients party remains a mystery.

[*Insert Figure 1.2*]

Since this study includes the party a CEO lists on their voter registrations and collects their congressional political contributions, the first analysis formally investigates the extent to which cross-party contributions misidentify these CEO's party. Figure 1.2 reports the results in a confusion matrix. A CEO's registered party is on the horizontal axis, while their contribution-imputed party is on the vertical axis. Each square contains the count of CEOs that register with the party listed on the horizontal axis and who give most of their contributions to congresspersons in the party listed on the vertical axis. The green squares show the CEOs who register and give most of their contributions to recipients in the same party. These are the CEOs whose contributions accurately predict their registered political party. Conversely, the red

squares show disagreement between the CEO's registered and majority contribution parties. Those are incorrect predictions or type 1 identification that would result from imputing these CEOs parties by their contributions.

227 CEOs contribute more on a dollar-weighted basis to Democrats. However, only 132 (58.1%) of them register as Democrats, while the other 95 (41.9%) register as Republicans. The almost 42% misidentification rate in the pool of Democrat-contributing CEOs is especially concerning in this study, given that the existing literature finds that firms led by Democrat-contributing managers have better CSR than those led by Republican contributors. Misidentification is not as severe in the 724 Republican-contributing CEOs, where only 52, or 7.5%, are registered as Democrats. Overall, 15.5% of the in-sample CEOs would have a misidentified party by imputing it through contributions.¹¹

1.4.2 CEO Registered Party and Firm CSR

[*Insert Table 1.3*]

Since Figure 1.2 indicates that a CEO's contribution imputed party is a poor proxy for their registered party, it implies that their registered party and contributions each contain separate information. Therefore, it is reasonable to investigate if either has an effect, and the next analysis begins by empirically examining if a CEO's registered party relates to their firm's CSR. Table 1.3 uses equation 2 to investigate the potential relation between a CEO's registered party and corporate social responsibility:

¹¹ The misidentified CEOs are the 52 + 95 in the red-shaded squares. $(52 + 95) / 951 = 0.1546$.

$$\begin{aligned}
CSR_{i,t} = & \alpha + \beta_1 Democrat\ CEO_{i,t} + \Sigma_{i,t-1} Firm\ Controls + \Lambda_{i,t} CEO\ Controls + \xi_i + \mu_i \\
& + \tau_t + \varepsilon_{i,t}
\end{aligned}
\tag{2}$$

Where the dependent variable, *CSR*, is either the netted *CSR Score* or its components, the sums of strengths or concerns. The variable of interest is *Democrat CEO*, which measures the effect of a registered Democrat helming the firm. Section 3 defines the firm and CEO controls, ξ_i represents industry (Fama-French 49) fixed effects to account for industry commonality, μ_i captures firm headquarters state fixed effects due to state trends in CSR, and τ_t are year-fixed effects to account for time variation in CSR. $\varepsilon_{i,t}$ is the residual. All firm-level controls are lagged by one year to help address potential selection issues between the firm and the CEO.

In specification 1, the dependent variable is *CSR Score* which measures a firm's overall CSR. The coefficient for *Democrat CEO* is positive at 0.054 but insignificant, indicating that a CEO's party does not relate to their firm's overall CSR. However, *CSR Score* is a netted value of the firm's CSR strengths less concerns. Therefore to ensure any potential party-driven effect does not net out, the dependent variables in specifications 2 and 3 are the sums of strengths and concerns, respectively. The coefficient for *Democrat CEO* remains insignificant at 0.171 for the strengths in specification 2 and 0.117 for the concerns in specification 3. These results also show that a CEO's party does not significantly relate to their firm's CSR.

Several control variables have significant results in Table 1.3. The natural log of total assets positively relates to all three dependent variables, indicating that larger firms have more strengths and concerns than smaller firms. However, the difference is larger in the strengths resulting in a positive relation with *CSR Score*. More highly levered firms have fewer strengths, while more profitable firms have more. Additionally, more liquid firms have more strengths and

concerns but are not significantly different in overall CSR. This netting out of the effect highlights why including the separate strengths and concerns as dependent variables is essential. Firms with a blockholder have fewer strengths and concerns. Firms led by a female CEO have lower concerns and higher overall CSR consistent with existing results (e.g., Hedge & Mishra, 2017; Cronqvist & Yu, 2017).

1.4.3 CEO Party and Firm CSR Pillars

Table 1.3 indicates no relation exists between a CEO's political party and their firm's overall corporate social responsibility. However, the effect of a CEO's party might also net out over or concentrate on one or more of the six CSR pillars: environmental, diversity, community, employee, human rights, and product. Di. Giuli & Kostovetsky (2014) determine that firms with a higher proportion of Democrat leadership have superior CSR in the diversity and environmental pillars, indicating that party effects may concentrate on a few pillars. Other researchers also determine that managerial exposure to females impacts firm diversity (e.g., Hedge & Mishra, 2017; Cronqvist & Yu, 2019) or environmental and employee (Cronqvist & Yu, 2019) decisions but not decisions related to other areas of CSR.

[*Insert Table 1.4*]

To ensure a potential party effect does not localize on one or more pillars, Table 1.4 uses equation 2 and considers each of the six pillar scores as dependent variables in separate specifications. In specification 1, *Environmental Score* is the dependent variable; in specification 2, it is *Diversity Score*; in specification 3, it is *Community Score*; in specification 4, it is *Employee Score*; in specification 5, it is *Humanities Score*; and in specification 6, *Product Score* is the dependent variable. The coefficient for *Democrat CEO* is positive in all specifications except 4, where *Employee Score* is the dependent variable. However, it is insignificant, small in

magnitude, and indistinguishable from zero in all specifications. These results find no relation between a CEO's party and any specific area of their firm's CSR.

1.4.4 CEO Party and Firm CSR Summary

Tables 1.3 and 1.4 indicate that no significant relation exists between a CEO's registered party and their firm's CSR. This finding agrees with Borghesi et al. (2014) while disagreeing with Di Guili & Kostovetsky (2014). The first two potential reasons that Gillan et al. (2021) propose for the discrepancy between the existing results are differences between the samples in the years and firms covered. Since this study's sample partially overlaps with both samples in years and likely firms, this study's findings suggest that the results of Borghesi et al. (2014) hold out-of-sample, while Di Guili & Kostovetsky's (2014) do not. The third proposed reason is the different types of managers the two samples contain. Borghesi et al. (2014) only include CEOs, while Di Guili & Kostovetsky (2014) consider a broad base of firm management, including managers, directors, and founders. The agreement of these CEO-only results with those in Borghesi et al. (2014) implies that the non-CEO managers in Di Guili & Kostovetsky's (2014) sample possibly drive the difference in results.

1.5 CEO Ideology and Firm CSR

1.5.1 Determinants of Ideology

Tables 1.3 and 1.4 show that a CEO's party does not relate to their firm's CSR. This result is not wholly unexpected, given the conflicting empirical results on the relation between a manager's party and corporate social responsibility, the ideological nature of many CSR topics, and the socio-political research that indicates party affiliation is a poor indicator of ideological beliefs. Therefore, this analysis next focuses on determining if a CEO's ideological beliefs, as measured through their support for congresspersons, relate to their firm's CSR.

[*Insert Table 1.5*]

Before investigating the effect of a CEO's ideology on CSR, it is necessary to validate this study's measure of ideology against known ideological drivers to ensure two things. The first is that this measure matches the existing results on ideological determinants to provide surety of the measure. The second is to verify that this measure of ideology captures information about the CEO separate from their party affiliation. If this measure does not add additional explanatory power separate from their registration, then using it as an explanatory variable would not provide any new value. Table 1.5 performs these checks by estimating the determinants of the 951 in-sample CEO's social and economic ideologies using equation 3:

$$\begin{aligned} Ideology_j^{E/S} = & \alpha + \beta_1 Female\ CEO_j + \beta_2 Democrat\ CEO_j + Birth\ State\ Fixed\ Effects_j \\ & + Birth\ Year\ Fixed\ Effects_j + \varepsilon_j \end{aligned} \tag{3}$$

Where *Ideology* is CEO *j*'s economic (*E*) or social (*S*) ideology, the explanatory variables are the female and democrat CEO dummy variables. The specification includes fixed effects for each CEO's birth state and birth year because ideological viewpoints develop early in life (Nogee and Levin, 1958; Stillman, Guthrie, and Becker, 1960) and allow for commonality within each state cohort and year cohort. Standard errors are clustered at the CEO level.

Before discussing the results, it is worth reminding the reader that ideological values range from -1 to +1, where negative numbers denote liberal and positive figures denote conservative beliefs. The dependent variable in specifications 1-3 is a CEO's economic ideology, while in specifications 4-6, it is their social ideology. Specifications 1 and 4 only include the CEO's birth state and year as explanatory variables. These specifications establish the role of childhood ideological exposure in forming enduring ideology because later tests use this

experience as an instrument for the CEO's ideology. The r-squared values in specifications 1 and 4 indicate that a CEO's childhood experiences account for slightly more than seven percent of the variation in each ideology dimension, confirming that the ideological views a CEO experienced during childhood contribute to their enduring beliefs.

Prior research finds that females have more liberal social and economic views (Welch, 1985), and female legislators enact more policies to close social gaps (Thomas, 1991). These results show that gender-based ideological differences exist. Specifications 2 and 5 add the *Female CEO* dummy to verify the effect of gender on their ideology. As expected, the dummy has negative coefficients in both specifications, implying that, on average female CEOs hold a more liberal ideological position in either dimension; however, this result is only significant for their economic ideology. Overall, the results for the Female CEO dummy denote they are more liberal on average, consistent with the existing research.

Last, specifications 3 and 6 add the *Democrat CEO* dummy, and the negative coefficients indicate those managers have more liberal views in both dimensions. The finding that Democrat CEOs are relatively more liberal is consistent with expectation, given that researchers (e.g., Chin et al. (2016); Gupta et al. (2019)) use a manager's contributions to candidates in the Democratic Party to identify liberal ideology. The r-squared values show that the *Democrat CEO* dummy explains more of the variation in economic ($24.9\% = (0.331 - 0.082) \times 100$) than social ($0.9\% = (0.080 - 0.071) \times 100$) ideology. Since adding the *Democrat CEO* dummy explains at most one-quarter of the ideological variation, this measure of a CEO's ideology captures information separate from their party.

Panel B of Table 1.5 contains bivariate regression results of economic ideology on social ideology. The ideologies of congresspersons serving in the 95th – 117th Congress' are regressed

by their party to establish party trends alongside similar party-based specifications for the in-sample CEOs. The 1,136 Democrat congresspersons, on average, have a liberal economic ideology of -0.316 and a slightly conservative social ideology of 0.092. Beta is the coefficient for economic ideology and is the party line shown in figure 1.1. The positive value of 1.204 implies that, on average, as a Democrat congressperson becomes more economically conservative, they become even more socially conservative. The average economic ideology for the 1,096 Republican congresspersons is conservative at 0.410 and only explains seven percent of the variation in their slightly liberal (-0.079) average social ideology. A regression of their economic on social ideology results in a beta of 0.494, indicating a positive relation between the two dimensions lower in magnitude than their Democrat counterparts.

There are 184 Democrat and 767 Republican CEOs in the sample. The average Democrat CEO has a liberal economic (-0.102) and social (-0.094) ideology; conversely, the average Republican CEO has a conservative economic (0.277) and slightly liberal (-0.025) social ideology. The betas for Democrat CEOs (0.138) and Republican CEOs (0.082) are both positive and less than one, indicating that a change in economic ideology corresponds with a similar change in social ideology that is smaller in magnitude. Figure 1.1B displays CEO ideology, and the betas are the party-specific lines.

Panel C displays the p-values from multivariate differences in means of economic and social ideology within and between CEOs and Congresspersons by their party. Each test shows that the two groups are ideologically different. Panel D conducts a similar exercise by testing differences in (β) and arrives at a similar conclusion.¹² These results of panels C and D suggest differences exist between CEOs by party and between CEOs and congresspersons from either party. Since

¹² The differences in betas are calculated using the method of Clogg, Petkova, and Haritou (1995).

CEOs are significantly different from their party's congressperson, this implies that party averages or trends do not accurately capture a specific CEO's ideological preferences.

1.5.2 Political Ideology on Firm CSR

Since Table 1.5 indicates that a CEO's political party explains only a small portion of their ideological beliefs, the subsequent analysis investigates possible relations between a CEO's economic and social beliefs and corporate social responsibility. Table 1.6 uses equation 4 below to replicate the earlier results but considers a CEO's social and economic ideologies in place of their party as explanatory variables:

$$\begin{aligned}
 CSR_{i,t} = & \alpha + \beta_1 \text{ CEO Economic Ideology}_{i,t-1} + \beta_2 \text{ CEO Social Ideology}_{i,t-1} \\
 & + \Sigma_{i,t-1} \text{ Firm Controls} + \Lambda_{i,t-1} \text{ CEO Controls} + \xi_i + \mu_i + \tau_t + \varepsilon_{i,t}
 \end{aligned}
 \tag{4}$$

The coefficients of interest are now β_1 and β_2 which capture the relation between a CEO's economic and social views and their firm's CSR. All other variables are previously defined.

[*Insert Table 1.6*]

Specification 1 uses *CSR Score* as the dependent variable. The coefficients for both ideology variables are negative, indicating that a firm led by a more conservative (liberal) CEO in either dimension has lower (higher) CSR. The magnitudes of the coefficients are -0.521 (p = 0.011) for economic and -0.817 (p = 0.021) for social ideology. A one standard deviation change in a CEO's economic ideology corresponds to a 2 (= -0.521 / 23) percentage point change or 21% (= -0.521 / 2.492) of one standard deviation in the score, compared to the median firm. A similar change in the CEO's social ideology relates to a 3.5 (= -0.817 / 23) percentage point decrease or 32.8% (= -0.817 / 2.492) of one standard deviation in the score, again, versus the median firm. These magnitudes imply that firms led by a more conservative (liberal) CEO have

lower (higher) CSR and that slight ideological differences translate to economically large differences in firm CSR.

Consistent with prior research, the coefficient for *Female CEO* in specification 1 is positive at 1.200 ($p < 0.001$), indicating that firms led by a female manager have a 5.2% ($= 1.2 / 23$) higher *CSR Score* compared to firms led by a male peer. Conversely, *CEO Ownership* has a negative coefficient, indicating that firms with relatively higher CEO equity ownership have lower scores. This result is consistent with a CEO viewing their portion of the ex-ante price of CSR initiatives as greater than their possible long-term gains from those programs.

The results of specification 1 determine that firms led by a more conservative (liberal) CEO have lower (higher) CSR. The negative coefficient on *CEO Economic Ideology* is consistent with managers considering the ex-ante financial cost of CSR investment when making those decisions (Iliev & Roth, 2021) and supports hypothesis H1B. Specification 1 also indicates that firms with a more socially conservative CEO have relatively lower CSR. These findings are consistent with the political science research that suggests a negative relation between conservatism, social concerns, and openness to change and supports hypothesis H2.

Next, specifications 2 and 3 of Table 1.6 also use equation 4 but replace the dependent variables with the sums of CSR strengths and concerns, respectively. The coefficients for the two ideology variables indicate that firms led by a more conservative (liberal) CEO in either dimension have fewer (more) strengths and more (less) concerns. However, this relation is only significant between a CEO's economic ideology and their firm's strengths in specification 2. The coefficient of -0.481 ($p = 0.039$) indicates that a one standard deviation change in a CEO's economic ideology results in a 2.1 ($= -0.481 / 23$) percentage point change, or 18.2% ($= -0.481 / 2.650$) of one standard deviation in the number of strengths the firm has. This result is again

consistent with the notion that managers consider the ex-ante costs of CSR investment since strengths are the results of that investment, supporting hypothesis H1B.

Taken as a whole, Table 1.6 indicates that a CEO's ideology correlates with their firm's CSR. Specifically, firms with a more economically or socially conservative (liberal) CEO have lower (higher) CSR. Those with a more economically conservative (liberal) CEO also have fewer (more) strengths, further supporting that a CEO's spending precaution affects CSR investment due to the associated upfront costs.

1.5.3 Political Ideology on CSR Pillars

It is possible that the effects in Table 1.6 concentrate on one or more pillars of CSR. For example, individuals polled as conservative are less likely to make energy-efficient investments (Gromet, Kunreuther & Larrick, 2013). Since green investments often require significant upfront capital, conservatives decreased propensity to invest is consistent with a spending precautionary effect. In another example, conservatives are less likely to select diverse employees for specific work teams (Jost, 2006), indicative of their lower openness to social change. These examples indicate that either dimension of a manager's ideology might concentrate on certain CSR pillars, denoting it is crucial to investigate if ideological effects concentrate on any pillar.

[*Insert Table 1.7*]

Next, Table 1.7 also uses equation 4 but considers the six pillar scores separately as dependent variables to investigate if ideological beliefs concentrate on various pillars. *CEO Economic Ideology* negatively relates to all six pillar scores, indicating that firms with a more conservative (liberal) CEO have worse (better) CSR. However, the coefficient is only significant in specification 1, where *Environmental Score* is the dependent variable. The magnitude indicates a one standard deviation change in economic ideology corresponds to an approximate

4.2 ($= -0.167 / 4$) percentage point change in *Environmental Score* relative to the median in-sample firm. This magnitude also equals 17.8% ($= -0.167 / 0.939$) of one standard deviation in the score. The results of specification 1 support hypothesis H1B, consistent with the notion that a manager's economic ideology affects their willingness to invest. Furthermore, this effect is the largest and most significant in a firm's *Environmental Score*. The concentration of the effect in the environmental pillar further suggests that spending precaution is the channel through which economic conservatism acts because the upfront costs associated with starting environmental programs are large compared to other CSR investments.

CEO Social Ideology negatively relates to four of the six pillars and significantly with two: environmental and employee. In specification 1, the coefficient indicates that one standard deviation change in a CEO's social ideology results in a 6 ($= -0.238 / 4$) percentage point change in *Environmental Score*. The effect is equivalent to 25.3% ($= -0.238 / 0.939$) of one standard deviation in the score but is only significant at the 10% level. Similarly, in specification 4, the coefficient indicates that a one-standard-deviation increase (decrease) in a CEO's social ideology results in a 3.1 ($= -0.343 / 11$) percentage point decrease (increase) in *Employee Score*. This effect is equivalent to 29.4% ($= -0.343 / 1.165$) of one standard deviation in the score. Both results are consistent with the notion that conservative individuals are more resistant to change, whether that change is environmentally or workplace oriented.

The results of Table 1.7 indicate that a CEO's social and economic ideology each affects specific pillars of CSR. A manager's economic ideology relates to their firm's *Environmental Score*, consistent with those managers considering the ex-ante financial costs of environmental investment and supporting hypothesis H1B. Additionally, a CEO's social ideology relates to the firm's environmental and employee score, which is conducive to the notion that ideologically

driven resistance to change affects their decisions and supports hypothesis H2. Last, these results are similar to those of Aiken et al. (2020), who find that more liberal Congresspersons disproportionately invest in companies with better environmental and employee performance.

1.6 Instrumental Variable Analysis

The results thus far indicate that firms led by more conservative CEOs have worse CSR than those led by a more liberal manager. However, they are not causal. Although ideological beliefs are not directly observable (Jost, 2006), and despite lagging the firm-level control variables by one year, a firm might select a CEO based on a latent variable that correlates with one or both ideology dimensions. To ensure that selection or other endogeneity issues do not drive the results, Table 1.8 uses the ideological views a CEO experienced during their childhood as instruments for their ideology in instrumental variable analysis (IVA). Each CEO's childhood exposure is the average of the ideologies of all congresspersons serving the CEO's birth state for the first 18 years of the CEO's life. This measure captures the prevailing ideological beliefs each CEO experienced and allows for within-state variance over time.

For a variable to be a valid instrument, it must satisfy two conditions: relevancy and exclusion. Research indicates that an individual's ideological viewpoints form early in life, and the most significant influencers are parents, family, and early-life peers (Nogee & Levin, 1959; Stillman, Guthrie & Becker, 1960), with up to one-half of views inherited (Alford, Funk & Hibbing, 2005). Additionally, foreign-born CEOs transmit their cultural beliefs to their firm CSR decisions (Bertrand, Betschinger, & Moschieri, 2021), indicating that early life experiences affect their future ideological choices. Intuitively, these findings help to satisfy the relevancy of using childhood ideological exposure as a valid instrument. The r-squared values in

specifications 1 and 4 of Table 1.5 also support their validity since a CEO's birth state and year account for more than seven percent of the variation in each dimension of a CEO's ideology.

To satisfy the exclusion condition, note that the mean (and median) in-sample CEO is over 56 years old, as reported in Table 1.2. This figure indicates that more than 35 years have passed since the average CEO's childhood ended. National ideology has changed significantly over the past two decades, implying that the local ideological views a CEO experienced during childhood also changed (Pew Research Center, 2014). By construction, each CEO's ideology is dynamic due to variation in each state's representatives over time, which ensures the exclusion condition holds.

[*Insert Table 1.8*]

Table 1.8 uses equation 2 and contains two first-stage regressions, one for each ideology dimension and a second-stage least squares regression (2SLS) that fits the predicted ideology values from both first stages. Specification 1 regresses the average *State Economic Ideology* that each CEO experienced during childhood, alongside all endogenous regressors, on *CEO Economic Ideology*. The coefficient for *State Economic Ideology* is significant and indicates a strong positive relation between the economic ideology a CEO experienced during childhood and their views. Specification 2 repeats the analysis but instead considers social ideology. Again, a strong positive relation exists between a CEO's ideology and their birth state's ideology. The results of specifications 1 and 2 further support using this measure as valid instruments for a CEO's ideology.

Specification 3 is the second stage and includes the predicted ideologies from both first stages. The coefficients are -5.561 ($p < 0.001$) for a CEO's economic ideology and -1.977 ($p =$

0.021) for their social ideology. These results again indicate that a firm with a more conservative (liberal) CEO has lower (higher) CSR and helps to alleviate potential endogeneity concerns.

1.7 Robustness

1.7.1 Ideology and Party are Independent on Firm CSR

[*Insert Table 1.9*]

The results thus far indicate that firms led by a more conservative CEO, in either dimension, have lower CSR scores. However, Table 1.2 indicates that a CEO's affiliation with the democratic party correlates with both their ideology and their firm's CSR. In addition, Table 1.5 indicates that their party affiliation is a determinant of ideological beliefs. Therefore, a CEO's party affiliation may confound the previous results, and it is necessary to ensure that the previous ideological results are robust to account for it. In Table 1.9, specification 1 employs equation 5, which includes the *Democrat CEO* dummy and the two ideology variables as variables of interest to ensure the ideological results hold while controlling for the CEO's party affiliation:

$$\begin{aligned}
 CSR_{i,t} = & \alpha + \beta_1 Democrat\ CEO_j + \beta_2 CEO\ Economic\ Polarity_j \\
 & + \beta_3 CEO\ Social\ Polarity_j + \Sigma_{i,t} Firm - level\ Controls + \Lambda_{i,t} CEO \\
 & - level\ Control + \xi_i + \mu_i + \tau_t + \varepsilon_{i,t}
 \end{aligned}
 \tag{5}$$

The coefficient for *Democrat CEO* is negative at -0.075 but insignificant. However, the coefficient for *CEO Economic Ideology* has a coefficient of -0.572 (p = 0.027), while *CEO Social Ideology* has a coefficient of -0.804 (p = 0.024). These results remain consistent with specification 1 of Table 1.6, indicating that a CEO's political party does not confound the effects of their ideology on CSR.

Specification 2 uses equation 6 below, which adds the interactions of the *Democrat CEO* dummy with both ideology variables to ensure the ideological effects do not vary between CEOs who register with different parties:

$$\begin{aligned}
 CSR_{i,t} = & \alpha + \beta_1 Democrat\ CEO_j + \beta_2 CEO\ Economic\ Polarity_j \\
 & + \beta_3 CEO\ Social\ Polarity_j + \beta_4 Democrat\ CEO_j \times CEO\ Economic\ Polarity_j \\
 & + \beta_5 Democrat\ CEO_j \times CEO\ Social\ Polarity_j + \Sigma_{i,t} Firm \\
 & - level\ Controls + \Lambda_{j,t} CEO - level\ Control + \xi_i + \tau_t + \varepsilon_{i,t}
 \end{aligned}
 \tag{6}$$

The coefficients of interest are now β_4 and β_5 and capture if a CEO's ideology affects their firm's CSR differently if the CEO is a Democrat compared to a Republican. Both coefficients of interest are negative but insignificant, as is the coefficient for the *Democrat CEO* dummy, which implies no party effect. The coefficients for both ideology variables remain consistent with the previous specification, albeit the coefficient for *CEO Social Ideology* is only significant at the ten-percent level. Table 1.9 confirms that the effects of a CEO's economic and social ideology on their firm's CSR are separate from their political party.

1.7.2 State Political Factors

The results thus far indicate that firms led by a CEO who is more economically or socially conservative have worse CSR, the debased scores vary by the specific CSR pillar measured, and those effects are independent of the CEO's political party. However, the state-fixed effects used in the previous specifications do not capture variation over time in state-level politics, which might affect those results.

[*Insert Table 1.10*]

Table 1.10 uses equation 2 but sequentially adds four control variables that capture time variance in state-level political trends. First, in specification 1, *HQ State Economic Ideology* is the average economic ideology of all congresspersons serving the firm headquarters state that year. Next, specification 2 controls for the state's social ideology similarly. In both specifications, the magnitude and sign of the coefficients for both CEO ideology dimensions remain consistent with those in Table 1.4, and neither state-level ideology variable is significant. These specifications confirm that the earlier results are independent of state-level ideological views.

To ensure that state-level political party preferences do not confound earlier results, specifications 3 and 4 control for state-level party preferences. In specification 3, the dummy *HQ State Democrat Governor* takes the value of one if the firm headquarters state's governor in that year is Democrat and zero otherwise. Specification 4 contains a similar dummy variable capturing if the state selected the Democratic candidate in the previous presidential election. The correlation of these two variables is 0.64, indicating they each hold separate information. Again, the coefficients for both CEO ideology variables remain consistent in both specifications, while neither state-level party variable is significant. Specification 5 includes all four state variables simultaneously. The coefficients for both CEO ideology dimensions remain consistent, while none of the state variable coefficients are significant. Table 1.10 indicates that the effects of CEO ideology on firm CSR are not affected by the firm's headquarters state's ideological beliefs or party preference.

1.7.3 Alternative Means of Constructing the Dependent Variables

[*Insert Table 1.11*]

Last, some researchers transform MSCI-created scores through various methods such as standardization (e.g., Di Guili & Kostovetsky, 2014) and scaling the counts of both the strengths and concerns by the maximum possible (e.g., Kim, Li, and Li, 2014). Therefore, Table 1.11 repeats the previous analysis with the seven scores as dependent variables but standardizes the scores in panel A and scales them in panel B. In both panels, the results remain unchanged from earlier analyses. Firms led by a more economically conservative (liberal) CEO have lower (higher) overall CSR and *Environmental Scores*. Those firms with a more socially conservative (liberal) continue to have lower (higher) CSR, environmental, and *Employee Scores*. Table 1.11 indicates that the results are robust to creating the dependent variables through alternative methods.

1.8 Conclusion

CEOs hold varied political views, and their political party affiliation is related to but separate from their ideological beliefs. This study measures their party affiliation through voter registrations and their social and economic beliefs through their contributions to United States Congresspersons. It then tests if firms led by CEOs with varied politics have different CSR, as measured by MSCI. This methodology provides a novel measure of a CEO's politics that calculates their multi-dimensional ideology separately from their party affiliation.

In this sample of S&P 1500 CEOs, a manager's ideological beliefs affect their firm's CSR decisions, while their party affiliation does not. Firms led by a CEO with relatively more conservative (liberal) beliefs have lower (higher) CSR, as measured by MSCI. Specifically, firms with a more economically conservative (liberal) CEO have lower (higher) *Environmental Scores*, while those with a more socially conservative (liberal) CEO have lower (higher) environmental and *Employee Scores*. These results are robust to controlling for the CEO's political party

membership, local political views, industry, year, and state trends, and both firm and CEO factors that are known to correlate with corporate social responsibility.

These results have implications for researchers interested in the effect of politics on decision-making inside the firm. Specifically, researchers should consider managers' beliefs, rather than their party affiliation, when the outcome is socially or economically motivated. This point also implies that these are the drivers which affect an array of managerial decisions since most decisions in the firm have economic and often social implications.

Figure 1.1A: *Ideology of Congressional Representatives who served in the 95th – 117th Congress by the Congressperson's Party.*

This figure shows the economic and social ideologies of United States Congresspersons serving in the 95th – 117th congressional sessions by party, as reported by UCLA's Voteview database. Negative values indicate liberal ideology, while positive values imply conservative.

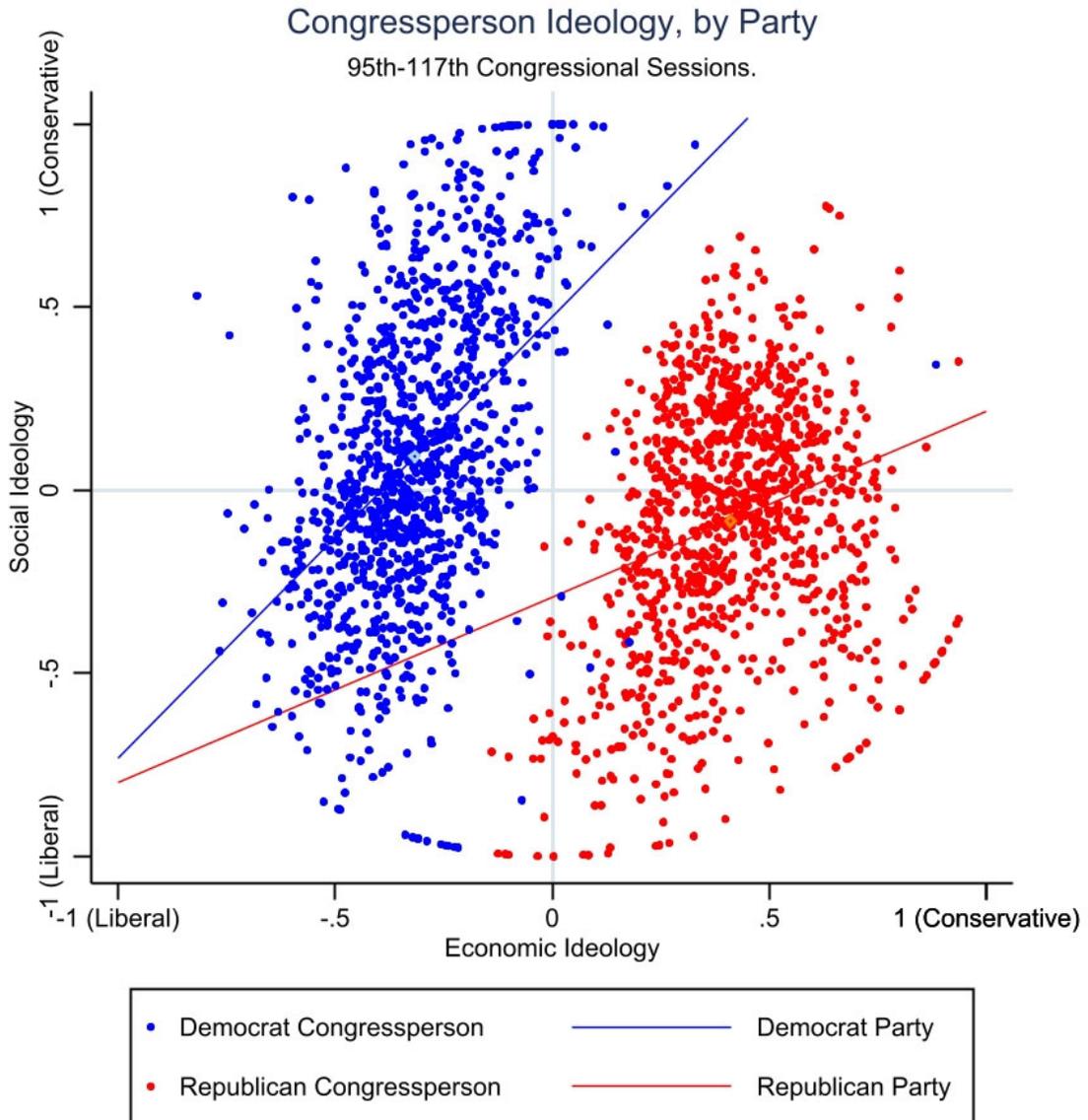


Figure 1.1B: *Ideology of CEOs who contribute to Congressional Representatives by the CEO's party.*

This panel shows the economic and social ideologies of all in-sample CEOs, by party. Each CEO's economic or social Ideology is their contribution value weighted average of the same Ideology for all Congresspersons the CEOs contributes to. Negative values indicate liberal ideology while positive values imply conservative.

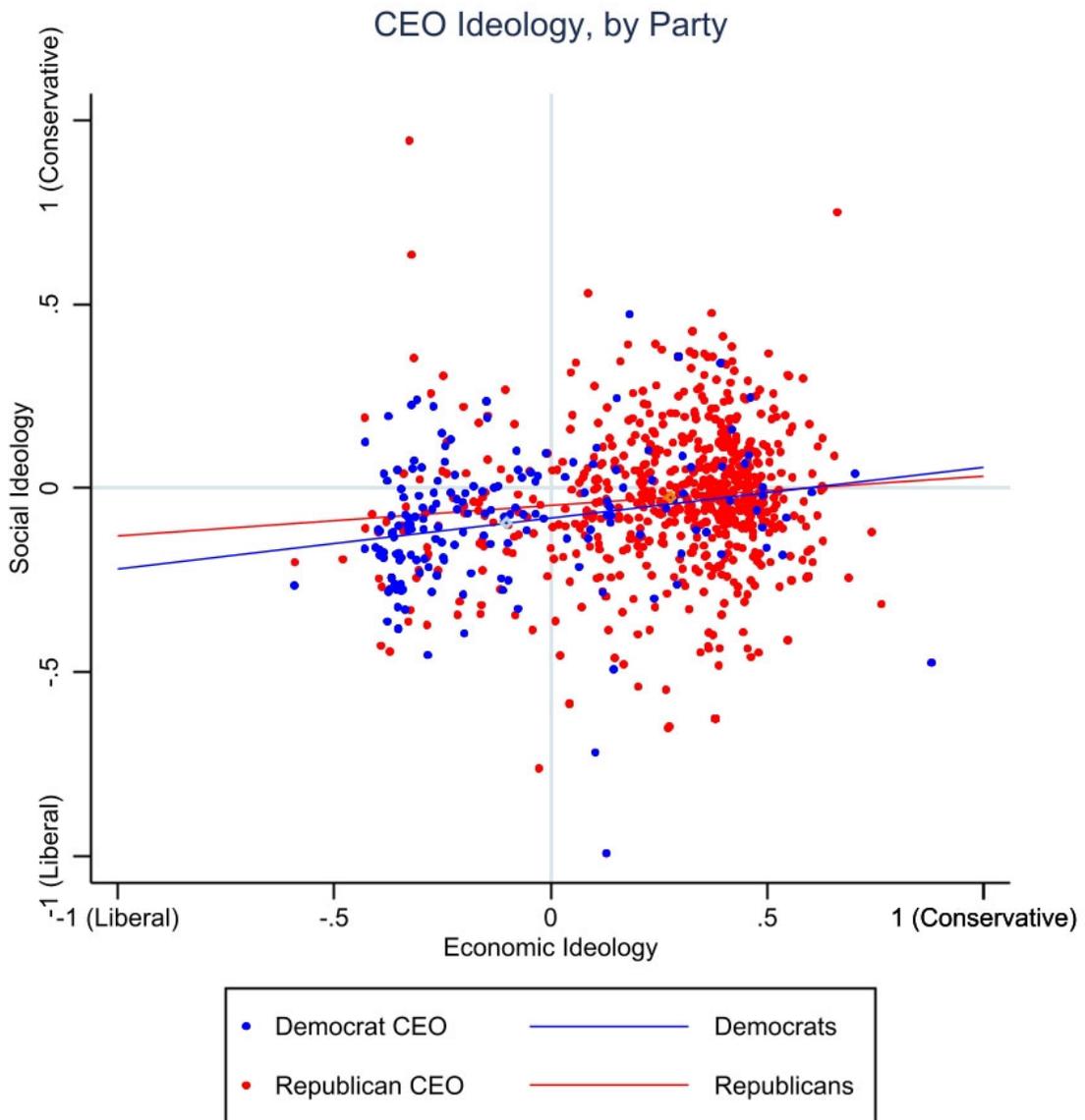


Figure 1.2: *Political Party Confusion Matrix*

This figure shows the confusion matrix between a CEO's registered political party and their contribution imputed party they, based on majority receipt of the CEO's contributions. The green squares indicate agreement between the contributed-to and registered parties, while the red squares show disagreement between contributed-to and registered parties. The number in each square is the count of CEOs in each of the four outcomes.

		Registered Party:	
		Democrat (n = 184)	Republican (n = 767)
Contributed Party:	Democrat (n = 227)	132	95
	Republican (n = 724)	52	672

Table 1.1: Summary Statistics

This table presents summary statistics for all variables in this analysis. Panel A contains the dependent variables, where each score is normalized with a zero minimum. Panel B contains the explanatory CEO political variables. Panel C contains firm-level controls, while Panel D contains CEO-level controls.

Panel A: Dependent Variables.

	N	Mean	SD	Median	Min	Max
CSR Score	5,128	9.434	2.492	9	0	23
CSR Strengths	5,128	1.891	2.650	1	0	17
CSR Concerns	5,128	1.456	1.886	1	0	15
Environmental Score	5,128	4.182	0.939	4	0	9
Diversity Score	5,128	3.209	1.257	3	0	10
Community Score	5,128	2.093	0.532	2	0	7
Employee Score	5,128	4.144	1.165	4	0	11
Human Rights Score	5,128	1.971	0.310	2	0	4
Product Score	5,128	3.836	0.729	4	0	6

Panel B: CEO Political Variables.

	N	Mean	SD	Median	Min	Max
Democrat CEO	951	0.195	0.396	0	0	1
CEO Economic Ideology	951	0.201	0.279	0.289	-0.592	0.880
CEO Social Ideology	951	-0.038	0.206	-0.035	-0.945	0.992

Panel C: Firm-level Control Variables.

	N	Mean	SD	Median	Min	Max
Log (Total Assets)	5,128	8.311	1.826	8.163	3.603	14.761
Book Leverage	5,128	0.245	0.181	0.230	0.000	0.916
Tobin's Q	5,128	2.788	2.647	2.019	0.475	19.723
Cash-to-Assets	5,128	0.084	0.099	0.048	0.000	0.545
Return-on-Assets	5,128	0.043	0.071	0.042	-0.296	0.257
Log (Boardsize)	5,128	2.250	0.270	2.303	1.091	3.258
Institutional Ownership (%)	5,128	0.770	0.193	0.807	0.000	1.000
Blockholder	5,128	0.910	0.287	1	0	1

Table 1.1 Continued

Panel D: CEO-level Control Variables.

	N	Mean	SD	Median	Min	Max
CEO Ownership (%)	5,128	0.017	0.043	0.002	0.000	0.797
Female CEO	951	0.018	0.131	0	0	1
Log (CEO Tenure)	5,128	1.970	0.746	1.969	0.003	3.973
CEO Age	5,128	56.812	7.359	57	32	88

Table 1.2: Correlation Matrix

This table presents the correlations between all variables in this analysis. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

<i>Variable:</i>	CSR Score	CSR Strengths	CSR Concerns	Environmental Score	Diversity Score	Community Score	Employee Score
CSR Score	1						
CSR Strengths	0.733***	1					
CSR Concerns	-0.293***	0.436***	1				
Environmental Score	0.639***	0.450***	-0.213***	1			
Diversity Score	0.545***	0.661***	0.209***	0.139***	1		
Community Score	0.413***	0.456***	0.095***	0.150***	0.304***	1	
Employee Score	0.644***	0.403***	-0.285***	0.263***	0.029*	0.069***	1
Humanities Score	0.185***	-0.072***	-0.346***	0.129***	-0.148***	-0.024	0.087***
Product Score	0.247***	-0.160***	-0.552***	0.070***	-0.244***	-0.134***	0.124***
Democrat CEO	0.032*	-0.003	-0.047***	0.049***	0.017	0.009	0.001
CEO Economic Ideology	-0.128***	-0.084***	0.052***	-0.098***	-0.096***	-0.044**	-0.065***
CEO Social Ideology	0.020	-0.042**	-0.062***	-0.003	-0.062***	-0.047***	0.040**
Ln (Total Assets)	0.337***	0.585***	0.377***	0.180***	0.436***	0.250***	0.228***
Book Leverage	0.030*	0.048***	0.028*	0.039**	0.044**	-0.005	0.021
Tobin's Q	0.103***	0.090***	-0.011	0.114***	0.061***	-0.014	0.071***
Cash-to-assets	-0.027	-0.073***	-0.067***	0.012	-0.086***	-0.041**	-0.001
Return on Assets	0.027	0.031*	0.008	0.027	0.020	-0.040**	0.034*
Ln (Boardsize)	0.227***	0.375***	0.226***	0.101***	0.367***	0.183***	0.093***
Institutional Ownership (%)	-0.002	-0.115***	-0.160***	0.009	-0.089***	-0.044**	0.017
Blockholder	-0.047***	-0.211***	-0.234***	-0.007	-0.199***	-0.101***	0.022
CEO Ownership (%)	-0.109***	-0.157***	-0.077***	-0.052***	-0.144***	-0.057***	-0.062***
Female CEO	0.052***	0.021	-0.034**	0.032*	0.092***	-0.013	-0.003
Ln (CEO Tenure)	-0.029*	-0.105***	-0.109***	0.0156	-0.137***	-0.015	0.007
CEO Age	0.0187	0.008	-0.0132	0.0229	-0.029*	0.003	0.050***

Table 1.2 Continued.

<i>Variable:</i>	Humanities Score	Product Score	Democrat CEO	CEO Economic Ideology	CEO Social Ideology
Humanities Score	1				
Product Score	0.176***	1			
Democrat CEO	0.002	0.001	1		
CEO Economic Ideology	0.024	-0.020	-0.519***	1	
CEO Social Ideology	0.040**	0.071***	-0.116***	0.134***	1
Ln (Total Assets)	-0.115***	-0.329***	-0.051***	-0.031*	0.047***
Book Leverage	-0.021	-0.046**	-0.018	-0.004	0.023
Tobin's Q	-0.050***	0.018	0.030*	-0.013	0.044**
Cash-to-assets	0.005	0.069***	0.070***	-0.076***	0.038**
Return on Assets	-0.017	0.005	-0.039**	0.065***	-0.013
Ln (Boardsize)	-0.010***	-0.225***	0.023	-0.079***	0.024
Institutional Ownership (%)	0.073***	0.109***	-0.015	0.002	0.010
Blockholder	0.111***	0.180***	0.004	-0.007	0.019
CEO Ownership (%)	0.042**	0.066***	0.023	0.030*	0.001
Female CEO	0.013	-0.012	0.022	-0.046**	-0.007
Ln (CEO Tenure)	0.053***	0.094***	0.085***	-0.003	0.014
CEO Age	0.002	0.001	-0.019	0.072***	0.044**

Table 1.2 Continued.

<i>Variable:</i>	Ln (Total Assets)	Book Leverage	Tobin's Q	Cash-to-assets	Return on Assets	Ln (Boardsize)
Ln (Total Assets)	1					
Book Leverage	0.186***	1				
Tobin's Q	-0.133***	0.068***	1			
Cash-to-assets	-0.367***	-0.268***	0.245***	1		
Return on Assets	-0.112***	-0.211***	0.313***	0.136***	1	
Ln (Boardsize)	0.598***	0.060***	-0.009	-0.277***	-0.050***	1
Institutional Ownership (%)	-0.094***	0.051***	0.029*	0.038**	0.089***	-0.159***
Blockholder	-0.195***	-0.017	-0.021	0.052***	0.017	-0.162***
CEO Ownership (%)	-0.236***	-0.074***	0.028*	0.136***	0.053***	-0.170***
Female CEO	-0.033*	0.011	0.042**	0.018	-0.014	-0.013
Ln (CEO Tenure)	-0.102***	-0.003	0.006	0.013	0.030*	-0.039**
CEO Age	0.065***	-0.020	-0.028*	-0.054***	-0.043**	0.045**

Table 1.2 Continued.

<i>Variable:</i>	Institutional Ownership (%)	Blockholder	CEO Ownership (%)	Female CEO	Log (CEO Tenure)	CEO Age
Institutional Ownership (%)	1					
Blockholder	0.474***	1				
CEO Ownership	-0.074***	0.032*	1			
Female CEO	0.030*	0.002	-0.030*	1		
Ln (CEO Tenure)	0.0093	0.090***	0.280***	-0.055***	1	
CEO Age	-0.040**	0.032*	0.144***	-0.045**	0.352***	1

Table 1.3: CEO Party Affiliation on Firm CSR Performance

This table presents the ordinary least squares (OLS) results of CEO political ideology on firm CSR. All observations are at the firm-year level. The dependent variable in specification 1 is firm *CSR Score*; in specification 2, it is *CSR Strengths*; in specification 3, it is *CSR Concerns*. *Democrat CEO* is the variable of interest and takes the value of 1 if the CEO is a registered Democrat, zero otherwise. All specifications include industry (Fama-French 49-industry), firm headquarters state, and year fixed effects. Standard errors are in parentheses and clustered at the firm level. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

	(1) CSR Score	(2) CSR Strengths	(3) CSR Concerns
Democrat CEO	0.054 (0.175)	0.171 (0.166)	0.117 (0.097)
Ln (Total Assets)	0.466*** (0.063)	1.030*** (0.065)	0.564*** (0.045)
Book Leverage	-0.428 (0.329)	-1.023*** (0.396)	-0.595* (0.323)
Tobin's Q	0.076*** (0.026)	0.086*** (0.022)	0.010 (0.018)
Cash-to-assets	0.795 (0.913)	2.245** (1.001)	1.450*** (0.414)
Return on Assets	1.090 (0.673)	1.036* (0.625)	-0.054 (0.526)
Ln (Boardsize)	0.163 (0.745)	-0.311 (0.865)	-0.474** (0.211)
Institutional Ownership (%)	-0.553 (0.402)	-0.870* (0.444)	-0.317 (0.224)
Blockholder	-0.070 (0.193)	-0.585*** (0.210)	-0.515*** (0.157)
CEO Ownership (%)	-2.945** (1.142)	-1.555 (1.237)	1.390** (0.670)
Female CEO	1.216*** (0.377)	0.547 (0.365)	-0.669** (0.318)
Ln (CEO Tenure)	0.055 (0.065)	0.040 (0.067)	-0.015 (0.050)
CEO Age	0.074 (0.065)	0.072 (0.069)	-0.003 (0.046)
CEO Age Squared	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.000)
Intercept	2.651 (1.980)	-6.949*** (2.198)	-0.600 (1.452)

Table 1.3 Continued.

N	5,128	5,128	5,128
Adj. R-sq.	0.324	0.508	0.503
Industry Fixed Effects	Yes	Yes	Yes
Headquarters State Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

Table 1.4: CEO Political Party on Firm CSR Pillar Performance.

This table presents ordinary least squares (OLS) results of CEO political ideology on firm categorical CSR Scores. All observations are at the firm-year level. Firm *Environmental Score* is the dependent variable in specification 1, *Diversity Score* in specification 2, *Community Score* in specification 3, *Employee Score* in specification 4, *Humanities Score* in specification 5, and *Product Score* in specification 6. *Democrat CEO* is the variable of interest and takes the value of 1 if the CEO is a registered Democrat, zero otherwise. All specifications include industry (Fama-French 49), firm headquarters state, and year fixed effects. Standard errors are clustered at the firm level. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

	(1) Environmental Score	(2) Diversity Score	(3) Community Score	(4) Employee Score	(5) Humanities Score	(6) Product Score
Democrat CEO	0.045 (0.057)	0.009 (0.081)	0.014 (0.037)	-0.024 (0.068)	0.006 (0.016)	0.006 (0.047)
Ln (Total Assets)	0.122*** (0.020)	0.313*** (0.028)	0.081*** (0.015)	0.145*** (0.027)	-0.029*** (0.007)	-0.165*** (0.021)
Book Leverage	-0.073 (0.119)	-0.239 (0.184)	-0.075 (0.075)	-0.140 (0.161)	0.012 (0.054)	0.087 (0.113)
Tobin's Q	0.026** (0.011)	0.020** (0.010)	0.009 (0.006)	0.025** (0.013)	-0.003 (0.003)	-0.000 (0.006)
Cash-to-assets	0.199 (0.287)	0.694* (0.421)	0.230* (0.132)	0.218 (0.247)	-0.092 (0.066)	-0.454*** (0.163)
Return on Assets	0.204 (0.258)	0.280 (0.324)	-0.269* (0.141)	0.888*** (0.301)	-0.046 (0.087)	0.033 (0.171)
Ln (Boardsize)	-0.131 (0.226)	0.253 (0.323)	0.015 (0.097)	-0.010 (0.119)	0.008 (0.034)	0.028 (0.090)
Institutional Ownership (%)	-0.337** (0.144)	0.132 (0.174)	0.010 (0.075)	-0.339*** (0.130)	0.019 (0.038)	-0.039 (0.088)
Blockholder	0.041 (0.077)	-0.410*** (0.105)	-0.062 (0.068)	0.154** (0.076)	0.046 (0.032)	0.160** (0.067)
CEO Ownership (%)	-1.040** (0.446)	-0.001 (0.631)	-0.007 (0.215)	-1.012** (0.429)	-0.018 (0.115)	-0.867*** (0.286)

Table 1.4 Continued.

	(1) Environmental Score	(2) Diversity Score	(3) Community Score	(4) Employee Score	(5) Humanities Score	(6) Product Score
Ln (CEO Tenure)	0.056** (0.025)	-0.068* (0.035)	0.026* (0.013)	0.002 (0.032)	0.006 (0.009)	0.033 (0.021)
CEO Age	-0.005 (0.022)	0.111*** (0.034)	0.006 (0.012)	0.016 (0.030)	-0.015** (0.007)	-0.040** (0.020)
CEO Age Squared	0.000 (0.000)	-0.001*** (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000** (0.000)	0.000* (0.000)
Intercept	3.550*** (0.723)	-2.447** (1.180)	1.259*** (0.479)	2.115* (1.161)	2.522*** (0.238)	5.651*** (0.678)
N	5,128	5,128	5,128	5,128	5,128	5,128
Adj. R-sq.	0.244	0.378	0.149	0.277	0.109	0.295
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Headquarters State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 1.5: Determinants of and Differences in CEO Ideologies.

Panel A presents the results of Ordinary Least Squares regressions of CEO characteristics on ideology. The dependent variable in specifications 1 – 3 is a CEO’s *Economic Ideology*; in specifications 4 – 6, it is a CEO’s *Social Ideology*. *Female CEO* is a dummy variable that takes the value of one if the CEO is a female and zero otherwise. *Democrat CEO* is a dummy variable that takes the value of one if the CEO is a registered Democrat and zero otherwise. Panel B shows bivariate regression summary results of economic ideology on social ideology by Congressperson or CEO party. *N* is the number of Congresspersons or CEOs registered with that party. *CEO Economic Ideology* and *CEO Social Ideology* are the average ideology by group. *B* is the slope coefficient of economic ideology regressed on social ideology, and the adjusted r-squared is the percent of the variation in social ideology explained by economic ideology. Panel C shows results from tests of differences in multivariate means of economic and social ideology jointly; panel D displays the results from tests of differences in ideology slopes. All values listed in parentheses in panels C and D are p-values. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

Panel A: Determinants of CEO Ideology.

	(1) Economic Ideology	(2) Economic Ideology	(3) Economic Ideology	(4) Social Ideology	(5) Social Ideology	(6) Social Ideology
Female CEO		-0.178*** (0.058)	-0.090* (0.050)		-0.031 (0.045)	-0.017 (0.045)
Democrat CEO			-0.374*** (0.021)			-0.058*** (0.019)
Intercept	0.136 (0.299)	0.131 (0.298)	0.226 (0.254)	-0.006 (0.232)	-0.007 (0.232)	-0.008 (0.231)
N	951	951	951	951	951	951
Adj. R-sq.	0.073	0.082	0.331	0.071	0.071	0.080
CEO Birth State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
CEO Birth Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 1.5 Continued.

Panel B: Ideology Regression Summary.

	<i>N</i>	<i>Economic Polarity</i>	<i>Social Polarity</i>	β	<i>Adj. R-sq.</i>
Democrat Congresspersons	1,136	-0.316	0.092	1.204***	0.222
Republican Congresspersons	1,096	0.410	-0.079	0.494***	0.070
Democrat CEOs	184	-0.102	-0.094	0.138***	0.042
Republican CEOs	767	0.277	-0.025	0.082***	0.006

Panel C: Multivariate Differences in Means of Economic and Social Ideology.

	Democrat Congresspersons	Republican Congresspersons	Democrat CEOs
Republican Congresspersons	(< 0.001)***		
Democrat CEOs	(< 0.001)***	(< 0.001)***	
Republican CEOs	(< 0.001)***	(< 0.001)***	(< 0.001)***

Panel D: Differences in Ideological Slopes (β).

	Democrat Congresspersons	Republican Congresspersons	Democrat CEOs
Republican Congresspersons	(< 0.001)***		
Democrat CEOs	(< 0.001)***	(< 0.001)***	
Republican CEOs	(< 0.001)***	(< 0.001)***	(< 0.001)***

Table 1.6: CEO Political Ideology on CSR

This table presents the ordinary least squares (OLS) results of CEO political ideology on firm CSR. All observations are at the firm-year level. The dependent variable in specification 1 is firm *CSR Score*; in specification 2, it is *CSR Strengths*; in specification 3, it is *CSR Concerns*. *CEO Economic Ideology* and *CEO Social Ideology* are the variables of interest, and both follow a -1 (liberal) to a +1 (conservative) range. All specifications include industry (Fama-French 49-industry), firm headquarters state, and year fixed effects. Standard errors are in parentheses and clustered at the firm level. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

	(1) CSR Score	(2) CSR Strengths	(3) CSR Concerns
CEO Economic Ideology	-0.521** (0.225)	-0.481** (0.233)	0.041 (0.135)
CEO Social Ideology	-0.817** (0.355)	-0.518 (0.332)	0.299 (0.218)
Ln (Total Assets)	0.477*** (0.063)	1.035*** (0.066)	0.558*** (0.045)
Book Leverage	-0.413 (0.324)	-1.019*** (0.393)	-0.606* (0.323)
Tobin's Q	0.076*** (0.026)	0.087*** (0.022)	0.011 (0.018)
Cash-to-assets	0.773 (0.893)	2.236** (0.985)	1.463*** (0.417)
Return on Assets	1.110* (0.669)	1.038* (0.621)	-0.072 (0.526)
Ln (Boardsize)	0.117 (0.726)	-0.336 (0.855)	-0.453** (0.216)
Institutional Ownership (%)	-0.566 (0.391)	-0.881** (0.436)	-0.315 (0.225)
Blockholder	-0.059 (0.190)	-0.582*** (0.209)	-0.523*** (0.157)
CEO Ownership (%)	-2.719** (1.116)	-1.389 (1.213)	1.331** (0.670)
Female CEO	1.200*** (0.389)	0.528 (0.373)	-0.673** (0.317)
Ln (CEO Tenure)	0.063 (0.066)	0.048 (0.068)	-0.014 (0.050)

Table 1.6 Continued.

CEO Age	0.081 (0.065)	0.076 (0.069)	-0.005 (0.046)
CEO Age Squared	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.000)
Intercept	2.623 (1.992)	-6.908*** (2.211)	-0.531 (1.460)
N	5,128	5,128	5,128
Adj. R-sq.	0.329	0.510	0.503
Industry Fixed Effects	Yes	Yes	Yes
Headquarters State Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

Table 1.7: CEO Political Ideology on Firm CSR Pillar Scores.

This table presents ordinary least squares (OLS) results of CEO political ideology on firm categorical CSR Scores. All observations are at the firm-year level. Firm *Environmental Score* is the dependent variable in specification 1, *Diversity Score* in specification 2, *Community Score* in specification 3, *Employee Score* in specification 4, *Humanities Score* in specification 5, and *Product Score* in specification 6. *CEO Economic Ideology* and *CEO Social Ideology* are the variables of interest, and both follow a -1 (liberal) to a +1 (conservative) range. All specifications include industry (Fama-French 49), firm headquarters state, and year fixed effects. Standard errors are clustered at the firm level. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

	(1) Environmental Score	(2) Diversity Score	(3) Community Score	(4) Employee Score	(5) Humanities Score	(6) Product Score
CEO Economic Ideology	-0.167** (0.080)	-0.085 (0.113)	-0.041 (0.056)	-0.130 (0.092)	-0.005 (0.020)	-0.093 (0.062)
CEO Social Ideology	-0.238* (0.133)	-0.159 (0.156)	0.001 (0.062)	-0.343** (0.136)	0.025 (0.041)	-0.102 (0.078)
Ln (Total Assets)	0.125*** (0.020)	0.315*** (0.028)	0.081*** (0.015)	0.150*** (0.026)	-0.029*** (0.007)	-0.164*** (0.021)
Book Leverage	-0.071 (0.118)	-0.236 (0.183)	-0.075 (0.075)	-0.132 (0.160)	0.012 (0.054)	0.090 (0.113)
Tobin's Q	0.026** (0.011)	0.020** (0.010)	0.009 (0.006)	0.025** (0.013)	-0.003 (0.003)	-0.000 (0.006)
Cash-to-assets	0.195 (0.280)	0.691* (0.417)	0.229* (0.131)	0.209 (0.248)	-0.092 (0.066)	-0.458*** (0.162)
Return on Assets	0.205 (0.255)	0.281 (0.323)	-0.266* (0.141)	0.895*** (0.300)	-0.045 (0.086)	0.040 (0.171)
Ln (Boardsize)	-0.142 (0.220)	0.245 (0.321)	0.013 (0.097)	-0.028 (0.114)	0.009 (0.034)	0.020 (0.087)
Institutional Ownership (%)	-0.341** (0.141)	0.130 (0.172)	0.010 (0.075)	-0.343*** (0.128)	0.019 (0.038)	-0.041 (0.088)
Blockholder	0.043 (0.076)	-0.407*** (0.104)	-0.062 (0.068)	0.160** (0.076)	0.046 (0.033)	0.161** (0.067)

Table 1.7 Continued.

	(1) Environmental Score	(2) Diversity Score	(3) Community Score	(4) Employee Score	(5) Humanities Score	(6) Product Score
CEO Ownership (%)	-0.975** (0.439)	0.037 (0.627)	0.004 (0.215)	-0.938** (0.424)	-0.019 (0.116)	-0.829*** (0.284)
Female CEO	0.023 (0.155)	0.845*** (0.196)	0.018 (0.060)	0.206 (0.171)	-0.014 (0.022)	0.123* (0.073)
Ln (CEO Tenure)	0.059** (0.025)	-0.067* (0.035)	0.026* (0.014)	0.005 (0.032)	0.006 (0.009)	0.034 (0.021)
CEO Age	-0.003 (0.022)	0.112*** (0.034)	0.007 (0.012)	0.018 (0.031)	-0.015** (0.007)	-0.038* (0.020)
CEO Age Squared	0.000 (0.000)	-0.001*** (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000** (0.000)	0.000* (0.000)
Intercept	3.564*** (0.723)	-2.444** (1.186)	1.249*** (0.482)	2.106* (1.164)	2.518*** (0.241)	5.630*** (0.679)
N	5,128	5,128	5,128	5,128	5,128	5,128
Adj. R-sq.	0.248	0.379	0.149	0.280	0.109	0.296
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Headquarters State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 1.8: CEO Instrumented Political Ideology and CSR

This table presents two-stage least-squares (2SLS) results of instrumented CEO political ideology on firm CSR Scores. All observations are at the firm-year level. Specifications 1 and 2 are first-stage regressions for a CEO's economic and social ideology, respectively, while specification 3 is the second-stage regression that fits the predicted first-stage values. The dependent variable in specification 1 is *CEO Economic Ideology*; in specification 2, it is *CEO Social Ideology*; in specification 3, it is firm *CSR Score*. The two instruments, *State Economic Ideology* and *State Social Ideology*, are the equally weighted average of the same ideology from all representatives serving the CEO's birth state for the first eighteen years of their life. In specification 3, the variables of interest are the instrumented *CEO Economic Ideology* and *CEO Social Ideology* fitted from their respective first-stage regressions. All specifications include industry (Fama-French 49), headquarters state, and year fixed effects. Standard errors are clustered at the firm level. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
	First-stage		2SLS
	CEO Economic Ideology	CEO Social Ideology	CSR Score
State Economic Ideology	0.193*** (0.035)		
State Social Ideology		0.092*** (0.007)	
CEO Economic Ideology (IV)			-5.561*** (1.748)
CEO Social Ideology (IV)			-1.977** (0.853)
Log (Total Assets)	-0.006* (0.003)	0.013*** (0.002)	0.391*** (0.034)
Book Leverage	-0.015 (0.028)	0.001 (0.020)	-0.590*** (0.187)
Tobin's Q	0.001 (0.002)	0.002 (0.001)	0.071*** (0.015)
Cash-to-Assets	-0.230*** (0.049)	-0.011 (0.039)	-0.385 (0.492)
Return on Assets	0.238*** (0.065)	-0.086* (0.045)	2.511*** (0.663)
Log (Boardsize)	-0.080*** (0.018)	-0.015 (0.015)	-0.144 (0.344)
Institutional Ownership (%)	-0.008 (0.024)	0.015 (0.018)	-0.408* (0.208)
Blockholder	-0.021 (0.015)	0.025** (0.011)	-0.270* (0.156)

Table 1.8 Continued.

	(1)	(2)	(3)
	First-stage		2SLS
	CEO Economic Ideology	CEO Social Ideology	CSR Score
CEO Ownership (%)	0.262*** (0.073)	0.086 (0.055)	-1.060 (0.762)
Female CEO	-0.067* (0.036)	0.016 (0.023)	0.717*** (0.241)
Ln (CEO Tenure)	-0.022*** (0.006)	0.010** (0.004)	-0.095 (0.058)
CEO Age	0.032*** (0.006)	-0.005 (0.004)	0.292*** (0.073)
CEO Age Squared	-0.000*** (0.000)	0.000* (0.000)	-0.002*** (0.001)
Intercept	-0.340* (0.174)	0.215* (0.113)	-1.296 (1.272)
N	5,036	5,036	5,036
Adj. R-sq.	0.132	0.158	0.285
Industry Fixed Effects	Yes	Yes	Yes
Headquarters State Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

Table 1.9: CEO Ideology and Party Affiliation on Firm CSR Score

This table presents ordinary least squares (OLS) results of CEO ideology and party affiliation on firm CSR performance. All observations are at the firm-year level. Firm *CSR Score* is the dependent variable in all specifications. The variable(s) of interest in specification 1 is *Democrat CEO*; in specification 2, they are *CEO Economic Ideology* and *CEO Social Ideology*, which both follow a -1 (liberal) to a +1 (conservative) range; in specification 3, they are the interactions between the Democrat CEO dummy and the two ideology variables. All specifications include industry (Fama-French 49), headquarters state, and year fixed effects. Standard errors are clustered at the firm level in parentheses. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

	(1) CSR Score	(2) CSR Score
Democrat CEO	-0.075 (0.197)	-0.049 (0.196)
CEO Economic Ideology	-0.572** (0.258)	-0.499* (0.274)
CEO Social Ideology	-0.804** (0.354)	-0.771** (0.371)
Democrat CEO x CEO Economic Ideology		-0.254 (0.600)
Democrat CEO x CEO Social Ideology		-0.279 (0.863)
Ln (Total Assets)	0.476*** (0.064)	0.476*** (0.064)
Book Leverage	-0.417 (0.324)	-0.433 (0.322)
Tobin's Q	0.076*** (0.026)	0.077*** (0.026)
Cash-to-assets	0.778 (0.893)	0.752 (0.896)
Return on assets	1.099 (0.668)	1.079 (0.662)
Ln (Boardsize)	0.122 (0.725)	0.128 (0.727)
Institutional Ownership (%)	-0.567 (0.391)	-0.571 (0.390)
Blockholder	-0.062 (0.191)	-0.061 (0.191)
CEO Ownership (%)	-2.719** (1.114)	-2.737** (1.117)

Table 1.9 Continued.

	(2)	(3)
	CSR Score	CSR Score
Female CEO	1.198*** (0.390)	1.201*** (0.391)
Ln (CEO Tenure)	0.065 (0.066)	0.065 (0.066)
CEO Age	0.081 (0.065)	0.080 (0.065)
CEO Age Squared	-0.001 (0.001)	-0.001 (0.001)
Intercept	2.671 (1.998)	2.653 (2.012)
N	5,128	5,128
Adj. R-sq.	0.329	0.329
Industry Fixed Effects	Yes	Yes
Headquarters State Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes

Table 1.10: CEO Political Ideology and Firm Headquarters State Politics on Firm CSR Score.

This table presents ordinary least squares (OLS) results of CEO political ideology on firm *CSR Score* while accounting for time-varying state-level political factors. All observations are at the firm-year level. Firm *CSR Score* is the dependent variable in all specifications. The variables of interest are *CEO Economic Ideology* and *CEO Social Ideology*, which both follow a -1 (liberal) to a +1 (conservative) range. Specification 1 controls for headquarters state economic ideology; specification 2 controls for headquarters state social ideology; specification 3 add the *HQ State Democrat Governor* dummy variable that takes the value of one if the state has a democrat governor, zero otherwise; specification 4 adds the *HQ State Democrat President* dummy that takes the value of one if the state voted for the Democratic party candidate in the previous presidential elections, zero otherwise; specification 5 includes all four state-level variables simultaneously. All specifications include industry (Fama-French 49), firm headquarters state, and year fixed effects. Standard errors are clustered at the firm level in parentheses. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
	CSR Score				
CEO Economic Ideology	-0.522** (0.225)	-0.524** (0.225)	-0.523** (0.226)	-0.521** (0.226)	-0.523** (0.226)
CEO Social Ideology	-0.818** (0.355)	-0.825** (0.356)	-0.823** (0.356)	-0.821** (0.356)	-0.824** (0.356)
HQ State Economic Ideology	-0.313 (0.978)				-0.618 (1.086)
HQ State Social Ideology		-0.400 (0.928)			-0.602 (1.059)
HQ State Democrat Governor			0.008 (0.118)		-0.012 (0.114)
HQ State Democrat President				-0.186 (0.189)	-0.207 (0.180)
Ln (Total Assets)	0.478*** (0.063)	0.478*** (0.063)	0.478*** (0.063)	0.479*** (0.063)	0.479*** (0.063)
Book Leverage	-0.413 (0.325)	-0.419 (0.324)	-0.418 (0.325)	-0.421 (0.325)	-0.422 (0.325)

Table 1.10 Continued.

Tobin's Q	0.076*** (0.026)	0.076*** (0.026)	0.076*** (0.026)	0.076*** (0.026)	0.076*** (0.026)
Cash-to-Assets	0.776 (0.894)	0.771 (0.893)	0.782 (0.897)	0.792 (0.897)	0.808 (0.900)
Return on Assets	1.101 (0.671)	1.124* (0.669)	1.147* (0.675)	1.138* (0.675)	1.132* (0.678)
Ln (Boardsize)	0.115 (0.725)	0.117 (0.725)	0.114 (0.726)	0.118 (0.727)	0.123 (0.724)
Institutional Ownership (%)	-0.575 (0.392)	-0.573 (0.392)	-0.576 (0.392)	-0.570 (0.391)	-0.577 (0.392)
Blockholder	-0.057 (0.190)	-0.055 (0.190)	-0.058 (0.190)	-0.063 (0.190)	-0.058 (0.190)
CEO Ownership (%)	-2.706** (1.118)	-2.710** (1.114)	-2.710** (1.116)	-2.676** (1.115)	-2.676** (1.116)
Female CEO	1.207*** (0.388)	1.192*** (0.392)	1.181*** (0.382)	1.193*** (0.382)	1.189*** (0.383)
Ln (CEO Tenure)	0.062 (0.066)	0.061 (0.066)	0.059 (0.067)	0.058 (0.066)	0.059 (0.066)
CEO Age	0.081 (0.065)	0.081 (0.065)	0.083 (0.066)	0.083 (0.066)	0.083 (0.066)
CEO Age Squared	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Intercept	2.708 (2.026)	2.795 (2.064)	2.569 (2.001)	2.538 (2.001)	2.947 (2.166)

Table 1.10 Continued.

N	5,121	5,121	5,108	5,108	5,108
Adj. R-sq.	0.329	0.329	0.328	0.328	0.328
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
HQ State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes

Table 1.11: CEO Political Ideology on Firm CSR Scores – Alternative Dependent Variable Measurement.

This table presents ordinary least squares (OLS) results of CEO political ideology on firm CSR Scores. All observations are at the firm-year level. *CSR Score* is the dependent variable in specification 1; *Environmental Score* is the dependent variable in specification 2; *Diversity Score* in specification 3; *Community Score* in specification 4; *Employee Score* in specification 4; *Humanities Score* in specification 5; *Product Score* in specification 6. *CEO Economic Ideology* and *CEO Social Ideology* are the variables of interest, and both follow a -1 (liberal) to a +1 (conservative) range. In panel A the dependent variables are scaled by the possible maximum for that industry, in that year, and take a possible range from -1 to +1. In panel B the dependent variables are standardized with a mean of zero and a standard deviation of 1. All specifications include industry (Fama-French 49), firm headquarters state, and year fixed effects. Standard errors are clustered at the firm level. Significance is denoted by *, **, *** at the 10%, 5%, and 1% levels, respectively.

Panel A – Scaled Scores

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	CSR Score	Environmental Score	Diversity Score	Community Score	Employee Score	Humanities Score	Product Score
CEO Economic Ideology	-0.026** (0.011)	-0.036** (0.016)	-0.025 (0.027)	0.011 (0.018)	-0.019 (0.017)	-0.006 (0.007)	-0.035 (0.023)
CEO Social Ideology	-0.042** (0.018)	-0.043* (0.026)	-0.052 (0.040)	-0.031 (0.021)	-0.067*** (0.026)	0.005 (0.016)	-0.016 (0.029)
Ln (Total Assets)	0.027*** (0.003)	0.031*** (0.004)	0.062*** (0.007)	0.017*** (0.005)	0.019*** (0.005)	-0.001 (0.002)	-0.026*** (0.006)
Book Leverage	-0.030* (0.017)	-0.007 (0.024)	-0.040 (0.047)	-0.027 (0.027)	-0.023 (0.030)	-0.008 (0.017)	0.032 (0.037)
Tobin's Q	0.005*** (0.002)	0.006** (0.002)	0.008*** (0.003)	0.005** (0.002)	0.004 (0.002)	-0.002* (0.001)	0.002 (0.002)
Cash-to-assets	0.036 (0.047)	0.048 (0.056)	0.137 (0.111)	0.045 (0.049)	0.002 (0.046)	0.002 (0.022)	-0.105 (0.069)
Return on Assets	0.038 (0.034)	0.062 (0.049)	0.022 (0.086)	-0.214*** (0.072)	0.174*** (0.057)	-0.025 (0.031)	0.063 (0.058)
Ln (Boardsize)	0.000 (0.038)	-0.021 (0.043)	0.083 (0.079)	-0.006 (0.034)	-0.006 (0.020)	0.002 (0.013)	-0.013 (0.043)

Table 1.11 – Panel A Continued.

Institutional Ownership (%)	-0.044** (0.021)	-0.082*** (0.028)	0.018 (0.047)	0.014 (0.031)	-0.060** (0.024)	-0.002 (0.016)	-0.020 (0.035)
Blockholder	0.017* (0.009)	0.010 (0.015)	-0.037* (0.019)	0.011 (0.021)	0.034** (0.014)	0.010 (0.013)	0.020 (0.025)
CEO Ownership (%)	-0.152** (0.062)	-0.161* (0.084)	-0.128 (0.167)	-0.054 (0.073)	-0.175** (0.084)	0.020 (0.046)	-0.291*** (0.104)
Female CEO	0.061** (0.026)	-0.003 (0.030)	0.315*** (0.065)	-0.012 (0.021)	0.036 (0.032)	0.003 (0.010)	0.045 (0.030)
Ln (CEO Tenure)	0.004 (0.004)	0.008 (0.005)	-0.012 (0.010)	0.012** (0.005)	-0.001 (0.006)	0.004 (0.004)	0.013* (0.008)
CEO Age	0.002 (0.003)	-0.001 (0.005)	0.027*** (0.009)	0.003 (0.004)	0.004 (0.006)	-0.005* (0.003)	-0.010 (0.007)
CEO Age Squared	-0.000 (0.000)	0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000* (0.000)	0.000 (0.000)
Intercept	-0.258** (0.110)	-0.104 (0.147)	-1.411*** (0.278)	-0.216 (0.146)	-0.289 (0.239)	0.079 (0.106)	0.348 (0.227)
N	5,128	5,128	5,128	5,128	5,128	5,128	5,128
Adj. R-sq.	0.430	0.261	0.338	0.097	0.295	0.103	0.190
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HQ State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 1.11 Panel B – Standardized Scores.

	(1) CSR Score	(2) Environmental Score	(3) Diversity Score	(4) Community Score	(5) Employee Score	(6) Humanities Score	(7) Product Score
CEO Economic Ideology	-0.243** (0.107)	-0.231** (0.105)	-0.061 (0.094)	-0.128 (0.103)	-0.089 (0.126)	-0.057 (0.083)	-0.162 (0.113)
CEO Social Ideology	-0.386** (0.167)	-0.293 (0.180)	-0.188 (0.132)	-0.411*** (0.151)	-0.024 (0.138)	0.116 (0.159)	-0.190 (0.144)
Ln (Total Assets)	0.212*** (0.030)	0.126*** (0.026)	0.268*** (0.024)	0.135*** (0.029)	0.182*** (0.034)	-0.133*** (0.030)	-0.296*** (0.038)
Book Leverage	-0.178 (0.151)	-0.055 (0.150)	-0.191 (0.163)	-0.130 (0.178)	-0.173 (0.168)	0.074 (0.231)	0.154 (0.208)
Tobin's Q	0.036*** (0.013)	0.029** (0.013)	0.025*** (0.008)	0.021 (0.014)	0.023* (0.012)	-0.013 (0.013)	0.000 (0.011)
Cash-to-assets	0.321 (0.407)	0.202 (0.332)	0.600 (0.371)	0.123 (0.270)	0.504 (0.313)	-0.433 (0.271)	-0.814*** (0.296)
Return on Assets	0.471 (0.309)	0.182 (0.344)	0.166 (0.284)	1.098*** (0.340)	-0.913** (0.371)	-0.196 (0.361)	0.065 (0.313)
Ln (Boardsize)	0.046 (0.329)	-0.195 (0.255)	0.210 (0.281)	-0.061 (0.127)	-0.039 (0.239)	0.010 (0.134)	0.039 (0.160)
Institutional Ownership (%)	-0.302* (0.181)	-0.449*** (0.171)	0.053 (0.157)	-0.363** (0.141)	0.047 (0.188)	0.065 (0.143)	-0.074 (0.162)
Blockholder	-0.002 (0.090)	0.072 (0.102)	-0.261*** (0.080)	0.109 (0.090)	-0.131 (0.148)	0.215 (0.144)	0.282** (0.124)
CEO Ownership (%)	-1.216** (0.512)	-1.366** (0.553)	-0.239 (0.536)	-0.960** (0.484)	-0.057 (0.509)	-0.097 (0.469)	-1.505*** (0.510)
Female CEO	0.544*** (0.195)	-0.012 (0.171)	0.735*** (0.155)	0.224 (0.199)	0.002 (0.139)	-0.021 (0.096)	0.227* (0.134)
Ln (CEO Tenure)	0.026 (0.031)	0.074** (0.033)	-0.054* (0.031)	0.005 (0.036)	0.073** (0.032)	0.020 (0.037)	0.062 (0.038)

Table 1.11 – Panel B Continued.

CEO Age	0.042 (0.031)	0.007 (0.030)	0.094*** (0.030)	0.022 (0.035)	0.022 (0.026)	-0.061** (0.028)	-0.067* (0.036)
CEO Age Squared	-0.000 (0.000)	-0.000 (0.000)	-0.001*** (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000** (0.000)	0.001* (0.000)
Intercept	-2.771*** (0.945)	-0.354 (0.995)	-4.700*** (1.020)	-1.688 (1.338)	-1.873* (1.050)	2.394** (0.999)	3.109** (1.234)
N	5,128	5,128	5,128	5,128	5,128	5,128	5,128
Adj. R-sq.	0.260	0.165	0.305	0.149	0.125	0.081	0.247
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HQ State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Chapter 2

Hunting and Fishing CEOs: Environmental Plunderers or Saviors?

2.1 Introduction

Recent research in the corporate finance literature finds that chief executive officers' (CEOs') life experiences influence their firms' corporate social responsibility (CSR). Hunting and fishing, also colloquially known as sporting activities, are recreational activities many CEOs participate in and experiences that might influence the CEO's environmental decisions since they require experiencing nature. However, the a priori effect is unclear. On the one hand, participating CEOs (sportsmen) benefit from spending time in and enjoying the natural environment.¹³ This enjoyment leads many sportsmen and sporting groups to advocate for protecting the environment so they may continue engaging in outdoor recreation. On the other hand, hunting or catching wildlife consumes natural capital from the environment.¹⁴ We, therefore, compare the environmental choices of firms led by CEO sportsmen to the environmental decisions of the complementary set of companies that a sportsman does not lead.

Sporting activities are popular recreational activities in the United States, as indicated by the more than thirty-five million individuals who obtained sporting licenses between 2011 and 2016 (U.S. Census Bureau, 2018). We hand-collect the sporting licenses issued by twenty-one states to 3,065 CEOs who led S&P 1500 firms between 2003 and 2018 and use each CEO's licenses as a proxy for their sporting experience. The data indicates that over thirty percent of in-sample CEOs, or three times the national rate, purchase at least one license, and many purchase numerous licenses.

¹³ We use the term *sportsmen* for CEOs that hunt or fish regardless of gender.

¹⁴ We fully recognize that some anglers release the fish they catch. Research indicates that between 20.9% and 28.3% of fish caught and released in angling tournaments subsequently die from trauma sustained during the catch (Wilde, 1998).

Anecdotal stories of CEO sportsmen are abundant. For example, both Martha Stewart and Ted Turner profess to be avid anglers who enjoy spending time in natural environments (The Martha Stewart Blog, 2009). Their account illustrates the enjoyment of nature that sportsmen receive from sporting activities. However, other stories portray CEOs' sporting activities as unethical due to the embedded environmental consumption. The People for the Ethical Treatment of Animals (PETA), a two-million-member non-profit organization and media publication, named GoDaddy CEO Bob Parsons as the 2011 Scummiest CEO of the Year for hunting an elephant in Zimbabwe (Kretzer, 2011). In another example, Jimmy John's Sandwiches has faced multiple boycotts due to the founder and former CEO Jimmy John Liautaud's participation in African trophy hunting (Tyko, 2019). Negative media coverage of this type has spillover externalities on future CSR performance because unethical CEO-CSR activities lose stakeholder support in future CSR initiatives (Ogunfowora, Stackhouse, Oh, 2018)

We use the number of sporting licenses each CEO obtains as a proxy for the CEO's sporting activity participation rate and then classify each CEO as a non-, casual, or enthusiast sportsman. Next, we separate CEOs based on the frequency of their participation because the effects of life experiences are cumulative. We then investigate if firms led by either casual or enthusiast CEO sportsmen have different environmental performance than firms led by non-sportsmen, as measured by MSCI (formerly KLD). Our findings indicate that firms led by enthusiast sportsmen have lower environmental scores than firms led by non-sportsmen. MSCI scores are composed of strengths factors that measure decisions firms make and concerns factors relating to adverse outcomes firms incur. Our findings also suggest that the lower scores are due to their firms making less pro-environmental decisions.

Further tests show the main effect is on climate change decisions but also extends to pollution and the preservation of natural capital. Additionally, we find no difference in the environmental scores between firms led by casual sportsmen and firms led by non-sportsmen. The results suggest the incidence of natural capital resource consumption dominates and that experience affects CEOs' decisions.

Measuring environmental consumption is difficult. However, when a firm makes fewer positive environmental decisions, it is likely subject to greater risk from more frequently experiencing negative environmental outcomes. Therefore, we next investigate if firms led by CEO sportsmen are more likely to violate a congressional environmental protection act. Our findings indicate that firms led by enthusiast sportsmen are more likely to sustain a major financial settlement for violating one of those protective acts. This result implies that the influence of CEO sporting activity on firm decisions has direct financial costs, paid as a legal settlement, and indirect reputational costs.

This paper is the first, to our knowledge, to use hunting and fishing licenses acquired by CEOs to measure personal environmental recreation. By linking these sporting activities to the environmental outcomes of their firms, we extend the literature investigating the effects of life experiences on managerial decision-making and, specifically, on firm environmental performance. Further, the quantity of hunting and fishing licenses procured provides us with a non-binary measure of CEO environmental recreation and allows us to measure the intensity of sporting activity.

2.2 Literature Review and Hypothesis Development

Research shows that the behavioral consistency principle guides CEOs to make similar decisions across various choices. For example, older executives are more conservative in their

decision-making (Bertrand and Schoar, 2003), as are CEOs who grew up during the Great Depression (Malmendier, Tate and Yan, 2011). Military service also affects the decision-making of executives (Malmendier et al., 2011; Benmelech and Frydman, 2015). CEO overconfidence is another characteristic that researchers show affects many firm outcomes, such as dividend policy (Malmendier et al., 2011), estimating external financing costs (Deshmukh, Goel and Howe, 2013), and innovation (Galasso and Simcoe, 2011).

Researchers also conclude that a host of CEO characteristics affect their firm's CSR decisions, and Gillan, Koch, and Starks (2021) note the need to determine those traits further. For example, firms led by female CEOs have better performance than those with males (Manner, 2010; McGuinness, Vieito, and Wang, 2017; Borghesi, Houston, and Naranjo, 2014). Similarly, so do firms led by a younger CEO or one with greater ability (Borghesi et al., 2014; Yuan, Tian, Lu, & Yu, 2019). Not all CEO traits lead to positive effects on CSR. For example, more risk-averse CEOs lead to an increase in greenhouse gas emissions (Hossain, Saadi, and Amin, 2022), and more overconfident CEOs engage in less CSR (McCarthy, Oliver, and Song, 2017).

Researchers also determine that specific life experiences affect a CEO's awareness of and commitment to CSR issues. For example, firms led by CEOs who experience being the father of a daughter make decisions that result in more positive social outcomes, especially those concerning diversity (Cronqvist and Yu, 2017). The authors also determine that the effect is strongest following a CEO's first daughter's birth and attribute their results to increased female exposure elevating the CEO's awareness of women's social issues. Similarly, firms led by married CEOs also make decisions that lead to better social performance (Hegde and Mishra, 2019). The authors conclude that experiencing spousal values influences the CEO's decision-making towards making more pro-social decisions. CEOs who experienced poverty in childhood

or received religious schooling also have increased CSR engagement through increased commitment to CSR principles (Xu and Ma, 2022, a,b).

Recent research also indicates that a CEO's personal experiences in nature affect their firm's environmental decisions. For example, firms tend to release less waste material in factories close to the CEO's hometown (Li, Xu, and Zhu, 2021). The authors determine that CEOs value and preserve the areas they experienced in their childhood to a greater degree than at other locations. Additionally, CEO childhood exposure to nature in urban green spaces positively correlates with their firm's propensity to engage in pro-environmental programs (Zhi, 2021). Both findings imply that time spent in nature directly impacts environmental decision-making.

Sporting activities are recreational activities that enable participants to spend time in and experience nature. When participants increase their exposure to natural environments, it raises their awareness of ecological concerns each time they participate (Dunlap and Heffernan, 1979; Bixler, Floyd, and Hammitt, 2002; Bixler, James, and Vadala, 2011). In turn, the increased environmental awareness leads to increased pro-environmental behavior, such as recycling and adopting green technology (Theodori, Luloff and Willits, 1998; Teisl and O'Brien, 2003; Berns and Simpson, 2009).

Other research determines that hunting and fishing have a consumptive effect on the environment. Each successful hunting or fishing excursion removes natural capital, and this depletion leaves an overall lower level of natural capital (Brown and Cameron, 2000). Research also suggests a negative relation between sportsmen and climate change concerns. The National Research Council uses hand-collected survey data to detail both the extent of disbelief in climate change held by sportsmen and the difficulty in educating those sportsmen about climate change. This decreased acceptance of climate change is despite the close-felt effects of climate change on

hunting and fishing, and the author attributes their lower climate change awareness to social values held by sportsmen. In a similar study, Love-Nichols (2020) details an increased rate of climate skepticism held by sportsmen that the author also attributes to the social values of the hunting and fishing communities.

Researchers also find a relation between participation in outdoor recreation and the participant's environmental sensitivity or their empathetic perspective towards the environment (Hungerford and Volk, 1990; Chawla, 1998). A facet of environmental sensitivity is that each additional significant life experience in the outdoors leads to a causal change in sensitivity (Chawla, 1998; Bustam, Young, and Todd, 2005). This point implies that sensitivity increases as more outdoor experiences accrue and that changes in sensitivity are not solely in the pro-environmental direction since negative experiences do occur.

With the extant research, we form two competing hypotheses operating on the notions that CEOs make consistent decisions across different dimensions and that CSR engagement is both discretionary and influenced by a manager's values (Hemingway & Maclagan, 2004). The first hypothesis proposes a positive relation between hunting and fishing and the pro-environmental behavior of the firm. This hypothesis denotes sportsmen CEOs as environmental saviors, and their firms are sensitive to ecological concerns. We refer to the following as the *Savior hypothesis*:

H1: CEOs who hunt and fish lead firms with better environmental performance that increases with the CEO's sporting activity participation rate.

A competing hypothesis follows the literature that notes sportsmen consume natural resources in their sporting activities and are skeptical of climate change. This hypothesis portrays

sportsmen CEOs as environmental plunderers, and their firms act more unethically toward ecological concerns. Therefore, we name our second hypothesis the *Plunderer hypothesis*:

H2: CEOs who hunt and fish lead firms with worse environmental performance that falls with the CEO's sporting activity participation rate.

The two hypotheses are mutually exclusive, so if one is true, the other must be false. A third possibility is that the null is true, and hunting and fishing experiences do not affect CEO leadership and firm environmental policies.

2.3 Data

This analysis considers all CEOs of firms in the S&P 1500 index between 2003 and 2018 while excluding the CEOs of financial and regulated utility firms. The Lexis Nexis Public Records (LNPR) database provides information on the sporting licenses each CEO obtains, including the state and date of issuance, type of license, and if the CEO is a resident or non-resident. Our dependent variables come from the MSCI environmental, social, and governance (ESG) dataset the corporate finance literature frequently employs. We add firm-level controls from Compustat, BoardEx & the Thompson Reuters 13-F database, and CEO-level controls from Execucomp. The sample is the intersection of the above sources and contains 3,065 CEOs who led 1,674 distinct firms for 15,096 firm years. The remainder of this section details the creation of our dependent and explanatory variables and discusses our selection of control variables.

[Insert Table 2.1]

We construct our dependent variables from the MSCI database that measures a firm's CSR performance using indicator variables denoting if a firm has a specific strength and concern factors. Because our two hypotheses relate a CEO's sporting activity to their firm's environmental performance, we only consider MSCI's environmental factors. In line with

existing research, our main dependent variable is a net Environmental Score.¹⁵ To create the net score, we first create the Environmental Strengths variable by counting all the firm's strength factors in that year. In Panel A of Table 2.1, the median in-sample firm has zero strengths, and the most strengths any firm has is six. Next, we construct Environmental Concerns through a similar method. As with the strengths, the median firm has zero concerns, but the most any firm has is five. Then we deduct the concerns from the strengths to create our primary dependent variable, Environmental Score. In line with other researchers (e.g., Cronqvist and Yu, 2017; McCarthy et al., 2017) and to facilitate the interpretation of the results, we then normalize this variable with a minimum of zero, which results in a median Environmental Score of five and a maximum of eleven.

Additionally, MSCI categorizes most of its environmental strength factors into four categories. The Environmental Opportunities category contains three strength factors capturing investments in clean technology, green buildings, and renewable energy. The Pollution and Waste category contains four strength factors. Third, the Climate Change category has five strength factors related to carbon output. In 2012 MSCI introduced a fourth category, Natural Capital, containing three strength factors covering the protection of wildlife and natural spaces. There are also four uncategorized strength factors: communications, property, plant and equipment, management systems, and a miscellaneous other strength factor. We classify the four uncategorized strength factors as environmental opportunities due to the similarity in the scope of items covered.¹⁶ MSCI does not categorize its environmental concern factors. Therefore, we match each concern factor with its corresponding strength factor for categorization. We then create a normalized net categorical score for each of the four categories in the same manner as

¹⁵ See for example Borgahsi et al. (2014) and Hegde and Mishra (2019), among others.

¹⁶ Our results for *Environmental Opportunities* hold without including the uncategorized strength factors.

Environmental Score. Panel A shows that the median in-sample firm scores two in the climate category and one in the other three categories.

Until 2014, MSCI included a concern factor that measures if a firm violated a congressional protection act and pays major regulatory settlement, defined as \$40,000 or more on average across the previous three years.¹⁷ We use this factor to create our dummy variable Regulatory Settlement, which takes the value of one if the firm pays a major regulatory settlement and zero otherwise. As shown in Panel A of Table 2.1, MSCI identifies six percent of the 10,993 firm-year observations between 2003 and 2014 as paying a major regulatory settlement.

LNPR aggregates public records on individuals from various sources, including state-level agencies. Two examples are the respective Secretary of State's office, which registers business licenses and similar corporate filings, and the sporting license-issuing wildlife management agency. We identify each CEO in the LNPR database through their executive role with the firm as listed on filed corporate documents and then obtain their sporting license records.¹⁸ By identifying each CEO through their position with the firm, we ensure correct identification in the LNPR database. However, each state has a regulation determining what specific personal information is public or private, and twenty-one states consider their sporting license registry a public record.

¹⁷ The environmental protection acts are the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), Toxic Substance Control Act (TSCA), Endangered Species Act (ESA), Clean Water Act (CWA), Safe Water Drinking Act (SWDA), Resource Conservation and Recovery Act (RCRA), Clean Air Act (CAA) Atomic Energy Act (AEA), and Mine Act (MA).

¹⁸ For some CEOs we must match on roles the CEO held at other firms due to LNPR only reporting a maximum of 50 executive roles per individual. For those CEOs we verify their employment history using the Bloomberg Terminal System.

State-level wildlife agencies issue sporting licenses to residents and non-residents for a nominal fee.¹⁹ Additionally, most states issue three types of sporting licenses: fishing, hunting, and a combination hunting and fishing license. Each license grants the holder the privilege of participating in the respective type(s) of sporting activity and is valid only in the issuing state for a specified period. The U.S. Census Bureau reports that between 2011 and 2016, more than thirty-five million Americans obtained a fishing license, and more than eleven million obtained a hunting license (U.S. Census Bureau, 2018). These figures highlight the popularity of sporting activities.

[Insert Table 2.2]

Panel B of Table 2.1 presents our sporting license data by both the issuing state and the license type. We identify 5,154 licenses that CEOs in our sample procure from twenty-one states. Both Alaska and Florida each issue approximately twenty percent of the licenses. Oregon, Georgia, and Arkansas issue about twelve, nine, and eight percent of the licenses, respectively. The remaining sixteen states issue the final twenty-eight percent of licenses. More than forty percent of the licenses in our sample are combination hunting and fishing licenses. Approximately thirty-four percent of licenses are hunting licenses, and the remaining twenty-six percent are fishing licenses. The high percentage of CEOs who obtain a combination license or both hunting and fishing licenses prevents any analysis between hunters and fishermen.

Panel C of Table 2.1 shows the distribution of CEOs by the number of sporting licenses they obtain. Slightly more than 30 percent of CEOs purchase at least one license in our sample. 311 CEOs (10.1%) only purchase one license, and the most sporting licenses of any CEO in our

¹⁹ In our sample slightly more than 60% of licenses are non-resident licenses. A hand survey of state-level regulations indicates that 2017 annual hunting licensing fees range from \$10 in Montana for residents, to \$183 for non-residents in Washington.

sample is eighty-one. Also, conditional on procuring at least one license, the median CEO purchases two licenses.

We posit that a CEO's sporting license record is a representative proxy for their sporting participation rate due to the commitment of both time and monetary resources CEOs expend to obtain each license. Due to the wide range in the number of licenses CEOs purchase, we separate CEOs into high-, low-, and non-participating sportsmen by creating two dummy variables.²⁰ The first variable, CEO Casual Sportsman, captures CEOs with a low participation rate and takes the value of one if a CEO purchases between one and five sporting licenses and zero otherwise. CEO Enthusiast Sportsman, a second dummy variable, captures CEOs with a high participation rate and takes a value of one if the CEO obtains more than five licenses and zero otherwise. CEOs who purchase no sporting licenses are the third reference group in all analyses. Table 2.1 shows that approximately twenty-two percent of CEOs are casual sportsmen, while more than eight percent are enthusiast sportsmen.

We include several firm-level variables from Compustat, BoardEx, and the Thompson Reuters 13-F database known to correlate with CSR performance, and Table 2.1 Panel D lists their summary statistics. Several studies (e.g., McGuinness, Vieto, and Wang, 2017; Hedge and Mishra, 2019) indicate that a positive relation exists between firm size and CSR performance. Therefore, we control for a firm's size with the log of its total assets. More profitable firms have better CSR performance (Borghesi et al., 2014), and we control for a firm's profitability through its Return on Assets (ROA). Less financially constrained firms also perform better (Hong, Kubik, and Scheinkman, 2012). Therefore, we include Book Leverage, calculated as the ratio of

²⁰ Our results remain robust if we classify CEO sporting activity as a binary decision, as the count or log-count of the number of licenses a CEO obtains, or if we separate casual from enthusiasts sportsmen at varying license thresholds.

total debt to total debt plus common equity, to control for leverage. Firms with more cash on hand are able to make more CSR investments, and the ratio of Cash-to-Assets proxy for the firm's balance sheet liquidity. Several studies (e.g., Gillan et al., 2010; Albuquerque et al., 2019) find a positive relation between firm value and CSR, which we proxy with Tobin's Q. The natural logarithm of the number of members who sit on the firm's board of directors (Log (Boardsize)) measures the internal monitoring of the CEO. Gloßner (2019) details various effects of institutional equity ownership on firm CSR performance. We capture institutional ownership through two variables: the percent of a firm's common equity held by institutional owners (Institutional Ownership %) and the Blockholder dummy variable that captures the presence of an investor who owns 5% or more of the firm's equity.²¹

Panel E of Table 2.1 reports the summary statistics for several CEO-level control variables from Execucomp. A CEO's power correlates positively with the value they receive from engaging in CSR initiatives (Li, Gong, Zhang, and Koh, 2018). The log of a CEO's tenure (in years) controls for their power, and the median in-sample CEO is in their role for six years. The median CEO in our sample is fifty-six years old, and research indicates their age negatively correlates with firm CSR investment (Borghesi et al., 2014; Hedge & Mishra, 2019). Therefore, we control for the CEO's age and its' square. Female leaders also invest more in CSR, and we include a dummy variable that captures the three percent of in-sample female CEOs (Cronqvist and Yu, 2017; Hedge and Mishra, 2019).

[Insert Table 2.2]

Table 2.2 presents the correlation matrix. Our first explanatory variable, CEO Casual Sportsman, has an insignificant correlation with both Environmental Score and Environmental

²¹ A blockholder is defined as an institutional investor who own at least 5 percent of common equity.

Strengths but a positive and significant correlation with Environmental Concerns. CEO Enthusiast Sportsman, our second explanatory variable, has a negative and significant correlation with Environmental Score, a negative and insignificant correlation with Environmental Strengths, and a positive and significant relation with Environmental Concerns. Together these results indicate a negative correlation exists between CEO sporting activity and firm environmental performance. Additionally, both sportsman dummy variables have a negative and significant correlation with Female CEO, indicating that females are less likely to participate in sporting activities.

2.4 Empirical Results

Our two hypotheses operate on the notion that some firms make different environmental decisions due to their CEO's hunting and fishing experiences affecting the firm's chosen outcome. To investigate these hypotheses, we use the following ordinary least squares (OLS) specification:

(1)

$$\begin{aligned}
 ENV_{i,t+1} = & \text{Intercept} + CEO \text{ Casual Sportsman}_{i,t} \\
 & + CEO \text{ Enthusiast Sportsman}_{i,t} + Firm \text{ Controls}_{i,t} \\
 & + CEO \text{ Controls}_{i,t} + \lambda_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

where ENV is one of the dependent variables from MSCI. Environmental Score is the dependent variable in the main results, but subsequent tests use Environmental Strengths, Environmental Concerns, the four categorical net scores, or the Regulatory Concern dummy variable. The variables of interest are the two sportsman dummies that capture the effect of a sportsman with a high or low participation rate leading the firm. Section 2 includes the previously defined firm and

CEO-level controls. $\lambda_{i,t}$ represents industry (Fama-French 48-Industry Classification) and year fixed effects, and $\varepsilon_{i,t}$ is the residual.²²

Some form of selection bias may exist in our sample that draws either a CEO or a firm to the other based on the CEO's propensity to hunt or fish. For example, a firm may select its CEO based on the expected comradery a sportsman provides other managers or their expected environmental views. Such a relation would diminish the sporting effect that we want to document. We lead our dependent variables by one year ($t + 1$) to alleviate this concern, as is common practice in the corporate finance literature.²³

[Insert Table 2.3]

We begin our analysis by considering if firms with a CEO sportsman have different overall environmental performance. Table 2.3 presents results that use equation 1 with Environmental Score as the dependent variable. Specification 1 includes industry and year fixed effects to account for industry commonality and time trends in environmental performance. The coefficient for CEO Casual Sportsman is -0.034 and insignificant, implying no difference in Environmental Score between firms with a casual and a non-sportsman manager. However, the coefficient for CEO Enthusiast Sportsman is -0.152 ($p = 0.007$). The magnitude of the coefficient indicates that firms with a manager who regularly participates in sporting activities have an approximately 3% ($= -0.152 / 5$) lower Environmental Score than the median in-sample firm. This effect also equates to about 15.6% ($= -0.152 / 0.974$) of one standard deviation in the score distribution. A test of differences between the coefficients for our sportsman dummies determines they are different at the five-percent significance level. This test confirms that the

²² All results remain consistent with Fama-French 49, SIC 2-digit, or SIC 3-digit industry fixed effects.

²³ See for example: McCarthy, Oliver, and Song (2017) and Hedge and Mishra (2019).

debased performance in firms led by sportsmen does not occur unless its manager is an enthusiast.

Consistent with the previous literature, several control variables significantly and positively relate to firm environmental performance. The coefficient for the log of total assets indicates that larger firms have higher environmental performance, while the positive correlation with ROA shows that more profitable firms also perform better. The Blockholder coefficient suggests that firms with large shareholders have higher environmental scores. This result is consistent with the notion that large shareholders monitor investments towards reducing the incident rate of costly outcomes since adverse environmental events are costly for the firm (Gloßner, 2019). Last, the positive coefficients for Tobin's Q and Cash-to-Assets imply that growth firms and more liquid firms have better environmental performance.

The coefficient for CEO age is positive and significant, while its square is negative, implying that firms with an older CEO have better performance at a decreasing rate. Similar studies (e.g., Borghesi et al., 2014; Hedge and Mishra, 2019) report a negative relation between a firm's CEO's age and CSR performance. However, those studies generally consider a composite score of social and environmental factors, while we only utilize the environmental factors. Our results indicate that a CEO's age may affect environmental and social performance differently. Institutional Ownership and CEO Ownership both have significant negative coefficients, implying that firms with higher external ownership or larger CEO ownership stakes have worse CSR performance.

It is possible that one or more unobserved firm-level variables drive the results in specification 1. To alleviate this concern, specification 2 uses firm in place of industry fixed effects. The coefficient for CEO Casual Sportsman is insignificant and has a magnitude of -

0.090, while the coefficient for CEO Enthusiast Sportsman is -0.248 ($p = 0.014$). Specifically, firms led by an enthusiast sportsman have an approximately 5% ($= -0.248 / 5$) lower Environmental Score than the median in-sample firm. This figure also equates to about 25.5% ($= -0.248 / 0.974$) of one standard deviation in the distribution of Environmental Score. A test of differences between the coefficients for our two sporting dummies fails to indicate they differ.

The coefficients for both sportsman dummies in specification 2 are consistent in sign but higher in absolute magnitude than in specification 1, where we applied industry fixed effects. It is important to note that the firm fixed effects model in specification 2 measures the within-firm variation where two types of sportsmen (non-, casual, or enthusiast) CEOs lead the firm at different times in our sample. This measurement issue exists because we consider a CEO's sporting participation rate static over time; casual sportsmen are always casual participants and the same for enthusiasts. We only have data on one CEO for most in-sample firms. This lack of intra-firm variation results in the firm fixed effects model absorbing any CEO-based effects for those firms with only one in-sample CEO. Our other tests use industry-fixed effects and do not suffer the same intra-firm measurement issue as the firm-fixed effect specification.

Including firm-fixed effects instead of industry-fixed effects inverts the sign of the point estimates for two control variables. Now, larger firms perform worse while more levered firms perform better. The results of specification 2 also indicate that firms with a CEO in the position longer have higher environmental performance. At the same time, several other control variables that are significant in specification 1 are insignificant in specification 2. These differences show the role that unobserved variables play in determining firm-level environmental performance.

The results of Table 2.3 support our Plunderer Hypothesis but not our Savior Hypothesis. Firms with a CEO who frequently participates in sporting activities have lower environmental

performance. These results indicate that the consumptive environmental views incurred from substantial experiences hunting and fishing overshadow any protective attitudes and extend to the decisions a CEO's firm makes.

However, a firm's Environmental Score score is composed of two parts: strengths and concerns. Di Giuli and Kostovetsky (2014) note that it is easier to affect the strengths since they are decisions the firm makes, compared to the concerns, which are outcomes the firm experiences. Therefore, if managerial preferences drive the results, the effect should center on strengths, not weaknesses.

[Insert Table 2.4]

Table 2.4 repeats the previous analysis but uses environmental strengths and concerns as separate dependent variables to verify that the previous results are due to managerial decisions. In specification 1, the dependent variable is Environmental Strengths. Both sporting coefficients have a negative sign, implying an overall negative relation between managerial sporting activity and pro-environmental decision-making. The coefficient for CEO Casual Sportsman is -0.014 but insignificant. However, the coefficient for CEO Enthusiast Sportsman is significant at -0.105 ($p = 0.007$). The median in-sample firm has zero strengths, preventing us from comparing the sportsman effect against the median firm. The magnitude of the coefficient is equivalent to 11.3% ($= -0.105 / 0.928$) of one standard deviation in the distribution of Environmental Strengths. A test of differences between our two sporting dummy coefficients indicates that the two coefficients are different at the five-percent significance level. Again, this difference implies that lower environmental performance is not present in firms led by a casual sportsman, only in those with an enthusiast.

Environmental Concerns is the dependent variable in specification 2. The coefficients for both sportsman dummies are positive but insignificant, indicating that firms led by a sportsman do not experience different environmental outcomes. A test of differences between the two sportsman coefficients determines that the difference is insignificant. Specification 2 indicates no difference in firm-level environmental outcomes based on the CEO's participation in sporting activities, as measured by MSCI. Table 2.4 shows that the lower performance in enthusiast sportsmen's firms is due to fewer positive environmental decisions, not from incurring more adverse outcomes. These results support our plunderer hypothesis since making fewer pro-environmental decisions indicates environmental insensitivity.

We next investigate which categories of environmental performance managerial sporting experiences affect for two reasons. First, the effect that our previous findings document may concentrate on one or more environmental categories. This possibility is consistent with the notion that outdoor recreationists care more for environmental issues closely related to their preferred type of recreation than more distantly related problems (Dunlap & Heffernan, 1976). Second, our plunderer and savior hypotheses may simultaneously be true but in different categories. For example, sportsmen might be concerned about pollution since it degrades the natural habitats they use for hunting and fishing. However, at the same time, they are skeptical about climate change despite its effects on natural habitats. Such competing effects might net out against each other.

[Insert Table 2.5]

Table 2.5 investigates categorical performance using equation 1 but separately tests the four categorical scores: Environmental Opportunities, Pollution and Waste, Climate Change, and Natural Capital. In specification 1, the dependent variable is Environmental Opportunities, which

contains factors generally related to investments, technology, and renewable energy sources. This category has no a priori relation between sporting activities and the breadth of topics it contains. Therefore we do not expect managerial sporting activity to affect the firm in this category. Consistent with our expectation, the coefficients for both sportsman dummies are insignificant and provide no support for either hypothesis. Additionally, a t-test indicates that the two sportsman coefficients are not significantly different, implying no effect in this environmental category.

The next category is Pollution and Waste. Sportsmen use natural habitats to enjoy their recreation, and pollution emission alongside waste inaction degrades those areas. Their personal use of the environment suggests motivation to reduce pollution and waste to ensure that a sufficient quantity and quality of natural habitats remain to sustain their recreation. On the other hand, not enacting pollution and waste controlling measures depreciates outdoor recreation quality through environmental degradation.

Both sporting dummy coefficients are negative in specification 2 of Table 2.5, implying an overall negative relation between managerial sporting activity and pollution and waste performance. The coefficient for casual sportsman is -0.013 but insignificant, while the coefficient for CEO Enthusiast Sportsman is larger in magnitude at -0.038 ($p = 0.058$). This magnitude implies that firms led by an enthusiast have an approximate 2% ($= -0.038 / 2$) lower Pollution and Waste Score than the median firm in our sample. It is also equivalent to 12.5% ($= -0.038 / 0.305$) of one standard deviation in the score. Last, a test for differences between the sporting coefficients determines that they are not statistically different. The results of specification 2 indicate that firms led by an enthusiast sportsman enact fewer pollution and waste controlling measures, which is indicative of plundering, not saving the environment.

Climate Score, primarily a function of carbon output, is the next category we consider. Research indicates that climate change has many detrimental effects on hunting and fishing, such as loss of habitat, migration pattern changes, and lack of game sustenance (National Research Council, 2012). Therefore, as with pollution and waste, sportsmen have the self-serving motivation to reduce carbon output to preserve their recreational activity. Not enacting carbon-reducing measures again indicates plundering the environment by reducing environmental quality.

In specification 3, the results indicate an overall negative relationship between firms with a sportsmen manager and their Climate Score. The coefficient for CEO Casual Sportsmen is -0.006 and insignificant, but the coefficient for the enthusiast sportsmen is significant at -0.057 ($p = 0.002$). The magnitude of the coefficient indicates that firms led by an enthusiast sportsman have an approximately 5.7% ($= -0.057 / 1$) lower Climate Score than the median in-sample firm. The coefficient magnitude also equals 14.4% ($= -0.057 / 0.395$) of one standard deviation in the score distribution. Additionally, a t-test determines that the difference between the casual and enthusiast dummy coefficients is significant ($p = 0.009$). This last finding indicates that the debased performance in the climate category is mainly in those firms led by an enthusiast.

MSCI introduced the Natural Capital Score in 2014, and our sample includes 5,600 observations between 2014 and 2018. This category has the clearest relation with hunting and fishing since it directly measures impacts on natural habitats and animal populations. In specification 4, the coefficient for casual sportsman is insignificant and has a magnitude of 0.012. The coefficient for CEO Enthusiast Sportsman is mildly significant and larger in absolute magnitude at -0.033 ($p = 0.100$). This equates to a 3.3% ($= -0.033 / 1$) decrease in the Natural Capital Score for firms led by an enthusiast sportsman compared to the median in-sample firm.

The magnitude also equates to 10.6% ($= -0.033 / 0.310$) of one standard deviation in the score distribution. A test of differences between the two sportsman coefficients finds they are slightly different ($p = 0.069$), again indicating that the effects on the firm's environmental performance do not manifest unless the CEO is an enthusiast.

Table 2.5 remains consistent with our previous results and indicates that firms led by enthusiast sportsmen make fewer positive environmental decisions concerning pollution and waste, climate change, and natural capital. Additionally, this effect is the most substantial in carbon-reducing decisions and is consistent with the previous literature that documents a heightened climate change skepticism in sportsmen. As in the earlier tables, these results support our plunderer hypothesis indicating that the consumptive side of hunting and fishing transfers to the environmental performance of an enthusiast sportsman's firm. Also, consistent with the previous tables, we find no support for our Savior Hypothesis.

2.5 Regulatory Settlement

The results thus far indicate that firms led by enthusiast sportsmen have lower environmental performance due to making fewer pro-environmental decisions across environmental categories. It is possible that making fewer positive environmental decisions increases the probability of non-compliance with environmental regulations if those positive decisions prevent regulatory infringements. Li, Xu, and Zhu (2021) document this effect and determine that firms discharge less waste at locations near the CEO's hometown. The authors determine that managerial preference towards their childhood locale influences their decision on where to make environmentally friendly investments.

MSCI includes a factor that denotes if a firm pays major environmental regulatory settlements. A benefit of analyzing only large settlements is that the associated violations are

more likely to receive a higher level of media attention (Elsasser and Dunlap, 2013), negatively affecting corporate reputation and future financial performance (Miles and Covin, 2000). Hence, we analyze those violations likely to incur the highest total economic costs for firms. We use this factor to create our regulatory settlement dummy variable. We then use the dummy on the left-hand side of a logistic specification of equation 1. Due to perfect collinearity, we do not include fixed effects.

[Insert Table 2.6]

Table 2.6 reports the results. The coefficient for CEO Casual Sportsman is 0.036 but not significant. However, the coefficient for CEO Enthusiast Sportsman is significant with a magnitude of 0.579 ($p < 0.001$), equivalent to a 57.4% increase in the log-odds ratio of major regulatory settlement. An F-test of the overall effect of CEO sporting activity indicates that managerial hunting and fishing significantly ($p < 0.001$) affect the probability of regulatory non-compliance. We also test for differences between firms led by casual and enthusiast sportsmen and find they are significant ($p = 0.002$).

Table 2.6 indicates that firms with a CEO who is an enthusiast sportsman are more likely to suffer a costly environmental event that violates federal regulation. This result is not present in firms led by either a casual or a non-sportsman, consistent with our previous finding that a manager's sporting experiences do not affect their decisions unless they are a sporting enthusiast. These results again support our Plunderer Hypothesis.

2.6 Robustness Tests

It is possible that a CEO's affiliation with either the Democrat or Republican party correlates with the propensity to obtain sporting licenses and CSR decisions. Most of the existing research on the relation between managerial politics and CSR indicates that firms led by

Democrats perform better (i.e., Di Giuli and Kostovetsky, 2014), except for Borghesi et al. (2014), who find that a CEO's political party does not affect their firm's CSR.

To ensure the manager's party affiliation does not drive our previous results, we first obtain each CEO's voter registrations from LNPR and identify 52% of in-sample CEOs that ever register with either the Republican or Democratic party. Next, we create the dummy variable, CEO Democrat, that takes the value of one if the CEO is registered with the Democratic party during that fiscal year and zero otherwise. CEOs who register with the Republican party act as the mutually exclusive reference group.²⁴ Then, we replicate our main results on this subsample of CEOs while controlling for their party affiliation with the dummy variable Democrat CEO.

[Insert Table 2.7]

In Table 2.7, Environmental Score is the dependent variable in all specifications. The democrat dummy is omitted in specification 1 to establish the baseline sporting effect in the subsample of CEOs who register with either party. These coefficients for the two sporting dummies remain consistent in sign and magnitudes with Table 2.3. Specification 2 includes the democrat dummy to account for the CEO's party. The casual and enthusiast sportsman coefficients are consistent in sign and magnitude with their base specifications, albeit the enthusiast sportsman is only significant at the ten-percent level. The democrat dummy is insignificant, indicating that a CEO's party does not affect their firm's environmental performance. In specification 3, we interact the democrat dummy with our two sporting indicator variables to investigate partial effects. Neither interacted coefficient is significant, implying that the impact of hunting and fishing does not vary between members of different parties. Table 2.7 results reject any confounding effect of a manager's political party.

²⁴ No CEOs in our sample transition between parties during their in-sample tenure.

[Insert Table 2.8]

Despite leading our dependent variables by one year, another remaining concern is selection bias between the firm and the CEO. It is possible that a latent variable, such as comradery, connects the CEO's sporting participation with the firm's inclination to hire that CEO. To help alleviate this concern, we match observations where an enthusiast sportsman helmed the firm with an observation from a firm in the same industry (Fama-French 49 Industry Classification) and year where a non-sportsman led the firm. The algorithm considers all firm-level control variables when matching observations. We do not include the observations where a casual sportsman led the firm because our previous results indicate differences between enthusiasts and non-sportsmen. Then, we validate that the matched sample does not differ between the observations with a non-sportsman CEO and those with an enthusiast sportsman. Finally, we recompile our previous results on the matched subset with Environmental Score and the six categorical scores as dependent variables.

Table 2.8 reports the results, and panel A shows the results of logit regressions with the CEO Enthusiast Sportsman dummy as the dependent variable. In specification 1, we conduct a pre-match analysis and include all firm-year observations where the firm was led by either a non- or an enthusiast sportsman. Several control variables significantly relate to the CEO Enthusiast Sportsman dummy. However, in specification 2, none of those controls are significant in the matched subsample. This lack of significance in the firm-level variables indicates that the matched panel is balanced. The decrease in the r-squared value from 9.4% in specification 1 to 0.7% in specification 2 further indicates that firms do not select their CEO based on these variables.

Panel B of Table 2.8 computes differences in the dependent and firm-level control variables between observations with and without a CEO Enthusiast Sportsman in the matched subsample. None of the control variables significantly differ between the firm-years led by an enthusiast and a non-sportsman. The lack of significant differences further indicates that the firms led by a non-sportsman are not dissimilar from those with an enthusiast sportsman based on the selection variables. However, the pairwise t-tests indicate that firms led by an enthusiast sportsman have lower environmental and natural capital scores than those led by a non-sportsman. These differences indicate that environmental performance differs between similar firms with different types of sportsman CEOs at a univariate level.

In Panel C, we recompute our main specification with each of the five scores as separate dependent variables. The coefficient for CEO Enthusiast Sportsman is significant in each of the specifications except 2, where Environmental Opportunities Score is the dependent variable. These results are similar to those in Tables 3 and 5. They also indicate that selection concerns between the firm and CEO do not drive the negative relation between CEO Enthusiast Sportsmen and Environmental Scores that we document.

[Insert Table 2.9]

To help enforce the notion that CEO sportsman preferences drive the effects we document thus far, we next analyze changes in Environmental Score surrounding CEO turnover. Specifically, we are interested in the scenario where the firm changes from a CEO who is an enthusiast sportsman to a non-sportsman or vice versa. We identify 138 such transitions in our sample. Then, we compute the change in Environmental Score and each firm-level dependent variable between $t-1$ and $t+1$ for each transition, where $t=0$ is the year of the CEO transition.²⁵

²⁵ This results in the possible values of -1 and 1 for Δ CEO Enthusiast Sportsman.

Baghdadi, Podolski, and Veeraraghavan (2022) perform a similar analysis to determine that pilot CEOs lead to a lower effective tax rate in the firm they manage.

Table 2.9 reports the results. The coefficient for the change in CEO Enthusiast Sportsman is significant and negative at -0.176. This sign of the coefficient indicates that a change from a non- to an enthusiast sportsman is related to a downward change in the firm's Environmental Score. Alternatively, a converse change from an enthusiast to a non-sportsman CEO is associated with an upward change in the firm's Environmental Score. The results of Table 2.9 indicate that CEOs who are enthusiast sportsmen do lead to changes in the firm's Environmental Score.

We argue that having sporting license data from only twenty-one states does not affect the inferences of our results for three reasons. First, over sixty percent of our CEO sporting licenses are non-resident licenses. The high percentage of non-resident licenses helps mitigate this concern because each CEO can procure a sporting license from any in-sample state. Second, the effect we document is in the pool of CEOs who obtain more than five sporting licenses, which decreases the probability that a few unreported licenses for any CEO would sway the results. Third, in unreported results, we identify CEOs who do not have a reported sporting license but live in a non-reporting, top five hunting or fishing license-issuing state. Those CEOs have the highest probability of having an unreported license. We then re-run our main results while including the dummy variable that captures those CEOs. The results remain unchanged, and the magnitude of the coefficient on the dummy variable is indistinguishable from zero, assuaging concerns that missing licenses from non-reporting states bias our results.

2.6 Conclusion

CEOs affect many decisions their firms make, and recent research suggests that closely-related life experiences influence their CSR decision-making. We investigate if CEOs who

experience the outdoors through hunting and fishing, collectively called sporting activities, make different environmental decisions in their firms. Existing research proposes two converse ethical channels through which sporting activities might affect the participant's environmental views. The first channel proposes that sportsmen work to save the environment due to a protective connection with the environment that hunting and fishing promote. Alternatively, the second channel operates on the consumptive facet of sporting activities and indicates that sportsmen view the environment through a more utilitarian lens.

We identify CEOs who participate in hunting and fishing through their sporting licenses, as reported by the license issuing regulator in twenty-one states. Our results show that almost one-third of CEOs purchase at least one license, and many CEOs purchase multiple licenses. Then, we separate CEOs into casual and enthusiastic sportsmen based on the number of licenses they obtain and test if firms led by either type of sporting CEO make less or more favorable environmental decisions.

The evidence consistently implies that firms with CEO sportsmen enthusiasts make less favorable environmental decisions regarding climate change, pollution, and natural capital. Furthermore, those firms are significantly more likely to incur a significant financial settlement for violating a federal environmental protection act, highlighting the unethical nature of the effects we document in this study. Overall, these results support the hypothesis that sporting CEOs plunder rather than save the environment.

Table 2.1: Summary Statistics.

This table presents summary statistics for all variables used in this analysis. All variables are defined in appendix A1.

Panel A: Dependent Variables.

<i>Variable:</i>	N	Mean	SD	Median	Min	Max
Environmental Score	15,096	5.244	0.974	5	0	11
Environmental Strengths	15,096	0.434	0.929	0	0	6
Environmental Concerns	15,096	0.190	0.601	0	0	5
Environmental Opportunities Score	15,096	1.204	0.503	1	0	4
Pollution Score	15,096	1.994	0.305	2	0	4
Climate Score	15,096	1.094	0.395	1	0	3
Natural Capital Score	5,600	1.029	0.310	1	0	4
Regulatory Settlement	10,993	0.060	0.238	0	0	1

Panel B: Distribution of CEO Sporting Licenses by State of Issuance and License Type.

<i>Issuance State:</i>	Fishing Licenses	Hunting Licenses	Combination Licenses	Total Sporting Licenses
Alaska	0	114	970	1,084
Arkansas	98	225	75	398
Connecticut	31	22	14	67
Florida	811	196	140	1,147
Georgia	38	196	246	480
Illinois	2	27	3	32
Massachusetts	29	55	6	90
Minnesota	0	10	0	10
Mississippi	6	36	11	53
Missouri	59	203	34	296
Montana	10	77	19	106
Nebraska	5	63	16	84
Nevada	0	35	0	35
New Jersey	1	0	0	1
North Carolina	10	8	7	25
North Dakota	9	74	0	83
Ohio	28	68	24	120
Oregon	90	108	396	594
Utah	2	10	21	33
Virginia	70	145	72	287
Wisconsin	37	73	19	129
Total	1,336	1,745	2,073	5,154

Table 2.1 Continued.

Panel C: Classification of CEO Sportsmen.

Number of Sporting Licenses Obtained	Number of CEOs	Sporting Classification
0	2,134	Non-sportsman
1	311	
2	165	
3	72	Casual Sportsman
4	64	(n = 664)
5	52	
6	45	
7	31	
8	26	
9	13	Enthusiast Sportsman
10	18	(n = 267)
11 – 20	78	
> 20	56	
Total	3,065	

Panel D: Firm-level Variables.

Variable:	N	Mean	SD	Median	Min	Max
Log (Total Assets)	15,096	7.592	1.543	7.445	4.627	11.836
Book Leverage	15,096	0.204	0.170	0.192	0.000	0.869
Return on Assets	15,096	0.051	0.085	0.056	-0.330	0.271
Log (Boardsize)	15,096	2.179	0.250	2.197	0.000	2.996
Institutional Ownership (%)	15,096	0.796	0.181	0.836	0.000	0.999
Blockholder	15,096	0.936	0.245	1	0	1
Tobin's Q	15,096	3.255	3.264	2.355	0.506	22.607
Cash-to-assets	15,096	0.121	0.115	0.086	0.000	0.550

Panel E: CEO-level Variables.

Variable:	N	Mean	SD	Median	Min	Max
CEO Casual Sportsman	3,065	0.217	0.419	0	0	1
CEO Enthusiast Sportsman	3,065	0.085	0.280	0	0	1
CEO Age	15,096	55.940	7.363	56	28	96
CEO Ownership (%)	15,096	0.020	0.054	0.003	0.000	0.876
Log (CEO Tenure)	15,096	1.927	0.765	1.946	0.003	4.140
Female CEO	3,065	0.030	0.171	0	0	1

Table 2.2: Correlation Matrix.

This table displays the correlations between all variables used in this analysis. All variables are defined in appendix A1. Statistical significance is denoted at the 10%, 5%, and 1% levels by *, **, and ***, respectively.

<i>Variable:</i>	CEO Casual Sportsman	CEO Enthusiast Sportsman	Environmental Score	Environmental Strengths	Environmental Concerns	Environmental Opportunities Score
CEO Casual Sportsman	1					
CEO Enthusiast Sportsman	-0.167***	1				
Environmental Score	-0.0119	-0.0576***	1			
Environmental Strengths	0.00303	-0.00976	0.804***	1		
Environmental Concerns	0.0241**	0.0788***	-0.380***	0.244***	1	
Environmental Opportunities	-0.0103	0.0148	0.666***	0.793***	0.147***	1
Pollution	-0.0111	-0.0522***	0.516***	0.312***	-0.358***	0.106***
Climate Change	0.00657	-0.0280***	0.637***	0.770***	0.159***	0.393***
Natural Capital	0.0194*	-0.0101	0.388***	0.509***	0.159***	0.181***
Log (Total Assets)	0.0360***	0.0308***	0.260***	0.494***	0.345***	0.347***
Book Leverage	0.0690***	0.0531***	0.0771***	0.132***	0.0801***	0.0766***
ROA	-0.0258**	0.0143	0.0728***	0.0801***	0.00579	0.0498***
Log (Boardsize)	0.0442***	0.0637***	0.173***	0.331***	0.233***	0.225***
Institutional Ownership	-0.000313	-0.0321***	-0.0123	-0.0748***	-0.0963***	-0.0187*
Blockholder	-0.0156	-0.00357	-0.00462	-0.0950***	-0.140***	-0.0608***
Tobin's Q	-0.0219**	-0.0219**	0.129***	0.104***	-0.0484***	0.0416***
Cash-to-assets	-0.0571***	-0.0952***	0.0180*	-0.0647***	-0.130***	-0.0307***
CEO Age	-0.0207*	-0.0299***	0.0167*	0.0436***	0.0406***	0.0278***
CEO Ownership	-0.0134	-0.0192*	-0.0489***	-0.101***	-0.0772***	-0.0806***
Log (Tenure)	-0.00738	-0.0407***	-0.0261**	-0.0665***	-0.0608***	-0.0494***
Female CEO	-0.0586***	-0.0443***	0.0283***	0.0207*	-0.0139	0.00215

Table 2.2 Continued.

<i>Variable:</i>	Pollution Score	Climate Change Score	Natural Capital Score	Log (Total Assets)	Book Leverage	ROA	Log (Boardsize)
Pollution	1						
Climate Change	0.184***	1					
Natural Capital	0.112***	0.360***	1				
Log (Total Assets)	-0.00347	0.424***	0.283***	1			
Book Leverage	0.0244**	0.122***	0.0887***	0.366***	1		
ROA	0.0412***	0.0740***	0.0358***	0.0569***	-0.191***	1	
Log (Boardsize)	0.0146	0.292***	0.152***	0.595***	0.246***	0.0370***	1
Institutional Ownership	-0.0353***	-0.0702***	-0.0613***	0.00138	0.0193*	0.0551***	-0.0556***
Blockholder	-0.0247**	-0.0751***	-0.0153	-0.145***	-0.00504	-0.0256**	-0.111***
Tobin's Q	0.0876***	0.119***	0.0725***	0.000263	0.110***	0.240***	0.0328***
Cash-to-assets	0.0322***	-0.0498***	-0.0505***	-0.315***	-0.356***	0.0647***	-0.243***
CEO Age	-0.0167*	0.0380***	0.0351***	0.0808***	0.0374***	0.0251**	0.0387***
CEO Ownership	0.00339	-0.0761***	-0.0505***	-0.196***	-0.114***	0.0196*	-0.187***
Log (Tenure)	-0.00578	-0.0405***	-0.0392***	-0.0857***	-0.0524***	0.0544***	-0.126***
Female CEO	0.0257**	0.0236**	0.0578***	-0.00204	-0.0113	0.0101	0.00893

Table 2.2 Continued.

<i>Variable:</i>	Institutional Ownership	Blockholder	Tobin's Q	Cash-to- assets	CEO Age	CEO Ownership	Log (Tenure)	Female CEO
Institutional Ownership	1							
Blockholder	0.453***	1						
Tobin's Q	0.00256	-0.0177*	1					
Cash-to-assets	0.0119	0.0311***	0.164***	1				
CEO Age	-0.0457***	-0.0181*	-0.0426***	-0.0788***	1			
CEO Ownership	-0.157***	-0.0104	0.000390	0.0904***	0.131***	1		
Log (Tenure)	-0.0305***	0.00438	-0.00184	0.0361***	0.367***	0.297***	1	
Female CEO	-0.00659	-0.0158	0.0216**	0.00822	-0.0447***	0.00537	-0.0697***	1

Table 2.3: CEO Sporting Activity on Firm Environmental Score.

This table presents the results of ordinary least squares (OLS) regressions of CEO sporting activity on firm environmental scores. Specification 1 includes industry and year fixed effects and specification 2 includes firm and year fixed effects. The dependent variable is *Environmental score (Env. Score)*, and the indicator variables of interest are *CEO Casual Sportsman* and *CEO Enthusiast Sportsman*. Firm-level control variables include the *Log (Total Assets)*, *Book Leverage*, *Return on Assets*, *Log (Boardsize)*, the percent of equity held by *Institutional Ownership (%)*, an indicator variable that captures the presence of an equity *Blockholder*, *Tobin's Q*, and the ratio of *Cash-to-(total)assets*. CEO-level controls include *CEO Age* and the square of their age, *CEO Ownership %* as the percent of equity owned by the CEO, the log of CEO tenure in years, and an indicator variable capturing the presence of a *Female CEO*. All variables are defined in appendix A1. Standard errors are in parentheses and clustered at the firm-level. Statistical significance is denoted at the 10%, 5%, and 1% levels by *, **, and ***, respectively.

	(1)	(2)
	Env. Score	Env. Score
CEO Casual Sportsman	-0.034 (0.035)	-0.090 (0.055)
CEO Enthusiast Sportsman	-0.152*** (0.056)	-0.248** (0.101)
Log (Total Assets)	0.180*** (0.017)	-0.110*** (0.040)
Book Leverage	-0.134 (0.088)	0.306*** (0.116)
Return on Assets	0.293** (0.121)	0.047 (0.125)
Log (Boardsize)	0.044 (0.101)	-0.041 (0.089)
Institutional Ownership (%)	-0.463*** (0.077)	-0.187** (0.095)
Blockholder	0.157** (0.063)	0.211*** (0.061)
Tobin's Q	0.021*** (0.005)	0.004 (0.006)
Cash-to-Assets	0.196* (0.114)	0.076 (0.114)
CEO Age	0.040*** (0.014)	-0.005 (0.018)
CEO Age Squared	-0.000*** (0.000)	0.000 (0.000)

Table 2.3 Continued.

CEO Ownership (%)	-0.007*** (0.002)	-0.003 (0.002)
Log (CEO Tenure)	-0.001 (0.015)	0.036* (0.021)
Female CEO	0.032 (0.074)	0.103 (0.138)
Intercept	-3.151*** (0.677)	0.162 (0.598)
N	15,096	15,096
Adj. R-sq	0.250	0.510
Industry and Year Fixed Effects	Yes	No
Firm and Year Fixed Effects	No	Yes
CEO Casual Sportsman vs. CEO Enthusiast Sportsman (p-value)	0.049**	0.136

Table 2.4: CEO Sporting Activity on Firm Environmental Strengths and Concerns.

This table presents the results of ordinary least squares (OLS) regressions of CEO sporting activity on firm environmental strengths and concerns. Specification 1 includes industry and year fixed effects and specification 2 includes firm and year fixed effects. The dependent variable in specifications 1 and 2 is *Environmental Strengths (Env. Strengths)* and in specifications 3 and 4 it is *Environmental Concerns (Env. Concerns)*. *CEO Casual Sportsman* and *CEO Enthusiast Sportsman* are the indicator variables of interest. Firm-level control variables include the *Log (Total Assets)*, *Book Leverage*, *Return on Assets*, *Log (Boardsize)*, the percent of equity held by *Institutional Ownership (%)*, and an indicator variable that captures the presence of an equity *Blockholder*, *Tobin's Q*, and the ratio of *Cash-to-Assets*. CEO-level controls include *CEO Age* and the square of their age, *CEO Ownership %* as the percent of equity owned by the CEO, the log of CEO tenure in years, and an indicator variable capturing the presence of a *Female CEO*. All variables are defined in appendix A1. Standard errors are in parentheses and clustered at the firm-level. Statistical significance is denoted at the 10%, 5%, and 1% levels by *, **, and ***, respectively.

	(1)	(2)
	Env.	Env.
	Strengths	Concerns
CEO Casual Sportsman	-0.014 (0.031)	0.020 (0.022)
CEO Enthusiast Sportsman	-0.105*** (0.039)	0.048 (0.041)
Log (Total Assets)	0.306*** (0.016)	0.126*** (0.012)
Book Leverage	-0.297*** (0.079)	-0.164** (0.071)
Return on Assets	0.284*** (0.106)	-0.008 (0.073)
Log (Boardsize)	0.132 (0.109)	0.089** (0.042)
Institutional Ownership (%)	-0.564*** (0.081)	-0.101** (0.045)
Blockholder	0.048 (0.047)	-0.109** (0.048)
Tobin's Q	0.023*** (0.005)	0.002 (0.002)
Cash-to-assets	0.297*** (0.111)	0.101* (0.058)
CEO Age	0.057*** (0.012)	0.017* (0.009)
CEO Age Squared	-0.000*** (0.000)	-0.000 (0.000)

Table 2.4 Continued.

CEO Ownership (%)	-0.005*** (0.002)	0.002 (0.001)
Log (CEO Tenure)	-0.022 (0.015)	-0.021** (0.009)
Female CEO	0.085 (0.087)	0.052 (0.045)
Intercept	-3.663*** (0.391)	-0.512 (0.691)
N	15,096	15,096
Adj. R-sq	0.381	0.319
Industry and Year Fixed Effects	True	True
CEO Casual Sportsman vs. CEO Enthusiast Sportsman (p-value)	0.037**	0.522

Table 2.5: CEO Sporting Activity on Environmental Categories.

This table presents ordinary least squares (OLS) regressions of CEO sporting activity on firm environmental category scores. The dependent variable in specification 1 is *Environmental Opportunities*, in specification 2 it is *Pollution*, in specification 3 it is *Climate Change*, and in specification 4 the dependent variable is *Natural Capital*. *CEO Casual Sportsman* and *CEO Enthusiast Sportsman* are the indicator variables of interest. Firm-level control variables include the *Log (Total Assets)*, *Book Leverage*, *Return on Assets*, *Log (Boardsize)*, the percent of equity held by *Institutional Ownership (%)*, an indicator variable that captures the presence of an equity *Blockholder*, *Tobin's Q*, and the ratio of *Cash-to-Assets*. CEO-level controls include *CEO Age* and the square of their age, *CEO Ownership %* as the percent of equity owned by the CEO, the log of CEO tenure in years, and an indicator variable capturing the presence of a *Female CEO*. All variables are defined in Appendix A1. Standard errors are in parentheses and are clustered at the firm-level. Statistical significance is denoted at the 10%, 5%, and 1% levels by *, **, and ***, respectively.

	(1) Environmental Opportunities	(2) Pollution	(3) Climate Change	(4) Natural Capital
CEO Casual Sportsman	-0.016 (0.017)	-0.013 (0.011)	-0.006 (0.014)	0.012 (0.016)
CEO Enthusiast Sportsman	-0.008 (0.025)	-0.038* (0.020)	-0.057*** (0.018)	-0.033* (0.020)
Log (Total Size)	0.124*** (0.007)	-0.005 (0.006)	0.087*** (0.006)	0.061*** (0.008)
Book Leverage	-0.120*** (0.041)	0.045 (0.030)	-0.114*** (0.038)	-0.085** (0.042)
Return on Assets	0.142** (0.064)	0.094*** (0.036)	0.034 (0.044)	-0.018 (0.064)
Log (Boardsize)	0.045 (0.036)	-0.009 (0.036)	0.054 (0.038)	0.051 (0.036)
Institutional Ownership (%)	-0.140*** (0.038)	-0.064** (0.026)	-0.212*** (0.033)	-0.209*** (0.044)
Blockholder	0.004 (0.028)	0.001 (0.020)	0.042* (0.022)	0.070 (0.064)
Tobin's Q	0.007*** (0.002)	0.003** (0.002)	0.009*** (0.002)	0.004* (0.002)
Cash-to-Assets	0.121** (0.055)	-0.008 (0.036)	0.097** (0.043)	0.029 (0.057)
CEO Age	0.020*** (0.006)	0.003 (0.004)	0.025*** (0.006)	0.009 (0.006)
CEO Age Squared	-0.000*** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)

Table 2.5 Continued.

CEO Ownership (%)	-0.002** (0.001)	-0.001* (0.001)	-0.002*** (0.001)	-0.001 (0.001)
Log (CEO Tenure)	-0.007 (0.008)	-0.000 (0.005)	-0.004 (0.007)	-0.007 (0.008)
Female CEO	0.032 (0.039)	-0.003 (0.022)	0.021 (0.035)	-0.027 (0.038)
Intercept	-1.407*** (0.209)	-0.268 (0.282)	-1.319*** (0.184)	-0.792*** (0.224)
N	15,096	15,096	15,096	5,600
Adj. R-sq	0.271	0.091	0.272	0.234
Industry and Year Fixed Effects	Yes	Yes	Yes	Yes
CEO Casual Sportsman vs. CEO Enthusiast Sportsman (p-value)	0.760	0.230	0.009***	0.069*

Table 2.6: CEO Sporting Activity on Major Environmental Regulatory Settlements.

This table presents the logistic regression results of CEO sporting activity on the probability of a major environmental regulatory settlement by the firm. The dependent variable, *Regulatory Settlement*, takes a value of one if the firm incurred a major environmental regulatory settlement during the year, and zero otherwise. *CEO Casual Sportsman* and *CEO Enthusiast Sportsman* are indicator variables of interest. Firm-level control variables include the *Log (Total Assets)*, *Book Leverage*, *Return on Assets*, *Log (Boardsize)*, the percent of equity held by *Institutional Ownership (%)*, an indicator variable that captures the presence of an equity *Blockholder*, *Tobin's Q*, and the ratio of *Cash-to-Assets*. CEO-level controls include *CEO Age* and the square of their age, *CEO Ownership %* as the percent of equity owned by the CEO, the log of CEO tenure in years, and an indicator variable capturing the presence of a *Female CEO*. All variables are defined in appendix A1. Standard errors are in parentheses and clustered at the firm-level. Statistical significance is denoted at the 10%, 5%, and 1% levels by *, **, and ***, respectively.

	(1) Regulatory Settlement
CEO Casual Sportsman	0.036 (0.105)
CEO Enthusiast Sportsman	0.579*** (0.129)
Log (Total Size)	0.623*** (0.037)
Book Leverage	0.646** (0.312)
Return on Assets	-1.043* (0.633)
Log (Boardsize)	0.563** (0.240)
Institutional Ownership (%)	-1.289*** (0.282)
Blockholder	0.218 (0.146)
Tobin's Q	-0.028 (0.019)
Cash-to-Assets	-2.074*** (0.637)
CEO Age	0.093 (0.070)
CEO Age Squared	-0.001 (0.001)
CEO Ownership (%)	-0.015 (0.013)

Table 2.6 Continued.

Log (CEO Tenure)	-0.155** (0.066)
Female CEO	-0.161 (0.319)
Intercept	-11.287*** (2.007)

N	10,993
Pseudo R-sq	0.202
Year Fixed Effects	True
Overall effect of CEO Sporting Activity (p-value)	0.000***
CEO Casual Sportsman vs. CEO Enthusiast Sportsman (p-value)	0.002***

Table 2.7: CEO Sporting Activity and Political Registration on Firm Environmental Score
This table presents the results of ordinary least squares (OLS) regressions of CEO sporting activity on firm environmental scores, while controlling for CEOs that register to the democratic party. Specification 1 includes industry and year fixed effects and specification 2 includes firm and year fixed effects. The dependent variable is *Environmental Score (Env. Score)*, and the indicator variables of interest are *CEO Casual Sportsman*, *CEO Enthusiast Sportsman*, and *CEO Democrat*. Firm-level control variables include the *Log (Total Assets)*, *Book Leverage*, *Return on Assets*, *Log (Boardsize)*, the percent of equity held by *Institutional Ownership (%)*, an indicator variable that captures the presence of an equity *Blockholder*, *Tobin's Q*, and the ratio of *Cash-to-(total)assets*. CEO-level controls include *CEO Age* and the square of their age, *CEO Ownership %* as the percent of equity owned by the CEO, the log of CEO tenure in years, and an indicator variable capturing the presence of a *Female CEO*. All variables are defined in appendix A1. Standard errors are in parentheses and clustered at the firm-level. Statistical significance is denoted at the 10%, 5%, and 1% levels by *, **, and ***, respectively.

	(1)	(2)	(3)
	Env. Score	Env. Score	Env. Score
CEO Casual Sportsman	-0.034 (0.035)	-0.022 (0.046)	0.004 (0.047)
CEO Enthusiast Sportsman	-0.152*** (0.056)	-0.144* (0.074)	-0.141* (0.078)
CEO Democrat		0.031 (0.057)	0.077 (0.063)
CEO Casual Sportsman x CEO Democrat			-0.257 (0.158)
CEO Enthusiast Sportsman x CEO Democrat			0.434 (0.128)
Log (Total Assets)	0.180*** (0.017)	0.137*** (0.024)	0.138*** (0.024)
Book Leverage	-0.134 (0.088)	-0.085 (0.118)	-0.093 (0.118)
Return on Assets	0.293** (0.121)	0.314* (0.172)	0.280 (0.171)
Log (Boardsize)	0.044 (0.101)	0.018 (0.163)	0.014 (0.162)
Institutional Ownership (%)	-0.463*** (0.077)	-0.489*** (0.115)	-0.489*** (0.114)
Blockholder	0.157** (0.063)	0.134 (0.094)	0.133 (0.095)
Tobin's Q	0.021*** (0.005)	0.023*** (0.006)	0.024*** (0.006)

Table 2.7 Continued.

Cash-to-Assets	0.196*	0.059	0.090
	(0.114)	(0.183)	(0.182)
CEO Age	0.040***	0.026	0.023
	(0.014)	(0.019)	(0.019)
CEO Age Squared	-0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
CEO Ownership (%)	-0.007***	-0.010***	-0.010***
	(0.002)	(0.003)	(0.003)
Log (CEO Tenure)	-0.001	0.028	0.031
	(0.015)	(0.020)	(0.020)
Female CEO	0.032	0.123	0.135
	(0.074)	(0.135)	(0.136)
Intercept	-3.151***	-1.814***	-1.792***
	(0.677)	(0.643)	(0.646)
N	7,980	7,980	7,980
Adj. R-sq	0.250	0.232	0.231
Industry and Year Fixed Effects	Yes	Yes	Yes
CEO Casual Sportsman vs. CEO Enthusiast Sportsman (p-value)	0.049**	0.123	0.358

Table 2.8: CEO Sportsmen and Firm Environmental Performance – Matched Sample.

This table presents the results of a matched sample analysis. Observations are matched using propensity scoring analysis on all firm-level control variables, and exactly on industry (Fama-French 49) and year. Panel A provides pre- and post-match diagnostic logit regressions on *CEO Sporting Enthusiast*. Panel B provides post-match differences in firm-level control variables between firms led by an enthusiast and a non-sportsman CEO. Panel C provides post-match OLS regressions with the overall Environmental Score and the categorical scores as dependent variables. Robust Standard errors are in parentheses. ***, **, * denote significance at the 1, 5, and 10% levels, respectively.

Panel A: Pre-Match PSM Regression and Post-Match Diagnostic Regression

	<i>Dependent Variable: CEO Sporting Enthusiast</i>	
	<u>Pre-Match</u>	<u>Post-Match</u>
	(1)	(2)
Log (Total Assets)	-0.166** (0.065)	-0.154 (0.122)
Bookleverage	0.910* (0.517)	1.419 (0.914)
Return on Assets	1.744** (0.695)	-1.878 (1.911)
Log (Boardsize)	1.210*** (0.407)	0.381 (0.671)
Institutional Ownership	-0.536 (0.416)	-0.845 (1.031)
Blockholder	0.148 (0.200)	-0.068 (0.718)
Tobin's Q	-0.021 (0.022)	0.118 (0.102)
Cash-to-Assets	-2.696*** (0.864)	0.341 (1.614)
Industry & Year Fixed Effects	Yes	Yes
Observations	11,438	1,054
Pseudo R-sq	0.094	0.007

Table 2.8 Continued.

Panel B: Post-Match Differences Test

<i>Variable:</i>	Firm year observations with a CEO Enthusiast Sportsman (<i>n</i> = 527)	Firm year observations with a CEO Non- Sportsman (<i>n</i> = 527)	Difference	t-statistics
Environmental Score	4.956	5.120	-0.164***	-2.582
Environmental Opp Score	1.175	1.202	-0.027	-0.913
Pollution Score	1.924	1.954	-0.030	-1.414
Climate Score	0.989	1.034	-0.046*	-0.094
Natural Capital Score	1.011	1.048	-0.036***	-3.268
Log (Total Assets)	7.833	7.902	-0.077	-0.838
Bookleverage	0.236	0.222	0.014	1.570
Return on Assets	0.049	0.053	-0.004	-1.246
Log (Boardsize)	2.228	2.229	0.001	0.110
Institutional Ownership	0.838	0.840	-0.002	-0.336
Blockholder	0.989	0.989	0.000	0.000
Tobin's Q	2.212	2.155	0.057	0.785
Cash-to-Assets	0.075	0.079	0.004	-0.801

Table 2.8 Continued.
 Panel C: Post-Match OLS Regressions

	(1) Environmental Score	(2) Environmental Opportunities Score	(3) Pollution Score	(4) Climate Score	(5) Natural Capital Score
CEO Enthusiast Sportsman	-0.223*** (0.084)	-0.038 (0.034)	-0.050* (0.026)	-0.063* (0.032)	-0.043*** (0.016)
Log (Total Assets)	0.091* (0.053)	0.147*** (0.022)	-0.042** (0.018)	0.057*** (0.019)	0.028*** (0.010)
Bookleverage	0.096 (0.313)	-0.218* (0.123)	0.186* (0.101)	-0.072 (0.140)	0.029 (0.078)
Return on Assets	-1.144 (0.886)	0.351 (0.388)	-0.410 (0.306)	-0.753** (0.295)	-0.239 (0.204)
Log (Boardsize)	-0.259 (0.239)	-0.065 (0.109)	-0.024 (0.079)	0.060 (0.085)	-0.060 (0.045)
Institutional Ownership	-0.268 (0.359)	-0.202 (0.176)	-0.343*** (0.114)	-0.187 (0.139)	-0.078 (0.079)
Blockholder	0.537 (0.339)	0.081 (0.135)	0.087 (0.091)	0.078 (0.094)	0.112 (0.092)
Tobin's Q	0.093** (0.040)	0.002 (0.015)	0.028** (0.012)	0.040*** (0.014)	0.012* (0.007)
Cash-to-Assets	0.455 (0.551)	0.231 (0.231)	0.246 (0.181)	0.179 (0.195)	0.172 (0.111)
CEO Age	0.121** (0.053)	0.062** (0.024)	-0.006 (0.016)	0.030 (0.021)	0.014** (0.006)
CEO Age Sq	-0.001** (0.000)	-0.001** (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000** (0.000)
CEO Ownership	-0.553 (1.095)	-0.518 (0.539)	-0.274 (0.247)	0.362 (0.454)	0.075 (0.192)

Table 2.8 Continued.

Panel C Continued.

Log (CEO Tenure)	0.005 (0.052)	-0.013 (0.023)	0.045** (0.018)	-0.024 (0.024)	-0.014 (0.010)
Female CEO	-0.234 (0.168)	0.139 (0.129)	-0.046 (0.050)	-0.116** (0.058)	-0.061** (0.026)
Intercept	1.322 (1.603)	-1.548** (0.725)	2.768*** (0.539)	-0.216 (0.694)	0.435* (0.242)
Industry & Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,054	1,054	1,054	1,054	1,054
Adj. R-sq	0.252	0.241	0.132	0.283	0.079

Table 2.9 – Change in firm environmental score surrounding CEO turnover.

This table presents OLS regression results on the effect of CEO sporting activity on firm ESG scores surrounding CEO transitions where the firm’s leadership changed from a CEO Enthusiast Sportsman to a non-sportsman or vice versa. The variable of interest is Δ CEO Enthusiast Sportsman. Standard errors are in parentheses. *, **, *** denote significance at the 10, 5, and 1% levels, respectively.

	(1) Δ Environmental Score
Δ CEO Enthusiast Sportsman	-0.176** (0.070)
Δ Log (Total Assets)	-0.366 (0.458)
Δ Book Leverage	0.925 (1.587)
Δ ROA	1.555 (1.924)
Δ Log (Boardsize)	-0.473*** (0.170)
Δ Institutional Ownership (%)	0.178 (0.469)
Δ Tobin’s Q	0.048 (0.029)
Δ Cash-to-Assets	0.316 (2.019)
Δ CEO Age	0.015* (0.008)
Δ CEO Ownership (%)	0.010 (0.023)
Δ Female CEO	-0.059 (0.363)
Intercept	-2.252*** (0.821)
Year Fixed Effects	Yes
N	138
Adj. R-sq	0.128

Chapter 3 Reexamining the Relative-age Effect and Career Success:

New Evidence from S&P 1500 CEOs

3.1 Introduction

Children born just after the school admission cutoff date are nearly a year older than the youngest of their grade cohort and, therefore, more physically and intellectually developed. The relative-age effect asserts that these older students are more mature than the younger, experience more leadership roles, and are likely to be among the first chosen in school activities. In turn, teachers and coaches might reinforce the initial success of the relatively older students by spending more time developing their skill sets.

Barnsley and Thompson (1988) first document the effect by examining the birth month distribution of Canadian junior hockey team members. They find that relatively older players born between January and June are likelier to play in the top minor league hockey teams than relatively younger players born between July and December. Brustio, Lupo, Ungureanu, Frati, Rainoldi, and Boccia (2018) find similar evidence of the relative-age effect in Italian soccer, while Barnsley, Thompson, and Legault (1992) observe the same in American football.

Examining educational performance in OECD countries, Bedard and Dhuey (2006) document the superior performance of older students in a cohort and conclude that relative maturity effects “propagate themselves into adulthood through the structure of education systems.” Similarly, Dhuey and Lipscomb (2008) trace adult wage premiums to school entry cutoffs that lead to relatively older students holding more high school leadership positions. Moreover, Bai, Ma, Mullally, and Solomon (2019) demonstrate that mutual fund managers born relatively early in the school year produce significantly higher returns than their younger peers and attribute the result to greater confidence. However, evidence that the relative-age effect

persists throughout a person's career is not universal. For example, Dobkin and Ferreira (2010) find that school entry laws do not influence wages or employment probability in a large sample of California and Texas adults.

Another test of career success and the relative-age effect is to consider the birth dates of senior executives. Du, Gao, and Levi (2012) examine a sample of 365 S&P 500 CEOs and find significantly fewer born in June and July. These months precede school cutoff dates, which were typically between September 1st and January 1st, implying that June and July children are among the youngest in their grade.²⁶ Thus, the authors conclude that the disproportionately smaller number of June and July CEOs suggests that “the relative-age effect has a long-lasting influence on career success.”

Research shows that CEO characteristics shape the firm strategy that affects firm performance (e.g., Liu, Fisher, and Chen, 2018; Wang, Holmes, Oh, and Zhu, 2016). If the relative-age effect determines career success through influencing CEO attributes such as self-confidence, it may provide a further channel that impacts firm performance. Therefore, it is important to reexamine CEO birth dates and test for a relative-age effect. In the following analysis, we consider more than 2000 CEOs and better match their birth dates to school cut-off dates. Ultimately, the analysis compares our sample's CEO birth month distribution to the U.S. population's distribution. Based on this larger sample and refined matching information, we find no evidence of a relative-age effect for CEOs of large, publicly held firms. Moreover, the birth month distribution of CEOs does not appear to be different from the U.S. population.

3.2 Identification of CEOs' Relative Ages

²⁶ Du et al. (2012) surmise that parents of August born children are likely to hold their children back a year due to their relative immaturity. Thus, many of the August born children are possibly the oldest within their cohort.

Data collection begins by identifying the names and ages of all S&P 1500 CEOs between 2000 and 2018 in the Execucomp database. To determine a CEO's relative age, we utilize the method described by Bai et al. (2019). We obtain each CEO's birth month, birth year, and birth state from the LexisNexis Public Records (LNPR) database. Next, we acquire the CEO's college graduation date from one of the following sources: BoardEx, the Bloomberg terminal system, Marquis Who's Who in Finance and Business 2008-2009, Marquis Who's Who in Finance and Industry 1998-1999, Marquis Who's Who in Corporate America 2011, or online biographies where necessary.²⁷ We then discard observations for those who attain their undergraduate degree at an age older than 23 years, as they are most likely to have experienced academic redshirting.²⁸ Furthermore, we identify and remove any CEO not born in the USA and therefore not subject to USA start of school year (SSY) regulations.²⁹

From Bedard and Dhuey (2006), Dhuey and Lipscomb (2008), and Angrist and Kruger (1992), we create a panel of mandated state-by-year cutoff dates. Earlier SSY cutoffs more closely align with the calendar year (January), while more recent cutoffs follow the start of the academic year (September). We remove six states from the panel due to the local education authority designating the SSY.³⁰ Additionally, we delete four states that do not have a state-mandated SSY cutoff and fifteen states where the cutoff does not fall on the first of the month. This last restriction is necessary because LNPR only reports a birth month and year, not the day.

²⁷ Online biographies come from NNDB.com, employee, educational, and similar biographical pages, interviews, and LinkedIn.

²⁸ Academic redshirting is the process of parents withholding their child from entering the education system due to their perception of the child's ability to achieve success in schooling. This would be consistent with the analysis in Du et al. (2012) that assumes August children are generally the oldest in their cohort as they tend to be held back a year.

²⁹ We identify foreign-born CEOs through BoardEx, online biographies, and undergraduate institutions.

³⁰ Four of these states have a floating cutoff aligned with the year-specific SSY, which is designated by the local education authority.

Matching birth date information to SSY cutoff dates results in a sample of 2,124 CEOs. For this set, it is possible to calculate a CEO's age in months relative to the relevant SSY cutoff date. This process indicates that our sample's average CEO's relative age equals 6.44 months. Thus, the typical CEO is roughly in the middle of their cohort in relative age.

[Insert Figure 3.1]

Our identification strategy provides four significant benefits compared to the season of birth proxy used in previous research. First, it accounts for state and year variation in SSY cutoffs. Figure 3.1 shows the distribution by month of known SSY dates between 1947 and 1985. Approximately 29% of all SSY cutoffs fall on January 1st, while only 19% fall on September 1st. This variety in SSY cutoffs highlights why accounting for state and year variation when identifying relative age. Take, for example, an individual born in July and facing a January 1st SSY cutoff. Using the season of birth proxy would denote this individual has a relative age of 2 months and is one the youngest in their educational cohort. However, conditional on the correct January 1st SSY cutoff, they have a relative age of 6 months and are in the middle of their cohort's age distribution.

The second benefit of our identification strategy is that we discard individuals most likely to have experienced academic redshirting. The third and related benefit is that we can examine the youngest individuals born in the month just before the appropriate SSY cutoff date. Studies that utilize the season of birth proxy for the relatively youngest usually omit individuals born in August, as it is assumed that they have the highest probability of academic redshirting. Lastly, we more accurately measure relative age by deleting foreign-born CEOs not subject to US SSY regulations. Bertrand, Betschinger, and Moschieri (2020), whose analysis period closely resembles ours, note that 11.7% of CEOs in their sample of US & UK firms are foreign-born.

3.2 Empirical Analysis

Table 3.1, Panel A replicates the analysis of Du et al. (2012) that examines the distribution of CEO birth months. Following their methodology, Panel A compares the percentage of CEOs born in June and July against the percentage of days in a calendar year and the percentage of the USA population born by month.³¹ In our data, 344 CEOs are born in either June or July. This figure corresponds to 16.2% of the sample and is not significantly different from the 16.71% of days in a year (p-value = 0.520) or the 16.80% of the US population born (p-value = 0.450) in June or July. Similar tests for the individual months of June and July also yield no statistical differences.

The remaining 10 months of the calendar year find 1,780 CEOs born in our sample. This corresponds to 83.8% of the data and is not significantly different from the 83.29% of days in a year (p-value = 0.520) or 83.20% of the US population born (p-value = 0.450) in the remaining ten-month period. Overall, Panel A finds no support for Du et al.'s (2012) conclusion that a disproportionately smaller number of CEOs were born in June and July.

[Insert Table 3.1]

Panel B of Table 3.1 considers a CEO's birth month relative to the relevant SSY cutoff date. Because since we can identify a CEO's exact relative age, Panel B focuses on the two youngest months of a cohort. This process differs from the season of birth methodology in panel A which implicitly assumes a fall SSY cutoff date and deletes the month of August due to redshirting.

The evidence corroborates the findings in Panel A. The 356 CEOs with a relative age of 1 or 2 months account for 16.77% of our sample. This figure is not significantly different from either

³¹ The analysis assumes an equally weighted average of US births by month between 1955-1985 from the NBER online repository. The first year US monthly birth data is available is 1955, and 1985 is the birth year of the youngest CEO in our sample.

the 16.70 % of days in a year (p-value = 0.940) or the 16.77% percent of the USA population (p-value = 0.991) born in those months. Repeating the analysis individually for the youngest and second youngest months also finds no differences from expected values. Lastly, the 83.23% of CEOs born in the remaining 10 months does not statistically differ from either the 83.30% of days in a year (p-value = 0.940) or the 83.23% of the US population born in the 10 months (p-value = 0.991).³²

The final line of investigation ignores SSY cutoff dates and examines whether the CEO birth distribution by month differs from what we might expect. Again, expectations either assume a uniform daily birth distribution or reflect historic births by month in the United States. For this analysis, we apply the Kolmogorov-Smirnov (KS) test, where the null hypothesis is that the two samples are drawn from the same distribution. In Panel C, we cannot reject the null hypothesis that the CEO birth distribution differs from the percent of days by month (p=.256) or the U.S. population distribution by month (p=.998).

[Insert Figure 3.2]

Because this portion of our analysis ignores SSY cutoff dates, it is possible to include CEOs born in all 50 states and increase the sample size to 5,159 CEOs. Again, we cannot reject the null hypothesis comparing the CEO distribution to either percent of days by month (p=.536) or U.S. population births by month (p=.998). These results can be seen in Figures 3.2A and 3.2B, where the cumulative distributions are nearly identical. Given the large sample, this analysis provides the strongest evidence that the CEO birth month distribution does not differ from the general population. Therefore, the relative-age effect does not play a role in determining who becomes a CEO.

³² Calculations are conducted using four decimal places.

3.4 Conclusion

We investigate if the relative-age effect influences career success by analyzing S&P 1500 CEOs. While earlier studies rely on the season of birth that implicitly assumes June and July-born CEOs are the youngest within an educational cohort, we implement an identification methodology that allows us to calculate a CEO's relative age precisely to the month. Additionally, our data set is a magnitude larger than observations in previous research and allows for a more robust examination.

We find no support for a relative-age effect in the distribution of CEO birth months. Earlier research observes that CEOs with June and July birth dates are significantly underrepresented and argues that this is evidence of the relative-age effect. However, our enlarged data set shows no statistical differences between CEO June and July births and expected values. Moreover, when measuring a CEO's relative age within a cohort, the results again suggest no differences between observed and expected values. Finally, the strongest evidence that the relative-age effect does not explain CEO career success is that the distribution of birth months for the expanded set of 5,159 CEOs is virtually identical to the distribution of the US population. Whereas others find CEO characteristics influence firm performance, the relative-age effect does not appear to provide a further, separate channel.

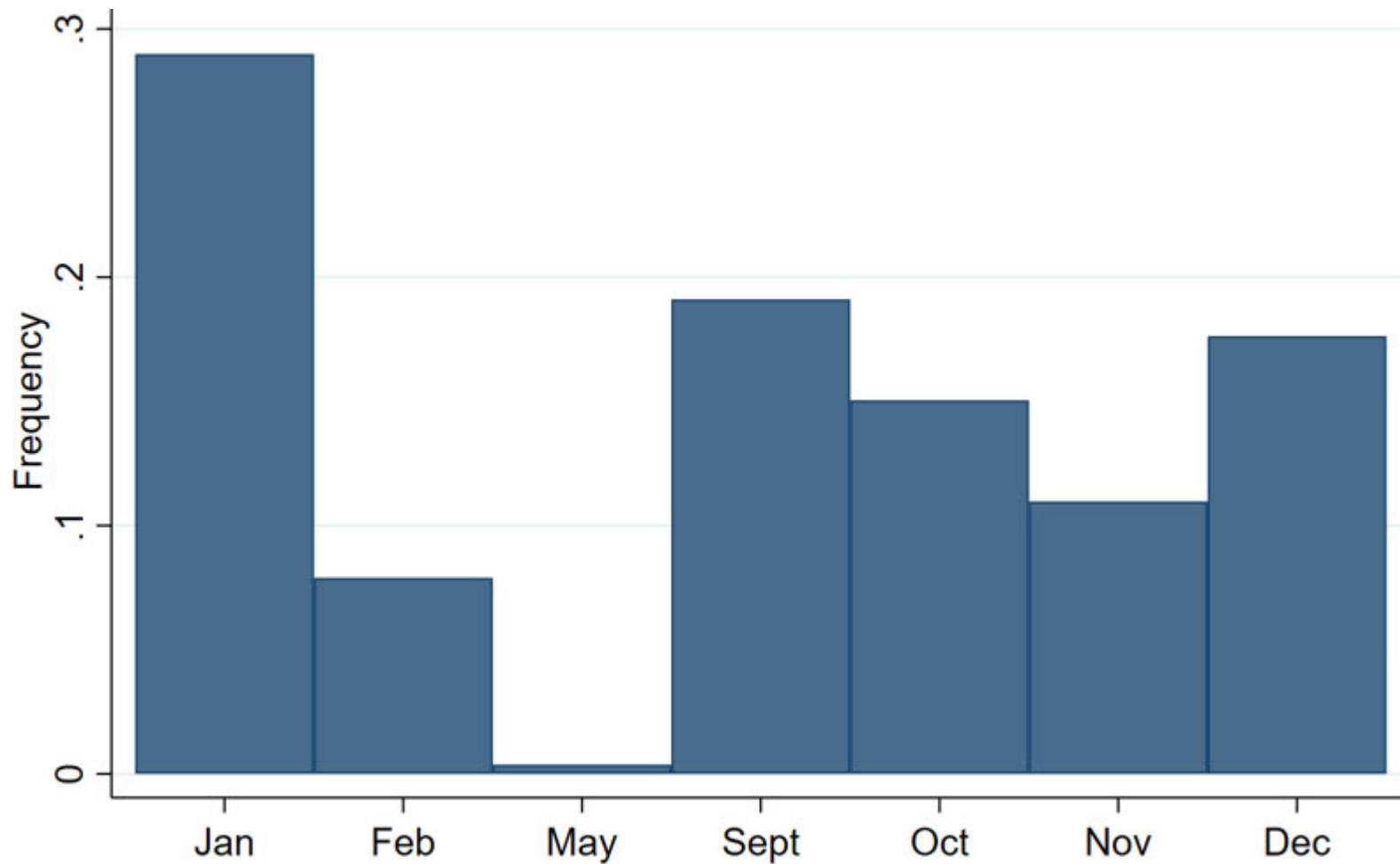


Fig. 3.1. Distribution of state-by-year SSY cutoffs, by month. SSY cutoffs are aggregated from Angrist & Kruegar (1992), Bedard & Dhuey (2007), and Dhuey & Lipscomb (2008).

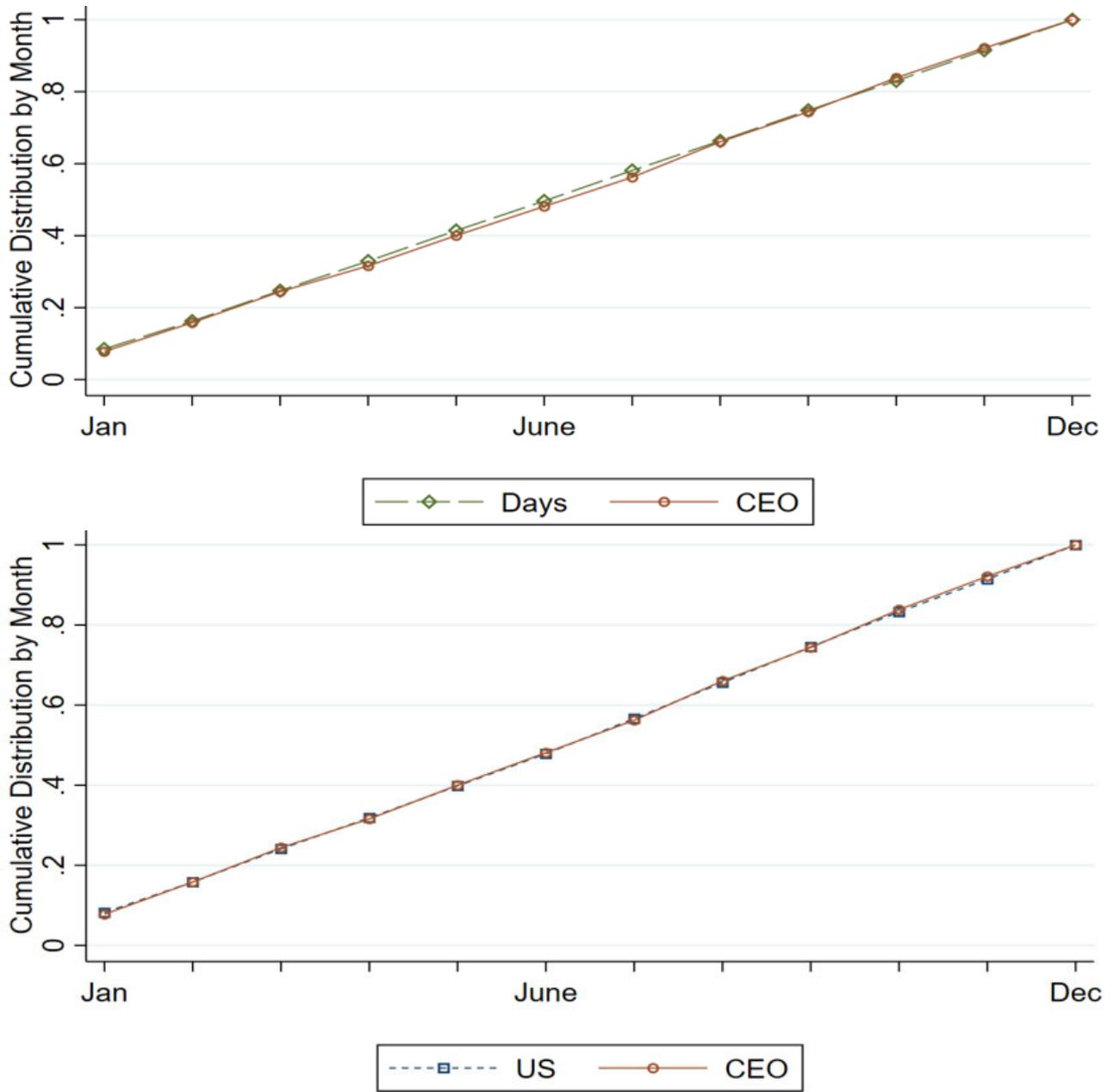


Fig. 3.2. Cumulative distributions of CEO births, (a) percent of days in a year and (b) US population births, by month

Table 3.1 Analysis of CEO Relative Age

Panel A: Number of CEOs by calendar month.

	CEO number (1)	CEO percent (2)	Percent of days in a year (3)	Percent of US population (4)	Test of differences (2) - (3) (%)	Test of differences (2) - (4) (%)
June + July	344	16.20	16.71	16.80	(0.520)	(0.450)
June	172	8.10	8.22	8.02	(0.837)	(0.917)
July	172	8.10	8.49	8.78	(0.508)	(0.271)
Other ten months	1,780	83.80	83.29	83.20	(0.520)	(0.450)
Total	2,124	100	100	100		

Panel B: Number of CEOs by relative age month.

	CEO number (1)	CEO percent (2)	Percent of days in a year (3)	Percent of US population (4)	Test of differences (2) - (3) (%)	Test of differences (2) - (4) (%)
Youngest 2 months	356	16.77	16.70	16.77	(0.940)	(0.991)
Youngest month	166	7.82	8.37	8.39	(0.341)	(0.324)
2nd youngest month	190	8.95	8.33	8.38	(0.377)	(0.333)
Other ten months	1,768	83.23	83.30	83.23	(0.940)	(0.991)
Total	2,124	100	100	100		

Table 3.1 Continued.

Panel C: Kolmogorov-Smirnov test of equality of distribution.

CEOs with known birthday & SSY cutoff ($n = 2,124$):

CEO birth month distribution vs distribution of percent of days by month	(0.256)
CEO birth month distribution vs distribution of US population birth by month	(0.998)

CEOs with known birthday ($n = 5,159$):

CEO birth month distribution vs distribution of percent of days by month	(0.536)
CEO birth month distribution vs distribution of US population birth by month	(0.998)

The sample consists of 2,124 CEOs of S&P 1500 companies from 2000 to 2018. Panel A presents tests of differences utilizing CEO calendar birth month. Column (1) presents the number of CEOs born in the respective months. Column (2) presents the number of CEOs born in the respective months as percentage of the total number of CEOs. Column (3) presents the number of days in the respective months as percentage of the total number of days in a year (365). Column (4) presents the percentage of births of US population in the respective months. P-values are reported in parentheses for tests of differences. Panel B presents test of differences utilizing

CEO relative age in months. Youngest month and 2nd youngest month are indicator variables which takes the value of one if the CEO was born in the month before or 2 months before, respectively, to the start of school year cutoff they faced, and zero otherwise. Percent of days in a year and percent of US population are calculated by CEO birth month. Panel C presents Kolmogorov-Smirnov two-sample tests of equality of distribution. P-values are reported in parentheses.

* Statistical significance at the 10% level

** Statistical significance at the 5% level

*** Statistical significance at the 1% level

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Appendix A1: Variables

This table defines all variables used in this analysis and provides their respective source in parentheses.

<i>Variable:</i>	<i>Definition:</i>
Environmental Score	ENV Strengths – ENV Concerns (MSCI)
Environmental Strengths	Sum of environmental strength factors (MSCI)
Environmental Concerns	Sum of environmental concern factors (MSCI)
Environmental Opportunity Score	Sum of environmental opportunity strengths – sum of environmental opportunity concerns (MSCI)
Pollution Score	Sum of pollution strengths – sum of pollution concerns (MSCI)
Climate Change Score	Sum of climate change strengths – sum of climate change concerns (MSCI)
Natural Capital Score	Sum of natural capital strengths – sum of natural capital concerns (MSCI)
Regulatory Compliance	Binary variable equal to 1 if the firm incurs \$40,000 or more, on average, in environmental regulatory settlements, and 0 otherwise (MSCI)
CEO Casual Sportsman	Binary variable equal to 1 if the CEO obtains between one and five sporting licenses, and 0 otherwise (LNPR)
CEO Enthusiast Sportsman	Binary variable equal to 1 if the CEO obtains more than five sporting licenses, and 0 otherwise (LNPR)
Log (Total Assets)	Natural log of total firm assets (Compustat)
Leverage	Firm leverage (Compustat)
ROA	Firm return on assets (Compustat)
Log (Boardsize)	Natural log of the number of directors on the firm's board (BoardEx)
Institutional Ownership (%)	Percentage of firm equity owned by institutional investors (Thompson Reuters)
Blockholder	Dummy variable equal to one if the firm has one or more investors holding > 5% of total firm equity, and 0 otherwise (Thompson Reuters)
Tobin's Q	Market value of assets over replacement value of assets (Compustat)
Cash-to-Assets	Ratio of firm cash and cash-equivalents to firm total assets (Compustat)
CEO Age	CEO age in years (Execucomp)
CEO Ownership (%)	CEO firm ownership, in percent (Execucomp)
Log (CEO Tenure)	Natural log of CEO tenure (Execucomp)
Female CEO	Binary variable equal to 1 if CEO is a female.