Green or greed? Corporate donations to politicians and their votes on environmental legislation*

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ABSTRACT

Green firms, those with high environmental scores, increasingly support "traditionalist" politicians who frequently vote against recommendations by the League of Conservation Voters (LCV). Environmental compliance cost-cutting and brown institutional ownership provide channels underlying this result. A $1 gift by green firms to traditionalists is associated with a $900 market capitalization increase when LCV-opposed bills pass. A one standard deviation increase in a firm's environmental score is related to a $100 million increase in firm value when traditionalists win close elections. These results highlight actions that sharply contrast with firms' environmental scores and their implications for shareholder wealth and climate-related legislation.

Keywords: ESG, Political Donations, Environmental Cost-Cutting, Environmental Laws
JEL codes: D72; G38; P48; Q58

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"Corporate greed is accelerating climate change… Corporations have translated their economic power into political power, lobbying for policies that give them free rein to despoil the environment." — Joseph Stiglitz (April 21, 2019)[1]

1. Introduction

This paper empirically shows that greener firms—those with a top MSCI environmental score (E-score)—donate substantially more to politicians who frequently vote *against* the environment bills endorsed by the League of Conservation Voters (LCV), an influential environmental organization (e.g., Kalt and Zupan, 1984). We study the causes and consequences of this novel finding.

Our empirical analyses rely on detailed records of donations to all political candidates by the corporate political action committees (PACs) associated with publicly traded U.S. firms during 1995-2018. For each candidate, we assess their revealed attitude toward the environment by tracking their lifetime voting record on key environment-related bills. This process allows us to construct an individual voting score ranging between 0 and 100, with 100 representing a voting record that always concurs with LCV's position. This score reveals, for example, that until 2018, Mr. Michael Conaway, U.S. Representative for Texas's 11th congressional district, voted in line with LCV's position just 6 times out of 359 environment votes since entering Congress. By contrast, Mr. Conaway's fellow Republican, Mr. Christopher Shays, Representative for Connecticut's 4th congressional district, voted along LCV's position for 90% of bills during his tenure. We define politicians as salient "environmental traditionalists" if their cumulative pro-climate votes stand at the bottom decile of all politicians in an electoral cycle. Similarly, we call politicians salient "environmental activists" if their cumulative pro-environment voting records are at the top decile in an electoral cycle.

Figure 1 presents our novel finding on corporate donations to traditionalists and activists. The left plot in Figure 1 shows that moving from a median E-score to a top E-performer is associated

[1] See: https://www.cnn.com/2019/04/21/perspectives/joseph-stiglitz-earth-day-economy/index.html

with a striking 19% surge in corporate donations to traditionalists (relative to the mean). By contrast, the right plot shows no correlation between gifts to activists and firm's E-score. These patterns hold in firm-level panel regressions with industry (or firm) and electoral cycle fixed effects and control variables that capture firm political affiliations and performance. We also find that these results are not solely driven by Republican firms, which give more to traditionalists, on average. In fact, in the subsample of Democratic firms, the economic effect nearly doubles when compared to the full sample. We obtain similar findings from politician-level regressions that control for politicians' position on other policies (e.g., taxes, tariffs, and free trade) and firm-politician fixed effects to account for firms' general attitudes toward a politician.

Firms' environmental performance is endogenous. Consequently, to assess causality, we use difference-in-differences (DiD) methods in the context of two different identification events. The first uses a quasi-experiment, the 2005 Energy Policy Act, which established wide-ranging policies to incentivize industrial firms to adopt new renewable fuel standards. Consistent with prior studies, we show that firms in the targeted industries improve their environmental performance (E-score) after the Act's passage. This finding supports our identification assumption that the law is a valid shock to companies' E-score. Comparing political contributions from treated and control firms, we find that treated firms (i.e., firms that improve their E-score) contribute significantly *more* to traditionalist politicians *after* the law implementation, but not before.

We use the 2015 Clean Power Plan (CPP) as a second exogenous shock to corporate environmental performance. The CPP assigns each state a target for CO_2 reductions.[2] Focusing on the states that openly endorsed and enforced the CPP emission targets, we first show that firms in the enforcing states improve their E-scores. We then find that firms with a higher treatment intensity (proxied by state-level CO_2 reduction targets) donate *more* to traditionalists.

[2] In 2016, the U.S. Supreme Court issued a temporary stay on the implementation of the CPP. However, many states announced that they would move forward to enforce the CPP and established state-level clean energy legislation. We describe the details in Section 3.1.1.

Subsample analyses exploit the discontinuity of CPP treatment along the geographic borders of Washington DC, which is exempt from any emission-reduction target. Both neighboring states of Washington DC (Maryland and Virginia) implemented their CPP targets. We thus compare donations from *control* firms located in Washington DC and those from *treated* firms located in counties that geographically neighbor Washington DC. In the spirit of Card and Krueger (1994), we use this geographic phenomenon as the "as-if random" treatment assignment. The test reveals that after the CPP law passes, treated firms boost their contributions to traditionalists by as much as 12 percent relative to bordering control firms. Taken together, our evidence indicates that the relation between firms' own environmental ratings, and their political engagement is likely causal.

While some firms experience an E-score increase after environmental regulations pass (e.g., the EP Act or the CPP legislation), others exhibit high E-scores throughout our sample period. This issue raises the question of whether our findings are driven by "involuntarily green" firms (those whose E-score improves after mandatory regulatory compliance) or by voluntarily green firms. Additional tests indicate that our results are largely driven by involuntarily green firms.

We go on to analyze the causes and consequences of the above empirical evidence. One interpretation of these findings is that greener firms use donations to lobby environmentally conservative politicians so that they do not oppose green legislation. We refer to this conjecture as the *"swing-the-vote"* hypothesis. An alternative, which we call the *"environmental cost-cutting"* hypothesis, posits that firms with green records support traditionalists with the goal of lowering the burden imposed by environmental regulations. Environmental cost-cutting may manifest if environmental regulations impose onerous costs on firms in general and on green firms in particular. Existing academic evidence (which we confirm with our data) shows that this is indeed the case as firms devoted to green operations are precisely those bearing higher costs from

environmental commitments or regulations.[3] The environmental cost-cutting hypothesis follows from Cukierman and Tommasi's (1998) theory of "policy reversals." This theory posits that when decision makers have private information about costly implementation of certain policies (e.g., environmental regulations), they could take actions that stand in stark contrast to their public stance, for example, by derailing potentially costly environmental laws through political donations.[4]

We directly test—and reject—the swing-the-vote hypothesis by showing that traditionalists do *not* change their (anti-LCV) voting behavior after receiving more funds from greener firms. By contrast, we find that environmental regulatory burden (proxied by state-level legislation and EPA enforcement actions) influences green firms' political giving to traditionalists. Overall, these results suggest environmental cost-cutting motives and support the claim by some policymakers that some firms' political engagement contrasts with their public climate position.[5]

We further study the environmental incentives of corporate executives and large institutional investors as potential drivers of political donations (Babenko et al., 2020; Bertrand et al., 2020). Our analyses reveal that ownership by "brown shareholders" is the most robust driver of green firms' political gifts to traditionalists—a finding consistent with the environmental cost-cutting hypothesis. We obtain this result by exploring each shareholder's own political contributions and classifying their environmental stance based on whether these shareholders regularly endorse traditionalists. Regression analyses show that green firms make significantly more political gifts

[3] See, for example, Cronqvist and Yu (2017), Di Giuli and Kostovetsky (2014), Fisher-Vanden and Thorburn (2011), Raghunandan and Rajgopal (2021). For evidence on the cost of capital, see also Avramov et al. (2021), Derwall et al. (2005), and Goldstein et al. (2021).

[4] Firms are not required to disclose their political activities and contributions, creating room for hidden actions. Recently, the lack of transparency in corporate PAC donations has received greater attention from academics and the Securities and Exchange Commission (see, e.g., https://www.sec.gov/rules/petitions/2011/petn4-637.pdf). Moreover, a substantial amount of political giving, such as that through intermediaries, is never publicly available.

[5] For example, U.S. Senator Sheldon Whitehouse noted that: "Despite the statements emitted from oil companies' executive suites about taking climate change seriously and supporting a price on carbon, their lobbying presence in Congress is 100% opposed to any action […] Let me use the example of two good guys: Coca-Cola and PepsiCo. […] Coke and Pepsi take great positions on climate change in their public materials […] but here in Congress their lobbying agencies don't support their position" (see: https://www.congress.gov/114/crec/2016/05/17/CREC-2016-05-17-pt1-PgS2911-4.pdf).

to traditionalists after brown shareholders obtain a large stake in the firm. Using a similar empirical approach, we also find that brown CEOs—those who *personally* contribute to traditionalists—lower green firms' contributions to environmental activist politicians.

Do political donations aimed at relieving environmental costs affect firm value? To address this question, we analyze firms' stock reactions to environment-related bills that receive congressional approval. For each LCV-opposed bill that Congress ratifies, we calculate firms' abnormal stock return on the passage date. We find that environmental cost cutting pays: greener firms with more donations to traditionalists exhibit significantly higher abnormal returns when an LCV-opposed bill passes. The estimates are economically meaningful: a $1 gift to a traditionalist is related to a market capitalization increase of over $900. Moreover, in close special congressional elections, greener firms exhibit much higher abnormal returns when the traditionalists they support narrowly win the race. This evidence suggests pecuniary motives behind the donations to traditionalists.

To probe our baseline results, we perform a battery of robustness checks. We use alternative econometric specifications, different measures of environmental performance, and other ways to define environmental traditionalist politicians. Our results survive the noise-correction procedure of Berg, Pavlova and Rigobon (2021) that uses two-stage least squares to instrument the MSCI E-score with Refinitiv's environmental rating. We also rule out several alternative explanations, including the possibility that firms' E-scores capture corporate liability risk to environmental infractions and that politicians' traditionalist status captures policy stance on other voted issues.

Our work contributes most directly to the literature investigating the implications of firms' environmental, social, and governance (ESG) activities. Most studies in this area focus on firm-level economic or financial outcomes, such as stock and accounting performance.[6] We move this literature forward by showing a disconnect between a firm's environmental performance (which is widely publicized) and its intervention in the process affecting environmental legislation (which

[6] See Giglio et al. (2021) and Gillan et al. (2021) for a review of this literature.

is not as transparent).[7] In this regard, our findings complement concurrent work by Raghunandan and Rajgopal (2021) and by Gibson et al. (2022). Raghunandan and Rajgopal (2021) find that many prominent firms that openly commit to being socially responsible exhibit worse records in environmental issues (such as carbon efficiency and air/water pollution), social issues (such as labor standards and gender diversity), and corporate governance issues (such as CEO pay and board composition). Gibson et al. (2022) find that U.S.-based institutional investors that join the Principles for Responsible Investment—a UN-supported network of investors that promotes the incorporation of ESG issues into investment analysis—exhibit worse ESG portfolio records.

Our study also complements a growing literature on the role of investors in firms' ESG practices. Existing work finds that, through engagement, ESG funds and green investors improve the environmental practices of their portfolio firms (Barko et al., 2021; Hoepner et al., 2018; Krueger et al., 2020). Unlike our study, those papers are silent on the role of *brown* investors. We fill this crucial gap in the literature by showing that brown investors influence their portfolio firms' support for politicians who frequently vote against LCV recommendations.

This study also adds to the growing body of work on the value of firms' political networks.[8] We highlight corporate political contributions as a network link with implications for both firm performance and the environment.

Our findings deliver important implications for researchers and practitioners that rely on various scores to assess a firm's ESG record. Berg, Koelbel, and Rigobon (2022) note that widely used ESG ratings vary by the rating's provider. Such divergence is particularly sharp for the "S" and "G" components. Our study suggests that a broader set of metrics (including political donations) should be considered when assessing a firm's *true* "E" stance. In this regard, scholars, shareholders,

[7] There also exists a business ethics literature on ESG and policy influence (see, e.g., Cho et al., 2006; Clark and Crawford, 2012; Delmas et al., 2015). However, this literature is very different from ours as it relates firms' overall political activities (such as total lobbying activities) to ESG performance. Our paper focuses on environmental cost-cutting (i.e., green firms supporting traditionalist politicians) and delivers distinct, even contrasting, implications. Moreover, our work provides a causal interpretation with novel identification attempts.

[8] See, for example, Akey, 2015; Akey et al., 2021; Babenko et al., 2020; Bertrand et al., 2021; Child et al., 2021; Cooper et al., 2010; Faccio, 2006; Fisman, 2001; Fisman and Wang, 2015; Heitz et al., 2021; Schoenherr, 2019).

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data allow us to calculate, for each politician and election cycle, the overall pro-LCV voting score. For example, Mr. James Inhofe, a Republican Senator from Oklahoma, had a cumulative voting score of 5 in 2014. This figure indicates that Mr. Inhofe's votes are consistent with LCV's position 5 out of 100 times since first entering Congress in 1987.

Figure 2 shows that politicians' congruence with LCV is polarized, and, intuitively, divided between Democrat and Republican lawmakers. The histogram in Panel A shows that most Democrats are in the top decile of the voting score, while most Republicans lie in the opposite end of the distribution. In Panel B, we plot the median annual support rate. Across most years, the median voting score in Congress is around 40%–60%. We observe a noticeable drop in the voting score from 2016 until 2018 during the Trump administration.

Finally, we classify politicians' environment-related voting stance based on their LCV voting score, which ranges from 0 to 100 with a higher score indicating a politician whose votes frequently match LCV's positions. We define a politician as a salient environmental traditionalist (activist) if the individual's cumulative voting score is in the lowest (highest) decile of the distribution in an election cycle. This definition ensures that we have the same number of traditionalists and activists in every cycle. We find that the average voting score by traditionalists and activists is 7 and 96, respectively. Figure 3 shows that, while the political giving to activists has increased since 2008, traditionalists get more contributions.

2.2 Firms' environmental performance

We estimate firm-level environmental performance using the rating scores issued by MSCI. MSCI ESG ratings attract the widest investor base and is the most influential of its kind (Berg, Heeb, and Koelbel, 2022).[13] According to Berg et al. (2021), MSCI scores also have the most precise measurement among all ESG raters. Moreover, Eccles and Stroehle (2018) and Pastor et al. (2022) note that the coverage of MSCI ratings is greater than other ESG raters—a feature that

[13] Over 1,700 asset management funds, consultants, advisers, banks, pension funds, and insurers use MSCI ESG ratings (data as of May 2022). See https://www.msci.com/our-solutions/esg-investing

allows us to capture more firms. MSCI's environmental rating focuses on an observable matrix that includes both strengths and concerns, such as pollution prevention, recycling, use of energies and chemicals, emissions, impact of products and services, as well as environmental management and regulatory concerns.[14] Notably, none of these assessment criteria is directly related to the firm's political activities. This allows us to detect discrepancies between observable firms' environmental performance and their (harder to detect) political contributions.[15]

We follow the literature (e.g., Deng et al., 2013; Hong and Kostovetsky, 2012) to calculate a firm's E-score. Specifically, we take the sum of all environmental strengths of a firm, as reported by MSCI, and divide this sum by the number of strength indicators. Similarly, we construct a scaled concern score. Accordingly, the resulting E-score is the scaled strength score minus the scaled concern score. By construction, a higher score indicates better (public) environmental performance. Since our corporate contribution data are available at a biennial electoral cycle level, we average a firm's annual E-score for each cycle to obtain electoral cycle-level scores.

The final sample links the PAC contribution dataset and the MSCI E-score dataset. MSCI's rating starts in 1991, however, firm CUSIPs, which we use to link with the financial data, are not available before 1995. Therefore, we start our analysis from 1995 (as in Engle et al., 2020). Unfortunately, there are no common firm identifiers between the FEC's PAC contribution records and the MSCI dataset. To circumvent this issue, we first use a fuzzy name-matching procedure that standardizes the names of corporations (as in Babenko et al. 2020). Next, we fuzzy merge based on textual similarity scores (as in Raffo and Lhuillery, 2009). We check matched firm names and identify the remaining unmatched companies using FEC-recorded organization names. This process generates a final dataset consisting of 5,286 firm-election cycle observations.

2.3 Other data

[14] Appendix 4 shows the details of MSCI's environmental rating and its components.
[15] As we discuss later, several issues affect the environmental scores provided by ESG rating firms. In our robustness tests (Section 5), we use an alternative measure of environmental commitment (not based on ESG scores) and find similar results.

Firms' financial data come from Compustat. We also use CRSP equity data to calculate firms' stock market reactions in our event study analyses. We collect politician characteristics, such as age, tenure, party affiliation, Congress seats, incumbent status, from FEC and the Biographical Directory of the U.S. Congress. Charles Stewart's Congressional Data Page provides politicians' committee assignment. Furthermore, we collect politicians' policy stance on other business-relevant issues, including taxes, trades, and tariffs, from the American Conservative Union, following Lee et al. (2004). We obtain CEO information from BoardEx and institutional ownerships from Thomson/Refinitiv's 13F dataset. We collect specific regulatory data, such as environmental law violations and CPP's emission targets, from the EPA's website.

2.4 Summary statistics

Table 1 presents summary statistics for corporate political contributions (Panel A), financial characteristics (Panel B), and industry distribution (Panel C). Appendix 1 provides variable definitions. At the firm-election cycle level, approximately 10% of PAC contributions go to traditionalist, and about 5% to activist politicians. The average corporate PAC campaign spending is 209,990 dollars in an election cycle. At the firm-politician-cycle, a typical political candidate receives 1.72% of a firm's total PAC funds. The descriptive statistics for other firm attributes, such as size, leverage, Tobin's Q, profitability, are similar to those reported in other studies (e.g., Akey, 2015; Babenko et al., 2020). We winsorize all firm characteristics at the top and bottom 1 percentiles to reduce the impact of potentially spurious outliers. Most of our sample firms have a large market capitalization (above US$ 10 billion) and operate in the manufacturing industry.

3. Environmental performance and political contributions

3.1 Empirical results

To study the effect of firms' green performance on their political engagement, our general approach is to examine whether E-scores are correlated with political giving to environmental traditionalists (or activists). However, an immediate concern is that a firm's political preference

could influence its contributions to traditionalists (often Republican lawmakers). For example, one might worry that if Republican-leaning firms have higher E-scores on average, a positive relation between E-score and contributions to traditionalists simply captures a firm's political stance. We note that this concern stands in contrast to the evidence in Di Giuli and Kostovetsky (2014) showing that Republican firms have *lower* average E-scores. Nevertheless, to control for a firm's political preference, as well as other characteristics, we estimate the following regression:

$$\%\ \textit{Contributions to}\ [\textit{traditionalists}\ \text{or}\ \textit{activists}]_{i,t} = \alpha + \beta \cdot \text{E-score}_{i,t} + \gamma \cdot \mathbf{Z_{i,t}} + \delta_t + \lambda_j + \epsilon_{i,t} \quad (1)$$

where % *Contributions* measures firm *i*'s PAC giving to traditionalists or activists in election cycle *t*. We focus on the percentage of giving, rather than dollar values, to capture the importance of firms' political gifts. Measuring contributions in relative terms also mitigates the size effect (i.e., larger firms donate more in absolute dollar values). E-score is a firm's environmental score in election cycle *t*. $\mathbf{Z_{i,t}}$ includes firm-level control variables: Democratic leaning (the percentage of PAC contributions to the Democratic Party), firm size (logarithm of total assets), cash holdings, Tobin's Q, leverage, profitability, and investment. δ_t represents election cycle fixed effects. λ_j denotes 4-digit Standard Industrial Classification (SIC) fixed effects. With the latter fixed-effects, we make comparisons within a granularly defined industry, which directly controls for industry-level policy preferences.[16] $\epsilon_{i,t}$ is the error term. We cluster standard errors at the firm level.

Table 2 reports ordinary least squares (OLS) regressions, based on equation (1), that analyze the full sample.[17] In column (1), the regression coefficient for our variable of interest, E-score, is positive and statistically significant. The estimate implies that moving from a median firm to a top

[16] Our tests use industry fixed effects rather than firm fixed effects because the main independent variable, E-score, is likely persistent in the time series. However, robustness test show that the results hold when we use firm fixed effects.
[17] Tobit models do not qualitatively alter our findings. However, we refrain from these models due to the concern that fixed effect estimators in non-linear models can be severely biased (Neyman and Scott, 1948; Greene, 2008). Moreover, Angrist and Pischke (2009) show that inferences drawn from linear models are similar to those drawn from non-linear specifications. Yet, according to those authors, linear models provide benefits such as direct interpretation of coefficients, better handling of fixed-effects, and easier interpretation of interaction terms.

environmental performer is associated with a 19 percent increase in PAC giving to traditionalists.[18] Conversely, the correlation between contributions to environmental activist politicians and E-score is not significant (column 2).

Next, we explore whether Republican firms (which mostly support traditionalist politicians) drive the baseline results. To check this, we restrict our analyses to Democratic firms. We define a firm as Democratic if more than 50% of its total contributions in the election cycle go to the Democratic Party. Columns 3 and 4 present this subsample analysis.

The results do not support the idea that our baseline findings reflect political ideologies. Compared to the full sample, greener Democratic firms exhibit a much stronger support for traditionalist politicians when their own E-score rises. The estimates in columns 3 imply that Democratic firms that move from a median to a top E-score are associated with a 38% increase in their contributions to traditionalists. By contrast, as in our baseline analyses, column 4 shows no significant association between a firm's E-score and its contributions to activist politicians.

The results of some of the other independent variables deserve attention. Among all controls, the one tracking party ideology (*Democratic leaning*, measuring the % donations to the Democrats) is the most robust predictor of corporate political contributions. This finding is consistent with those by Di Giuli and Kostovetsky (2014). In addition, larger firms are less likely to contribute to the most salient candidates (both traditionalists and activists). We also find that a firm's profitability is negatively associated with political gifts to the most salient lawmakers.

3.1.1 Identification through exogenous shocks

Our tests are subject to two potential and different endogeneity concerns. First, environmental performance is associated with *unobserved attributes* which, despite using various fixed effects in our tests, we are unable to account for. Second, while most investors do not observe firms'

[18] The economic magnitude is calculated by dividing 1.938 (coefficient in column 1 of Table 2, which equals the change of E-score from median to maximum) by the mean % contributions to traditionalists (10.177).

campaign/political gifts, there might be a concern of *reverse causality*, whereby firms that donate more to traditionalist candidates engage in greenwashing.

To mitigate these concerns and explore the potential causal impact of corporate environmental performance on political giving, we rely on separate DiD analyses using two different identification events: the 2005 Energy Policy (EP) Act and the 2015 Clean Power Plan (CPP). Section B of Appendix 2 provides additional details on these policies.

3.1.1.1 Energy Policy Act of 2005

The EP Act of 2005 provides substantial incentives for industrial companies to improve energy conservation and efficiency. The variation of the effects stems from the industry in which a firm operates. Metcalf (2008) shows that the Act substantially contributes to greenhouse gas reductions. We use the EP Act promulgation as a quasi-experimental setting to examine firms' incentives to influence future environmental legislation. Following Dixon et al. (2010), we define Act-treated firms as those operating in the fuel production, transportation, building construction, and manufacturing industries.[19] Accordingly, *Treated* is an indicator variable for these firms and *Post* is a dummy variable for election cycles after 2005/06. The treatment effect of the law is estimated with the following specification:

$$\%\ \textit{Contributions to traditionalists}_{i,t} = \alpha + \beta \cdot \text{Treated}_i \times \text{Post}_t + \gamma \cdot \mathbf{Z_{i,t}} + \delta_t + \lambda_j + \epsilon_{i,t} \qquad (2)$$

where the dependent variable is firm *i*'s contributions to traditionalists in cycle *t*. We include the same set of control variables ($\mathbf{Z_{i,t}}$) as those in equation (1). Because political giving varies across industries, we control for 4-digit SIC industry fixed effects (λ_j). We also include election cycle fixed effects (δ_t) to account for cyclical fluctuations in political participation. Because these fixed

[19] Specifically, the affected industries' 2-digit SICs include the following: energy production and transportation (28, 29, 35, 36, 38, 46), transportation (37, 40, 41, 43, 45, 46, 47), building construction (15), and industrial manufacturing (20-27, 30-34, 39).

effects fully subsume the coefficient estimates of *Treated* and *Post*, we only keep their interaction term in equation (2). β captures the treatment effects of the EP Act.

Our DiD identification relies on several assumptions. First, the EP Act must be a valid shock to the related firms' E-scores. We verify this assumption in the first column of Table 3. We see that treated firms significantly improve their E-scores after the Act implementation relative to the control group. The increase in E-score is equivalent to an interquartile range of E-score in our sample, suggesting that the improvement on E-performance is economically meaningful.

In columns 2 and 3 of Table 3, we first present the aggregate effect of the law on political giving. The results show that treated firms significantly increase their PAC contributions to environmental traditionalists after the EP Act passes (column 2). The increase in giving amounts to 13 percent relative to the predicted average contributions to these politicians, suggesting that the economic effect is large. In contrast, in column 3, we find no significant impact of the law on political giving to environmental activist politicians, as in the analyses in Table 2.

We augment equation (2) with a set of time (election cycle) indicators interacted with *Treated*. The augmented model allows us to compare the dynamics of firm contributions for each election cycle (from 1995/96) relative to the baseline cycle 2005/06 (when the law is first enforced). Column 4 reports the results. We find that treated and control groups follow a similar trend prior to 2005, and that the effect is only significant one cycle *after* the law is in effect.

To directly illustrate this pattern, Panel A of Figure 4 plots the difference (treated – controls) in contributions to environmental traditionalists. We observe a drastic upward discontinuity in the trend of contributions around 2006. This graphical evidence suggests that our setting satisfies parallel trends, an assumption necessary to ensure the internal validity of DiD estimates.

3.1.1.2 Clean Power Plan

Our second identification event relies on the stringent carbon emission targets set by the CPP policy. Because the targets differ by state, this setting allows us to explore a different source of potential E-score variation, namely, that at the state level.

There are potential caveats with the use of the CPP policy as a quasi-experimental setting. First, the Supreme Court issued a stay on the CPP preventing the EPA from enforcing the policy. Consequently, some states never effectively implemented the Plan's mandates. To address this problem, we exclude firms located in states that publicly opposed the CPP and retain those in states that vowed to meet the CO_2 reduction targets despite the Supreme Court's decision. Notably, most endorsing states subsequently ratified state-level laws aimed at enforcing carbon-reduction target (see Appendix 2 for details). Second, the CPP was announced in 2015, which leaves us with a short post-regulation period. Therefore, we focus on the sample period after 2008, which also excludes the introduction of the EP Act (our first shock) as a confounding event. Moreover, under the CPP, the treatment effect is identified with the *intensity* of carbon emission reduction goals (rather than discrete treated vs control groups). We therefore adjust equation (2) by replacing the *Treated* dummy with a continuous treatment variable, capturing the intensity of CO_2 reduction targets. The *Post* dummy variable is equal to 1 for an election cycle that occurs after 2015/16.

We first verify whether the carbon emission goal is associated with improvements in E-score for firms located in the targeted states. Column 1 of Table 4 confirms this assumption: Firms located in states with higher emission reduction targets improve their E-scores. The statistical significance is weak (*t*-statistic = 1.7), most likely because the effect is estimated with only one post-regulation period, and the environmental improvement takes time to materialize.

The DiD regressions in columns 2 and 3 provide the political donation results. According to column 2, after the Clean Power legislation passes, a one standard deviation increase in the emission reduction target is associated with an 11% increase in PAC donations by treated firms to traditionalists (relative to the sample mean). As in our baseline regressions, in columns 3 we do not observe a significant change in giving to environmental activists.

In column 4 of Table 4 and in Panel B of Figure 4 we examine the temporal dynamics of the treatment effects. Both the regression estimates and the plot in Figure 4 suggest that our CPP-setting satisfies the parallel-trends condition since a sharp break occurs only after 2015.

Subsample analyses further address concerns about (a) the Supreme Court's stay on the CPP and (b) the short post-treatment period, which may be correlated with a "Trump" effect. We note that the Governors of both Maryland (MD) and Virginia (VA) vowed to implement their CPP-related carbon emission targets after the Supreme Court's decision to temporarily halt the policy's enforcement. We use this setting in a test that contrasts contributions from *control* firms located in Washington DC (which is exempt from the CPP target),[20] and those from *treated* firms located in neighboring MD and VA. This setting gives us a unique opportunity to exploit the discontinuity using *county borders*. Importantly, one should not expect firms to be fundamentally different along county borders (Card and Krueger, 1994, 2000). We therefore use an alternative formulation of equation (2) in which we define *Treated* as a dummy variable that equals 1 for firms headquartered in MD and VA counties that neighbor Washington DC, and 0 for firms in Washington DC.

Columns 5 and 6 of Table 4 report the results. We find that treated firms increase their campaign contributions to environmental traditionalists by 12 percentage points relative to their neighboring control firms. This result is statistically significantly at the 1 percent level. Conversely, the impact on campaign contributions to activist politicians is insignificant, as shown in column 6. If we view the treatment in these analyses as "almost random" (as in Card and Krueger, 1994), then the evidence supports a causal impact of corporate environmental performance on political giving.

3.2 Environment vs other policy congruence: Politician-level evidence

In this section, we examine contributions at the politician level. This exercise allows us to control for politician individual characteristics and therefore, assess whether a politician's environmental stance is correlated with other policy positions (such as taxes). To do so, we collapse our data to firm-politician-cycle pairs. We employ the following specification:

[20] The EPA does not set a goal for the District of Columbia because the District does not have any electric generating units. We note (1) that to mandate 100% renewable electricity by 2032, the District of Columbia unveiled a Clean Energy plan in 2019 (which falls outside our sample period), and (2) that Alaska, Hawaii, and Vermont are also exempt from emission targets. Our sample does not include firms headquartered in Alaska, Hawaii, and Vermont.

$$\%\ Contributions\ to\ Politician_{i,p,t} = \alpha + \beta \cdot \text{E-score}_{i,t} \times Politician_{p,t} + \eta \cdot \text{E-score}_{i,t} + \theta \cdot Politician_{p,t} + \gamma \cdot \mathbf{Z_{p,t}} + \lambda_{i,p} + \delta_t + \epsilon_{i,p,t} \quad (3)$$

where the dependent variable is firm *i*'s contributions to politician *p* in cycle *t* (in percentage). The main explanatory variable is the interaction of "E-score × *Politician*," where *Politician* is a variable that flags the politician's environmental stance (i.e., traditionalist or activist).

Equation (3) includes a vector of control variables, $\mathbf{Z_{p,t}}$, that captures, among other attributes, politicians' other policy positions. We include two policy variables that are directly business relevant: *anti-free trade* and *anti-tax*, which reflect the politician's voting score on trade (tariffs) and business tax issues, respectively. In addition, $\mathbf{Z_{p,t}}$ includes politician characteristics, such as party affiliation, Congress seat (Senate vs House), incumbent status, age, years in office, and committee assignments. We use δ_t to denote election-cycle fixed effects and $\lambda_{i,p}$ to denote firm-politician paired fixed effects. Importantly, the latter fixed effects control for a firm's congruence with a given politician, allowing us to estimate the incremental support for a politician conditional on the firm's *general policy preference* with respect to that politician. Finally, in some regressions, we include granular firm-cycle fixed effects to control for time-varying firm characteristics. As a result, we do not need to control for firm-level covariates in these tests.

Panel A of Table 5 reports descriptive statistics for the 1,641 unique politicians that we study (representing 357,452 politician–firm–cycle level observations). Panel B reports regressions estimates based on equation (3). In columns 1 and 2, we first study contributions to traditionalist politicians. The results show that contributions to a traditionalist *increase* on the E-score. The economic magnitude is important. Based on column 2 (where we control for firm-cycle fixed effects), political giving to a traditionalist increases by 6.4% relative to the mean when a firm moves from a median E-score to the top E-score. By contrast, columns 3 and 4 show that political giving to an activist politician is not correlated with the E-score.

Finally, in columns 5 and 6, we measure politicians' environmental stance using their *continuous* voting score (with a higher score indicating a pro-LCV position) rather than a

traditionalist/activist indicator. The coefficient on the interaction term "Politician score × E-score" is negative and significant, suggesting that higher E-score firms donate *less* to a politician if the politician's own voting record frequently concurs with LCV's positions.

To conserve space, we only report the control variables that flag politicians' policy stance on free-trade and business tax issues. We find that firms give significantly less to the politicians who regularly vote against free-trade bills and significantly more to the ones who oppose higher corporate taxation. These findings suggest that contributions are driven by candidates' pro-business stance. Nevertheless, controlling for these policy variables (and general firm-politician congruence) does not alter our main finding that firms' environmental performance influences their support for environmental traditionalist candidates. The evidence—both at the firm and the politician level—suggests that firms with higher E-scores donate relatively more to politicians with voting records that do not adhere to LCV's advice.

4. Causes and consequences of green firms' political giving

Why do green firms support salient traditionalist politicians? One possibility involves strategic political engagement that aims to *swing the vote* from the opposite side of the political spectrum. Under this possibility, greener firms use political contributions to influence traditionalists and alter these lawmakers' behavior. Alternatively, another possibility involves environmental *cost cutting* motives whereby insiders take actions that sharply contrast with their firm's public position (e.g., supporting traditionalist politicians) to lower the costs imposed by environmental laws. Such cost-cutting behavior can manifest if ESG engagements (a) generate negative spillovers on firm performance,[21] or (b) provide "window dressing" for firms with agency problems (see, for example, Cheng et al., 2020; Krueger, 2015; Masulis and Reza, 2015).

To establish a baseline, we use our data to confirm a *negative* association between the E-score and firm performance as measured by Tobin's Q, profitability, and EBIT margin. We also

[21] See, for example, Gillan et al. (2021) for a review.

document a *positive* association between the E-score and a firm's costs margin. Appendix 5 reports these results. Note that the goal of these analyses is neither to assess causality nor to reject the possibility that E-performance could be beneficial in other contexts (such as during the COVID-19 crisis, as in Albuquerque et al., 2020). Our tests simply provide auxiliary evidence germane to the hypotheses that we seek to study.

To distinguish between the swing-the-vote hypothesis and the environmental cost-cutting alternative, in this section we first assess whether green firms' contributions successfully alter politicians' voting behavior. We then evaluate whether environmental regulatory burden is directly related to green firms' giving to traditionalists. Afterwards, we study whether key decision makers drive corporate donations.

4.1 Does political giving alter lawmakers' climate stance?

To examine whether contributions can swing politicians' votes, we analyze politicians' voting behavior after they receive corporate donations.

We estimate regressions in which the dependent variable is a politician's LCV-congruent vote in political cycle *t*. LCV-congruence is the percentage of pro-LCV votes out of all votes on environment-related bills cast by the politician (at *t*). The key independent variable is donating firms' E-score interacted with the firm's contributions to that politician, both measured at $t - 1$. The regressions control for politician characteristics, politician fixed effects, and political cycle fixed effects. We cluster the standard errors at the politician level.

The regression estimates in Panel A of Table 6 show that green firms' contributions (measured as either percentage of giving or logarithm of $ value) do not correlate with the politician's voting in the *following* cycle. This pattern holds for both the subsample of traditionalists (columns 1 and 2) and of activists (columns 3 and 4). The evidence—showing no response from politicians to green firms' giving—rejects the swing-the-vote hypothesis, because it is unlikely that a firm will consistently donate to politicians if the money does not alter their policy stance (at least with respect to the environment).

This finding is perhaps unsurprising as one would not expect the swing-the-vote incentive to prevail in the subsample of traditionalist/activist politicians whose environmental stance is persistent. In untabulated tests, we perform the same exercise using the subsample of moderate politicians, defined as those whose pro-LCV voting score is between 45 and 55 (out of 100). Even in the moderate politician subsample where the swing-the-vote motivation is most plausible, we fail to find empirical support for this hypothesis.[22] In this regard, our evidence parallels that in extant studies (e.g., Ansolabehere et al., 2003; Lee et al., 2004; Stratmann, 2002). Most of these related studies conclude that voters do not *affect* politicians' policy choices; instead, they merely *support* candidates whose policies are congruent with the voters' existing preferences.

4.2 Does regulatory burden drive environmental cost-cutting?

Next, we analyze the role of firms' environmental regulatory burden to ascertain whether such burden is directly related to their political giving to environmental traditionalists. We augment the baseline specification in equation (1) by interacting the key independent variable, E-score, with measures of environmental regulation stringency. We measure regulation stringency with three proxies: (i) a dummy variable that indicates whether a State Environmental Policy Act (SEPA) exists in the firm's headquarter state,[23] (ii) an index that captures the *intensity* of state-level environmental policies (with a higher index value indicating more stringent actions),[24] and (iii) the number EPA enforcement actions per election cycle.

The results in Panel B of Table 6 support the conjecture that a higher regulatory burden is associated with political donations to traditionalists by green firms. Columns 1 through 3 show statistically significant estimates on the coefficient *E-score* × *Regulatory stringency* regardless of which measure we use as a proxy for the regulatory burden. For example, in SEPA states, the

[22] In all specifications, the *t*-statistic is around 0.4 (*p-value* = 0.7) for the *Contributions × E-score* explanatory variable. The results are similar if we examine the politicians whose voting score is between 49 and 51.

[23] Sixteen states have a SEPA. In addition to the National Environmental Policy Act (NEPA), SEPAs require state government actions be evaluated for the potential impact on the environment or public health.

[24] The index is based on the following procedural requirements for project reviews: state actions, local actions, private actions, and all actions that could potentially contribute to global warming and climate change.

effect of E-score on traditionalist contributions is 1.3 times greater than the average baseline effect (see column 1). Likewise, increasing EPA enforcement actions by a single standard deviation is associated with a 9.5% increase in donations to traditionalists (relative to the mean; see column 3).

By contrast, the estimates are not significant in the regressions for political giving to activists (see columns 5 through 7). Overall, these results are consistent with a prediction of the environmental cost-cutting hypothesis whereby firms facing higher regulatory costs oppose LCV-backed legislation (through their donations to traditionalists) despite their public green record.

4.2.1. Voluntary vs. involuntary green firms

The findings in Section 3.1 show that environmental policies (such as the EP Act and the CPP legislation) lead to an exogenous increase in corporate environmental performance. These results suggest a likely unintended effect of environmental regulation: while corporate green performance improves once the regulation passes, "involuntarily green" firms (those whose E-score increases due to mandatory regulatory compliance) try to lessen the environmental regulatory burden through political donations. To explore whether voluntarily or involuntarily green firms drive our main findings, we reexamine the EP Act and the CPP legislation. In column 4 (Panel B of Table 6), we regress donations to traditionalists on *E-score*, an indicator variable that flags treated firms in the post-legislation period (*EPAct/CPP*), and their interaction term. We find that involuntarily green firms—those whose E-score rises due to mandatory regulatory compliance—boost their support for traditionalists. Because the economic effect related to this finding (of about a 19% relative increase in gifts to traditionalists) mirrors the baseline effect, we determine that that involuntarily green firms drive our main results. Notably, according to the estimate for the interaction term in column 8, involuntarily green firms also decrease their donations to activists.

4.3 Do key decision makers influence contributions to traditionalists/activists?

Next, we examine whether key decision makers influence corporate donations to traditionalists or activists. We consider two types of insiders, CEOs and large institutional shareholders. This

choice is guided by studies that identify these parties as the key drivers of corporate PAC contributions (Babenko et al., 2020; Bertrand et al., 2020; Bonica, 2016; Hertel-Fernandez, 2017).

Following the procedure in Bertrand et al. (2020), we first obtain institutional investors' own PAC contributions from FEC. For each shareholder, we calculate their political donations in an election cycle. We then compute the ownership stake-weighted average of investors' contributions (to either to traditionalists or activists) at the firm level. With this process, we obtain a "brownness" score and a "greenness" score for each firm's ownership in an election cycle.

Similarly, we use firm CEOs' private political contributions (to both traditionalists and activists) as a proxy for the CEO's personal environmental stance.[25] We then compute the "brownness" and "greenness" scores for every CEO. Because our goal is to examine whether salient (extreme) environmentalist shareholders or CEOs can affect firms' political donation choices, we define a firm as being owned or managed by brown investors/CEO if the brownness score of the investors/CEO is in the top 95 percentile of the distribution. Likewise, we classify a firm as having green investors/CEO if the greenness score of its investors/CEO lies in the top 95 percentile. We note that a firm could be simultaneously owned by both brown and green investors.

We base our tests on equation (1) but augment the specification by interacting the E-score with indicator variables for brown/green investors (or CEOs). For example, in column 1 of Table 7, we examine whether salient brown and green ownership amplifies or attenuates the E-score effect on contributions to traditionalists. We find that, conditional on E-score, firms owned by *brown* investors increase their contributions to traditionalist politicians by 4.4%. This effect more than doubles the E-score effect on donations from an average firm not owned by brown shareholders. In contrast, we do not find green shareholders influence firms' political gifting. Indeed, facing potentially costly environmental regulation, brown investors proactively sway their portfolio

[25] These individual contributions can be found in FEC's "Contributions by individuals" database. We manually collect individuals' contributions to political candidate's committees (FEC committee type H, S, and P). Note that we do not include CEOs' contributions to their corporate PACs.

firm's political giving to match their own. Meanwhile, because these contributions are not readily observable, green investors might not be able to counter with offsetting donations.

Column 2 examines the contributions to activist politicians. According to the results, which lack statistical significance, neither brown nor green investors seem to directly influence donations to environmental activists. This is consistent with our baseline finding showing that contributions to environmental activists are not driven by the E-score.

Columns 3 and 4 of Table 7 report the results for CEOs. Overall, the effect of CEOs is weak. In column 3 we find that E-score continues to be positively correlated with contributions to traditionalists, but the CEO's own climate attitude does not alter this relation. Nonetheless, column 4 provides evidence that brown CEOs reduce green firms' contributions to activist politicians.

In the last two columns of Table 7, we probe the robustness of our earlier results by including investor and CEO indicators in the same specification. The new results corroborate the previous findings as they highlight a material role of brown institutional investors.

Our overall evidence is consistent with the environmental cost-cutting hypothesis. The results also connect our work to studies on the influence of ESG funds or green investors. Several papers suggest that ESG activism is an effective tool for improving corporate climate policies (Hoepner et al., 2018; Krueger, et al., 2020). While consistent with the message in those studies, our findings strike a more cautious tone: while green investors could promote green initiatives, brown shareholders can influence E-legislation through their portfolio firms' political donations.

4.4 Does corporate environmental cost-cutting create value?

The last question we ask is whether a firm's political support for traditionalist politicians carries a pecuniary incentive, as predicted by the environmental cost-cutting hypothesis. Existing papers show that partisan contributions benefit the donating firms (e.g., Akey, 2015; Babenko et al., 2020). We move this literature forward by studying whether green firms benefit when (a) Congress passes an LCV-opposed bill and (b) salient environmental traditionalists win congressional elections.

4.4.1 LCV-opposed bills

First, we study 339 environment-related bills opposed by LCV that pass in the House or the Senate, in the spirit of Cohen et al. (2013).[26] If a firm with a high E-score *and* high contributions to traditionalists benefits from these bills, we should expect an increase in its value on their passage date. To test this conjecture, we estimate firms' abnormal returns on the bill passage date using standard event study methods (Dodd and Warner, 1983).[27] We regress abnormal stock returns on the interaction term of *E-score* and the percentage of contributions to traditionalists in the previous cycle. We control for firm characteristics like those in Table 2. Because our analysis is at the bill level, we also include industry-cycle fixed effects and/or bill fixed effects.

Panel A in Table 8 presents the results. Column 1 shows that the estimate of the interaction term is positive and statistically significant at the 5 percent level. Conditional on E-score, increasing contributions to environmental traditionalists by one standard deviation (8.42%) is associated with a $16 million increase in firm value. An alternative way of gauging the magnitude is that a $1 contribution is related to a $932 increase in the firm's market capitalization.[28] In column 2, we obtain similar results when we include bill fixed effects, which allow us to compare the value effects across firms for the same bill.

In columns 3 and 4 of Panel A, we control for contributions to activist politicians. We find that the coefficient on the interaction term ("E-score × % Contributions to activists") is negative but statistically indistinguishable from zero. In other words, donations to environmental activists are not associated with immediate monetary benefits. This result might explain the absence of an effect

[26] Congressional bill data and classification come from LCV. Passed bills generally reflect (1) an increased probability that the bill becomes a law, and (2) an increased support for the policy across the political spectrum in congress.
[27] We use a 200-day estimation window and the CRSP value-weighted index as our market benchmark. Our results are similar if we use the Fama-French three-factor model.
[28] The calculation is as follows. To get the change in firm value by a one standard deviation change in contributions (conditional on E-score), we multiple 0.973% (the coefficient of the interaction) by 8.42 (standard deviation) to obtain 0.082%. We then multiply this value by the mean market value before the passage day (20,118 million), to obtain 16 million. To calculate the $ return for $1 of contributions, we first multiply 0.973% by the mean market capitalization (20,118 million), to obtain 195.7 million, which is the value increase if the firm were to increase their contributions by 100%. We then divide 195.7 by 0.21 (average total contributions in $million in a cycle) to obtain 932.

on political giving to environmental activists in our earlier analyses. By contrast, we continue to find a significant association between abnormal returns and green firms' giving to traditionalists.

These results, along with those in Table 7, cast doubt on the possibility that a risk-based channel accounts for green firms' gifts to traditionalists, namely, that greener firms use their donations to *hedge* against policy risks brought about by traditionalists. The hedging conjecture predicts that both green and brown investors in high E-score firms will contribute to traditionalists irrespective of their private preferences—a prediction for which we find no empirical support. Moreover, unlike the environmental cost-cutting hypothesis, the hedging policy risks alternative does *not* predict benefits of LCV-opposed bills for green firms—which we find in our event study tests.

4.4.2 Does the election of environmental traditionalists matter?

Because most general election results are predictable, we follow the identification strategy proposed by Akey (2015) involving close races in special elections. Special elections occur when a congressman dies or resigns before their term ends. These elections provide the cleanest setting in which to examine the effect of firms' political giving for two reasons. First, the dates of these elections are exogenous to firm-specific economic events; second, unlike general elections where multiple politicians (or the President) are concurrently elected, special elections are not confounded by other political races.

We examine *close elections* to make plausibly causal inferences. Close elections are those in which a candidate wins (or loses) by a margin of less than 5 percentage points (as in Akey, 2015). To the extent that the election results in these races cannot be precisely predicted, the treatment effect near the winning threshold is randomized (Lee and Lemieux, 2010). Consequently, our approach resembles a regression discontinuity (RD) that explores differences in abnormal returns to the firms that support the "just winning" candidate versus those supporting the "just losing" candidate. Because our interest is to discern the value of supporting a traditionalist by a green firm (rather than the value of supporting a winner for an average firm), we follow the RD design in Ito

(2015) and Lucas and Mbiti (2014) by interacting the treatment variable (*Won*) with the candidate's traditionalist status and the firm's E-score. Equation (4) provides our specification.

$$AR_{i,j,t} = \alpha + \beta \cdot \text{Won}_{j,t} \times \text{Traditionalist}_{j,t} \times \text{E-score}_{i,t} + f(\text{margin}_{j,t}) + \text{Won}_{j,t} \times g(\text{margin}_{j,t}) + \gamma \cdot \mathbf{Z_{i,t}} + \lambda_e + \delta_i + \epsilon_{i,j,t} \quad (4)$$

where i indexes firms, j indexes candidates, t indexes election dates, and f and g are polynomial functions of the winning margin, defined as the difference in vote share for candidate j relative to the just winning (or losing) candidate. *Margin* takes a positive (negative) value for a winning (losing) candidate. We allow the regression function to differ on both sides of the winning point in equation (4). The vector $\mathbf{Z_{i,t}}$ includes all constituent variables from the triple interaction term and their pairwise interactions, firm-level control variables (like those in Table 2), as well as an indicator for whether the winning candidate is from the same party as the firm's political affiliation. It is important to note that we include election fixed effects (λ_e) to control for characteristics of the special election, and industry or firm fixed effects, δ_i.

We extend the sample of close special elections in Akey (2015) with supplemental data from FEC (Appendix 6 lists the 44 elections we examine). Following Akey, we consider only the firms that donated to either the winning or the losing candidate, but not to both.[29] In equation (4), we are interested in β, which estimates the causal effect of supporting a winning traditionalist by a green firm. To save space, we only report the β estimates in Panel B of Table 8.

Starting from column 1, which examines abnormal returns on the election day with a linear model, we observe that greener firms exhibit significantly higher returns when the winning candidate is an environmental traditionalist. This result survives the inclusion of firm fixed effects in column 2. In column 3, we follow the recommendation by Lee (2008) and Gelman and Imbens

[29] We follow the advice in Lee (2008) and check whether there are observable differences between firms that donate to winning politicians and firms that donate to losing politicians. We do not find any statistically significant differences in firm-level covariates (e.g., size, profitability, Tobin's Q, leverage, investment) between firms connected to a just-winner and those connected to a just-loser, controlling for the candidate's voting share.

(2019) and introduce a quadratic polynomial function to allow for a more flexible estimate around the discontinuity point. That specification yields a very similar β estimate, suggesting that our results are not spuriously significant due to underlying nonlinearity in the dependent variable.

Finally, to be consistent with previous work on election outcomes, we calculate firms' cumulative abnormal returns (CAR) from day -1 until day +3. Column 4 shows that our results are robust to this alternative return window. Based on the column 4 estimate, CAR increases by 0.51% (or about $103 million in terms of market capitalization) for a one standard deviation increase in the E-score if the supported traditionalist candidate narrowly wins. Comparably, Akey (2015) shows that when a connected politician wins an election firm value improves by 3.7% and Babenko et al. (2020) find a 0.9% abnormal return when a CEO-backed candidate wins a congressional seat.

Because our earlier analyses imply that firms facing greater regulatory burden are more likely to benefit from their political gifts to traditionalists, we examine whether this is indeed the case. An untabulated test in the spirit of Akey (2015) shows that rising regulatory stringency—proxied by EPA enforcement—by a one standard deviation is related to a 0.78% stock return increase when a green firm-supported traditionalist narrowly wins an election (t-statistic = 2.12). In line with our other results, this finding also supports the idea that green firms benefit from backing traditionalists.

5. Robustness checks

We conduct several robustness checks in this section to confirm our baseline findings and to examine alternative explanations. The results of these analyses appear in Table 9.

5.1 Do omitted firm characteristics or political ideologies explain the results?

We first use an alternative statistical specification by controlling for firm fixed effects. If firm-level E-scores are persistent, this specification would identify the effect on political giving when a firm experiences changes in its E-score. Column 1 of Panel A presents the results. The coefficient estimate of E-score remains highly significant and positive, suggesting that (unobserved) time-invariant firm characteristics do not affect our findings.

Second, we reconsider the possibility that contributions to environmental traditionalists are correlated with *other* policy preferences of the political candidates. To the extent that policies from local lawmakers are most directly relevant to a firm's operations, we argue that contributions to out-of-state politicians are less likely confounded by policy congruence. In column 2 of Panel A, we examine out-of-state contributions. The results are consistent with those from our baseline test.

We further evaluate the concern that partisanship is behind our baseline findings. In Table 2, we show that Democratic firms, which would support fewer traditionalists if the partisanship argument were true, actually donate more to traditionalists when their own E-scores are high. In a similar vein, we examine politically neutral firms, defined as those whose contributions to either party range between 45% and 55%. Column 3 of Panel A reports the results of this subsample analysis. We find that the positive effect of E-score on donations to environmental traditionalists is significant at the 1 percent level. Again, as in earlier analyses, the latter results do not support the possibility that political preferences explain our findings.

5.2 Alternative definitions of environmental performance and of traditionalist politicians

Another concern is that the MSCI rating score is noisy. In column 1 of Panel B (Table 9), we use another variable to identify climate leaders: CERES membership. CERES is one of the largest nonprofit organizations led by pro-climate investors. It supports its member firm's efforts to achieve "net-zero emissions by 2040."[30] CERES membership sends a clear public signal about a firm's climate commitments. We collect CERES membership affiliations and use them to replace firms' MSCI E-scores. Consistent with the results using E-scores, column 1 (Panel B) shows a positive association between CERES membership and political giving to traditionalists.

We implement the noise-correction procedure of ESG rating prescribed by Berg et al. (2021). Specifically, we use two-stage least squares to instrument the MSCI E-score with Refinitiv's environmental rating. The *F*-statistic (=223) on the instrument (first stage) is above the Stock-

[30] See https://www.ceres.org/about-us (data as of May 2022).

Yogo critical value, suggesting that the estimation is efficient. The second stage estimate (reported in Column 2 of Panel B) indicates that the E-score effect increases in magnitude. This is what we would expect, as the classical errors-in-variables problem biases the OLS coefficient toward zero (Wooldridge, 2002). In our noise-correction test, the increase in the E-score matches the finding by Berg et al. (2021) showing that after the noise correction the magnitude is about twice as large.[31]

To check the robustness of the results with respect to our definitions of environmental traditionalists, we reclassify these politicians in two different ways. The first classifies politicians as traditionalists if their pro-LCV voting score lies below the bottom 5th percentile (instead of decile). The second definition is based on a rolling window of support rate using the most recent 3 election cycles. This second classification incorporates the possibility that a politician's climate stance may change overtime. Because we use a much shorter observation window, the proxy might be noisier. Regardless of how we classify an environmental traditionalist, the results in columns 3 and 4 of Panel B suggest that our evidence on environmental cost-cutting is robust.

5.3 Is there a sample selection bias?

To detect whether our estimates are driven by the energy industry, we drop all observations of energy firms based on the SIC codes. Column 1 of Panel C shows that our results are robust to this exclusion. Additionally, we consider whether a sample selection bias exists. Our main analyses include only firms with established corporate PACs. This requirement is consistent with the existing literature: as a firm's PAC-donation decision is endogenous, comparing firms based on whether they have PACs might not be appropriate. Nevertheless, in column 2 of Panel C, we include all MSCI firms without PACs. This strategy adds noise to the data since about 64% of MSCI firms do not have a corporate PAC. Despite the caveats just stated, we continue to find a positive association between E-scores and contributions to traditionalist politicians.

5.4 Does E-score proxy for environmental violations?

[31] See Berg et al. (2021) for a detailed discussion of the theory and empirical interpretation.

We are concerned that a firm's E-score is a proxy for environmental policy violations. To tackle this concern, we obtain all cases of environmental violations from the EPA website. In column 3 (Panel C), we re-estimate the baseline regression using a subsample that excludes 476 "EPA violator" firms. The results are similar to those from the full sample, suggesting that the E-score does not proxy for regulatory infractions.

5.5 Do environmental traditionalists capture policy stance on other issues?

Finally, we reassess the issue that our focus on the most salient anti-LCV politicians might capture politicians' votes on other business-related policies. For example, a politician who votes consistently against LCV recommendations may vigorously oppose high corporate taxes or fervently favor free trade legislation. To check if our measure of E-traditionalists is correlated with votes on other business-related policies, in Panel D of Table 9, we use four alternative (placebo) dependent variables that capture firm contributions to the most salient pro-/anti-tax (or trades) politicians. As our definition of E-traditionalists, salient pro-/anti-tax (-free trade) politicians are those whose cumulative voting records on corporate tax (or free trade/foreign tariffs) issues are among the top/bottom decile of all politicians in a given electoral cycle. The results in Panel D show that *E-score* is not correlated with political gifts to these other sets of salient politicians. This finding is consistent with the politician-level regressions presented in Table 5, showing that politicians' policy stance on the other business issues does not affect our main baseline results.

6. Conclusions

This paper provides strong empirical evidence revealing that U.S. public corporations that publicly support green initiatives, as implied by their high environmental scores, direct their PAC donations towards politicians that often vote against legislation endorsed by environmental groups. This result is mostly driven by firms that become green due to an environmental rating increase that occurs after the enactment of laws mandating environmental compliance. Our results support the view that green firms seek to lessen the burden imposed by environmental laws through their

donations to certain politicians. Notably, such actions prove successful as contributions to these lawmakers ultimately enhance the stock market value of green firms. While this evidence indicates that environmental cost-cutting by green firms improves the wealth of their shareholders, we recognize that we are silent about the potential impact of such cost-cutting on the welfare of society at large. We hope that our work inspires others to investigate this important issue. In this vein, our findings should be of particular interest to investors that seek green firms in their portfolios, to government agencies that grant benefits to firms based on the environmental scores issued by third parties, and to investigators who use those scores in their research projects.

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Figure 1. PAC Contributions to Environmental Traditionalists and Activists

The figures plot the relation between % contributions to environmental traditionalists (left) / activists (right) and a firm's environmental score. We show a fractional polynomial that controls for firm characteristics (Democrat leaning, size, cash holding, Tobin's Q, leverage, profitability, investment intensity, industry, and election cycle fixed effects). Dash lines present the 95% confidence intervals.

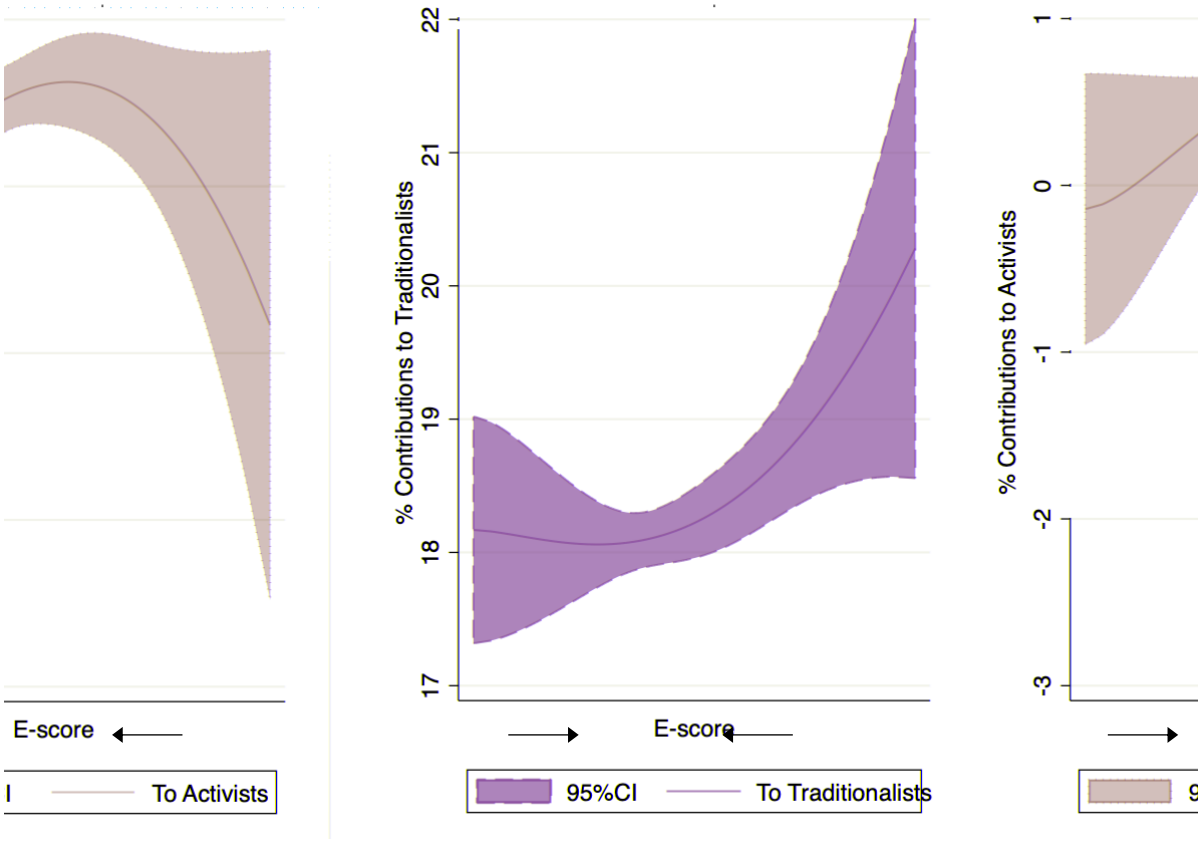


Figure 2. Politicians' Support for the Environment

Panel A plots the histogram of support rate of pro-environmental bills as classified by LCV. The blue bar identifies politicians from the Democratic Party whereas the red bar identifies politicians from the Republican Party. Panel B shows the median LCV score by election cycle.

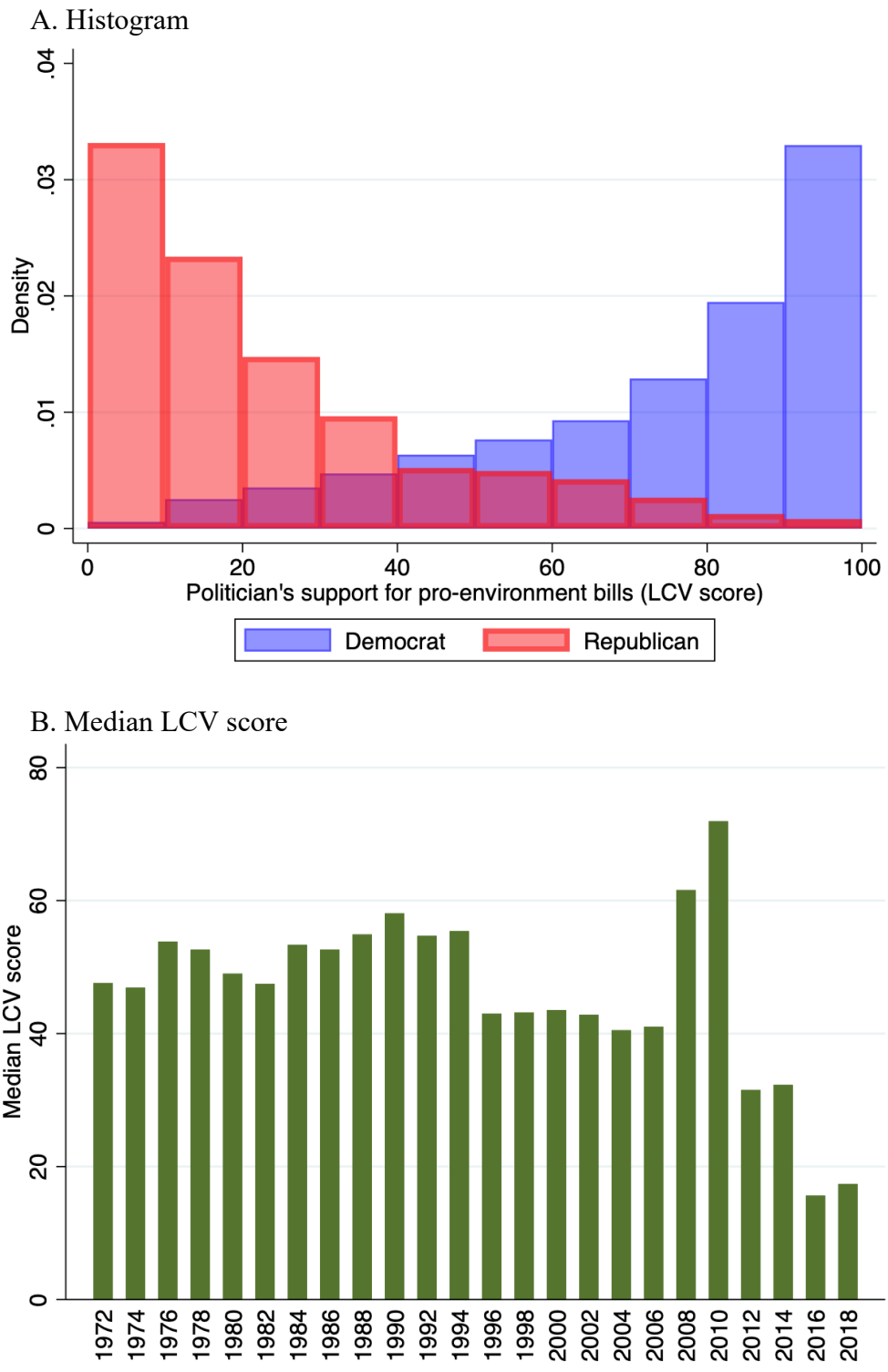


Figure 3. Political Giving to Environmental Traditionalists and Activists

The graph shows the percentage of corporate PAC contributions that flow to environmental traditionalists and activists by election cycle.

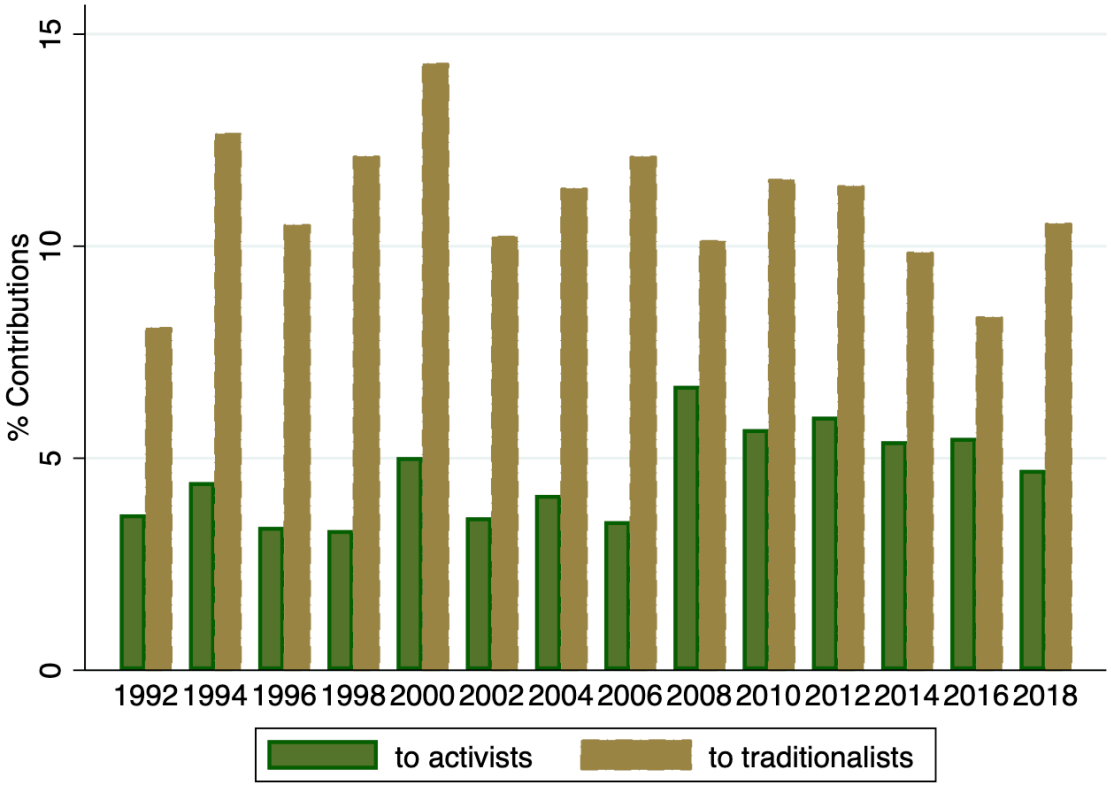
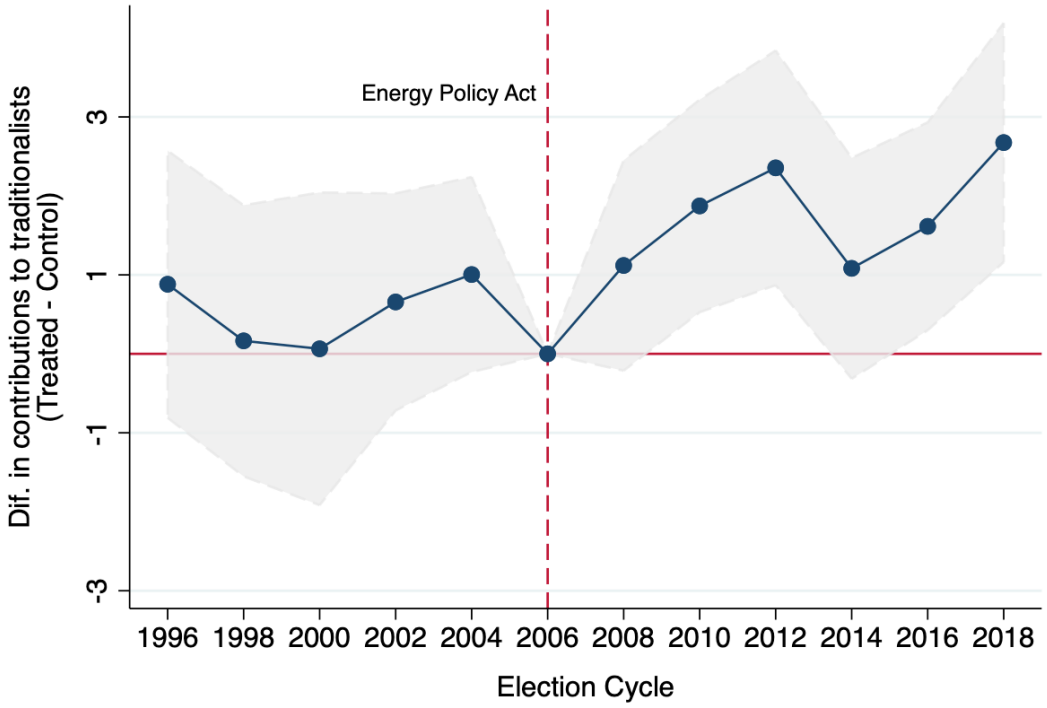


Figure 4. Effects of Environmental Policies Around the Implementation Year

The figure shows the treatment effects of the EP Act (Panel A) and the CPP policy (Panel B) around the implementation year, controlling for firm characteristics, cycle, and industry fixed effects (see equation (2)).

Panel A: Effects around the EP Act (2006 congressional cycle)



Panel B: Effects around the CPP policy (2016 congressional cycle)

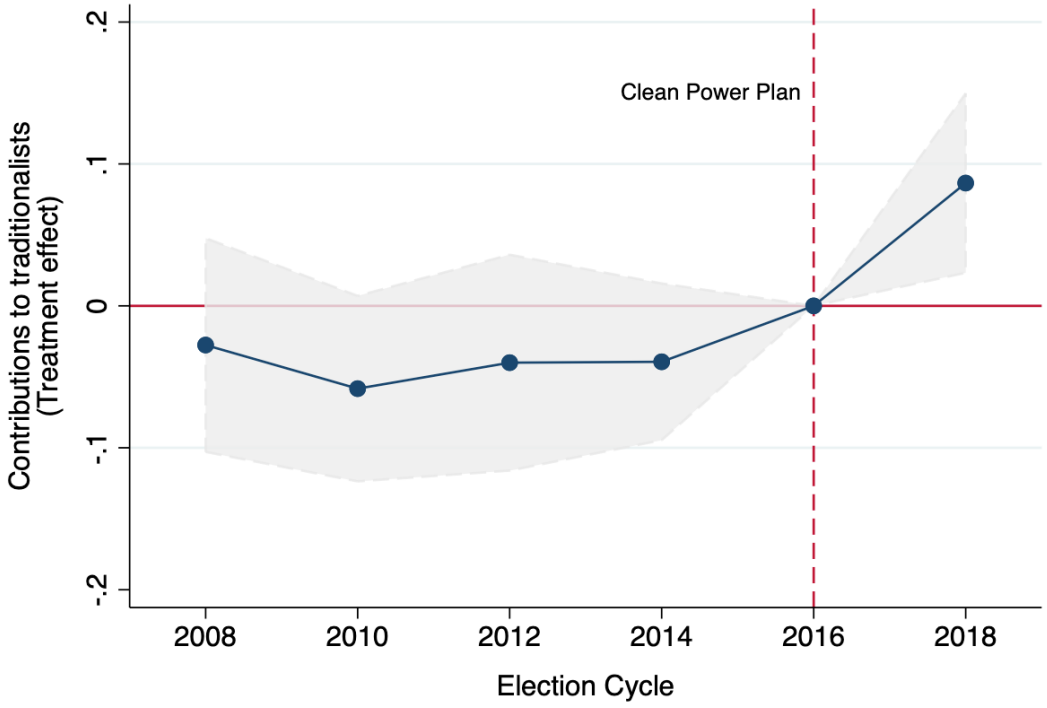


Table 1. Summary Statistics

The table reports summary statistics for firms during 1995 – 2018 election cycles. Definitions of environmental traditionalists, activists, and E-score appear in Section 2. Firm size is the logarithm of a firm's total assets. Cash holding is cash and equivalents scaled by total assets. Tobin's Q is market value of assets over book value of assets. Leverage is book value of debts over market value of assets. Profitability is net income scaled by total assets. Investment is capital expenditure scaled by total assets. These values are reported at the end of an election cycle. Panel C displays the industry (based on 2-digit SIC) and size distribution of the 1,210 unique sample firms. Size is measured by the maximum market capitalization and is classified as: small cap (market value below $2 billion), mid cap (market value between $2 and 10 billion), and large cap (above $10 billion).

	N	Mean	S.D.	Pct 10	Median	Pct 90
Panel A. Firm's PAC political contributions						
Firm-cycle level:						
Contributions to environmental traditionalists (%)	5,286	10.177	8.421	1.273	8.945	19.388
Contributions to environmental activists (%)	5,286	5.032	8.778	0.000	2.484	12.155
Total amount of contributions (thousand $)	5,286	209.99	327.77	17.00	96.55	511.57
Firm-politician-cycle level:						
Pct contributions to candidate (%)	357,452	1.720	5.086	0.168	0.716	3.534
Panel B. Firm's environmental score and characteristics						
E-score	5,286	0.059	0.230	-0.157	0.000	0.375
Firm size (log. of total assets)	5,286	9.292	1.636	7.246	9.279	11.391
Cash holdings	5,286	0.100	0.120	0.008	0.055	0.256
Tobin's Q	5,286	1.747	1.062	1.000	1.374	2.903
Leverage	5,286	0.202	0.151	0.032	0.175	0.395
Profitability	5,286	0.040	0.073	-0.014	0.037	0.119
Investment	5,286	0.047	0.044	0.002	0.036	0.100

Panel C. Industry and market value distribution of sample firms

Industries:	Small Cap	Mid Cap	Large Cap	Total
Mining	9	20	31	60
Construction	9	8	2	19
Manufacturing	92	137	181	410
Transportation and utilities	43	79	102	224
Wholesale trade	11	6	8	25
Retail	9	18	27	54
Finance	41	84	109	234
Services	63	60	53	176
Public admin and other	0	2	6	8
Total	277	414	519	1,210

Table 2. Environmental Performance and Political Contributions

This table presents the association between firms' PAC contributions and their environmental score at the firm–congressional cycle level. We use OLS regressions. The dependent variable is the percentage of PAC contributions to politicians who are either environmental traditionalists or activists, as indicated in the table header. The independent variable is the firm's environmental score (*E-score*). Definitions of environmental traditionalists/activists and *E-score* are in Section 2. The full sample includes all firms in the MSCI ESG database. Columns 3 and 4 only include the subsample of Democratic firms, defined as firms whose PAC contributes more than 50% of funds to the Democratic Party in a given congressional cycle. We include congressional cycle and industry (4-digit SIC) fixed effects. Definition of the variables is in Appendix 1. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Depend. variable: Contributions to environmental traditionalists or activists			
	Traditionalists	Activists	Traditionalists	Activists
	1	2	3	4
E-score	1.938***	0.076	3.852***	-2.900
	(0.662)	(0.589)	(1.397)	(2.562)
Democratic leaning	-15.519***	25.345***	-15.598***	58.936***
	(0.958)	(2.070)	(1.811)	(8.482)
Firm size	-0.313**	-0.550***	-0.114	0.297
	(0.123)	(0.145)	(0.203)	(0.411)
Cash holdings	-0.275	3.479**	0.471	5.789
	(1.301)	(1.514)	(2.228)	(4.337)
Tobin's Q	-0.098	0.141	-0.342	0.590
	(0.167)	(0.236)	(0.241)	(0.745)
Leverage	-0.342	-0.055	-3.154	-2.633
	(1.203)	(1.368)	(2.099)	(4.385)
Profitability	0.543	-4.535*	-6.239**	-13.040*
	(1.801)	(2.542)	(2.875)	(6.880)
Investment	1.025	-0.411	2.325	-12.586
	(4.575)	(4.143)	(8.052)	(20.619)
Sample	All firms	All firms	Dem. firms	Dem. firms
N	5,286	5,286	1,122	1,122
R^2	0.288	0.402	0.444	0.448
Cycle FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Table 3. Difference-in-Differences: Evidence from Energy Policy Act

This table presents a difference-in-differences analysis using the Energy Policy Act as an exogenous shock to firms' E-score. The main independent variable is the interaction term of *Treated* and *Post*. Treated firms are those operating in energy production, manufacturing, transportation, and buildings industries. *Post* is a dummy variable that equals 1 for election cycles after 2006, and 0 otherwise. We include industry and congressional cycle fixed effects. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Depend. variable:	Test for identification assumption: E-score	Difference-in-differences		
		Cont' to traditionalists	Cont' to activists	Cont' to traditionalists
	1	2	3	4
Treated × $Post^{EPA(2006)}$	0.153***	1.288***	-0.294	
	(0.017)	(0.499)	(0.503)	
Treated × $Before^{1996}$				0.881
				(1.028)
Treated × $Before^{1998}$				0.164
				(1.043)
Treated × $Before^{2000}$				0.064
				(1.202)
Treated × $Before^{2002}$				0.657
				(0.835)
Treated × $Before^{2004}$				1.004
				(0.750)
Treated × $Post^{2008}$				1.119
				(0.809)
Treated × $Post^{2010}$				1.873**
				(0.817)
Treated × $Post^{2012}$				2.355***
				(0.903)
Treated × $Post^{2014}$				1.083
				(0.850)
Treated × $Post^{2016}$				1.615**
				(0.799)
Treated × $Post^{2018}$				2.675***
				(0.920)
Democratic leaning	0.096***	-15.439***	25.385***	-15.435***
	(0.019)	(0.963)	(2.070)	(0.963)
Firm size	0.035***	-0.243**	-0.548***	-0.244**
	(0.003)	(0.118)	(0.144)	(0.119)
Cash holdings	0.079**	-0.301	3.540**	-0.343
	(0.036)	(1.292)	(1.506)	(1.295)
Tobin's Q	-0.009*	-0.096	0.134	-0.096
	(0.005)	(0.166)	(0.239)	(0.166)
Leverage	-0.007	-0.326	-0.065	-0.334
	(0.032)	(1.208)	(1.370)	(1.212)
Profitability	0.113**	0.691	-4.505*	0.714
	(0.049)	(1.800)	(2.543)	(1.797)
Investment	0.279**	1.884	-0.488	2.031
	(0.111)	(4.652)	(4.160)	(4.681)
N	5,286	5,286	5,286	5,286
R^2	0.494	0.287	0.403	0.288
Cycle FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Table 4. Difference-in-Differences: Evidence from the Clean Power Plan

This table presents a difference-in-differences analysis using the Clean Power Plan (CPP) policy as a shock to firms' E-score. The sample is from 2008 till 2018 and excludes the states that oppose the CPP. The independent variable is the interaction term of *Treatment* and *Post*. *Treatment* measures treatment intensity, defined as the percentage CO_2 reduction target from 2012 to 2030 in each state (columns 1 to 4). *Post* is a dummy variable that equals 1 for election cycles after 2015, and 0 otherwise. Column 1 tests the identification assumption, where the dependent variable is *E-score*. Columns 2 through 5 present the results of the difference-in-differences analysis, where the dependent variable is the percentage of PAC contributions to environmental traditionalists or activists. In columns 5 and 6, the sample is restricted to firms located in Washington DC (where there is no CCP target) and in its neighboring counties (with CCP targets), and *Treatment* is a dummy variable that equals 1 for firms in the neighboring counties of DC, and 0 for control firms in DC. We include industry and congressional cycle fixed effects. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Depend. variable:	Test for identification assumption: E-score	Difference-in-differences				
		Cont' to traditionalists	Cont' to activists	Cont' to traditionalists	Cont' to traditionalists	Cont' to activists
	1	2	3	4	5	6
Treatment × $Post^{CPP(2016)}$	0.002*	0.080***	0.050		12.252***	3.795
	(0.001)	(0.031)	(0.045)		(3.297)	(2.281)
Treatment × $Before^{2008}$				-0.028		
				(0.046)		
Treatment × $Before^{2010}$				-0.058		
				(0.040)		
Treatment × $Before^{2012}$				-0.040		
				(0.046)		
Treatment × $Before^{2014}$				-0.039		
				(0.033)		
Treatment × $Post^{2018}$				0.087**		
				(0.038)		
Treatment	-0.001	-0.067***	-0.083**	-0.026	-6.029*	-1.117
	(0.001)	(0.024)	(0.033)	(0.030)	(3.469)	(1.702)
Democratic leaning	0.050	-16.147***	25.923***	-16.179***	-13.239**	11.117***
	(0.041)	(1.720)	(3.330)	(1.727)	(6.497)	(2.732)
Firm size	0.070***	0.381**	-0.465*	0.380**	-0.750	0.083
	(0.006)	(0.167)	(0.257)	(0.167)	(0.653)	(0.418)
Cash holdings	0.076	1.878	-1.183	1.906	8.812	-0.576
	(0.065)	(1.747)	(2.405)	(1.741)	(8.277)	(3.958)
Tobin's Q	0.010	-0.551**	0.596	-0.534**	0.670	2.444***
	(0.013)	(0.266)	(0.457)	(0.264)	(0.998)	(0.708)
Leverage	-0.004	-2.284	0.472	-2.342	6.765	6.483
	(0.074)	(1.856)	(2.827)	(1.871)	(7.352)	(4.814)
Profitability	0.086	-0.682	-8.586**	-0.823	3.790	-15.499*
	(0.106)	(2.917)	(3.847)	(2.921)	(8.685)	(7.964)
Investment	0.190	-0.307	0.639	-0.007	-2.851	8.106
	(0.299)	(7.903)	(11.610)	(7.944)	(18.326)	(12.977)
Sample	Supporting states, 08-18	Supporting states, 08-18	Supporting states, 08-18	Supporting states, 08-18	DC + Neighbors	DC + Neighbors
N	1,443	1,443	1,443	1,443	178	178
R^2	0.557	0.404	0.488	0.406	0.414	0.529
Cycle FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Table 5. Politician-level Evidence

This table presents the association between firms' PAC contributions and their environmental score at the politician–firm–congressional cycle level. Panel A reports the summary statistics. In Panel B, the dependent variable is the percentage of PAC contributions to a given politician in an election cycle. The independent variable is the interaction term of the firm's *E-score* and a dummy variable, *Politician*, which flags whether the politician is an environmental traditionalist or activist. Definitions of environmental traditionalist / activist and *E-score* are in Section 2. In columns 5 and 6, the independent variable is the interaction term of the firm's *E-score* and the politician's environmental score (i.e., cumulative support rate for pro-environment bills). We use OLS regressions. The sample includes all politicians from FEC's contribution records that can be matched to the firms in the MSCI ESG database. We include firm-politician pairwise fixed effects, election cycle fixed effects, and/or firm-cycle fixed effects. We control for the following politician characteristics: Party affiliation, chamber seat (Senate or House), incumbent status, age, years in office, anti-free trade position, anti-business tax position, and environment-related committee assignment. Definition of the variables is in Appendix 1. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Descriptive statistics

# Politicians	1,641				
Chamber (most recent cycle):			*Gender:*		
Senate	279	(17%)	Male	1,397	(85%)
House	1,362	(83%)	Female	244	(15%)
Party:			*Selected committees:*		
Democrat	795	(48.5%)	Energy and commerce (House)		7.4%
Republican	829	(50.5%)	Natural resources (House)		5.2%
Other/Independent	17	(1%)	Energy and natural resources (Senate)		1.1%
			Environment and public works (Senate)		1.1%

Other statistics:	*Mean*	*S.D.*	*25th Pct*	*Median*	*75th Pct*
Age	56	11	49	56	63
Years in office	12	11	3	11	19
Incumbent	0.896	0.306	1	1	1

Panel B. Politician–firm–cycle level regressions

	Depend. variable: Contributions to the politician					
	Politician is an E-traditionalist		*Politician* is an E-activist		Using politician's environmental score	
	1	2	3	4	5	6
Politician × E-score	0.211***	0.110**	-0.036	-0.000		
	(0.073)	(0.055)	(0.075)	(0.054)		
Politician score × E-score					-0.169**	-0.080*
					(0.081)	(0.044)
Anti-free trade	-0.102***	-0.092***	-0.110***	-0.098***	-0.114***	-0.103***
	(0.037)	(0.029)	(0.037)	(0.028)	(0.037)	(0.029)
Anti-tax	0.226	0.221*	0.237	0.229*	0.237	0.223*
	(0.167)	(0.130)	(0.167)	(0.130)	(0.167)	(0.130)
N	357,452	357,452	357,452	357,452	357,452	357,452
R^2	0.602	0.719	0.602	0.719	0.602	0.719
Firm-Politician FE	YES	YES	YES	YES	YES	YES
Politician controls	YES	YES	YES	YES	YES	YES
Cycle FE	YES	NO	YES	NO	YES	NO
Firm-Cycle FE	NO	YES	NO	YES	NO	YES

Table 6. Swing-the-vote *versus* Environmental Cost-Cutting

Panel A reports the association between politicians' pro-climate vote in cycle *t* (%) and their funds received from firms in *t* – 1. The regressions are at the politician–firm–congressional cycle level. The dependent variable is the percentage of pro-climate vote in cycle *t.* The independent variable is the interaction term of the firm's *E-score* and the firm's contributions to that politician in *t* – 1. *Contributions* are measured as the percentage of PAC contributions to a given politician or as the logarithm of contribution amount. We examine environmental traditionalists (columns 1–2) and activists (columns 3–4) separately. We include politician fixed effects and election cycle fixed effects. Control variables include political party affiliation, Senator, incumbent status, politician age, years in office, and environment-related committee assignment. Standard errors are clustered at the politician individual level. Panel B examines whether regulatory burden drives the association between firms' contributions and their E-score. The regressions are at the firm–election cycle level. The dependent variable is the percentage of PAC contributions to either environmental traditionalists or activists, as indicated in the table header. The independent variable is the firm's environmental score interacted with *E stringency*. *E stringency* is a proxy for regulatory stringency using *SEPA* (dummy variable for whether (state-level) State Environmental Policy Acts exist), an *index* capturing the intensity of the state-level environmental policy, and *EPA* enforcement actions (number of EPA actions per cycle). In columns 4 and 8, we also interact E-score with a dummy variable flagging firms subject to the EP Act and CPP laws. Same control variables and fixed effects as in Table 2 are included. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. Does political giving alter politicians' voting behavior?

	Depend. variable: Pro-climate vote (%) in current political cycle *t*			
	Traditionalist subsample		Activist subsample	
Contributions (*t*–1) proxied by:	PAC percentage	Log($ value)	PAC percentage	Log($ value)
	1	2	3	4
Contributions × E-score	-0.004	-0.002	0.025	0.000
	(0.028)	(0.001)	(0.023)	(0.001)
E-score	0.001	0.012	0.000	-0.001
	(0.001)	(0.009)	(0.000)	(0.005)
Contributions	0.001	-0.000	0.003	0.001**
	(0.004)	(0.000)	(0.003)	(0.000)
# Politician-firm-cycles	28,642	28,325	15,170	14,821
# Unique politicians	227	227	217	217
R^2	0.528	0.531	0.480	0.484
Politician controls	YES	YES	YES	YES
Cycle FE	YES	YES	YES	YES
Politician FE	YES	YES	YES	YES

Panel B. Does regulatory burden drive political giving?

	Depend. variable: Contributions to environmental traditionalists or activists							
	Traditionalists				Activists			
Regulatory stringency (*E stringency*) proxied by:	SEPA	Index	EPA	EPA	SEPA	Index	EPA	EPA
	1	2	3	4	5	6	7	8
E-score × E stringency	2.418***	0.631**	0.002*	0.003**	0.490	0.112	-0.001	-0.002
	(0.893)	(0.307)	(0.001)	(0.002)	(0.797)	(0.367)	(0.001)	(0.001)
E-score × EPAct / CPP				1.953*				-1.882*
				(1.085)				(0.988)
N	5,286	5,286	5,139	5,139	5,286	5,286	5,139	5,139
R^2	0.289	0.289	0.304	0.305	0.405	0.406	0.405	0.406
Controls as in Table 2	YES	YES	YES	YES	YES	YES	YES	YES
Cycle FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 7. Who Drives Political Contributions?

This table examines the channels that drive firms' political contributions at the firm–congressional cycle level. The dependent variable is the percentage of PAC contributions to politicians who are either environmental traditionalists or activists, as indicated in the table header. The independent variable is the firm's environmental score (*E-score*) interacted with "brown" / "green" institutional ownership (columns 1 and 2), CEOs (columns 3 and 4), or both (columns 5 and 6). Definitions of environmental traditionalist/activist and *E-score* are in Section 2. "Brown" ("Green") institutional ownership or CEO is defined as the institutional ownership / CEO whose political contributions to environmental traditionalists (activists) lie in the top 5 percentile of the distribution. We use OLS regressions. The sample includes all firms in the MSCI ESG database. The control variables are the same as those in Table 2. We include congressional cycle and industry (4-digit SIC) fixed effects. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Depend. variable: Contributions to environmental traditionalists or activists					
	Traditionalists	Activists	Traditionalists	Activists	Traditionalists	Activists
	1	2	3	4	5	6
Brown investor × E-score	4.410***	-0.685			4.855***	-1.025
	(1.708)	(1.897)			(1.750)	(1.951)
Green investor × E-score	0.112	2.095			-0.052	2.224
	(1.272)	(2.213)			(1.284)	(2.228)
Brown CEO × E-score			-1.575	-1.402*	-1.552	-1.278*
			(1.178)	(0.771)	(1.183)	(0.765)
Green CEO × E-score			1.246	-1.228	0.867	-1.084
			(1.187)	(1.525)	(1.072)	(1.460)
E-score	1.666**	-0.035	1.970***	0.279	1.703**	0.159
	(0.680)	(0.595)	(0.682)	(0.600)	(0.699)	(0.605)
Brown investor	0.292	-0.627			0.241	-0.652
	(0.608)	(0.442)			(0.610)	(0.441)
Green investor	-0.003	0.841*			0.034	0.870*
	(0.407)	(0.466)			(0.408)	(0.467)
Brown CEO			2.879***	-0.190	2.906***	-0.181
			(0.618)	(0.317)	(0.620)	(0.317)
Green CEO			-1.087***	3.073***	-1.098***	3.093***
			(0.380)	(0.751)	(0.380)	(0.752)
N	5,286	5,286	5,286	5,286	5,286	5,286
R^2	0.289	0.403	0.294	0.408	0.295	0.409
Controls as in Table 2	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Cycle FE	YES	YES	YES	YES	YES	YES

Table 8. Do Contributions to Environmental Traditionalists Create Value?

Panel A examines firms' abnormal return (AR) on the passage date of anti-environmental legislation. The sample includes all firms in the MSCI ESG database with stock information available on the legislation date. The dependent variable, AR, is calculated using a market model with a 200-day estimation window before the legislation passage. The independent variable is the interaction term of the firm's environmental score (*E-score*) and the firm's % contributions to environmental traditionalists. Panel B examines a sample of Congress special elections won or lost by a margin of 5% or less, and for the firms that only donated to one candidate in the election. The dependent variable is AR on the election day 0 or cumulative abnormal return (CAR) over [-1,3]. The independent variable is the interaction term of the firm's *E-score* and a dummy variable indicating that an environmental traditionalist won. The estimation is performed using various polynomial forms. Definitions of environmental traditionalist/activist and *E-score* are in Section 2. We include control variables as those in Table 2 and standalone variables in the interaction term (untabulated). Fixed effects are indicated at the bottom of each panel. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. Anti-environment bills

	Depend. variable: Abnormal return			
	1	2	3	4
E-score × % Contributions to traditionalists	0.973**	0.973**	0.927**	0.926**
	(0.397)	(0.396)	(0.426)	(0.425)
E-score × % Contributions to activists			-0.257	-0.265
			(0.612)	(0.611)
E-score	-0.020	-0.020	0.000	0.001
	(0.047)	(0.047)	(0.063)	(0.063)
% Contributions to traditionalists	0.057	0.055	0.053	0.052
	(0.079)	(0.079)	(0.079)	(0.079)
% Contributions to activists			-0.179	-0.180
			(0.140)	(0.140)
N	133,146	133,146	133,146	133,146
R^2	0.061	0.085	0.061	0.085
Controls as in Table 2	YES	YES	YES	YES
Industry-Cycle FE	YES	YES	YES	YES
Bill FE	NO	YES	NO	YES

Panel B. Close special elections

Depend. variable:	AR[0]	AR[0]	AR[0]	CAR[-1,3]
	1	2	3	4
E-score × Traditionalist × Won	0.946**	1.114**	1.166**	2.231**
	(0.452)	(0.464)	(0.467)	(1.022)
Functional form	Linear	Linear	Quadratic	Quadratic
N	1,252	1,252	1,252	1,252
R^2	0.213	0.334	0.337	0.260
Variables in the interaction term & controls	YES	YES	YES	YES
Election FE	YES	YES	YES	YES
Industry FE	YES	NO	NO	NO
Firm FE	NO	YES	YES	YES

Table 9. Robustness Tests

This table presents the robustness tests for the association between firms' PAC contributions and their environmental score at the firm–congressional cycle level. The dependent variable is the percentage of PAC contributions to environmental traditionalists in Panel A through Panel C. The independent variable is the firm's environmental score (*E-score*). In Panel A, column 1 includes firm fixed effects; column 2 examines contributions to out-of-state environmental traditionalists; column 3 examines the contributions from "politically neutral" firms, defined as the firms whose contributions to either Party range within 45% to 55% of all contributions in the congressional cycle. In Panel B, column 1 replaces the *E-score* with an alternative measure of environmental leader, *CERES*, a dummy indicator for firms in the CERES environmental network; column 2 instruments MSCI *E-score* with Refinitiv's environmental score; columns 3 and 4 use alternative definitions of traditionalists. In column 2, a traditionalist is defined as a politician whose lifetime supporting rate for pro-environmental legislation falls in the bottom 5 percentile of all politicians. In column 3, a traditionalist is defined using a politician's supporting rate for pro-environmental legislation in the most recent 3 congressional cycles. In Panel C, column 1 excludes firms in the energy industry; column 2 includes all MSCI-sample firms (including those without corporate PACs); column 3 drops firms with EPA violations. Panel D presents the placebo tests where the dependent variable is the percentage of PAC contributions to pro-business tax, anti-business tax, pro-free trade, and anti-free trade politicians, respectively. Control variables are the same as those in Table 2. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. Do omitted firm characteristics or political ideologies explain the results?

	Including Firm FE	Out-of-state contribution	Politically neutral firms
	1	2	3
E-score	1.398**	1.494**	4.344***
	(0.669)	(0.667)	(1.209)
N	5,286	5,286	932
R^2	0.504	0.191	0.413
Controls	YES	YES	YES
Cycle FE	YES	YES	YES
Industry FE	NO	YES	YES
Firm FE	YES	NO	NO

Panel B. Alternative measure of E-performance and of E-traditionalists

	Using CERES to replace *E-score*	Instrumenting MSCI score with Refinitiv's *E-score*	Alternative definition of E-traditionalists	
			Bottom 5pct voting record	Voting in most recent 3 cycles
	1	2	3	4
E-score	1.898**	4.696**	1.770***	1.255*
	(0.755)	(2.281)	(0.550)	(0.690)
N	5,286	5,286	5,286	4,936
R^2	0.287	0.094	0.203	0.283
Controls	YES	YES	YES	YES
Cycle FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Panel C. Alternative samples and sample selection issues

	Excluding Energy	Including no-PAC firms	Drop firms with EPA violations
	1	2	3
E-score	1.328**	0.849*	2.064***
	(0.663)	(0.515)	(0.720)
N	4,982	14,466	4,810
R^2	0.277	0.576	0.290
Controls	YES	YES	YES
Cycle FE	YES	YES	YES
Industry FE	YES	NO	YES
Firm FE	NO	YES	NO

Panel D. Placebo tests

Depend. variable: *Contributions to…*	Pro-tax politicians	Anti-tax politicians	Pro-free trade politicians	Anti-free trade politicians
	1	2	3	4
E-score	-0.010	-0.001	-0.003	0.006
	(0.010)	(0.001)	(0.003)	(0.008)
N	5,843	5,843	5,217	5,217
R^2	0.650	0.393	0.740	0.719
Controls	YES	YES	YES	YES
Cycle FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Appendix 1. Variable definition

Abnormal return: (cumulative) abnormal return around bill passage date or election date calculated using the market model. The model parameters are estimated over the 200 trading days prior to the event date with value-weighted CRSP market index. (Source: CRSP)

Anti-free trade (tax): indicator variable for the candidates whose cumulative anti-free trade (or corporate tax) voting record is in the top decile in the electoral cycle. (Source: American Conservative Union)

Cash holding: cash and equivalents scaled by total assets. (Source: Compustat)

Contributions by firms: political contributions to candidates by firms' political action committees (PACs) in an electoral cycle. (Source: FEC)

Contributions by investors/CEOs: political contributions to candidates by institutional investors' PACs or by CEO's private donations in an electoral cycle. (Source: FEC, Thomson/Refinitiv's 13F, BoardEx)

Democratic leaning: percentage of corporate PAC contributions that goes to Democratic candidates in a given electoral cycle. (Source: FEC)

E-traditionalist (activist): dummy variable equals 1 if the candidate's cumulative pro-LCV voting record is in the bottom (top) decile in the electoral cycle, and 0 otherwise. (Source: LCV)

E-score: environmental score of the firm in the electoral cycle, calculated as the (scaled) environmental strengths minus the (scaled) environmental weaknesses. (Source: MSCI)

Firm size: the logarithm of a firm's total assets. (Source: Compustat)

Investment: capital expenditure scaled by total assets. (Source: Compustat)

Leverage: book value of debts over market value of assets. (Source: Compustat)

Politician age: politician age in the election cycle. (Source: http://bioguide.congress.gov)

Politician chamber seat: indicator variable for Senator or House Representative. (Source: FEC)

Politician committee assignment: historical committee assignments of politicians. (Source: Charles Stewart III and Jonathan Woon)

Politician incumbent status: indicator variable for politicians holding office in the electoral cycle. (Source: FEC)

Politician party affiliation: party affiliation of the politician in the election cycle. (Source: FEC)

Politician years in office: years in office since the candidate first entered the Congress. (Source: http://bioguide.congress.gov)

Profitability: net income scaled by total assets. (Source: Compustat)

Regulatory stringency: index for environmental regulatory stringency in firms' state based on (i) a dummy variable that indicates whether a State Environmental Policy Act exists in the firm's headquarter state, (ii) an index that captures the intensity of state-level procedural requirements for project reviews (state actions, local actions, private actions), and (iii) the number EPA enforcement actions per election cycle. (Source: EPA, Ballotpedia)

Tobin's Q: market value of assets over book value of assets. (Source: Compustat)

Appendix 2. Institutional background

A. Corporate gifts through PACs and Super PACs

In the U.S., companies must establish political action committees (PACs) to make campaign contributions. These committees solicit funds from their firm's employees, but they are prohibited from using corporate treasury funds directly. Current federal campaign finance laws limit a corporate PAC's contribution to $5,000 per election per candidate (or $10,000 per election cycle for a given candidate). In 2010, the Supreme Court decision in "Citizens United v. The Federal Election Commission (FEC)" substantially expanded the ability of firms to support political candidates. The decision allows companies to make contributions from their treasury funds to independent-expenditure political committees (also known as "Super PACs"). The ruling also removed corporate contribution limits to the Super PACs. Although Super PACs disclose the finances to regulators, most of their funds are untraceable because they take contributions from nonprofits (with undisclosed donors) that don't have the reporting requirements.

B. U.S. environmental policies in the 2000's

A series of laws and policies established in the U.S. since 1970 address environmental protection concerns. Federal agencies, most noticeably, the Environmental Protection Agency (EPA), implement and enforce these regulations. During our sample period (1995–2018), there are two major environmental policy developments: the Energy Policy Act (EP Act) of 2005 and the Clean Power Plan policy (CPP) of 2015. In our empirical analysis, we explore the effects of these policies as individual exogenous shocks to firms' environmental performance.

The EP Act, signed into law in August 2005, established stringent renewable fuel standards by mandating greater amounts of renewable fuel (e.g., ethanol or biodiesel) contained in gasoline. It intended to improve energy efficiency in many economic sectors through a wide-ranging set of tax incentives and programs. Industries directly targeted by the EP Act include renewable fuel production, transportation (especially railroad and air), buildings/construction, and manufacturing (Dixon et al., 2010). Because of the EP Act, pollution issues, such as the greenhouse gas emissions, have substantially decreased (Metcalf, 2008).

The second climate policy, CPP, was proposed by the EPA in 2014 and announced by President Barack Obama in 2015. The CPP set state-level carbon emission reduction targets with the goal of cutting CO_2 emissions by 32 percent in 2030, relative to 2005 levels. According to the EPA, the CPP is the most forceful action on climate change in U.S. history. However, in 2016, the U.S. Supreme Court issued a temporary stay on the implementation of the CPP in response to a lawsuit led by some states and industry groups.[32] Despite the stay, over 20 states—including Republican-leaning ones such as Virginia and Idaho—announced that they would move forward to enforce the CPP. For example, right after the court decision, the Governors of Maryland and Virginia vowed to reach their CPP-assigned goals to reduce carbon pollution.[33] Moreover, 14 such states subsequently adopted 100% clean energy goals through state-level legislation or executive order based on the CPP. The so-called "opt-in" state compliance was effective in achieving targeted pollution goals (e.g., Linn et al., 2016; Pacyniak, 2017). See Figure A1.

[32] See https://archive.epa.gov/epa/cleanpowerplan/clean-power-plan-existing-power-plants-regulatory-actions.html

[33] See https://www.georgetownclimate.org/articles/state-statements-following-the-supreme-court-s-decision-to-stay-the-clean-power-plan.html, https://appvoices.org/2016/02/18/va-clean-power-plan-approach-unchanged/, https://www.troutmanenergyreport.com/2016/04/maryland-governor-reauthorizes-act-with-40-percent-greenhouse-gas-reduction-goal/, and https://www.nytimes.com/2016/07/20/us/obama-clean-power-plan.html

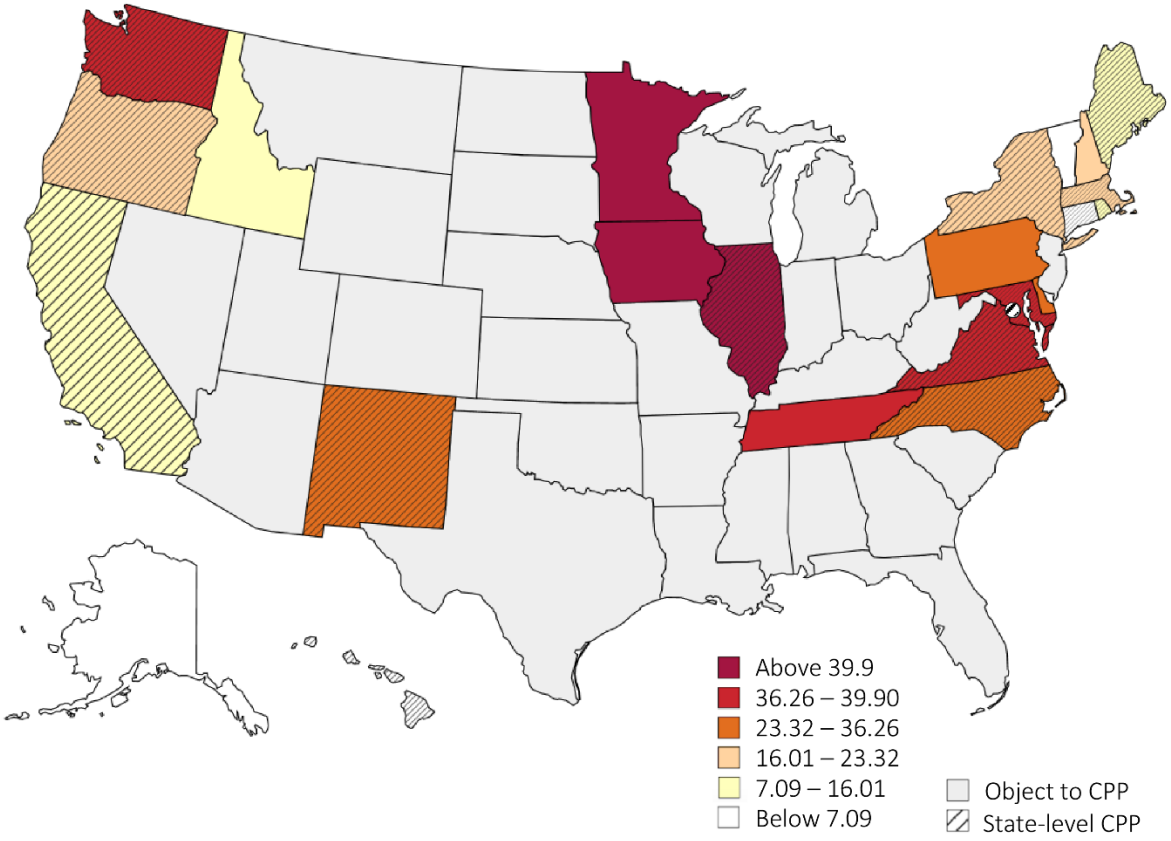


Figure A1. Status of the Clean Power Plan and State-level Clean Energy Policies

The map illustrates the states that objected to the 2015 Clean Power Plan (in grey) and the states that supported the Plan after the Supreme Court's stay on the Plan's implementation (in other colors). The states that oppose the CPP include Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Texas, Utah, West Virginia, Wisconsin, Wyoming. For the supporting states, a darker color indicates a higher CO_2 pollution reduction goal. Stripes indicate the states that implement their own 100% Clean Energy legislation following the Supreme Court's stay on the CPP.

Appendix 3. LCV, environmental bills, and pro-environment positions

LCV collects the most important environmental bills voted in Congress since 1970. According to LCV, these bills represent "the consensus of experts from more than 20 respected environmental, environmental justice, and conservation organizations." The bills are related to the vital environmental issues of the year, such as air, water, energy, lands, climate change, spending for environmental programs, public health, wildlife conservation, etc.

Below are three examples of environmental bills and LCV's explanation for a pro-environment position.

1. 2018 House roll call vote 203, *eliminating clean water safeguards*, "no" vote is the pro-environment position. Explanation: Representative Jim Banks (R-IN) offered an amendment to H.R. 2, the Agriculture and Nutrition Act of 2018, also known as the Farm Bill, which would repeal the clean water safeguards established by the 2015 Clean Water Rule. This rule protects the waterways that feed into the drinking water of over 117 million people as well as the streams, headwaters, wetlands and other water bodies that serve as habitat for wildlife, reduce flooding risk, and naturally filter pollution. The Banks amendment would subvert the rulemaking process by disregarding public input, ignore the rule's strong scientific foundation, and return Clean Water Act jurisdiction to an inconsistent and uncertain regulatory scheme. Eliminating the Clean Water Rule would disproportionately impact low-income communities and communities of color and would jeopardize the clean water families, communities, and economies depend on.

2. 2016 Senate roll call vote 9, *clean energy funding*, "yes" vote is the pro-environment position. Explanation: Senator Brian Schatz (D-HI) offered an amendment to S. 2012, the Energy Policy Modernization Act of 2015, which would increase funding for the Advanced Research Projects Agency-Energy, an important Department of Energy research program intended to spur transformational breakthroughs in energy technologies. Additional funding for this program could help the United States lead in the clean energy transformation.

3. 2010 Senate roll call vote 187, *cutting oil subsidies*, "yes" vote is the pro-environment position. Explanation: The oil and gas industry receives billions of dollars of government support each year through loopholes in the tax code and royalty-free lease agreements. These subsidies dwarf the incentives that are currently available for renewable energy and energy efficiency and distort the market in favor of this mature industry that is a major source of global warming and other toxic pollutants. President Obama called for the elimination of many of these subsidies in his budgets for fiscal years 2010 and 2011 and agreed to eliminate these subsidies in a pledge made with other world leaders at a Group of 20 Summit in 2009. Congress, however, has not taken the steps necessary to end these subsidies.

In June, the Senate took up H.R. 4213, the American Workers, State, and Business Relief Act of 2010, which would extend unemployment benefits to long term out of work Americans for an additional four months. Senator Bernard Sanders (I-VT) offered an amendment to the bill to eliminate $35 billion in subsidies to the oil and gas industry, giveaways which were targeted for elimination in the President's budget; $25 billion of the savings would go to deficit reduction and $10 billion would be directed to the Energy Efficiency and Conservation Block Grant Program, a grant program that allows communities to invest in projects that reduce energy usage.

Appendix 4. MSCI's environmental rating

The following criteria are included in MSCI ESG's environmental score:

E-strengths: Beneficial products and services, pollution prevention, recycling, clean energy, property, plant and equipment, management system strengths, natural capitals (waste stress, land use and biodiversity, raw material sourcing), financing environmental impact, opportunities in green building, opportunities in renewable energy, electronic waste strengths, product carbon footprint, climate change vulnerability, and other strengths

E-concerns: Hazardous waste, regulatory problems, Ozone depleting chemicals, substantial emissions, agricultural chemicals, climate change concerns, negative impacts of products and services, land use and biodiversity concerns, non-carbon releases, supply chain management, water management, and other concerns

Appendix 5. Environmental grades and firm performance

The table presents the association between firm performance and E-score. The sample is from MSCI ESG database over 1995 – 2018. The dependent variables in column 1 through 4 are *Tobin's Q* (market value of assets over book value of assets), *Profitability* (net income scaled by total assets), *EBIT margin* (EBIT scaled by sales), and *Costs margin* (COGS scaled by sales), respectively. All values are reported at the end of an election cycle. Definitions of E-score are in Section 2. We include cycle and firm fixed effects. Standard errors are clustered at the firm level and reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Tobin's Q	Profitability	EBIT margin	Costs margin
	1	2	3	4
E-score	-0.308***	-0.010*	-0.017*	0.025*
	(0.088)	(0.006)	(0.009)	(0.014)
Democratic leaning	-0.019	0.020***	0.019**	-0.001
	(0.067)	(0.006)	(0.010)	(0.030)
Firm size	-0.403***	-0.002	0.007	0.009
	(0.044)	(0.003)	(0.004)	(0.012)
Cash holdings	0.471**	0.016	-0.064**	0.051
	(0.238)	(0.022)	(0.031)	(0.047)
Leverage	-2.360***	-0.244***	-0.189***	0.122***
	(0.174)	(0.017)	(0.025)	(0.043)
R&D expenditures	2.250	-0.591***	-0.662***	-0.009
	(2.600)	(0.164)	(0.189)	(0.262)
Constant	5.858***	0.110***	0.138***	0.506***
	(0.414)	(0.029)	(0.041)	(0.114)
N	5,835	5,835	5,776	5,831
R^2	0.758	0.545	0.733	0.648
Cycle FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES

Appendix 6. Close special elections 1996–2018

This table presents dates, candidates, seats, and outcomes of special Congressional elections won by a margin of less than 5 percent from 1996 to 2018. Victory margin is the percentage by which the candidate won (lost) the election: A positive (negative) margin indicates win (loss). To indicate parties, D refers to the Democratic Party; R refers to the Republican Party; and C refers to the Conservative Party. Data come from the Federal Election Commission.

Date	Name	State	District	Party	Victory Margin (%)
19960130	Ron Wyden	Oregon	Senate	D	1.6
19960130	Gordon Smith	Oregon	Senate	R	-1.6
19970513	Bill Redmond	New Mexico	3	R	2.96
19970513	Eric Serna	New Mexico	3	D	-2.96
19980623	Heather Wilson	New Mexico	1	R	4.96
19980623	Phillip Maloof	New Mexico	1	D	-4.96
19990529	David Vitter	Louisiana	1	R	1.49
19990529	David Treen	Louisiana	1	R	-1.49
20010619	Randy Forbes	Virginia	4	R	4.2
20010619	Louise Lucas	Virginia	4	D	-4.2
20030603	Randy Neugebauer	Texas	19	R	1.04
20030603	Mike Conaway	Texas	19	R	-1.04
20040601	Stephanie Herseth	South Dakota	0	D	1.15
20040601	Larry Diedrich	South Dakota	0	R	-1.15
20050802	Jean Schmidt	Ohio	2	R	3.27
20050802	Paul Hacket	Ohio	2	D	-3.27
20060606	Brian Bilbray	California	50	R	4.55
20060606	Francine Busby	California	50	D	-4.55
20070717	Paul Broun	Georgia	10	R	0.84
20070717	Jim Whitehead	Georgia	10	R	-0.84
20080503	Don Cazayoux	Louisiana	6	D	2.93
20080503	Woody Jenkins	Louisiana	6	R	-2.93
20090331	Scott Murphy	New York	20	D	0.45
20090331	Jim Tedisco	New York	20	R	-0.45
20091103	Bill Owens	New York	23	D	2.37
20091103	Douglas Hoffman	New York	23	C	-2.37
20100119	Scott Brown	Massachusetts	Senate	R	4.76
20100119	Martha Coakley	Massachusetts	Senate	D	-4.76
20110524	Kathy Hochul	New York	26	D	4.96
20110524	Jane Corwin	New York	26	R	-4.96
20140311	David Jolly	Florida	13	R	1.8
20140311	Alex Sink	Florida	13	D	-1.8
20170620	Karen Handel	Georgia	6	R	3.56
20170620	Jon Ossoff	Georgia	6	D	-3.56
20170620	Ralph Norman	South Carolina	5	R	3.1
20170620	Archie Parnell	South Carolina	5	D	-3.1
20171212	Doug Jones	Alabama	Senate	D	1.7
20171212	Roy Moore	Alabama	Senate	R	-1.7
20180313	Conor Lamb	Pennsylvania	18	D	0.4
20180313	Rick Saccone	Pennsylvania	18	R	-0.4
20180424	Debbie Lesko	Arizona	8	R	4.8
20180424	Hiral Tipirneni	Arizona	8	D	-4.8
20180807	Troy Balderson	Ohio	12	R	0.8
20180807	Danny O'Connor	Ohio	12	D	-0.8