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Abstract

A frequently voiced concern is that corporate lobbying activities, at least in part, hinder the implementation of ambitious climate policies. We quantify corporate anti- and pro-climate lobbying expenses of U.S.-listed firms and identify the largest corporate lobbyists and their motives. Firms spend on average $277k per year on anti-climate lobbying ($185k on pro-climate lobbying). Anti-climate lobbyists have more carbon-intensive business models, while pro-climate lobbyists exhibit more green innovation. Firms that spend more on anti-climate lobbying earn higher returns, probably because of a risk channel. Our results align with the increasingly common investor view that anti-climate lobbying constitutes an investment risk.

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1 Introduction

Climate change requires regulatory action to limit the increase in global temperature to internally agreed levels. Despite this necessity, most countries' climate efforts are insufficient, with significantly more action needed to cut carbon emissions, transition to renewable energy sources, or stimulate green innovation. A common concern is that more ambitious climate action, at least in parts, is obstructed by firms' lobbying activities. Such activities seek to influence politicians or policymakers to undermine, delay, or avoid pro-climate regulations. For that reason, some argue that anti-climate lobbying should be labeled as "Scope 4 emissions," to reflect that some firms' lobbying against stricter policies impact climate change more negatively than their Scope 1, 2, or 3 emissions would indicate.

Typically, lobbying occurs behind the scenes, sometimes even colliding with a firm's public commitment to combat climate change.[1] In the 2022 proxy season, manifestations of such misalignment were a key issue raised by activist investors, and climate lobbying also emerged as a major topic of concern in shareholder engagement (Dimson et al., 2023; Ceres, 2022; ClimateAction100+, 2023). Several investors and investor groups have started to publish expectations on climate lobbying for their portfolio firms, including guidance on the goals, scope, and transparency of such activities (e.g., PRI, 2022; NBIM, 2023).

Corporate lobbying against climate action is not a sideshow but has real effects on climate action by countries (Meng and Rode, 2019; Brulle, 2018). For example, corporate lobbying and various lawsuits had a major impact on the failure of the U.S. Clean Power Plan, which contained standards to reduce emissions. Further, auto industry lobbying arguably compromised climate rules on vehicles in the U.S. and EU. There is also evidence on video of how an ExxonMobil lobbyist said that the firm had fought climate science through "shadow groups" and targeted influential senators to weaken President Biden's climate proposals (Tabuchi,

[1]For example, ExxonMobil, Glencore, and Stellantis, among others, made public statements to become greener (e.g., through net-zero pledges), but in silence conducted lobbying against climate action (InfluenceMap, 2023). Similarly, the Business Roundtable, a major U.S. corporate lobbying group, publicly supported the fight against climate change while silently lobbying against stricter regulation (Lowenstein, 2022).

2021). Gao and Huang (2024) show that U.S. Congress members who receive large campaign contributions from carbon-emitting firms are more likely to cast climate-skeptic votes. The social costs associated with climate lobbying are potentially large. For example, Meng and Rode (2019) calculate that such lobbying lowered the probability of enacting the (eventually failed) Waxman-Markey Cap-and-Trade Bill by 13 percentage points, representing a social cost of $60 billion. That said, climate lobbying is not necessarily only anti-climate, and pro-climate lobbying may counter attempts to obstruct or even encourage stricter legislation.

Understanding corporate climate lobbying is important given its significant role in the ultimate success of tackling the global climate crisis. In this paper, we comprehensively analyze the climate lobbying activities of U.S.-listed firms from 2001 to 2022. We quantify anti- and pro-climate lobbying expenses, identify the largest corporate lobbyists and their motives, and document whether, how, and why climate lobbying is priced in financial markets. We identify lobbying expenses at the federal level, which account for 70% of total lobbying expenses since 2015 at the combined federal and state levels (OpenSecrets, 2024).[2]

We construct lobbying measures from quarterly lobbying reports, which are required by law and filed by in-house corporate lobbyists or external lobbying firms. The construction comprises two steps. In step one, we identify those reports that address climate-related topics and measure the associated lobbying amounts. Climate-related lobbying is identified based on a classification of the lobbying "issues" listed in the reports (one report may contain multiple issues). An issue is classified as "climate-related" if its description contains climate-specific keywords or pertains to climate-related bills. Climate-related issues feature in 25,394 (or 10%) of the 250,598 reports filed by our sample firms. We quantify the associated dollar amounts of climate lobbying by proportionally allocating the total lobbying expenditures listed in a report across the issues included (there is no data on issue-level spending).

In step two, we differentiate between anti- and pro-climate lobbying, leveraging data on

[2]While the Lobbying Disclosure Act mandates transparency for federal lobbying, most states lack comprehensive disclosure laws, making it difficult to measure state-level lobbying (only 19 states provide meaningful data).

campaign contributions by a firm's executives and its hired lobbyists. We calculate whether these individuals' contributions go primarily to the Republican or Democratic Party, maintaining that a firm's lobbying is anti-climate (pro-climate) if its executives or lobbyists donate primarily to Republicans (Democrats).[3] This approach to identifying the direction of lobbying follows Kwon et al. (2024), who use contributions by lobbyists to identify anti- and pro-environmental lobbying; we consider primarily contributions by executives. Our inference is based on two plausible assumptions: (i) the climate stance of executives is informative about the climate stance of their employers (and likewise for lobbyists servicing a firm); and (ii) firms with executives (or lobbyists) donating predominantly to the Republican Party—characterized by more conservative climate actions and regulations—undertake more anti-climate lobbying; conversely, firms with associated individuals supporting the Democratic Party—recognized for a more pro-climate leaning agenda—engage more in pro-climate lobbying. We provide evidence supporting these assumptions. We aggregate these numbers across all quarterly lobby reports of a firm.

Building on our newly created metrics, we provide a detailed anatomy of corporate climate lobbying in the United States. On average, spending on anti-climate lobbying amounts to \$277k per year and pro-climate lobbying to \$185k (both at the intensive margin for firms that engage in climate lobby); both measures exhibit large cross-sectional variation.[4] Anti-climate lobbying is highly concentrated, with Petroleum & Natural Gas firms and Utilities spending the largest amounts (around \$232m per sector from 2001 to 2022).[5] Pro-climate lobbying is more dispersed across sectors. Interestingly, the Utilities sector also ranks highest based on the aggregate amount of pro-climate lobbying, followed by Pharmaceuticals, Automobiles & Trucks, and Electronic Equipment. The top five anti-climate lobbyists are

[3]We need to infer the climate stance as firms are not required to disclose their stances in the lobbying reports. We use contributions by executives and lobbyists because *corporate* political donations are much less informative about a firm's climate stance (firms rarely donate to just one party).

[4]Average lobbying expenses by firms with executives or lobbyists that predominantly donate to the Republican (Democratic) Party, irrespective of whether the expenses are climate-motivated, amount to \$521k (\$389k) per year.

[5]Pástor et al. (2024) demonstrate that the Utilities and Energy sectors have the highest carbon burden from future emissions relative to their market capitalization.

Southern Company, ExxonMobil, Chevron, BP, and American Electric Power, and the largest pro-climate lobbyists are PG&E, General Motors, Calpine, Covanta Energy, and Microsoft. Besides direct lobbying, some firms leverage trade associations for lobbying purposes, which can obscure individual firms' lobbying efforts.[6] We calculate these indirect lobbying expenses and show that our results are unaffected when accounting for them.

To understand the motives behind climate lobbying, we evaluate whether lobbying activities relate to firm-specifics deemed important for the net-zero transition. As climate lobbying varies with firm size, we measure a firm's climate lobbying intensity as lobbying expenses scaled by assets (to smooth seasonal variation, we use an annual measure). We document that climate lobbying relates to proxies for the risks and opportunities associated with climate change. Firms with more carbon-intensive business models spend more on anti-climate lobbying. On the contrary, firms that exhibit more green innovation, captured using green patents or green innovation discussions in earnings calls, spend more on pro-climate lobbying.

To demonstrate that climate lobbying varies significantly within industries, we zero in on the Utilities sector. This sector stands out by ranking high for both anti- and pro-climate lobbying, which reflects the wide variation in business models within the sector. Utilities are heterogeneously affected by the transition away from fossil fuels as electricity providers vary in their reliance on different fuels. Firms primarily dependent on coal and gas conduct significantly more anti-climate lobbying, whereas those heavily reliant on nuclear energy participate in more pro-climate lobbying (nuclear energy is "green" according to the EU Taxonomy).

An inspection of lobbying reports reveals a recent trend of camouflaging climate lobbying, with some firms increasingly using bill titles or abstract bill codes in their issue descriptions, instead of explicitly mentioning climate-related keywords. This practice constitutes a form of camouflaging as bill codes often do not make recognizable climate-related legislation (this underscores the importance of identifying lobbying through methods beyond keyword descrip-

[6] Our main tests focus on direct lobbying because the calculations of indirect lobbying expenses require significantly more assumptions due to the more opaque nature of the underlying data.

tions alone).[7] Camouflaging is more prevalent among firms that initiate lobbying activities or shift their stance from anti- to pro-climate (the latter effect is marginally insignificant). Perhaps in response to this trend, investors increasingly express concerns over the lack of transparency in corporate climate lobbying (e.g., NBIM, 2023).

Having documented determinants and motives of climate lobbying, we address whether investors care about such activities when pricing stocks. This is a plausible consideration, especially during recent years, as major investors have paid increased attention to the topic (PRI, 2022). As stressed by Sustainalytics (2023), a major ESG rating agency, anti-climate lobbying can constitute an investment risk by damaging trust and triggering "name and shame" actions (reputation risk), or by delaying necessary business model adjustments in the hope of successful lobbying (transition risk). Anti-climate lobbyists may also face legal risk if the lobbying contradicts public climate statements and is interpreted as misleading investors or consumers (PRI, 2018). Furthermore, climate lobbying increases firms' exposure to climate-policy-related government shocks (political risk).

We find that firms with more anti-climate lobbying earn higher future returns.[8] This effect arises only in the second part of our sample from 2010 to 2022. A standard-deviation increase in anti-climate lobbying is associated with 0.32% higher monthly returns, or 3.84% annually (t-statistic of 5.76). The effect does not reflect a carbon risk premium, as we show by directly controlling for carbon emissions. The return effects become larger when indirect lobbying through trade associations is included. We verify that the return effects do not simply reflect political connections to parties. Pro-climate lobbying is unrelated to returns.

We compile evidence indicating that the return effect reflects an investment risk channel. First, more anti-climate lobbying predicts—in subsequent years—more political risk discus-

[7] FedEx Corporation provides a case in point. In 2009, FedEx spent \$5.3m on anti-climate lobbying, with 58% (59%) of the amount being identifiable through keywords (keywords and bill titles). In 2022, when FedEx spent \$1.3m on anti-climate lobbying, these detectable proportions dropped to 4% (34%); the remaining expenses can only be identified through bill codes and bill titles (bill codes).

[8] We follow Bolton and Kacperczyk (2021, 2023) and employ cross-sectional regressions using a characteristic-based approach. Results from portfolio sorts and implied cost of capital estimates (instead of realized returns) generate similar return patterns (Pástor et al., 2022; Eskildsen et al., 2024).

sions in earnings calls, more climate incidents, and more climate litigation. Second, anti-climate lobbyists experience lower returns in months when aggregate climate-related political and legal risks *materialize* (while generally earning higher future returns across the sample period); this suggests that the positive lobbying-return relationship reflects compensation for related risks. Third, the stock prices of anti-climate lobbyists are bid down (bid up) around important regulatory events that increase (decrease) investor uncertainty about strict climate regulation. We document this using two opposing events: the failure of the Waxman-Markey Bill (WMB), and the announcement of the Inflation Reduction Act (IRA).[9] Fourth, lobbying-related risk contains a systematic component, as evidenced by Fama-MacBeth regressions relating stock returns to firm exposures to a risk factor based on anti-climate lobbying.

We evaluate an alternative interpretation of our results which holds that anti-climate lobbyists generate unexpectedly higher earnings that subsequently cause higher returns. Earnings surprises could occur if anti-climate lobbying is successful and unexpectedly results in less stringent regulation or lower regulatory costs.[10] This channel is inconsistent with our data: firms with larger anti-climate lobbying expenses do not exhibit higher earnings surprises.

Related Literature. Our paper contributes to the literature on ESG and political leanings. Most related is Kwon et al. (2024), who also identify corporate political stances using campaign contributions. They examine the interaction between environmental lobbying and green innovation and explore its connection to firms' business operations, toxic emissions, and ESG ratings. We differ methodologically from their work by complementing their approach to measuring lobbying: while they rely on lobbyist contributions, we place more emphasis on executive contributions. We also specifically focus on climate lobbying. In terms of content, while

[9]The failed WMB would have significantly changed U.S. climate policy by establishing a national cap-and-trade system. It is also used as an exogenous shock in Meng (2017). The IRA constitutes the most ambitious and comprehensive U.S. climate change legislation, aiming for a 41% reduction in emissions by 2030. If the return dynamics reflect a risk channel, then—from an equilibrium perspective—the stock prices of anti-climate lobbyists should be bid up (bid down) around events that decreased (increased) investor uncertainty about climate-related regulation (Bolton and Kacperczyk, 2021). Lobbying-related risks would, in turn, be impounded into stock prices, as lower (higher) prices imply higher (lower) expected returns.

[10]This mispricing channel requires *unexpectedly* higher earnings, as higher earnings as such should be capitalized in a stock's market value and not be associated with higher returns.

Kwon et al. (2024) analyze the innovation-lobbying nexus in detail, we explore broader lobbying motives and investigate the impacts on the financial market. For political leaning in a wider ESG context, Di Giuli and Kostovetsky (2014), Eichholtz et al. (2009), and Gupta et al. (2016) show that Democratic-leaning corporate stakeholders are more inclined towards CSR practices. Fich and Xu (2023) demonstrate that "involuntarily" green firms increase political donations to traditionalist politicians to reduce compliance burden, while Heitz et al. (2023) find fewer environmental enforcement and lower penalties for politically connected firms.

We also contribute to studies on the effect of corporate lobbying on climate policy. Lantushenko and Schellhorn (2023) document intensified lobbying by fossil fuel firms since 2013. Kang (2016) quantify the impact of energy firms' lobbying on policy enactment. Meng and Rode (2019) and Delmas et al. (2016) reveal a reduced likelihood of policy enactment due to lobbying and a U-shaped relationship between emissions and lobbying expenses.[11] The identification of anti- and pro-climate lobbying differentiates our approach from this body of work. Instead of assessing the role of lobbying on policy outcomes, we explore the determinants of different types of climate lobbying and how such activities are priced by investors.

Finally, we add to research linking political connections or lobbying to returns. Cooper et al. (2010), among others, study how contributions to U.S. political campaigns relate to the cross-section of returns. Akey (2015) shows that firms donating to winning candidates experience higher post-election returns compared to those donating to losing candidates. Grotteria (2024) documents a positive risk premium for corporate lobbying, even in cases where lobbying amounts are small. Borisov et al. (2015) investigate whether corporate lobbying creates firm value by analyzing a shock that limits firms' ability to lobby. Neretina (2024) shows that non-lobbying firms systematically lose market value around the passage of federal legislation that attracts lobbying from competitors. We extend this literature by

[11] Paul et al. (2017) and Brulle (2018) also explore the influence of lobbying on climate legislation. Clark and Crawford (2011) and Johnston (2010) link firms' environmental performance to political engagement and to questioning the prevailing climate narrative. Rendina et al. (2023) examine how firms respond to environmental concerns through clean innovation and environmental lobbying.

examining the lobbying-return relationship in the climate context and providing a risk-based explanation. Studies examining risk-return effects in climate finance include Pástor et al. (2021), Bolton and Kacperczyk (2021), Bolton and Kacperczyk (2023), or Hsu et al. (2023).

2 Data Sources and Sample Construction

2.1 Data on Lobbying Reports

Our analysis of corporate lobbying expenses builds on all 1,235,401 quarterly U.S. lobbying reports from 2001Q1 to 2023Q1 (cross-sectional tests use data until 2022).[12] We download these reports from OpenSecrets, a nonprofit that publishes data on lobbying and campaign finance. OpenSecrets can collect these data as in-house lobbyists and external lobbying firms—who lobby on behalf of a client—are required to file lobbying reports. These reports have to contain the firm names (or clients), the issues lobbied on, the houses of Congress/federal agencies contacted, the individual lobbyists involved, and the lobbying amounts. Reports for the first calendar quarter (Q1) are due on April 20, covering January 1 to March 31. Similarly, Q2, Q3, and Q4 reports are due on July 20, October 20, and January 22, respectively. Typically, the reports are available for public viewing within a few days of submission.

Our initial sample covers 59,979 clients and 1,235,401 lobbying reports. Out of the total number of clients, 53,242 clients submitted 1,046,506 reports through 7,634 external lobbying firms, and 6,858 clients filed 188,895 reports via in-house lobbyists. Some firms show up as clients in both numbers (they have in-house and external lobbyists), and some firms file multiple reports as they work with multiple lobbying firms. We consolidate client reports at the firm level in the next steps. We match client names with Compustat using exact name matches or fuzzy matching (FuzzyWuzzy) plus a manual verification. As detailed in Table IA

[12] The Lobbying Disclosure Act (LDA) of 1995 mandates disclosure on lobbying aimed to influence federal legislative decision-making. Before 2008, firms were required to submit reports on a semi-annual basis. For simplicity, we refer to a quarterly frequency throughout (most of our tests aggregate data at the annual frequency; we explain below how we account for the semi-annual frequency when using quarterly data).

A1, Panel A, of the 59,979 clients in OpenSecrets' lobbying reports, 5,586 are listed firms, of which 4,036 are U.S.-listed firms. Table IA A1, Panel B, shows that among the 1,235,401 lobbying reports in our initial sample, 250,598 are from U.S.-listed Compustat firms.

2.2 Data on Campaign Contributions

We collect data on individual campaign contributions by executives and lobbyists from the FEC website. Federal U.S. law requires all political committees, including candidates' campaign committees, Political Action Committees (PACs), and party committees, to report to the FEC the contributions they receive.[13] The FEC data include information on the donors' employers and their occupations (e.g., CEO or lobbyist), which allows us to link the names of the individuals to Compustat firms. We use the matching approach from above to link individual and employer names to Compustat firms and lobbying reports.

2.3 Other Data Sources

Emission data is obtained from Trucost (2005-2020), data on green innovation from the United States Patent and Trademark Office (USPTO) and Leippold and Yu (2024) (2002-2022), data on electricity generation sources from the Energy Information Administration (EIA) (2001-2022), data on firm-level text-based political risks from Hassan et al. (2019) (2002-2022), data on climate incidents from RepRisk (2007-2022), data on climate lawsuits from Sato et al. (2024) (2006-2021), and accounting data from Compustat (2001-2022). We utilize monthly stock returns from CRSP for firms traded on NYSE, AMEX, and NASDAQ.

[13] Our analysis focuses on direct contributions to candidates and parties. Direct campaign contributions originate from committees and individuals, with individuals typically being the major contributors. For example, about 99.5% of Donald Trump's presidential campaign funding from January 2023 to October 2024 came from individuals. Firms can also form affiliated PACs to collect voluntary contributions and then donate those funds to support or oppose candidates or political parties. Unlike individuals who often make most of their contributions to one party, PACs commonly distribute their contributions strategically across both parties as a hedging tactic. We exclude Super PACs as they follow different rules and represent a more recent development in campaign finance after the 2010 U.S. Supreme Court decision. Fich and Xu (2023) and Akey (2015) also exclude Super PACs because of their higher complexity and lower transparency.

3 Quantifying Corporate Climate Lobbying

3.1 Measuring Climate Lobbying Amounts

We develop several measures quantifying corporate climate lobbying. In step one, we identify climate-related lobbying by classifying the specific "issues" addressed in a lobbying report. Each lobbying report contains a description of the lobbying activities at the issue level. To classify an issue as "climate-related," we analyze the text of the issue description and the bills mentioned therein. An issue is climate-related if its description contains at least one climate-specific keyword or if the issue pertains to a climate-related bill.[14] Climate-related issues feature in 25,394 or 10.1% of the 250,598 reports of our sample firms (Table IA A1, Panel B). Of the 2.3 lobbying issues addressed in the average report, 0.17 are climate-related.

Having identified climate-related issues, we quantify the associated lobbying expenses. Data on the money spent on *individual* lobbying issues is unavailable. Therefore, to calculate a firm's quarterly climate lobbying expenses, we proportionally allocate the total lobbying expenditures across the number of issues. This allows us to calculate the climate lobbying amount in the report r filed by firm i (or its external lobbyists) in quarter q of year t as:

$$ClimateLobby_{r,i,q,t} = \frac{N_{r,i,q,t}^{Climate\ Issue}}{N_{r,i,q,t}^{Issue}} \times LobbyAmount_{r,i,q,t},$$

where $LobbyAmount_{r,i,q,t}$ is the lobbying expense of report r related to firm i in quarter q of year t, $N_{r,i,q,t}^{Climate\ Issue}$ is the number of issues containing climate keywords or bills in report r, and $N_{r,i,q,t}^{Issue}$ is the total number of issues in report r. For comparison, we construct $ClimateLobby_{r,i,q,t}^{Text}$, for which we classify an issue as "climate-related" if the associated text

[14] Our list of climate keywords includes the following terms: climate change, global warming, greenhouse gas, carbon emission, renewable energy, clean energy, dirty energy, fuel economy, renewable electricity, energy efficiency, climate mitigation, climate adaptation, climate resilience, or air pollution. We identify most keywords from those climate-related keywords in Sautner et al. (2023) plausibly relate to climate lobbying. Climate-related bills are identified based on whether a bill's title or sub-titles feature any predefined climate keywords. Bills are proposals introduced by a member of Congress to create new laws or substantially modify existing ones. We identify 2,802 climate bills (out of 221,861 bills). Our data source for bills is Congress.gov.

description includes a predefined climate keyword (i.e., we ignore bill titles and bill codes).

3.2 Measuring Political Stance of Climate Lobbying

In step two, we distinguish between anti- and pro-climate lobbying, following a similar approach in Kwon et al. (2024). Firms are not obligated to reveal their positions on climate issues in their reports, such as whether they lobby for or against specific legislation.[15] Hence, we must deduce their climate stances indirectly, which we accomplish by analyzing the campaign contributions made by a firm's executives or their hired lobbyists to the Republican or Democratic Party. We use these individuals' contributions because political donations through corporate-affiliated PACs are comparatively less informative about a firm's climate stance; firms rarely donate to just one party.[16] As we show below, this is different for executives—even after aggregating donations across executives within the firm—and also for lobbyists.

We make two assumptions. First, the climate stance of executives is informative about the climate stance of their employers (and likewise for lobbyists who service a firm). Second, the climate lobbying of firms whose executives (or lobbyists) donate predominantly to the Republican Party is anti-climate, as Republicans have a relatively conservative climate stance. Conversely, the climate lobbying of firms whose associated individuals support the Democratic Party is pro-climate, as Democrats have a more pro-climate leaning agenda.

In support of these assumptions, Kempf et al. (2023) shows that executive teams are increasingly partisan, and executives misaligned with the political majority of their teams are more likely to leave. Furthermore, Di Giuli and Kostovetsky (2014) show that firms

[15]Few lobbying issues convey a clear climate stance. We verified this by identifying keywords in issue descriptions that suggest either "opposition" or "support." Opposition keywords include terms such as oppose, against, challenge, reject, delay, postpone, or slow down; support terms include advocate for, support, enhance, endorse, or promote. Using this approach, only 1.9% of climate issues indicate an oppositional stance and only 13.3% a supportive stance. Moreover, these terms may not directly reflect a firm's climate stance, as a firm may support (or oppose) either anti- or pro-climate legislation; this makes it challenging to clearly determine the climate lobbying stance from lobbying reports alone.

[16]We calculate that less than 20% of the 1,384 U.S.-listed firms and 1,053 trade associations that lobby and donate to parties directed their donations (over the past three years) predominantly to a single party.

headed by Democratic-leaning CEOs (who donated to Democrats) exhibit higher CSR performance, of which climate performance is a part, relative to firms led by CEOs who donate to Republicans. We can illustrate the gist of our assumptions by comparing ExxonMobil and General Motors (GM). Since 2010, executives at ExxonMobil, a firm known for its rather questionable climate stance and limited climate action, donated $991k (97%) to Republicans and only $34k to Democrats (3%). Its CEO, Darren Woods, supported policies to encourage investment in oil and gas in a testimony to the House Committee on Energy and Commerce in April 2022. In contrast, executives from GM, a firm with an increasingly pro-climate positioning, contributed $30k (22%) to Republicans and $106k (78%) to Democrats. Mary Barra, GM's CEO, stated in 2020 that "Climate change is real. That is indisputable, and we take the challenges it presents seriously."[17] That Republican (Democratic) congress members are more anti-climate (pro-climate) is also plausible and demonstrated in Figure IA A1, which displays LCV scores for politicians from both parties. LCV scores are constructed by tracking the voting records of Congress members and range from zero to one, with higher scores reflecting a stronger pro-environmental stance. The figure shows a stark contrast between the two parties' LCV scores for House Representatives (Panel A) and Senators (Panel B): while the average scores for Democrats are always higher than 0.8, almost all the values for Republicans are below 0.2. When the Inflation Reduction Act, the most significant U.S. pro-climate legislation according to the EPA, was passed by the House, all Republicans voted against the bill and all (except one) Democrats in favor of it.

Building on these assumptions, we determine the stances of the lobbying reports based on the campaign contributions by executives or lobbyists to either the Republican or Democratic Party. We primarily employ donations from executives, but in cases where executive

[17] ExxonMobil engages negatively in climate policy and advocates for the continued role of fossil fuels in regulations. For instance, the firm's Proxy Statement (Form DEFA14A) in May 2023 stated that IEA's net-zero emission pathways would lead to a "degradation in global standard of living." In July 2023, its comments to the EPA appeared not to support the tailpipe emission standards for light/median-duty vehicles. It has also declined to participate in the CDP Climate Change Survey since 2018 and its lobbyists conceded that the firm targeted senators to weaken President Biden's climate proposals. In contrast, GM actively supports measures to accelerate the electrification of road transport. (InfluenceMap)

contribution data is unavailable or inconclusive, we rely on donations from a firm's lobbyists. Out of the 11,868,258 individual contributions from employees of U.S.-listed firms in the FEC database, 703,415 are from executives, and 178,696 clearly indicate the recipient's party (we use this subset to obtain a clear and robust measure).[18]

Figure 1, Panel A, displays the distribution of contributions to the Republican and Democratic parties from executives (we aggregate donations by firm-year). We present the proportion of contributions to the Democratic Party relative to all contributions (based on donations over the previous three years); hence, the values range from 0 (all to Republicans) and 1 (all to Democrats). Most executives (63%) support only one party: 35.4% donate only to the Republican Party, and 27.6% exclusively to the Democratic Party. Based on this striking feature, we attribute a stance to a lobbying report by assuming that the report is anti-climate (pro-climate) if the executives associated with the firm primarily donate to the Republican Party (Democratic Party). To identify a climate stance, we require that the executives as a team allocate at least 75% of their donations over the past three years to a single party. If executives do not contribute to political parties or do not donate more than 75% of their contribution to a single party, then we assign a stance to a report based on contributions by lobbyists. In Figure 1, Panel B, we depict the distribution of donations by the 3,947 lobbyists in our sample. Similar to executives, the vast majority, 89% of lobbyists, exclusively support one party. We require that lobbyists donate more than 75% of their historical contributions to a single party, which is the case for 3,728 lobbyists.[19]

Across the 250,598 lobbying reports in the sample, we can then identify the political

[18] In the FEC database, individuals can contribute to political candidates, political parties, PACs (which can be connected to organizations like firm or unions, or can also be independent), Super PACs, and some other groups. We only unambiguously know the political party information for donations to political candidates and parties; in other cases, it is often unknown. Figure IA A2, Panel A, plots the total contributions from these executives to the Republican and Democratic parties over the last 20 years. Figure IA A2, Panel B, reports the corresponding numbers for lobbyists.

[19] We further require that executives donate over $1,000 as a team. We exclude from the analysis firm-years where contributions to a single party are lower than 75% (even if the firms have lobbying expenditures). Results are similar if we replace the 3-year requirement with 2- or 1-year requirements. For lobbyists, we require that over 50% of a report's lobbyists make contributions, and all of them donate to the same party (the average lobbying report lists 2.65 lobbyists).

stance for 148,411 reports (Table IA A1, Panel B), of which 81,352 are associated with the Republican Party and 67,059 with the Democratic Party. We determine the political leaning for 70.4% of lobbying reports based on executive contributions; these reports account for 85% of lobbying expenses.[20] Hence, the inclusion of data on executive contributions to identify the stance of climate lobbying is important. For the subset of 25,394 reports with climate lobbying, we can link 15,084 reports to a political leaning: 8,028 reports are linked to the Republican Party ("anti-climate"), and 7,056 reports to the Democratic Party ("pro-climate").

For the amounts associated with anti- and pro-climate lobbying, we can then calculate the following two measures for report r of firm i in quarter q of year t:

$$ClimateLobby^{Anti}_{r,i,q,t} = ClimateLobby_{r,i,q,t} \times \mathbb{1}_{[RepParty_{r,i,q,t}]}$$
$$ClimateLobby^{Pro}_{r,i,q,t} = ClimateLobby_{r,i,q,t} \times \mathbb{1}_{[DemParty_{r,i,q,t}]},$$

where $ClimateLobby^{Anti}_{r,i,q,t}$ and $ClimateLobby^{Pro}_{r,i,q,t}$ are the anti- and pro-climate lobbying expenses in report r of firm i in quarter q of year t, respectively. $ClimateLobby_{r,i,q,t}$ is the total climate lobbying expense in report r, and $\mathbb{1}_{[RepParty_{r,i,q,t}]}$ ($\mathbb{1}_{[DemParty_{r,i,q,t}]}$) is an indicator for whether the lobbying is related to the Republican (Democratic) Party based on the political contribution of firm i's executives (or lobbyists). We calculate corresponding measures using the text-based classification of lobbying reports (e.g., $ClimateLobby^{Anti,Text}_{r,i,q,t}$).

Finally, we sum these amounts across all reports r of firm i in quarter q of year t:

$$ClimateLobby^{Anti}_{i,q,t} = \sum_{r} ClimateLobby^{Anti}_{r,i,q,t}$$
$$ClimateLobby^{Pro}_{i,q,t} = \sum_{r} ClimateLobby^{Pro}_{r,i,q,t}.$$

As some firms have anti- and pro-climate expenses, we create a net measure, which takes

[20] Table IA A1, Panel C, shows that executive contributions help significantly in identifying the stance of lobbying reports with larger amounts, more issues, and more lobbyists.

positive values (negative values) if a firm does more (less) anti- than pro-lobbying:[21]

$$ClimateLobby_{i,q,t}^{Anti-Pro} = ClimateLobby_{i,q,t}^{Anti} - ClimateLobby_{i,q,t}^{Pro}.$$

3.3 Creating Firm-Year Level Intensity Measures

We make two final adjustments. First, we create annual versions by summing up the quarterly lobbying amounts across the calendar quarters of year t to smooth within-year variation.

$$ClimateLobby_{i,t}^{Anti} = \sum_{q=1}^{4} ClimateLobby_{i,q,t}^{Anti}$$
$$ClimateLobby_{i,t}^{Pro} = \sum_{q=1}^{4} ClimateLobby_{i,q,t}^{Pro}.$$

Second, we account for size effects by scaling the lobbying expenses by firm i's assets:

$$ClimateLobbyIntensity_{i,t}^{Anti} = ClimateLobby_{i,t}^{Anti}/Assets_{i,t}$$
$$ClimateLobbyIntensity_{i,t}^{Pro} = ClimateLobby_{i,t}^{Pro}/Assets_{i,t}.$$

We accordingly calculate an annual version of net climate lobbying for firm i in year t:

$$ClimateLobbyIntensity_{i,t}^{Anti-Pro} = (\sum_{q=1}^{4} ClimateLobby_{i,q,t}^{Anti-Pro})/Assets_{i,t}.$$

3.4 Accounting for Trade Association Lobbying

To account for indirect lobbying through trade associations, we use the same approach and calculate anti- and pro-climate lobbying amounts for each association ta in year t based on

[21] Only 3% of firm-quarters with climate lobbying expenses have reports assigned to two parties. This occurs when we determine the stance of reports based on the political donations of external lobbyists (i.e., these are cases where two or more reports were filed for a firm by lobbyists with diverging political stances).

its lobbying reports and campaign contributions.[22] These amounts are then proportionally allocated to member firms m using annual revenues as weight. We then aggregate firm i's indirect lobbying across climate-related trade associations TA^i it belongs to:

$$ClimateLobby_{i,t}^{Anti,\,TA} = \sum_{ta \in TA^i} \frac{Rev_{i,t}}{\sum_{m \in ta} Rev_{m,t}} ClimateLobby_{ta,t}^{Anti}.$$

In robustness check, this value is combined with our baseline measure to capture the amount of direct and indirect climate lobbying:

$$ClimateLobbyIntensity_{i,t}^{Anti,\,Combo} = (ClimateLobby_{i,t}^{Anti} + ClimateLobby_{i,t}^{Anti,\,TA})/Assets_{i,t}.$$

We use a similar approach for pro-climate lobbying expenses.

3.5 Measuring General Political Lobbying

As control variables, we calculate corporate expenses for broader political lobbying. The variable $LobbyIntensity_{i,t}^{Rep}$ quantifies lobbying expenses—irrespective of whether they are climate-related—by firms where executives (or lobbyists) predominantly contribute to the Republican party; we scale again by assets to obtain an intensity measure. $LobbyIntensity_{i,t}^{Dem}$ is defined accordingly. We assign corporate lobbying expenses to a political party based on whether firm executives donate more than 75% of their donations to a single party (over the past three years) according to FEC data (likewise for lobbyists if executive data is missing).

[22] IA Section B details how we select climate-related trade associations and measure their lobbying amounts.

4 Anatomy of Corporate Climate Lobbying

4.1 Descriptive Evidence on Climate Lobbying

Table 1 presents summary statistics of the measures of corporate climate lobbying at the firm-year level. In Panel A, the sample includes U.S.-listed firms with data on lobbying reports, independent of whether the lobbying is climate-related. Across the full sample, the average firm spends \$85k annually on climate-related lobbying. Expenses on anti-climate lobbying are about 50% larger than those on pro-climate lobbying, with yearly averages of \$51k and \$34k, respectively. The median values for these variables are zero as most sample firms do not lobby on climate topics. Climate lobbying occurs in 18.3% of firm-years, as reflected by the indicator $\mathbb{1}(ClimateLobby)$ (extensive margin). In terms of the lobbying stance, we observe anti-climate lobbying in 10.6% of firm-years, and pro-climate lobbying in 8.5%. For comparison, $Lobby^{Rep}$, the general lobbying expenses by firms whose executives or lobbyists primarily contribute to Republicans, amounts on average to \$521k per year; the corresponding average for $Lobby^{Dem}$ is \$389k.

In Table 1, Panel B, we report figures for firms that undertake climate lobbying (i.e., $\mathbb{1}(ClimateLobby)$=1). At the intensive margin, the averages for $ClimateLobby^{Anti}$ and $ClimateLobby^{Pro}$ are \$277k and \$185k, respectively.[23] The panel further reports the asset-scaled lobbying intensity measures. $ClimateLobbyIntensity^{Anti}$, for example, has a mean of 35 after scaling by firm assets (in \$ million). All variables come with very large standard deviations, reflecting significant cross-sectional variation in climate lobbying across firms. When identified solely based on verbal text-based descriptions in the lobbying reports, climate lobbying is substantially smaller. Table IA A2 reports correlations of selected variables.

[23] Table IA A1, Panel C, compares firm-year observations for which we detect the direction of lobbying through executive or lobbyist contributions. For over 70% of the climate lobbying samples, we identify the stance of the lobbying via executives, with mean amounts of anti- and pro-climate lobbying equal to \$356k and \$239k; this is fourfold the average amounts identified through lobbyist contributions.

4.2 Time-Series Evolution of Climate Lobbying

Figure 2 plots in Panel A the quarterly trend in climate lobbying amounts over time, and in Panel B the number of anti- or pro-climate corporate lobbyists. In Panel A, spending on climate lobbying was low before 2006, reflecting limited corporate and societal awareness of climate issues, and few related bills or regulations.[24] From 2008 to 2010, climate lobbying peaked for the first time (both types), coinciding with a surge in climate legislation, such as the (eventually failed) Waxman-Markey Bill (officially the American Clean Energy and Security Act). The period under President Trump's administration, from 2017 to 2019, saw the least lobbying activity, probably because his categorical opposition to climate action made pro-climate regulation highly unlikely and thereby muted lobbying efforts by both sides. In 2022, climate lobbying reached a second peak, with pro-expenses exceeding anti-expenses. The surge in lobbying seems largely related to President Biden's administration, which proposed more stringent climate regulation and efforts supporting climate action and also included green subsidies. Subsequently, firms reduced their spending.[25]

4.3 Camouflaging Climate Lobbying

From inspecting lobbying reports, we observe an emerging trend by some firms to avoid explicitly mentioning climate-related words in their issue descriptions. Instead of keywords, they refer to climate-related bills, using either bill titles or bill codes. Especially bill codes, but often also bill names, are not immediately identifiable as climate-related and require

[24] IA Section C reports the most heavily lobbied climate bills. Lobbying reports were semi-annual before 2008. In the figure, we divide pre-2008 semi-annual expenditures by two to approximate quarterly amounts.

[25] Figure 2 does not simply reflect variation in aggregate lobbying expenses directed to the Republican or Democratic Party. Figure IA A3 clarifies this by showing the time series for $Lobby_{i,t}^{Rep}$ and $Lobby_{i,t}^{Dem}$ (Panels A and B), and by scaling anti- and pro-climate lobbying by total lobbying (Panels C and D). Panels E and F report lobbying amounts and the number of lobbying firms for climate-related (anti- and pro-climate) versus general (Republican- and Democratic-leaning) lobbying. The number of firms involved in general lobbying grew until 2008 and then stabilized, similar to the trend observed by Kwon et al. (2024). This may partly result from the Honest Leadership and Open Government Act of 2007, which introduced stricter transparency and regulatory requirements for lobbying. In contrast, climate lobbying trends appear more responsive to the presence of climate-related legislation.

external information for context (e.g., bill code "H.R.5376" refers to the Inflation Reduction Act of 2022). Figure 3 illustrates this development, depicting the time series of lobbying expenses (Panel A) and lobbying firms (Panel B) as identified solely based on climate-related keywords. While the panels largely mirror those in Figure 2 until about 2021, a gap emerges thereafter. Before 2010, over 80% of climate-related lobbying reports openly included climate keywords. This proportion fell to below 35% by the end of 2022. Accordingly, the number of firms explicitly mentioning climate words also decreased by about 50% over the past two to three years. That lobbying amounts fell by more than the number of firms implies that it is especially firms with large lobbying expenses avoid direct mentions of climate keywords. (A concern may be that the camouflage effects arise because our keywords do not capture the latest terms used in lobbying reports; we address this possibility in IA Section D).

4.4 Industry and Firm Distribution of Climate Lobbying

Figure 4 reports the distribution of climate lobbying expenses by industrial sector. Panel A reports total expenses and Panel B displays firm-quarter-level averages. In both panels, we report anti- and pro-climate expenses, but we rank sectors based on the amount of anti-climate lobbying. In Panel A, anti-climate lobbying is highly concentrated, with firms in the Utilities and Petroleum & Natural Gas sectors spending the largest total amounts (each around $231.7m over the sample years). When considering firm-quarter-level averages in Panel B, Coal emerges as a further sector with constituent firms spending large resources on anti-climate lobbying.[26] Pro-climate lobbying is more dispersed across sectors. The Utilities sector ranks highest in both the aggregate amount of pro-climate lobbying and the per-firm-quarter average. Other sectors with high aggregate pro-climate expenses include

[26]The difference to Panel A arises as the number of firms in the Coal sector is smaller compared to the Utilities sector. Across all firm-quarters for the Coal sector, 128 out of 388 firm-quarters (or 33%) contain lobbying against climate actions (untabulated). Similarly, in the Petroleum & Natural Gas sector, 556 (27%) out of all 2,084 firm-quarters involve anti-climate lobbying. Focusing solely on active climate lobbying firm-quarters, average spending rises to $0.42m and $0.21m per firm per quarter in the Petroleum and Coal industries, respectively (untabulated).

Pharmaceuticals, Automobiles & Trucks, and Electronic Equipment.

Figure 5, Panel A, lists the firms with the largest anti-climate spending. The top 5 include utility Southern Company, followed by ExxonMobil, Chevron, BP, and American Electric Power. Though the vast majority of these firms' lobbying expenses are anti-climate, Southern Company and BP also spend money on pro-climate lobbying. Figure 5, Panel B, lists the largest pro-climate lobbyists. The ranking is topped by PG&E, GM, Calpine, Covanta Energy, and Microsoft.

4.5 Indirect Lobbying through Trade Associations

We find that trade associations play an important role in climate lobbying, particularly when it comes to anti-climate lobbying. Notably, as indicated in Figure IA B1, climate lobbying expenses are concentrated among a few trade associations. The U.S. Chamber of Commerce spent $267m during our sample years on anti-climate lobbying, surpassing the combined expenditures of all other associations. The Business Roundtable ($32m), the American Petroleum Institute ($32m), and the American Chemistry Council ($19m) also invested heavily in anti-climate lobbying.[27] Indirect anti-climate lobbying equals on average about 32% of direct lobbying; indirect pro-climate lobbying accounts for about 12%.

5 Climate Lobbying and the Net-Zero Transition

5.1 Climate Lobbying, Carbon Emissions, and Green Innovation

We evaluate whether climate lobbying relates to business model characteristics deemed important for a firm's climate transition. Building on prior work, we start with features that

[27] As shown in the figure, some associations engage in pro-climate lobbying, albeit with smaller expenditures, including the Association of American Railroads ($20m), Alliance of Automobile Manufacturers ($15m), and Solar Energy Industries Association ($14m). The large concentration of climate lobbying alleviates concerns that our focus on key trade associations underestimates indirect lobbying. See IA Section C for details.

proxy for risks and opportunities related to climate change. First, we evaluate the role of carbon emissions, a firm-level measure of climate transition risk (Bolton and Kacperczyk, 2021, 2023; Ilhan et al., 2021) and, second, we consider measures of green innovation, which act as proxies for opportunities related to the net-zero transition (Sautner et al., 2023; Leippold and Yu, 2024; Cohen et al., 2021). We estimate for firm i and year t:

$$Climate\,LobbyIntensity^{X}_{i,t} = \beta_0 + \beta_1 Transition\,Variable_{i,t} + \beta_2 \mathbf{X}_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t}, \quad (1)$$

where $ClimateLobbyIntensity^{X}_{i,t}$ is one of three measures of firm i's scaled climate lobbying expenses in year t (i.e., $ClimateLobbyIntensity^{Anti}_{i,t}$, $ClimateLobbyIntensity^{Pro}_{i,t}$, or $ClimateLobbyIntensity^{Anti-Pro}_{i,t}$). When considering risks, $Transition\,Variable_{i,t}$ is a firm's Scope 1 emissions ($\text{Log}(Carbon\,Emissions_{i,t})$) or sales-scaled emissions ($CarbonIntensity_{i,t}$). When focusing on opportunities, $Transition\,Variable_{i,t}$ is replaced by $GreenPatents_{i,t}$ or $GreenInnovation_{i,t}$, whereby $GreenPatents_{i,t}$ is the number of granted green patents scaled by all patents, and $GreenInnovation_{i,t}$ is the fraction of the earnings call that discusses green innovation (Leippold and Yu, 2024). $\mathbf{X}_{i,t}$ includes various firm characteristics ($Log(Asset)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$). We include year fixed effects (γ_t) to identify effects from the cross-section of firms and add industry fixed effects (δ_j), using the Fama-French 49 industry classification, to compare firms with their industry peers. Independent variables are normalized to have a mean of zero and a standard deviation of one (except those using logs). Standard errors are clustered at the industry level. The sample includes all firms with lobbying expenses.

Table 2 provides results. In Panel A, we explore the role of carbon emissions. In Columns 1–2, firms with more carbon-intense business models spend significantly more on anti-climate lobbying. In Column 1, a standard-deviation increase in $\text{Log}(Carbon\,Emissions)$ is associated with a 2.23 increase in the anti-climate lobbying intensity, or 75% of the variable's mean. These effects contrast sharply with opposing effects in Columns 3–4, in which we

explain pro-climate lobbying. In Column 3, a standard-deviation increase in the emissions variable is associated with a 1.80 decrease in the pro-climate lobbying intensity, or about 74% of the variable's mean. The effects in Columns 1–4 lead to positive and significant coefficients when explaining net lobbying in Columns 5–6.

Table 2, Panel B, demonstrates in Columns 1–2 no link between *GreenPatents* or *GreenInnovation* and anti-climate lobbying. However, significant and positive correlations emerge with pro-climate lobbying in Columns 3–4, with point estimates also being much larger. A standard-deviation increase in the green patents (green innovation) measure is associated with a 5.88 (7.03) increase in the pro-climate lobbying intensity; the estimates are sizable as they correspond to 133% (159%) of the variables' means in the regression sample. Consequently, the correlations for $ClimateLobbyIntensity^{Anti-Pro}$ in Columns 5–6 are negative.

5.2 Climate Lobbying and Electricity Generation Sources

The Utilities sector ranks highest for both anti- and pro-climate lobbying, suggesting that within-sector variation in business models leads to diverging lobbying decisions. To understand this heterogeneity, we analyze the role of different electricity generation sources in explaining lobbying. Electricity generators vary greatly in their fuel sources, and these differences affect firms heterogeneously in terms of transition risk exposures as the economy moves away from fossil fuels. To explore this heterogeneity, we use granular power-plant-level data from the EIA, which we aggregate at the firm level. The EIA data are differentiated by fuel types and we classify energy generation sources into six categories using Annual Energy Review fuel type codes: (i) coal; (ii) oil; (iii) natural gas; (iv) nuclear; (v) renewable; and (vi) others.[28] To measure the importance of a fuel source for a firm, we scale the Megawatt

[28] These data are available for firms operating electricity plants in the Utilities, Oil, Chemicals, and Steel industries. The Form EIA-923 survey provides electricity generation data for 9,108 electricity plants (in Megawatt hours). By matching plant operators with Compustat firms, we aggregate data on all electricity plants of an operator to the firm-year level.

hours associated with a fuel type by assets (in $ millions). We then estimate:

$$Climate\,LobbyIntensity_{i,t}^{X} = \beta_0 + \beta_1 \textbf{Fuel Sources}_{i,t} + \beta_2 \mathbf{X}_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t}, \qquad (2)$$

where $ClimateLobbyIntensity_{i,t}^{X}$ is defined as above and the vector $\textbf{Fuel Sources}_{\mathbf{i,t}}$ includes the six scaled fuel sources for firm i in year t; the other variables are defined as before.[29]

Results are reported in Table 3. In Column 1, firms that primarily use coal are significantly more likely to conduct anti-climate lobbying. A standard-deviation increase in coal intensity is associated with a 0.39 increase in the anti-climate lobbying intensity (9% of the variable's mean); there is a similar effect for gas. Column 2 shows that nuclear energy usage correlates significantly with increased pro-climate lobbying expenses. Somewhat unexpectedly, firms relying on renewable energy do not spend more on pro-climate lobbying.

5.3 Climate Lobbying and Camouflaged Activities

What drives the camouflaging of climate-related lobbying? To answer this question, we construct a firm-year measure that quantifies camouflaging intensity. $Camouflage\,1_{i,t}^{X}$ isolates the share of lobbying that is identifiable exclusively from the bills mentioned in issue descriptions (either from bill codes or bill titles):

$$Camouflage\,1_{i,t}^{X} = \frac{ClimateLobby_{i,t}^{X} - ClimateLobby_{i,t}^{X,Text}}{ClimateLobby_{i,t}^{X}},$$

where $ClimateLobby_{i,t}^{X}$ represents the amount of anti- (or pro-) climate lobbying ($X \in (Anti, Pro)$) and $ClimateLobby_{i,t}^{X,Text}$ is the part of climate lobbying that can be identified exclusively from climate keywords. Further, we calculate $Camouflage\,2_{i,t}^{X}$ to focus on

[29] This regression sample deviates from the remaining tables in that we include 26 non-listed U.S. firms (several major utilities in the EIA database are unlisted). The regression sample contains mostly Utilities (68%), but also other sample firms that generate electricity.

lobbying identified solely through abstract bill *codes* in the issue descriptions:

$$Camouflage\,2_{i,t}^{X} = \frac{ClimateLobby_{i,t}^{X} - ClimateLobby_{i,t}^{X,Text+Bill\,Titles}}{ClimateLobby_{i,t}^{X}},$$

where $ClimateLobby_{i,t}^{X,Text+Bill\,Titles}$ now captures lobbying identified either from climate keywords or bill titles; this measure addresses that lobbying reports sometimes mention bill titles which—despite lacking climate keywords—suggest some climate relevance. IA Section D provides details and examples for the measures.

Camouflaging may be an attempt to influence policy without risking the public image, which could be most relevant for firms entering the arena of climate lobbying or altering their stances. We explore this possibility by creating measures of the change in a firm's lobbying policy that capture: (i) moving from no climate lobbying to anti- or pro-climate lobbying, or (ii) reversing the (anti- or pro-) lobbying directions (we create the measure such that they compare with lobbying over the previous three years). We then estimate:

$$Camouflage\,1(2)_{i,t}^{X} = \beta_0 + \beta_1 \mathbb{1}(Lobby\,Policy\,Change_{i,t}^{X\to X}) + \beta_2 \mathbf{X}_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t}, \quad (3)$$

where $Camouflage\,1(2)_{i,t}^{X}$ is one of the two measures reflecting the degree of camouflaging, and $\mathbb{1}(Lobby\,Policy\,Change_{i,t}^{X\to X})$ is a measure reflecting a lobby policy change (e.g., $\mathbb{1}(Lobby\,Policy\,Change_{i,t}^{Anti\to Pro})$ indicates a switch from anti- to pro-climate lobbying).

Table 4 reports results. Firms transitioning from no climate lobbying to either stance demonstrate significantly more camouflaged activity. For example, firms new to anti-climate lobbying have 15% more of their lobbying activities concealed through the absence of climate keywords (Column 1), and 12% more activities only identifiable through bill codes (Column 3). The effects correspond to 40% of the average value for these two types of camouflaged intensity. The pattern holds for pro-climate lobbying, albeit with smaller magnitudes (Columns 5 and 7). Columns 6 and 8 reveal an increase in camouflaged pro-climate lobbying when the

lobbying position was previously anti-climate (effects are marginally insignificant).

6 Stock Returns and Corporate Climate Lobbying

6.1 Return Estimates: Main Results

To understand whether investors care about a firm's lobbying activities when pricing stocks, we follow Bolton and Kacperczyk (2023, 2021) and employ cross-sectional regressions using a characteristic-based approach.[30] We link excess returns of firm i in each month of year t+1 (from February of t+1 to January of t+2) to climate lobbying at the end of year t. Lobbying reports are available within one month after the calendar-quarter end, so our estimation includes one month's lag to ensure the information is available to investors. We use annual expenses to smooth variation in lobbying activities within the calendar year. We split the sample into return observations for the years 2002 to 2009 and 2010 to 2022, as we expect stronger effects for the second period—this is because climate lobbying-related concerns by investors have become more relevant over the years. The sample includes all firms with lobbying expenses. We estimate for firm i in month m of year t+1:

$$\begin{aligned} Excess\ Return_{i,m,t+1} &= \beta_0 + \beta_1 ClimateLobbyIntensity_{i,t}^{Anti} \\ &+ \beta_2 ClimateLobbyIntensity_{i,t}^{Pro} + \beta_3 \mathbf{X}_{i,t} + \gamma_{m,t+1} + \delta_j + \epsilon_{i,m,t+1}, \end{aligned} \tag{4}$$

where $Excess\ Return_{i,m,t+1}$ is firm i's raw return minus the risk-free rate during month m of year t+1. $ClimateLobbyIntensity_{i,t}^{Anti}$ and $ClimateLobbyIntensity_{i,t}^{Pro}$ are firm i's anti- or pro-climate lobbying intensities in t (we also employ the net measure). We control for lobbying expenses related to the Republican or Democratic Party ($LobbyIntensity^{Rep}$ and

[30] This approach is well suited given our sample's rich cross-sectional variation in lobbying activities and firm characteristics. Further, with a characteristics-based approach, there is no need to make assumptions about the underlying asset pricing model. As explained in Bolton and Kacperczyk (2023), a conceptual difficulty with the choice of asset pricing model, in the context of a complex pricing problem such as climate-related risks, is that no such model has yet been formulated.

$LobbyIntensity^{Dem}$) and firm characteristics (namely $Log(MarketCap)$, $Log(B/M)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$). We follow Bolton and Kacperczyk (2021) by including year-month ($\gamma_{m,t+1}$) and industry (δ_j) fixed effects, and double cluster standard errors by firm and year. As in Zhang (2024), we use weighted least squares regression to avoid small stocks influencing the estimates.

Table 5 reports results. In Columns 1–4, which cover 2002 to 2009, we find no evidence that climate lobbying is related to returns: coefficients are small and insignificant. This is sharply different during the later years in Columns 5–8. In Column 5, a standard-deviation increase in $ClimateLobbyIntensity^{Anti}$ is associated with 0.32% higher monthly returns (or 3.84% annually), with a t-statistic of 5.76. When adding control variables in Column 6, the estimates are similar. In Columns 7–8, results are unchanged with the net lobbying measure. Pro-climate lobbying is unrelated to returns.

6.2 Return Estimates: Robustness

Do the return effects simply reflect a carbon risk premium? Bolton and Kacperczyk (2021, 2023) demonstrate that firms with higher carbon emissions earn higher returns, attributing this effect to investors seeking compensation for carbon risk exposure. The concern is valid, as Section 4 indicates a positive correlation between anti-climate lobbying and emissions. Table 6, Columns 1–2, address this concern by controlling for Log($CarbonEmissions$) or $CarbonIntensity$. $ClimateLobbyIntensity^{Anti}$ continues to be positively and significantly related to returns, regardless of whether we control for emission levels or intensities.[31]

Does indirect lobbying through trade associations bias the return effects by reducing the transparency of lobbying? In Table 6, Column 3, we examine this possibility by estimating the combined effects of direct and indirect lobbying. A standard-deviation increase in

[31] To account for the delayed availability of emission data to investors, we allow for a six-month lag in emissions when matching with returns (Zhang, 2024). Hence, we relate returns from July of year t+1 to June of the following year to emissions from year t. We obtain similar results with contemporaneous emissions.

$ClimateLobbyIntensity^{Anti,Combo}$ correlates with 0.39% higher monthly returns, or 4.65% p.a. (t-statistic of 4.41). In Columns 4–5, we explore the effects of camouflaging on the lobbying-return relation in the climate lobbying sample. We introduce interaction terms between climate lobbying and dummy variables indicating above-median camouflage intensities. Anti-climate lobbying remains significantly related to returns, while the interaction terms are insignificant (i.e., camouflaging does not systematically influence the return effects of lobbying).

The cross-sectional regressions follow prior literature, but we also conduct in Table IA A3, Panel A, portfolio sorts as in Fama and French (1992, 1993). To ensure all information is available to investors, we form portfolios at the end of January in year $t+1$ based on annual lobbying expenses from January to December of year t. We sort firms according to $ClimateLobbyIntensity_{i,t}^{Anti}$ within each Fama-French 49 industry for the 2010–2022 period and create three groups: *High* includes firms with above-median anti-climate lobbying values, *Moderate* includes firms below the median, and *Low* includes firms without climate lobbying.[32] We form a *High*-minus-*Low* (HML) portfolio that is long (short) in the *High* (*Low*) group, and a corresponding *High*-minus-*Moderate* (HMM) portfolio. Value-weighted monthly returns are calculated for each portfolio over the next 12 months (from February of year t+1 to January of t+2). For raw returns, the HML spread is positive but insignificant, while the HMM spread is positive at 0.28% (t-statistic of 1.67). Spreads are larger and more significant when we risk-adjust returns (using time-series regressions of portfolio returns on common risk factors). Sorting on $ClimateLobbyIntensity_{i,t}^{Pro}$ yields insignificant results (untabulated).

The return effects remain robust in other tests. First, Table IA A4 shows that results are unaffected when adding as controls other return determinants (beta, momentum, idiosyncratic volatility, liquidity), ESG/E ratings, or Scope 2/3 emissions. Second, Table IA A5 shows that results are not driven by industry shocks, as they are unchanged when we consider

[32]The *High/Moderate* split is among firms with positive $ClimateLobbyIntensity^{Anti}$. As climate lobbying is concentrated in a few industries, the *Low* portfolio focuses on firms in top anti-climate lobbying sectors (Oil, Utilities, Transportation, Chemicals, Coal, Business Supplies, Machinery, and Others); these sectors account for over 80% of total anti-climate lobbying expenses. This helps us identify firms that do not lobby but operate in industries with strong incentives for climate lobbying.

other industry fixed effects (SIC-2 codes or the classification by Hoberg and Phillips, 2016), include industry-by-year fixed effects, or exclude the top lobbying industries. Third, Table IA A6 shows that results hold when using alternative specifications, namely when we (i) estimate effects only among firms with non-zero climate lobbying expenses (to ensure results are not distorted because the baseline sample includes firms that do not lobby on climate topics); (ii) detect climate lobbying from text descriptions only; (iii) use indicators for whether a firm does anti- or pro-climate lobbying; (iv) cluster standard errors by industry and year; or (v) address potential look-ahead bias by delaying the lobbying variables by six months post year-end (i.e., linking lobbying in year t to monthly returns from July of year t+1 to June of t+2). Fourth, Table IA A7 shows significant results if we estimate expected returns using measures of a firm's implied cost of capital (ICC). This addresses concerns about using future realized returns as proxies for expected returns in a climate finance context, which is characterized by a short sample and evolving investor perceptions (Pástor et al., 2022; Eskildsen et al., 2024).

6.3 Return Estimates: Risk-based Channel

6.3.1 Anti-Climate Lobbying: Economic Channel

What explains the positive relation between anti-climate lobbying and returns? One potential channel is that anti-climate lobbyists are perceived as riskier due to reputation, transition, legal, or political risks associated with the lobbying. Sustainalytics (2023), a major ESG rater, argues that anti-climate lobbying constitutes an investment risk by damaging trust and leading to "name and shame" actions (reputation risk). The rater also argues that such lobbying leads firms to not adjust business models fast enough in the hope that the lobbying succeeds, implying that lobbying generates a form of transition risk. A further risk is climate-related legal risk, for example, if the lobbying contradicts public positions on climate-related policies, which can be interpreted as misleading investors or consumers (PRI, 2018). Anti-climate lobbying may also increase firms' exposures to government shocks (political risk),

including climate policy changes, with investors demanding a risk premium if government restrictions occur when investors' marginal utility is high (Grotteria, 2024).

Consistent with lobbying constituting an investment risk, some investors have submitted shareholder proposals aiming to stop the practice. An example is CCLA Investment Management's proposal at NextEra Energy, displayed in Figure IA A4. CCLA filed the proposal on behalf of Climate Action 100+, arguing that NextEra Energy's climate lobbying is inconsistent with the Paris Agreement and constitutes a material investment risk.

In the next sections, we conduct four analyses to corroborate the presence of a risk channel.

6.3.2 Anti-Climate Lobbying: Future Risk Realizations

As a starting point, we examine whether anti-climate lobbying predicts future firm-level climate-related political or legal risks. We estimate for firm i of year $t+1$:

$$\begin{aligned} Risk_{i,t+1}^{Political/Legal} &= \beta_0 + \beta_1 ClimateLobbyIntensity_{i,t}^{Anti} \\ &+ \beta_2 ClimateLobbyIntensity_{i,t}^{Pro} + \beta_3 \mathbf{X}_{i,t} + \gamma_{t+1} + \delta_j + \epsilon_{i,t+1}, \end{aligned} \tag{5}$$

where $Risk_{i,t+1}^{Political/Legal}$ is one of four measures of firm-level climate-related political or legal risk: (i) $PRisk_{i,t+1}$ captures political risk based on the proportion of a firm's earnings call devoted to political risk topics (Hassan et al., 2019); (ii) $PRisk_{i,t+1}^{EnvReg}$ is a refined version of $PRisk_{i,t+1}$ that focuses on political risks related to environmental or regulatory topics;[33] (iii) $CIncidents_{i,t+1}$ is the number of risk incidents related to climate change, carbon emissions, or pollution; and (iv) $CCases_{i,t+1}$ is the cumulative number of new climate lawsuit filings (Sato et al., 2024). We now measure lobbying expenses over the past three years. $\mathbf{X}_{i,t}$ contains firm characteristics and lagged dependent variables. We cluster standard errors by industry.

[33] Hassan et al. (2019) provide political risk measures across eight topics. $PRisk_{i,t+1}^{EnvReg}$ is the combined political risk related to the topics *environment*, *institutions*, and *trade*. Bigrams and text snippets in Hassan et al. (2019) show that *environment* mainly discusses climate regulations, *institutions* covers federal election and bills, and *trade* mentions trade relations and associations, all closely tied to climate lobbying.

Results are reported in Table 7, Panel A. In Column 1, anti-climate lobbying predicts firm-level political risks ($PRisk_{i,t+1}$). Column 2 shows that this effect mainly stems from environmental/regulatory political risk ($PRisk^{EnvReg}_{i,t+1}$). A standard-deviation increase in anti-climate lobbying is associated with a 0.14 standard-deviation increase in $PRisk^{EnvReg}_{i,t+1}$. In Columns 3 and 4, more anti-climate lobbying predicts more climate-related incidents ($CIncidents_{i,t+1}$), and higher involvement in climate litigation ($CCases_{i,t+1}$). Overall, anti-climate lobbying seems to predict future realizations of climate-related political and legal risk at the firm level.

6.3.3 Anti-Climate Lobbying: Returns around Risk Realizations

If the higher returns associated with ant-climate lobbying reflect a risk compensation, then anti-climate lobbyists should perform worse when climate-related political or legal risks materialize. To examine this idea, we follow Florackis et al. (2022) and construct time-series indices of *aggregate* political or legal risks from firm-level data. We then estimate for firm i in month m of year t+1:

$$\begin{aligned} Excess\ Return_{i,m,t+1} = \beta_0 &+ \beta_1 ClimateLobbyIntensity^{Anti}_{i,t} + \beta_2 ClimateLobbyIntensity^{Pro}_{i,t} \\ &+ \beta_3 ClimateLobbyIntensity^{Anti}_{i,t} \times \mathbb{1}(Risk^{High}_{m,t+1}) \\ &+ \beta_4 ClimateLobbyIntensity^{Pro}_{i,t} \times \mathbb{1}(Risk^{High}_{m,t+1}) \\ &+ \beta_5 \mathbf{X}_{i,t} + \gamma_{m,t+1} + \delta_j + \epsilon_{i,m,t+1}. \end{aligned} \tag{6}$$

where $\mathbb{1}(Risk^{High}_{m,t+1})$ is one of four dummy variables that each capture months when climate-related political or legal risks are high. For example, $\mathbb{1}(PRisk^{High}_{m,t+1})$ equals one for months in the top 10% of an index calculated from quarterly averages of $PRisk_{i,t}$ across firms (we apply the same values to all months within a quarter). $\mathbb{1}(PRisk^{EnvReg,\,High}_{m,t+1})$, $\mathbb{1}(CIncidents^{High}_{m,t+1})$, and $\mathbb{1}(CCases^{High}_{m,t+1})$ are constructed accordingly (the non-interacted term $\mathbb{1}(Risk^{High}_{m,t+1})$ is absorbed by the fixed effects). We double cluster standard errors by firm and year.

Results are reported in Table 7, Panel B. In Column 1, the estimates indicate lower returns for anti-climate lobbyists in months where political risks materialize (a standard-

deviation increase in anti-climate lobbying is associated with 0.93% lower returns at these times). The effect is similar in Column 2 for $\mathbb{1}(PRisk_{m,t+1}^{EnvReg,\,High})$. In Column 4, anti-climate lobbyists underperform in months where climate-related legal risks materialize based on $\mathbb{1}(CCases_{m,t+1}^{High})$. Column 3 also indicates lower returns in months with increasing climate incidents (with similar magnitudes), but the effect is more noisy.

Table IA A3, Panel B, corroborates these effects using asset pricing factor tests based on HML portfolios sorted by anti-climate lobbying. Columns 1–4 perform time-series regressions of HML portfolio returns on the market factor and each of the monthly risk indices. While anti-climate lobbyists earn higher future returns on average (positive αs), each risk index shows a significantly negative coefficient (except for $\mathbb{1}(CIncidents_{t}^{High})$). Overall, it appears that the higher returns for anti-climate lobbyists compensate investors for holding risky stocks that underperform when climate-related political or legal risks realize.

6.3.4 Anti-Climate Lobbying: Returns around Climate Regulatory Events

If the return results reflect a risk premium, then stock prices of anti-climate lobbyists should be bid down (bid up) around events that increased (decreased) investor uncertainty about climate-related regulation (Bolton and Kacperczyk, 2021). Lobbying-related risks would, in turn, be impounded into prices, as lower (higher) prices imply higher (lower) expected returns. These repricing dynamics should be present around major climate-related regulatory events that unexpectedly shifted investor beliefs. We examine this prediction around two events.

The first event was when Senator Graham, a Republican from South Carolina, dropped support for the Waxman-Markey Bill (WMB). The bill had the goal to establish a national cap-and-trade system, to reduce emissions to 83% below 2005 levels by 2025 (it led firms to hire lobbyists on a large scale). The bill passed the House by a narrow margin (219 to 212) on June 26, 2009, but was never brought to the Senate. Critical for this outcome was that Senator Graham withdrew his support on April 23, 2010, which implied the bill's eventual failure.

Under the risk channel, for anti-climate lobbyists, the bill's failure should increase valuations, as uncertainty about bill-related immediate regulatory and financial costs no longer existed.

The second event is the Inflation Reduction Act (IRA), the most ambitious and comprehensive U.S. climate legislation to date. As the IRA aims for a 41% reduction in emissions by 2030, it substantially heightened uncertainty about costly regulatory changes for firms reliant on fossil fuels. The IRA also allocated $370 billion towards climate-related expenses and tax credits, favoring firms that benefit from the green transformation. The IRA's unexpected announcement came on July 27, 2022, when Senator Manchin and Senate Majority Leader Schumer released a statement supporting it; this came as a surprise due to Manchin's previous pessimistic attitude about the bill. Following Deng et al. (2023), we use July 28 as the event date (the announcement became widely known after the market closed). Under the risk channel, anti-climate lobbyists should experience a decline in valuations after the event.

We estimate for firm i around each of the two events e:

$$\begin{aligned} CAR_i^e = \beta_0 + \beta_1 ClimateLobbyIntensity_i^{Anti} + \beta_2 ClimateLobbyIntensity_i^{Pro} \\ + \beta_3 \mathbf{X}_i + \delta_j + \epsilon_i, \end{aligned} \tag{7}$$

where CAR_i^e is the cumulative market-adjusted abnormal return (in excess of CRSP value-weighted market returns) of firm i over a 1-, 2-, or 3-day window after the event date. The lobbying variables now only include lobbying issues that reference the two bills (expenses are calculated over the 1-year period before the event dates until one quarter before the event quarter). We include industry fixed effects (δ_j) and cluster standard errors at the industry level.

Table 8 presents results. In Panel A, for the WMB, firms with higher anti-climate lobbying expenses outperform others. In Column 1, a standard-deviation increase in anti-climate lobbying is associated with 0.29% higher CARs in the 1-day window; this effect rises to 0.52% over the 3-day window in Column 3. Pro-climate lobbying correlates with a decrease in stock prices. In Panel B, for the IRA, an increase in anti-climate lobbying by a standard-deviation

correlates with a 0.29% valuation decrease in the 1-day window (Column 1). This effect increases over the 2-day window and then weakens. For pro-climate lobbying, the coefficients are positive. Overall, the return dynamics for anti-climate lobbying firms around the two events are consistent with the risk channel: stock prices are bid down (bid up) around events that increased (decreased) investor beliefs about climate regulation. (The opposite effects for pro-climate lobbyists do not translate into lower expected returns in Table 5).

6.3.5 Anti-Climate Lobbying: Fama-MacBeth Regressions

Table IA A8 shows that lobbying-related risk has a systematic component. We run Fama-MacBeth (FMB) regressions based on firms' exposures to the HML portfolio returns constructed from $ClimateLobbyIntensity^{Anti}$. This portfolio return can be viewed as a risk factor reflecting exposure to risks associated with anti-climate lobbying. We calculate a firm's exposure ($Beta_{i,t}^{Anti}$) using rolling time-series regressions of returns on the HML portfolio returns and the Fama-French five factors over a sixty-month window. Higher betas indicate that firms are more vulnerable to the same risks faced by anti-climate lobbyists. This approach isolates the return premium associated with being sensitive to lobbying-related risks, regardless of a firm's own lobbying activity. When we estimate FMB regressions of returns on $Beta_{i,t}^{Anti}$, we obtain a strong positive coefficient. This result aligns with a risk-based explanation: exposure to anti-climate lobbying risks is priced in the cross-section of returns.

6.4 Return Estimates: Alternative Channels

6.4.1 Anti-Climate Lobbying: Mispricing and Earnings Surprises

An alternative to the risk channel holds that anti-climate lobbyists generate *unexpectedly* higher earnings, which leads to positive earnings surprises and subsequently to higher returns. The higher earnings can arise, for example, if the lobbying successfully and unex-

pectedly leads to lower regulatory costs (less stringent or no regulation).[34] Address this mispricing alternative is important as we use realized returns in the baseline tests. Hence, return effects may stem from unexpected changes in earnings, which can drive up realized returns and cause a positive link with anti-climate lobbying. To evaluate this channel, we relate climate lobbying to earnings surprises:

$$\begin{aligned} SUE_{i,t} =& \beta_0 + \beta_1 ClimateLobbyIntensity_{i,t}^{Anti} + \beta_2 ClimateLobbyIntensity_{i,t}^{Pro} \\ &+ \beta_3 \mathbf{X}_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t}, \end{aligned} \tag{8}$$

where SUE is one of two measures of earnings surprises from Atilgan et al. (2023). Table IA A9 shows that climate lobbying does *not* significantly correlate with earnings surprises. Hence, the returns are unlikely to be driven by mispricing related to earnings surprises.

6.4.2 Anti-Climate Lobbying: Effects of Political Affiliations

Another alternative holds that our return effects primarily reflect corporate affiliations with the Republican Party. To address this possibility, Table IA A10 presents three tests, which are explained in detail in IA Section E. First, in Columns 1–2, our results are unchanged when we directly control for a firm's party connection or its campaign contributions to congressional candidates. Second, in Columns 3–4, we consider the geographical dispersion of firms, building on the idea that firms may choose to donate to the dominant party in their state, particularly if their operations are concentrated in a few locations. In such cases, the direction of political contribution might not reflect the firms' climate stance. To alleviate the concern that we are simply picking up (local) party affiliations, we run regressions for firms with geographically dispersed operations (those mentioning more than five states in their 10-Ks) and include state-level headquarters fixed effects; both obtain consistent return results. Third, in Column 5, we infer the climate stance of firms based on scores provided by

[34] An important element of this mispricing channel is that it requires *unexpectedly* higher earnings, as higher earnings per se should be capitalized in a stock's valuation and be unrelated to returns.

InfluenceMap, that is, we are not relying on political contribution data. This approach also shows significant return effects of anti-climate lobbying.

7 Conclusion

In this paper, we quantify corporate anti- and pro-climate lobbying expenses, identify the largest corporate lobbyists and their motives, and document how and why climate lobbying is priced in financial markets. Anti-climate lobbying is highly concentrated, with firms in the Utilities and Petroleum & Natural Gas sectors spending the largest total amounts. Pro-climate lobbying is more dispersed across sectors, but the Utilities sector also ranks highest based on the aggregate amount of pro-climate lobbying. Recently, firms have tried to camouflage their lobbying activities by avoiding explicitly mentioning climate-related words in lobbying reports. Firms with more carbon-intense business models spend significantly more on anti-climate lobbying. In contrast, there is a positive correlation between green innovation and pro-climate lobbying. Firms with more anti-climate lobbying earn higher future returns, even after controlling for carbon emissions. The higher returns are not driven by earnings surprises but instead reflect the perception that anti-climate lobbyists carry higher risk.

Data Appendix

Variables	Definitions	Sources
$ClimateLobby_{i,t}$	Climate lobbying expenses identified from lobbying reports. A lobbying report is climate-related if it contains climate-related keywords or climate-related bills. For firms with in-house lobbyists, the amounts reported in lobbying reports include the portion of salaries for staff engaged in lobbying, along with other costs directly related to lobbying. For lobbying firms, the reported lobbying amounts include the income received by lobbying firms from their clients. This encompasses fees paid specifically for lobbying efforts, and it may also include services such as research and communication with government officials.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Anti}$	Anti-climate lobbying expenses identified from lobbying reports. A lobbying report is climate-related if it contains climate-related keywords or climate-related bills. When firm executives donate over 75% of their contributions in the past three years to Republican candidates, the firm's climate-lobbying expenditures in a report are classified as anti-climate lobbying expenses. In cases where executive contribution data is unavailable, we label climate-lobbying expenditures as anti-climate if donation information is available for at least 50% of the lobbyists listed in the report and if each of these lobbyists allocated over 75% of their total historical contributions to Republican candidates.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Pro}$	Pro-climate lobbying expenses. A lobbying report is climate-related if it contains climate-related keywords or climate-related bills. When firm executives donate over 75% of their contributions in the past three years to Democratic candidates, the firm's climate-lobbying expenditures in a report are classified as pro-climate lobbying expenses. In cases where executive contribution data is unavailable, we label climate-lobbying expenditures as pro-climate if donation information is available for at least 50% of the lobbyists listed in the report and if each of these lobbyists allocated over 75% of their total historical contributions to Democratic candidates.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Anti-Pro}$	Anti- minus pro-climate lobbying expenses. Takes positive (negative) values if anti-climate spending is higher (lower) than pro-climate spending. We identify lobbying reports as climate-related if they contain climate keywords or climate bills.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Anti,Text}$	Defined as $ClimateLobby_{i,t}^{Anti}$ but with lobbying report identified as climate-related based on climate keywords only.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Pro,Text}$	Defined as $ClimateLobby_{i,t}^{Pro}$ but with lobbying report identified as climate-related based on climate keywords only.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Anti,Text+Bill\,Titles}$	Defined as $ClimateLobby_{i,t}^{Anti}$ but with lobbying report identified as climate-related based on climate keywords and climate bill titles.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Pro,Text+Bill\,Titles}$	Defined as $ClimateLobby_{i,t}^{Pro}$ but with lobbying report identified as climate-related based on climate keywords and climate bill titles.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Anti,Combo}$	Combined direct and indirect (via trade associations) anti-climate lobbying expenditures.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Pro,Combo}$	Combined direct and indirect (via trade associations) pro-climate lobbying expenditures.	OpenSecrets, FEC
$ClimateLobby_{i,t}^{Anti,IM}$	Anti-climate lobbying expenditures based on InfluenceMap scores to assess corporate climate stance.	OpenSecrets, InfluenceMap
$ClimateLobby_{i,t}^{Pro,IM}$	Pro-climate lobbying expenditures based on InfluenceMap scores to assess corporate climate stance.	OpenSecrets, InfluenceMap
$\mathbb{1}(ClimateLobby_{i,t})$	Equals 1 if $ClimateLobby_{i,t}$ is positive, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(ClimateLobby_{i,t}^{Anti})$	Equals 1 if $ClimateLobby_{i,t}^{Anti}$ is positive, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(ClimateLobby_{i,t}^{Pro})$	Equals 1 if $ClimateLobby_{i,t}^{Pro}$ is positive, 0 otherwise.	OpenSecrets, FEC
$ClimateLobbyIntensity_{i,t}^{Anti}$	Anti-climate lobbying expenses (in \$) divided by total assets (in \$ million). Winsorized at the 1% and 99.9% levels. We winsorize at 99.9% as only 10% of the observations take positive values.	OpenSecrets, FEC

Variables	Definitions	Sources
$ClimateLobbyIntensity_{i,t}^{Pro}$	Pro-climate lobbying expenses (in \$) divided by total assets (in \$ million). Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$	Anti- minus pro-climate lobbying expenses (in \$) divided by total assets (in \$ million). Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$Camouflage\,1_{i,t}^{Anti}$	Proportion of anti-climate lobbying expenditures that is solely identifiable through climate-related bills (titles or codes) mentioned in the issue description. This variable is only available for observations with positive anti-climate lobbying expenditures.	OpenSecrets, FEC
$Camouflage\,2_{i,t}^{Anti}$	Proportion of anti-climate lobbying expenditures that is solely identifiable through abstract bill codes mentioned in the issue description. This variable is only available for observations with positive anti-climate lobbying expenditures.	OpenSecrets, FEC
$Camouflage\,1_{i,t}^{Pro}$	Proportion of pro-climate lobbying expenditures that is solely identifiable through climate-related bills (titles or codes) mentioned in the issue description. This variable is only available for observations with positive pro-climate lobbying expenditures.	OpenSecrets, FEC
$Camouflage\,2_{i,t}^{Pro}$	Proportion of pro-climate lobbying expenditures that is solely identifiable through abstract bill codes mentioned in the issue description. This variable is only available for observations with positive pro-climate lobbying expenditures.	OpenSecrets, FEC
$\mathbb{1}(Camouflage\,1_{i,t}^{Anti})$	Equals 1 if $Camouflage\,1_{i,t}^{Anti}$ is above the median, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(Camouflage\,2_{i,t}^{Anti})$	Equals 1 if $Camouflage\,2_{i,t}^{Anti}$ is above the median, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(Camouflage\,1_{i,t}^{Pro})$	Equals 1 if $Camouflage\,1_{i,t}^{Pro}$ is above the median, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(Camouflage\,2_{i,t}^{Pro})$	Equals 1 if $Camouflage\,2_{i,t}^{Pro}$ is above the median, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(Lobby\,Policy\,Change_{i,t}^{Zero\to Anti})$	Equals 1 if the firm had no climate lobbying activities from years $t-3$ to $t-1$ but exclusively engage in anti-climate lobbying in year t, 0 otherwise	OpenSecrets, FEC
$\mathbb{1}(Lobby\,Policy\,Change_{i,t}^{Zero\to Pro})$	Equals 1 if the firm had no climate lobbying activities from years $t-3$ to $t-1$ but exclusively engage in pro-climate lobbying in year t, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(Lobby\,Policy\,Change_{i,t}^{Pro\to Anti})$	Equals 1 if the firm spent more lobbying expenditures in the pro-climate direction (over 50% of their climate lobbying efforts) than the anti-climate from years $t-3$ to $t-1$ but exclusively engage in anti-climate lobbying in year t, 0 otherwise.	OpenSecrets, FEC
$\mathbb{1}(Lobby\,Policy\,Change_{i,t}^{Anti\to Pro})$	Equals 1 if the firm spent more lobbying expenditures in the anti-climate direction (over 50% of their climate lobbying efforts) than the pro-climate from years $t-3$ to $t-1$ but exclusively engage in pro-climate lobbying in year t, 0 otherwise.	OpenSecrets, FEC
$LobbyIntensity_{i,t}^{Rep}$	Republican-leaning lobbying expenses divided by total assets. Determined based on executive donations and lobbyist contributions. Lobbying expenditures are classified as Republican-leaning when firm executives have directed over 75% of their past three-year contributions to Republican candidates. In the absence of executive contribution data, we designate lobbying expenses as Republican-leaning if donation information is available for at least 50% of the lobbyists listed in the report and if each of these lobbyists allocated over 75% of their total historical contributions to Republican candidates. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$LobbyIntensity_{i,t}^{Dem}$	Democratic-leaning lobbying expenses divided by total assets, are determined based on executive donations and lobbyist contributions. Lobbying expenditures are classified as Democratic-leaning when firm executives have directed over 75% of their past three-year contributions to Democratic candidates. In the absence of executive contribution data, we designate lobbying expenses as Democratic-leaning if donation information is available for at least 50% of the lobbyists listed in the report and if each of these lobbyists allocated over 75% of their total historical contributions to Democratic candidates. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC

Variables	Definitions	Sources
$CarbonEmissions_{i,t}$	Scope 1 carbon emissions (in CO_2-equivalent tonnes). Winsorized at the 1% and 99% levels.	Trucost
$CarbonIntensity_{i,t}$	Scope 1 carbon emissions (in CO_2-equivalent tonnes) divided by revenues (in \$ million). Winsorized at the 2.5% and 97.5% levels.	Trucost
$CarbonEmission_{i,t}^{Scope2}$	Scope 2 carbon emissions (in CO_2-equivalent tonnes). Winsorized at the 1% and 99% levels.	Trucost
$CarbonIntensity_{i,t}^{Scope2}$	Scope 2 carbon emissions (in CO_2-equivalent tonnes) divided by revenues (in \$ million). Winsorized at the 2.5% and 97.5% levels.	Trucost
$CarbonEmission_{i,t}^{Scope3}$	Scope 3 carbon emissions (in CO_2-equivalent tonnes). Winsorized at the 1% and 99% levels.	Trucost
$CarbonIntensity_{i,t}^{Scope3}$	Scope 3 carbon emissions (in CO_2-equivalent tonnes) divided by revenues (in \$ million). Winsorized at the 2.5% and 97.5% levels.	Trucost
$Coal/Asset_{i,t}$	Electricity net generation from coal (in Megawatt hours) divided by total assets (in \$ million). Winsorized at the 1% and 99% levels.	EIA
$NaturalGas/Asset_{i,t}$	Electricity net generation from natural gas (in Megawatt hours) divided by total assets (in \$ million). Winsorized at the 1% and 99% levels.	EIA
$Oil/Asset_{i,t}$	Electricity net generation from oil (in Megawatt hours) divided by total assets (in \$ million). Winsorized at the 1% and 99% levels.	EIA
$Nuclear/Asset_{i,t}$	Electricity net generation from nuclear energy (in Megawatt hours) divided by total assets (in \$ million). Winsorized at the 1% and 99% levels.	EIA
$Renewable/Asset_{i,t}$	Electricity net generation from renewable energy (in Megawatt hours) divided by total assets (in \$ million). Winsorized at the 1% and 99% levels.	EIA
$Other/Asset_{i,t}$	Electricity net generation from sources other than coal, natural gas, oil, nuclear energy, and renewable energy (in Megawatt hours) divided by total assets (in \$ million). Winsorized at the 1% and 99% levels.	EIA
$GreenPatents_{i,t}$	Number of green patents scaled by the total number of patents. Winsorized at the 1% and 99% levels.	USPTO
$GreenInnovation_{i,t}$	Percentage of green innovation-focused discussions in earnings conference calls (including presentation and Q&A), calculated as the mean of the four quarterly calls. Winsorized at the 1% and 99.9% levels.	Leippold and Yu (2024)
$Log(Assets)_{i,t}$	Logarithm of total assets. Winsorized at the 1% and 99% levels.	Compustat
$Log(MarketCap)_{i,t}$	Logarithm of a firm's market capitalization. Winsorized at the 1% and 99% levels.	CRSP
$Log(B/M)_{i,t}$	Logarithm of book equity divided by market capitalization. Winsorized at the 1% and 99% levels.	Compustat, CRSP
$ROA_{i,t}$	Operating income before depreciation divided by total assets. Winsorized at the 1% and 99% levels.	Compustat
$Capex/Assets_{i,t}$	Capital expenditures divided by total assets. Winsorized at the 1% and 99% levels.	Compustat
$Leverage_{i,t}$	Total debt divided by total assets. Winsorized at the 1% and 99% levels.	Compustat
$Tangibility_{i,t}$	Net property, plant, and equipment divided by total assets. Winsorized at the 1% and 99% levels.	Compustat
$SalesGrowth_{i,t}$	Percentages change in sales. Winsorized at the 1% and 99% levels.	Compustat
$Beta_{i,t}$	Loading of stock returns on the market factor estimated over a 60-month rolling window. Winsorized at the 1% and 99% levels.	CRSP
$Momentum_{i,t}$	Stock returns over the previous 12 months. Winsorized at the 1% and 99% levels.	CRSP
$IVol_{i,t}$	Idiosyncratic volatility estimated from the Fama-French three-factor model over a 60-month rolling window. Winsorized at the 1% and 99% levels.	CRSP
$Liquidity_{i,t}$	Annual average ratio of the daily absolute return to the (dollar) trading volume on that day, following the method of Amihud (2002). Winsorized at the 1% and 99% levels.	CRSP
$ExcessReturn_{i,m,t}$	Monthly excess return (delisting-adjusted raw returns minus the risk-free rate) during each month m. Winsorized at the 1% and 99% levels.	CRSP

Variables	Definitions	Sources
$ESG_{i,t}$	ESG Scores. Winsorized at the 1% and 99% levels.	Refinitiv
$Environment_{i,t}$	Environment pillar scores. Winsorized at the 1% and 99% levels.	Refinitiv
$PRisk_{i,t}$	Annual average proportion of quarterly earnings calls devoted to political risk. Winsorized at the 1% and 99% levels.	Hassan et al. (2019)
$PRisk_{i,t}^{EnvReg}$	Annual average proportion of quarterly earnings calls devoted to political risk related to environment, institutions, and trade. Winsorized at the 1% and 99% levels.	Hassan et al. (2019)
$CIncidents_{i,t}$	Number of risk incidents related to climate change, greenhouse gas emissions, or pollution as identified across various news sources. Winsorized at the 1% and 99% levels.	RepRisk
$CCases_{i,t}$	Cumulative number of new climate lawsuit filings. Winsorized at the 1% and 99% levels.	Sato et al. (2024)
$\mathbb{1}(PRisk_{m,t}^{High})$	Equals 1 for months in the top 10% of quarterly average $PRisk_{i,t}$ across firms, 0 otherwise.	Hassan et al. (2019)
$\mathbb{1}(PRisk_{m,t}^{EnvReg,High})$	Equals 1 for months in the top 10% of quarterly average $PRisk_{i,t}^{EnvReg}$ across firms, 0 otherwise.	Hassan et al. (2019)
$\mathbb{1}(CIncidents_{m,t}^{High})$	Equals 1 for months in the top 10% of aggregate climate incidents in the U.S., 0 otherwise.	RepRisk
$\mathbb{1}(CCases_{m,t}^{High})$	Equals 1 for months with new climate lawsuit filings, 0 otherwise.	Sato et al. (2024)
CAR[0,1]/[0,2]/[0,3]	The cumulative market-adjusted abnormal returns over a one-day/two-day/three-day window from the event date. Winsorized at the 1% and 99% levels.	CRSP
$Beta_{i,t}^{Anti}$	Firm-month exposure to the *High*-minus-*Low* portfolio returns based on $ClimateLobbyIntensity^{Anti}$, estimated using rolling 60-month time-series regressions of individual stock returns on the portfolio returns and Fama-French five factors. Winsorized at the 1% and 99% levels.	CRSP
$SUE1_{i,t}$	Actual earnings per share (EPS) for the fiscal year t minus the analyst consensus forecast, divided by the fiscal year-end stock price. We measure the analyst consensus as the median analyst forecast constructed eight months before the end of the forecast period. We exclude observations where actual-forecast EPS deviation exceeds 10% of the stock price. Winsorized at the 1% and 99% levels.	I/B/E/S
$SUE2_{i,t}$	Actual earnings per share (EPS) for the fiscal year t minus the analyst consensus forecast, divided by the fiscal year-end stock price. We measure the analyst consensus as the median analyst forecast constructed twenty months before the end of the forecast period. We exclude observations where actual-forecast EPS deviation exceeds 10% of the stock price. Winsorized at the 1% and 99% levels.	I/B/E/S
$ICC_{i,m,t}^{GLS}$	Monthly residual income model-based implied cost of capital (ICC) proposed by Gebhardt et al. (2001) (GLS) utilizing mechanical earnings forecasts from Hou et al. (2012)'s cross-sectional forecast model. Winsorized at the 1% and 99% levels.	Lee et al. (2021)
$ICC_{i,m,t}^{Mean}$	Equal-weighted average of four commonly used implied cost of capital (ICC) variants based on mechanical earnings forecast: the residual-income-model-based ICCs proposed by Gebhardt et al. (2001) (GLS) and Claus and Thomas (2001) (CAT) and the abnormal-earnings-model-based ICCs proposed by Easton (2004) (PEG) and Ohlson and Juettner-Nauroth (2005) (AGR). Winsorized at the 1% and 99% levels.	Lee et al. (2021)
$\mathbb{1}(Rep_{i,t})$	Equals 1 if a firm's executives donate more than 75% of their contributions to the Republican party over the past three years, 0 otherwise.	FEC
$\mathbb{1}(Dem_{i,t})$	Equals 1 if a firm's executives donate more than 75% of their contributions to the Democratic party over the past three years, 0 otherwise.	FEC
$ContributionIntensity_{i,t}^{Rep}$	Annual executive campaign contributions to the Republican party scaled by total assets. Winsorized at the 1% and 99% levels.	FEC
$ContributionIntensity_{i,t}^{Dem}$	Annual executive campaign contributions to the Democratic party scaled by total assets. Winsorized at the 1% and 99% levels.	FEC

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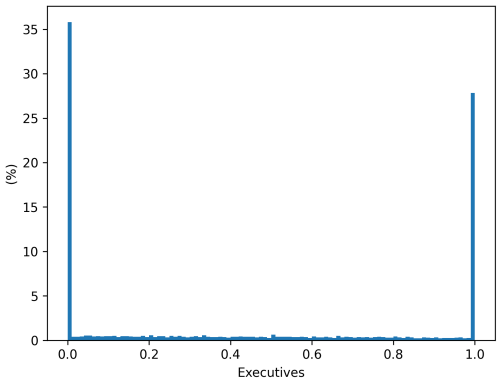
Figure 1: **Contributions to the Democratic and Republican Party**

This figure illustrates contributions by corporate executives or lobbyists to the Democratic or Republican Party. We aggregate contributions from executives of the same firm in a year. We display the proportion of contributions to the Democratic Party relative to all contributions. As a result, the distribution ranges between 0 (all contributions to the Republican Party) and 1 (all contributions to the Democratic Party). Panel A presents contributions by corporate executives (based on their contributions over the past three years). Panel B displays results for lobbyists (based on their total historical contributions).



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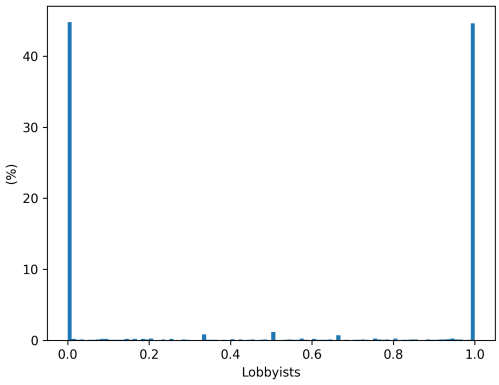

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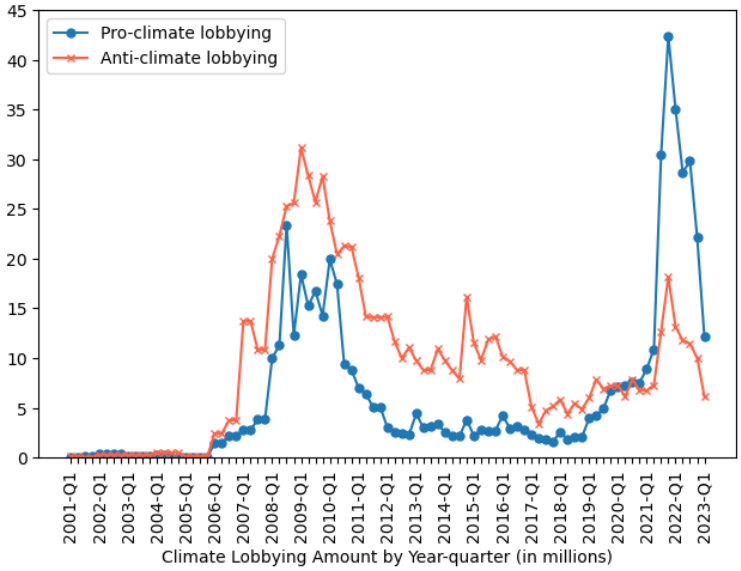
Figure 2: **Time-Series Variation of Corporate Climate Lobbying**

This figure illustrates spending on anti- and pro-climate lobbying across firms over time. Panel A displays the aggregate amounts of anti- and pro-climate lobbying by quarter, while Panel B shows the count of distinct firms engaged in anti- or pro-climate climate lobbying by quarter.



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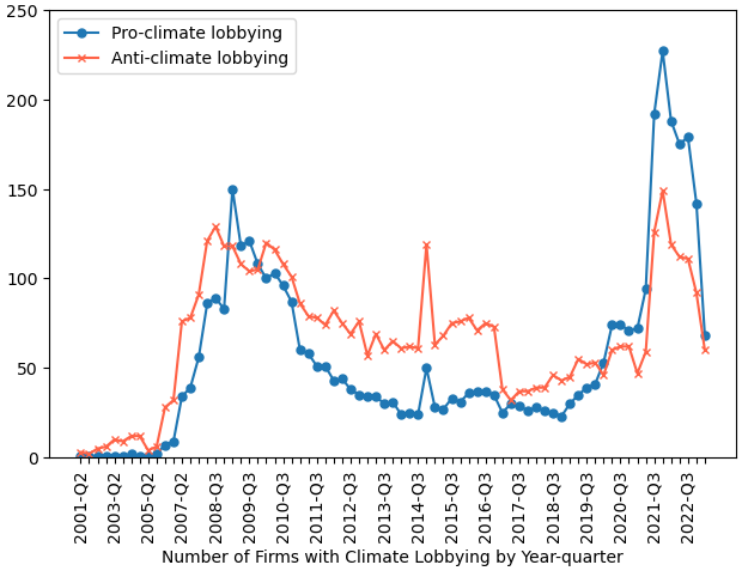

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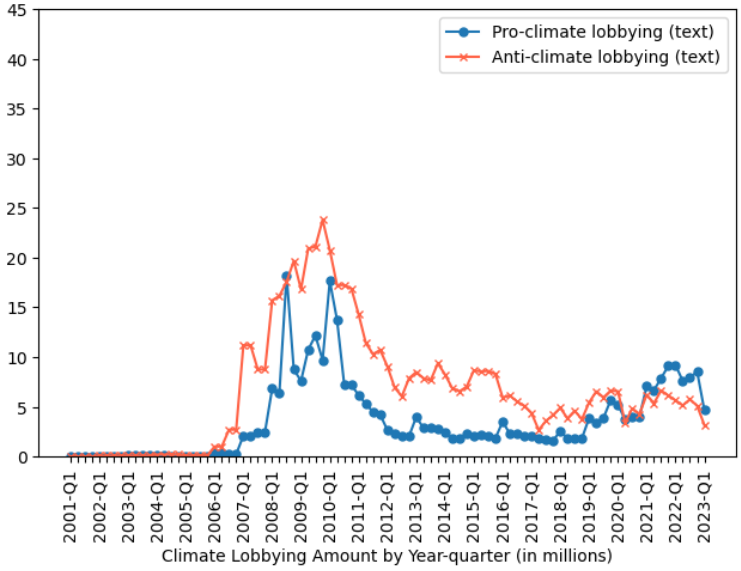
Figure 3: **Time-Series Variation of Text-Based Corporate Lobbying**

This figure illustrates spending on anti- and pro-climate lobbying across firms over time. For this figure, we identify lobbying solely from climate-related keywords. Panel A displays the aggregate amounts of anti- and pro-climate lobbying by quarter, while Panel B shows the count of distinct firms engaged in anti- or pro-climate climate lobbying by quarter.



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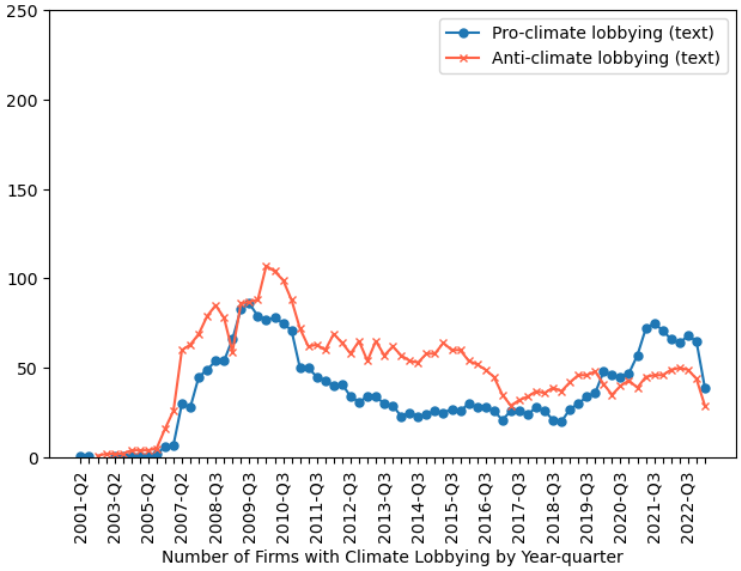

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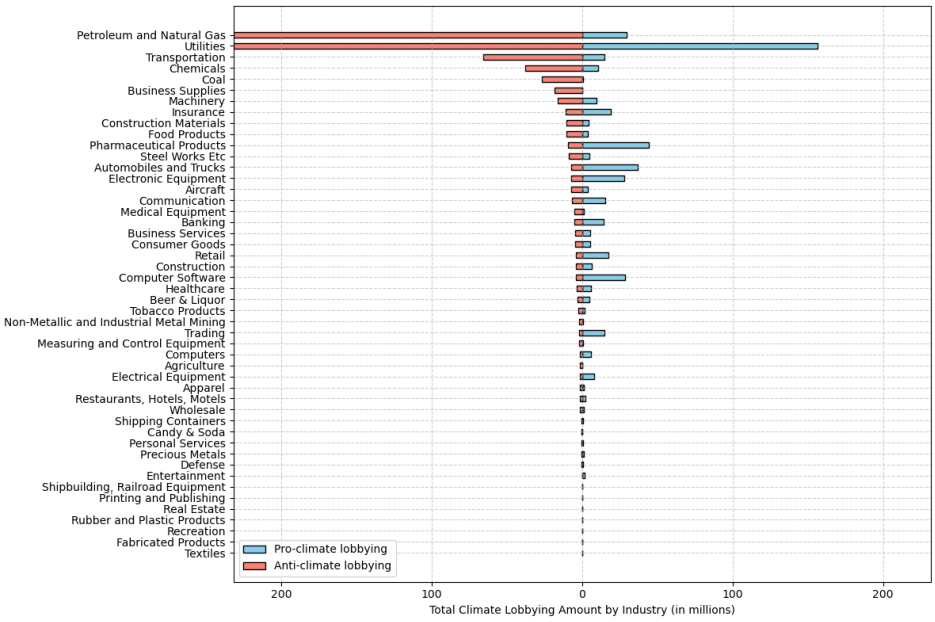
Figure 4: **Industry Distribution of Corporate Climate Lobbying**

This figure shows the distribution of spending on climate lobbying by industry sector (Fama-French 49 industry classification). Panel A reports the total climate lobbying amount by industry (aggregated across the sample period), while Panel B displays firm-quarter-level averages by industry sector (across the sample period). Both panels are sorted by the amount of anti-climate lobbying.



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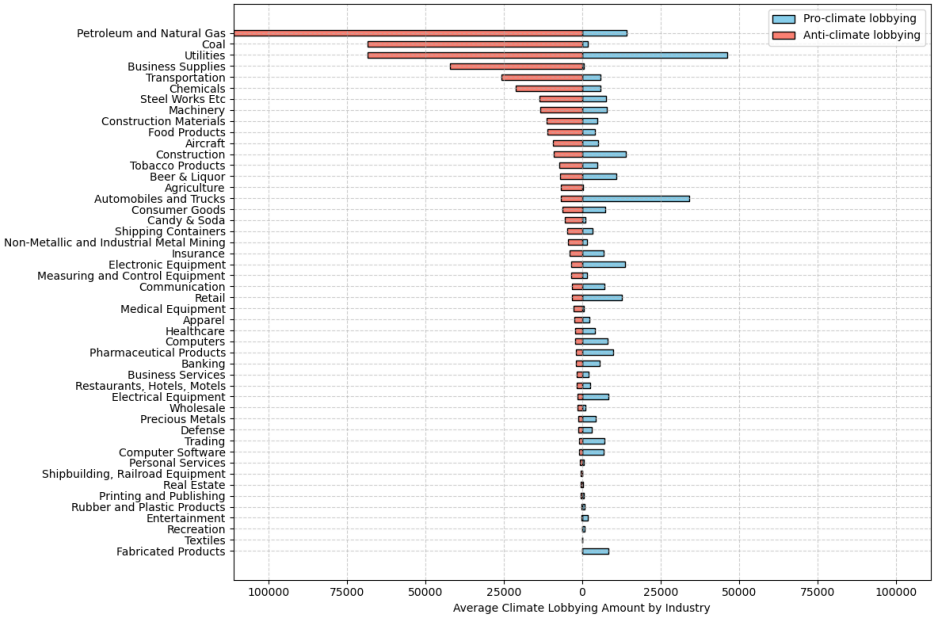

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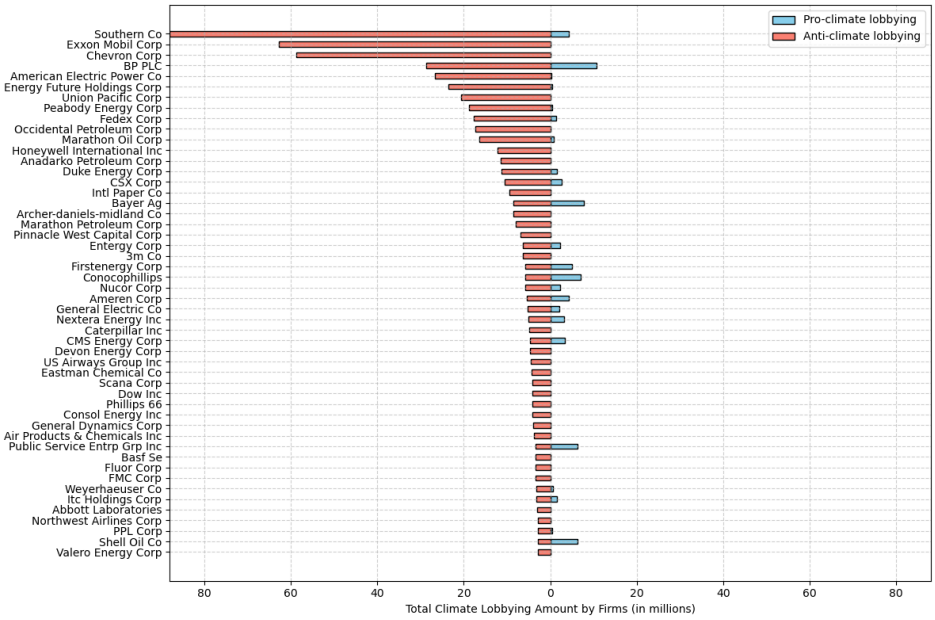
Figure 5: **Top-50 Firms with Corporate Climate Lobbying Expenses**

This figure shows the distribution of spending on climate lobbying by firms. Panel A ranks firms based on total anti-climate lobbying expenses (aggregated across the sample period). In contrast, Panel B ranks firms based on total pro-climate lobbying expenses (aggregated across the sample period). We report the top 50 firms in each ranking. Recall that our sample includes U.S.-listed firms, some of which are incorporated abroad. With typically substantial U.S. shareholders and operations, these foreign firms actively lobby in the U.S. Since filing an LDA report reflects direct participation in U.S. policy influence, their inclusion is necessary to capture the landscape of federal lobbying activities comprehensively.



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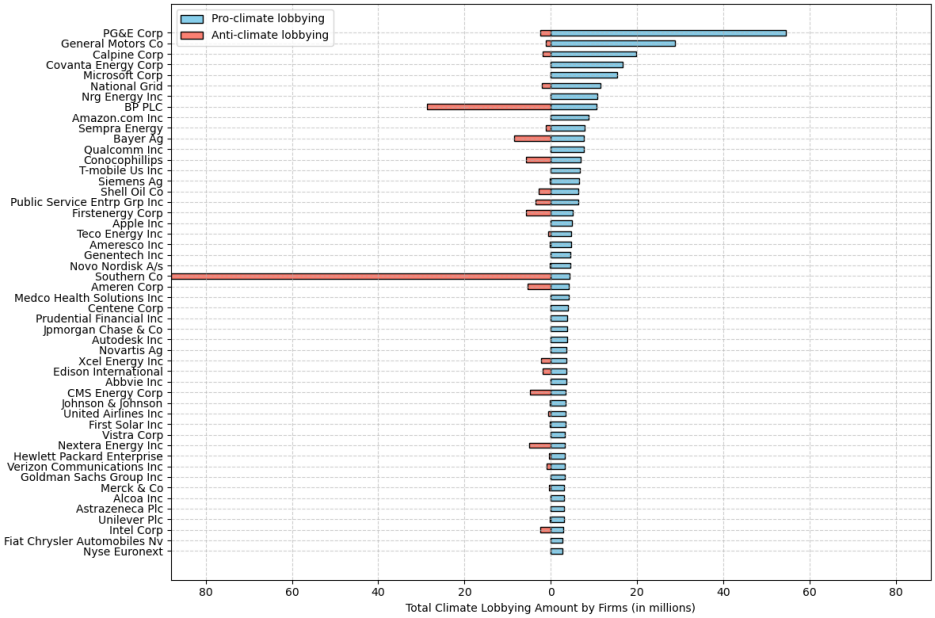


(b)

Table 1: **Descriptive Statistics on Corporate Climate Lobbying**

This table presents summary statistics at the firm-year level for key variables used in the analysis. In Panel A, the sample consists of U.S.-listed firms that undertake lobbying. In Panel B, the sample consists of U.S.-listed firms that undertake climate lobbying. We exclude observations of firms with assets below $5 million. In both panels, the sample period is from 2001 to 2022. Not all variables are available for all years and firms. Variables are defined in the Data Appendix.

Panel A: Lobbying Sample						
Variable	Mean	SD	5%	50%	95%	N
$ClimateLobby_{i,t}$	84,707	517,136	0	0	377,500	14,837
$ClimateLobby_{i,t}^{Anti}$	50,847	410,444	0	0	148,475	14,837
$ClimateLobby_{i,t}^{Pro}$	33,860	319,069	0	0	95,000	14,837
$ClimateLobby_{i,t}^{Anti-Pro}$	16,987	522,597	-89,000	0	141,429	14,837
$ClimateLobby_{i,t}^{Anti,Text}$	36,673	351,022	0	0	66,667	14,837
$ClimateLobby_{i,t}^{Pro,Text}$	19,190	255,006	0	0	13,857	14,837
$ClimateLobby_{i,t}^{Anti,Combo}$	66,979	448,645	0	0	256,651	14,837
$ClimateLobby_{i,t}^{Pro,Combo}$	38,031	329,741	0	0	120,000	14,837
$\mathbb{1}(ClimateLobby_{i,t})$	18.3%					14,837
$\mathbb{1}(ClimateLobby_{i,t}^{Anti})$	10.6%					14,837
$\mathbb{1}(ClimateLobby_{i,t}^{Pro})$	8.5%					14,837
$ClimateLobbyIntensity_{i,t}^{Anti}$	6.45	187.24	0	0	8.71	14,837
$ClimateLobbyIntensity_{i,t}^{Pro}$	4.41	52.72	0	0	5.04	14,837
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$	2.05	194.38	-4.72	0	8.54	14,837
$Lobby_{i,t}^{Rep}$	520,864	1,687,886	0	50,000	2,500,000	14,837
$Lobby_{i,t}^{Dem}$	389,140	1,435,144	0	0	1,980,000	14,837
$CarbonEmission_{i,t}$	3,415,756	11,824,390	1,360	89,332	17,784,227	6,345
$CarbonIntensity_{i,t}$	298.83	849.11	0.54	16.52	2300.50	6,345
$GreenPatents_{i,t}$	9.3%	20.0%	0	0.4%	50.0%	7,041
$GreenInnovation_{i,t}$	0.1%	0.3%	0	0	0.4%	10,069
$Coal/Asset_{i,t}$	228.09	834.92	0	0	1909.83	941
$NaturalGas/Assets_{i,t}$	150.28	418.93	0	1.51	888.59	941
$Oil/Assets_{i,t}$	29.11	186.42	0	0	10.66	941
$Nuclear/Assets_{i,t}$	40.74	215.60	0	0	0	941
$Renewable/Assets_{i,t}$	88.58	307.26	0	0	662.81	941
$Others/Assets_{i,t}$	9.02	35.82	0	0	56.93	941

Panel B: Climate Lobbying Sample						
Variable	Mean	SD	5%	50%	95%	N
$ClimateLobby_{i,t}$	461,718	1,133,138	15,000	140,000	1,898,333	2,722
$ClimateLobby_{i,t}^{Anti}$	277,155	925,088	0	27,770	1,311,307	2,722
$ClimateLobby_{i,t}^{Pro}$	184,564	726,125	0	0	858,182	2,722
$ClimateLobby_{i,t}^{Anti-Pro}$	92,591	1,217,411	-858,182	20,000	1,311,307	2,722
$ClimateLobby_{i,t}^{Anti,Text}$	199,896	799,492	0	0	995,482	2,722
$ClimateLobby_{i,t}^{Pro,Text}$	104,602	587,896	0	0	534,167	2,722
$ClimateLobby_{i,t}^{Anti,Combo}$	333,239	996,985	0	46,179	1,540,792	2,722
$ClimateLobby_{i,t}^{Pro,Combo}$	199,077	741,386	0	10,000	925,935	2,722
$ClimateLobbyIntensity_{i,t}^{Anti}$	35.18	436.05	0	0.92	72.11	2,722
$ClimateLobbyIntensity_{i,t}^{Pro}$	24.03	121.18	0	0	84.05	2,722
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$	11.15	453.77	-83.51	0.70	69.60	2,722
$Camouflage\,1_{i,t}^{Anti}$	40.3%	44.1%	0	17.6%	100%	1,579
$Camouflage\,2_{i,t}^{Anti}$	27.4%	39.7%	0	0	100%	1,579
$Camouflage\,1_{i,t}^{Pro}$	47.8%	45.7%	0	35.0%	100%	1,260
$Camouflage\,2_{i,t}^{Pro}$	31.1%	40.7%	0	0	100%	1,260
$\mathbb{1}(Lobby\ Policy\ Change_{i,t}^{Zero\to Anti})$	17.2%					2,722
$\mathbb{1}(Lobby\ Policy\ Change_{i,t}^{Zero\to Pro})$	16.1%					2,722
$\mathbb{1}(Lobby\ Policy\ Change_{i,t}^{Pro\to Anti})$	5.4%					2,722
$\mathbb{1}(Lobby\ Policy\ Change_{i,t}^{Anti\to Pro})$	5.4%					2,722
$Lobby_{i,t}^{Rep}$	1,244,247	2,862,627	0	160,000	6,270,321	2,722
$Lobby_{i,t}^{Dem}$	974,465	2,637,507	0	40,000	5,000,000	2,722

Table 2: **Corporate Climate Lobbying, Carbon Emissions, and Green Innovation**

This table presents regressions at the firm-year level relating corporate climate lobbying to carbon emissions (Panel A) and green innovation (Panel B). We use the following dependent variables: $ClimateLobbyIntensity^{Anti}$ measures anti-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Pro}$ measures pro-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Anti-Pro}$ measures anti- minus pro-climate lobbying expenses divided by total assets. We use the following independent variables of interest: $CarbonEmissions$ is Scope 1 carbon emissions. $CarbonIntensity$ is Scope 1 carbon emissions divided by revenues. $GreenPatents$ is the number of green patents scaled by the total number of patents. $GreenInnovation$ is the percentage of green innovation-focused discussions in earnings calls. Control variables (not reported) include $Log(Asset)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$. Independent variables are normalized to have a mean of zero and a standard deviation of one (except those using logs). The sample consists of U.S.-listed firms that undertake lobbying. In Panel A, the sample period is from 2005 to 2020, and in Panel B, the sample period is from 2002 to 2022 (limited data availability). t-statistics, reported in parentheses, are based on standard errors clustered by industry. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

Panel A: Carbon Emissions

	$ClimateLobbyIntensity^{Anti}_{i,t}$		$ClimateLobbyIntensity^{Pro}_{i,t}$		$ClimateLobbyIntensity^{Anti-Pro}_{i,t}$	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Log}(CarbonEmissions_{i,t})$	0.78**		-0.63*		1.41***	
	(2.07)		(-1.84)		(3.28)	
$CarbonIntensity_{i,t}$		2.60***		-0.45**		3.05***
		(4.39)		(-2.19)		(5.30)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	6,094	6,094	6,094	6,094	6,094	6,094
R^2	0.06	0.07	0.01	0.01	0.01	0.02

Panel B: Green Patent and Green Innovation

	$ClimateLobbyIntensity^{Anti}_{i,t}$		$ClimateLobbyIntensity^{Pro}_{i,t}$		$ClimateLobbyIntensity^{Anti-Pro}_{i,t}$	
	(1)	(2)	(3)	(4)	(5)	(6)
$GreenPatents_{i,t}$	3.80		5.88**		-2.08	
	(1.43)		(2.01)		(-0.47)	
$GreenInnovation_{i,t}$		4.11		7.03***		-2.92
		(1.16)		(4.10)		(-1.09)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	6,603	9,668	6,603	9,668	6,603	9,668
R^2	0.01	0.02	0.05	0.05	0.01	0.01

Table 3: **Corporate Climate Lobbying and Electricity Generation Characteristics**

This table presents regressions at the firm-year level relating corporate climate lobbying to electricity generation sources for firms operating power plants. We use the following dependent variables: $ClimateLobbyIntensity^{Anti}$ measures anti-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Pro}$ measures pro-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Anti-Pro}$ measures anti- minus pro-climate lobbying expenses divided by total assets. We use the following independent variables of interest: $Coal/Asset$ is electricity net generation from coal divided by total assets. $NaturalGas/Assets$, $Oil/Assets$, $Nuclear/Assets$, $Renewable/Assets$, and $Other/Assets$ are defined accordingly. Control variables (not reported) include $Log(Asset)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$. Independent variables are normalized to have a mean of zero and a standard deviation of one. The sample consists of U.S.-listed firms and U.S. non-listed utility firms that undertake lobbying and operate power plants. The sample period is from 2001 to 2022. t-statistics, reported in parentheses, are based on standard errors clustered by industry. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ClimateLobbyIntensity_{i,t}^{Anti}$	$ClimateLobbyIntensity_{i,t}^{Pro}$	$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$
	(1)	(2)	(3)
$Coal/Assets_{i,t}$	0.39**	-1.69*	2.09**
	(2.40)	(-1.98)	(2.42)
$NaturalGas/Assets_{i,t}$	0.99**	-3.63	4.62*
	(2.25)	(-1.49)	(1.89)
$Oil/Assets_{i,t}$	-0.33	-2.89**	2.56**
	(-1.67)	(-2.63)	(2.16)
$Nuclear/Assets_{i,t}$	0.31	3.84*	-3.53*
	(0.42)	(1.81)	(-2.02)
$Renewable/Assets_{i,t}$	0.74	0.01	0.73
	(0.76)	(0.00)	(0.29)
$Other/Assets_{i,t}$	-0.50	-1.00	0.51
	(-0.93)	(-0.31)	(0.18)
Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
N	903	903	903
R^2	0.08	0.30	0.25

Table 4: **Corporate Climate Lobbying and Camouflaged Activities**

This table presents regressions at the firm-year level relating camouflaged climate lobbying to shifts in climate lobbying policy. We use the following dependent variables: $Camouflage\,1^{Anti}$ is the proportion of anti-climate lobbying expenses solely identifiable through climate-related bills (titles or codes). $Camouflage\,2^{Anti}$ is the proportion of anti-climate lobbying expenses solely identifiable through abstract bill codes. $Camouflage\,1^{Pro}$ and $Camouflage\,2^{Pro}$ are defined accordingly. We use the following independent variables of interest: $\mathbb{1}(Lobby\,Policy\,Change^{Zero\rightarrow Anti})$ equals one for firms that transitioned from no climate lobbying activity to exclusively anti- climate lobbying. $\mathbb{1}(Lobby\,Policy\,Change^{Zero\rightarrow Pro}$ is defined accordingly. $\mathbb{1}(Lobby\,Policy\,Change^{Anti\rightarrow Pro})$ indicate firms that shifted from predominantly anti-climate lobbying to exclusively pro-climate lobbying. $\mathbb{1}(Lobby\,Policy\,Change^{Pro\rightarrow Anti})$ is defined accordingly. Control variables (not reported) include $ClimateLobbyIntensity^{Anti}$, $ClimateLobbyIntensity^{Pro}$, $Log(Asset)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$. The sample consists of U.S.-listed firms that undertake anti-climate lobbying (Columns 1-4) and pro-climate lobbying (Columns 5-8). The sample period is from 2001 to 2022. t-statistics, reported in parentheses, are based on standard errors clustered by industry. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$Camouflage\,1^{Anti}_{i,t}$		$Camouflage\,2^{Anti}_{i,t}$		$Camouflage\,1^{Pro}_{i,t}$		$Camouflage\,2^{Pro}_{i,t}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\mathbb{1}(Lobby\,Policy\,Change^{Zero\rightarrow Anti}_{i,t})$	0.15***		0.12***					
	(5.54)		(5.23)					
$\mathbb{1}(Lobby\,Policy\,Change^{Zero\rightarrow Pro}_{i,t})$					0.11***		0.09**	
					(2.76)		(2.30)	
$\mathbb{1}(Lobby\,Policy\,Change^{Pro\rightarrow Anti}_{i,t})$		-0.04		-0.04				
		(-1.03)		(-1.10)				
$\mathbb{1}(Lobby\,Policy\,Change^{Anti\rightarrow Pro}_{i,t})$						0.06		0.05
						(1.47)		(1.56)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1,524	1,524	1,524	1,524	1,205	1,205	1,205	1,205
R^2	0.35	0.33	0.26	0.24	0.43	0.43	0.30	0.29

Table 5: **Corporate Climate Lobbying and Future Stock Returns**

This table presents weighted least square regression at the firm-month level relating excess stock returns to corporate climate lobbying. We use the following dependent variable: $ExcessReturn$ is the monthly return of month m. We consider returns from February of year t+1 to January of year t+2. We use the following independent variables of interest: $ClimateLobbyIntensity^{Anti}$ measures anti-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Pro}$ measures pro-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Anti-Pro}$ measures anti- minus pro-climate lobbying expenses divided by total assets. The sample consists of U.S.-listed firms that undertake lobbying. In Columns 1–4, the sample period covers returns from January 2002 to December 2009, and in Columns 5–8, from January 2010 to December 2022. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ExcessReturn_{i,m,t+1}$							
	2002-2009				2010-2022			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$ClimateLobbyIntensity^{Anti}_{i,t}$	-0.30	-0.29			0.44***	0.57***		
	(-0.65)	(-0.48)			(5.76)	(4.21)		
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.25*	-0.43			-0.34	-0.29		
	(-2.16)	(-1.60)			(-1.31)	(-1.18)		
$ClimateLobbyIntensity^{Anti-Pro}_{i,t}$			-0.15	-0.04			0.39**	0.43**
			(-0.44)	(-0.09)			(2.54)	(2.55)
$LobbyIntensity^{Rep}_{i,t}$		-0.03		-0.03		-0.02		-0.01
		(-1.50)		(-1.65)		(-0.95)		(-0.59)
$LobbyIntensity^{Dem}_{i,t}$		0.09		0.09		0.01		0.01
		(1.24)		(1.09)		(0.40)		(0.54)
$Log(MarketCap)_{i,t}$		-0.26***		-0.26***		-0.06		-0.06
		(-3.80)		(-3.83)		(-1.30)		(-1.27)
$Log(B/M)_{i,t}$		0.17		0.17		-0.05		-0.05
		(0.83)		(0.83)		(-0.17)		(-0.17)
$ROA_{i,t}$		1.01		0.99		1.13		1.12
		(0.48)		(0.48)		(0.59)		(0.59)
$Capex/Assets_{i,t}$		-7.01		-7.09		-10.37		-10.34
		(-1.62)		(-1.64)		(-1.75)		(-1.75)
$Leverage_{i,t}$		0.05		0.05		0.80		0.80
		(0.11)		(0.13)		(0.91)		(0.90)
$Tangibility_{i,t}$		1.27*		1.25*		0.59*		0.59*
		(2.01)		(2.01)		(1.87)		(1.88)
$Sales\,Growth_{i,t}$		-0.16		-0.16		-0.77***		-0.77***
		(-0.47)		(-0.47)		(-7.45)		(-7.70)
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	50,462	45,420	50,462	45,420	100,016	90,732	100,016	90,732
R^2	0.25	0.25	0.25	0.25	0.32	0.32	0.32	0.32

Table 6: **Climate Lobbying and Future Returns: Carbon Emissions, Trade Associations, Camouflaged Lobbying**

This table presents weighted least square regression at the firm-month level relating excess stock returns to corporate climate lobbying. We use the following dependent variable: $ExcessReturn$ is the monthly return of month m. We consider returns from February of year t+1 to January of year t+2. We use the following independent variables of interest: $ClimateLobbyIntensity^{Anti}$ measures anti-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Pro}$ measures pro-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Anti,\,Combo}$ and $ClimateLobbyIntensity^{Pro,\,Combo}$ additionally include indirect lobbying via trade associations. Columns 4–5 add interaction terms between climate lobbying and dummy variables indicating above-median camouflage intensity. $\mathbb{1}(Camouflage\,1^{Anti})$ equals one if $Camouflage\,1^{Anti}$ is above the median, and zero otherwise. $\mathbb{1}(Camouflage\,2^{Anti})$ is defined accordingly. Columns 1–2 account for carbon emissions and use a six-month lag in carbon emissions when matching with returns to address concerns regarding the delayed availability of emission data to investors. Control variables (not reported) include $LobbyIntensity^{Rep}$, $LobbyIntensity^{Dem}$, $Log(MarketCap)$, $Log(B/M)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$. The sample consists of U.S.-listed firms that undertake lobbying (Columns 1–3) or climate lobbying (Columns 4–5). The sample period covers returns from January 2010 to June 2022 for Columns 1–2 (emissions data available through 2020) and extends to December 2022 for Columns 3–5. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ExcessReturn_{i,m,t+1}$				
	Carbon Emissions		Trade Associations	Camouflaged Lobbying	
	(1)	(2)	(3)	(4)	(5)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.60***	0.56***		0.66*	0.80***
	(4.41)	(4.38)		(1.98)	(4.04)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.36	-0.36		-0.27	0.11
	(-1.05)	(-1.03)		(-0.77)	(0.39)
$ClimateLobbyIntensity^{Anti,\,Combo}_{i,t}$			0.68***		
			(4.41)		
$ClimateLobbyIntensity^{Pro,\,Combo}_{i,t}$			-0.34		
			(-1.40)		
$ClimateLobbyIntensity^{Anti}_{i,t} \times \mathbb{1}(Camouflage\,1^{Anti}_{i,t})$				0.38	
				(0.69)	
$\mathbb{1}(Camouflage\,1^{Anti}_{i,t})$				0.16	
				(0.48)	
$ClimateLobbyIntensity^{Pro}_{i,t} \times \mathbb{1}(Camouflage\,1^{Pro}_{i,t})$				0.33	
				(0.60)	
$\mathbb{1}(Camouflage\,1^{Pro}_{i,t})$				-1.14**	
				(-2.93)	
$ClimateLobbyIntensity^{Anti}_{i,t} \times \mathbb{1}(Camouflage\,2^{Anti}_{i,t})$					0.05
					(0.14)
$\mathbb{1}(Camouflage\,2^{Anti}_{i,t})$					0.34
					(1.19)
$ClimateLobbyIntensity^{Pro}_{i,t} \times \mathbb{1}(Camouflage\,2^{Pro}_{i,t})$					-0.13
					(-0.21)
$\mathbb{1}(Camouflage\,2^{Pro}_{i,t})$					-0.72
					(-1.62)
$Log(CarbonEmission_{i,t})$	0.02				
	(0.30)				
$CarbonIntensity_{i,t}$		0.07			
		(1.09)			
Controls	Yes	Yes	Yes	Yes	Yes
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	59,399	59,399	90,732	20,382	20,382
R^2	0.30	0.30	0.32	0.40	0.40

Table 7: **Climate Lobbying and Future Returns: Risk-based Channels**

This table provides risk-based explanations for the positive relations between anti-climate lobbying and stock returns. Panel A presents regressions at the firm-year level relating future climate-related political or legal risks to corporate climate lobbying (Poisson regressions in Columns 3–4). We use the following dependent variables: $PRisk$ captures firm-level political risk measured based on the proportion of a firm's earnings call devoted to political risk topics. $PRisk^{EnvReg}$ is a refined version of $PRisk$ by focusing on political risks related to environmental or regulatory topics. $CIncidents$ measures the number of risk incidents related to climate change, greenhouse gas emissions, or pollution based on data from RepRisk. $CCases$ measures the cumulative number of new climate lawsuit filings. Panel B presents regressions at the firm-month level relating excess stock returns to climate lobbying and an aggregate time-series index of realizations of climate-related political or legal risks. We use the following dependent variable: $ExcessReturn$ is the monthly returns of month m from February of year t+1 to January of year t+2. We use the following independent variables of interest in both panels: $ClimateLobbyIntensity^{Anti}$ measures anti-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Pro}$ measures pro-climate lobbying expenses divided by total assets. In Panel B, $\mathbb{1}(Risk^{High})$ is one of four dummy variables that each capture months when climate-related political or legal risks are high. Control variables (not reported) are the same as those in Table 2 (Panel A) or Table 5 (Panel B). We also control for lagged dependent variables in Panel A. The sample consists of U.S.-listed firms that undertake lobbying. The sample period is from 2002 to 2022 in Panel A and from January 2010 to December 2022 in Panel B. The political risk measures from Hassan et al. (2019) cover 2002Q1 to 2022Q1. To align with the sample period of our baseline return regression, we extend the data to 2022Q4 by filling in aggregate political risk values in Panel B using the average values of the most recent four quarters (2021Q2 to 2022Q1). t-statistics are reported in parentheses. Standard errors are clustered by industry in Panel A and double-clustered by firm and year in Panel B. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

Panel A: Climate Lobbying and Future Climate-related Political / Legal Risks

	$PRisk_{i,t+1}$	$PRisk^{EnvReg}_{i,t+1}$	$CIncidents_{i,t+1}$	$CCases_{i,t+1}$
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.08*	0.14***	0.14***	0.19***
	(1.82)	(2.69)	(5.50)	(4.56)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.01**	-0.01	0.04	0.21
	(-2.24)	(-1.09)	(1.12)	(0.84)
Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	8,863	8,863	8448	1,994
R^2	0.23	0.22		

Panel B: Performance in Periods with Climate-related Political / Legal Risk Realization

	$ExcessReturns_{i,m,t+1}$			
	$\mathbb{1}(Risk^{High}_{m,t+1}) =$			
	$\mathbb{1}(PRisk^{High}_{m,t+1})$	$\mathbb{1}(PRisk^{EnvReg,High}_{m,t+1})$	$\mathbb{1}(CIncidents^{High}_{m,t+1})$	$\mathbb{1}(CCases_{m,t+1})$
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.71**	0.70**	0.67***	0.68***
	(2.72)	(2.71)	(3.19)	(3.87)
$ClimateLobbyIntensity^{Anti}_{i,t} \times \mathbb{1}(Risk^{High}_{m,t+1})$	-1.98**	-1.76**	-1.26	-1.11**
	(-2.48)	(-2.30)	(-1.05)	(-2.23)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.41	-0.43	-0.33	-0.30
	(-1.23)	(-1.31)	(-1.30)	(-1.08)
$ClimateLobbyIntensity^{Pro}_{i,t} \times \mathbb{1}(Risk^{High}_{m,t+1})$	4.12	9.18	0.55	0.14
	(1.05)	(1.30)	(0.87)	(0.16)
Controls	Yes	Yes	Yes	Yes
Year-Month Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	90,732	90,732	90,732	90,732
R^2	0.32	0.32	0.32	0.32

Table 8: **Corporate Climate Lobbying and Event Study Stock Returns**

This table presents regressions at the firm level relating cumulative abnormal returns around two events to corporate climate lobbying. In Panel A, we conduct an event study for the failure of the Waxman-Markey Bill, and in Panel B for the announcement of the Inflation Reduction Act. We use the following dependent variable: CAR is the cumulative market-adjusted abnormal returns over a 1-, 2-, or 3-day window from the event date. We use the following independent variables of interest: $ClimateLobbyIntensity^{Anti}$ measures anti-climate lobbying expenses divided by total assets. $ClimateLobbyIntensity^{Pro}$ measures pro-climate lobbying expenses divided by total assets. Control variables (not reported) include $LobbyIntensity_{i,t}^{Rep}$, $LobbyIntensity_{i,t}^{Dem}$, $Log(MarketCap)$, $Log(B/M)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$. The sample consists of U.S.-listed firms that undertake lobbying. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors that are clustered by industry. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

Panel A: Failure of the Waxman-Markey Bill			
	CAR[0,1]	CAR[0,2]	CAR[0,3]
	(1)	(2)	(3)
$ClimateLobbyIntensity_{i,t}^{Anti}$	0.56**	0.75***	1.00*
	(2.05)	(3.05)	(1.95)
$ClimateLobbyIntensity_{i,t}^{Pro}$	-0.17	-0.42***	-0.35***
	(-1.48)	(-5.02)	(-4.10)
Controls	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
N	625	625	625
R^2	0.10	0.06	0.07
Panel B: Passage of the Inflation Reduction Act			
	CAR[0,1]	CAR[0,2]	CAR[0,3]
	(1)	(2)	(3)
$ClimateLobbyIntensity_{i,t}^{Anti}$	-0.73***	-0.95***	-0.33*
	(-7.60)	(-6.04)	(-1.99)
$ClimateLobbyIntensity_{i,t}^{Pro}$	2.11***	2.94***	3.81***
	(3.18)	(3.76)	(3.79)
Controls	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
N	703	703	703
R^2	0.26	0.27	0.17

Internet Appendix

for

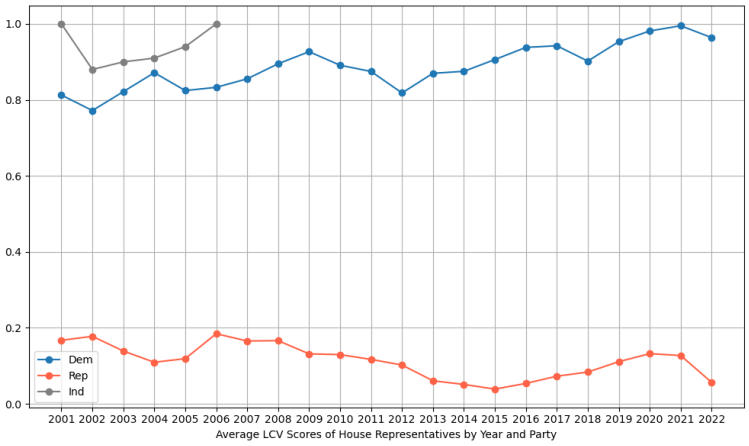
Corporate Climate Lobbying

This Internet Appendix provides additional material supporting the main text.

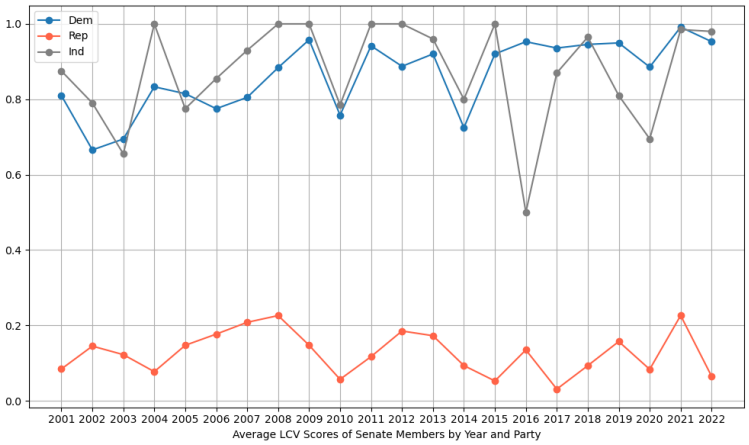
A Additional Figures and Tables

Figure IA A1: **LCV Scores of Congress Members**

This figure presents the average National Environmental League of Conservation Voters (LCV) scores of congress members from different political parties over time. Panel A illustrates LCV scores for House representatives and Panel B depicts them for Senators. LCV scores range from zero to one and track the voting records of all Congress members on critical environmental, climate, or environmental justice legislation. Higher LCV scores reflect a stronger pro-environmental stance.



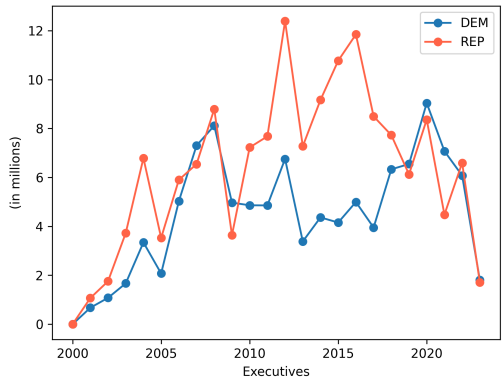
(a)



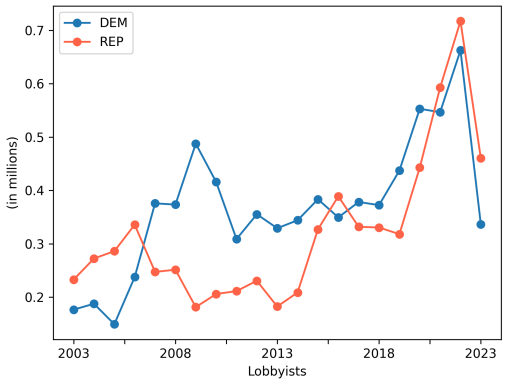
(b)

Figure IA A2: **Contributions to Political Parties**

This figure depicts the time-series variation in contributions to the Republican and Democratic Party from corporate executives (Panel A) and lobbyists (Panel B).



(a)



(b)

Figure IA A3: **Time-Series Variation of Corporate Lobbying**

This figure illustrates spending on lobbying across firms over time. Panel A shows the quarterly aggregate lobbying amounts linked to the Republican and Democratic parties. Panel B displays the number of distinct firms lobbying each party per quarter. Panel C illustrates the proportion of spending on anti- and pro-climate lobbying relative to total lobbying. Panel D presents the quarterly proportion of firms engaged in anti- and pro-climate lobbying. Panel E compares aggregate amounts in climate versus general lobbying. Panel F shows the number of firms involved in climate versus general lobbying.

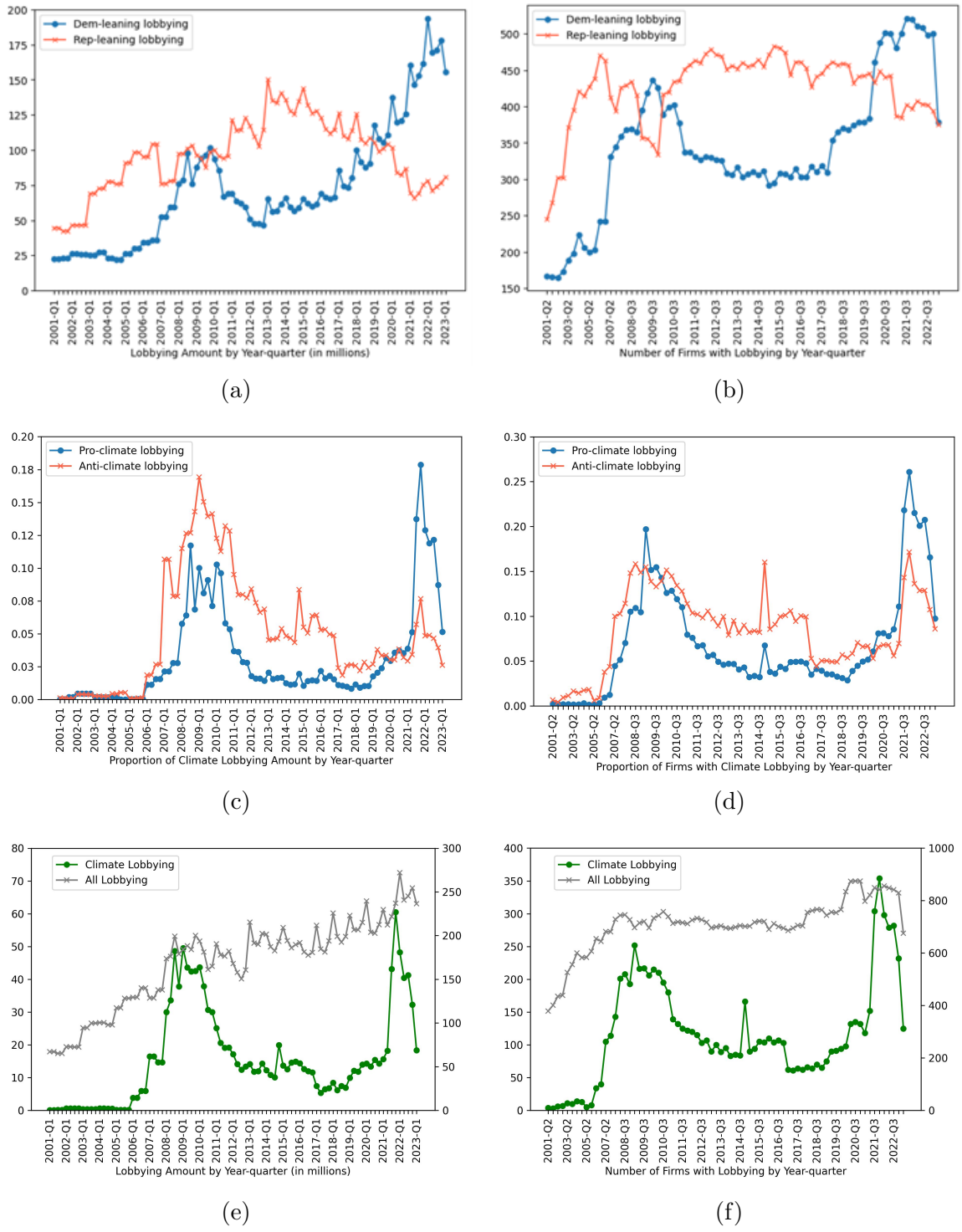
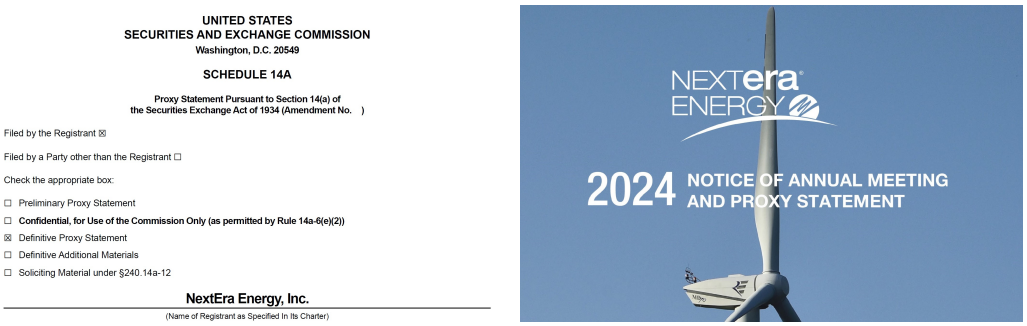


Figure IA A4: **Sample Shareholder Proposal on Anti-Climate Lobbying**

This figure presents an example of a shareholder proposal addressing anti-climate lobbying, as included in the DEF 14A (Proxy Statement) filed on April 1, 2024, for NextEra Energy, Inc.



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant ☒

Filed by a Party other than the Registrant ☐

Check the appropriate box:

☐ Preliminary Proxy Statement
☐ **Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
☒ Definitive Proxy Statement
☐ Definitive Additional Materials
☐ Soliciting Material under §240.14a-12

NextEra Energy, Inc.
(Name of Registrant as Specified In Its Charter)

Proposal 5—Climate Lobbying Report

CCLA Investment Management Limited has notified the Company that they intend to present the following proposal for consideration at the annual meeting.

WHEREAS: The United Nations Framework Convention on Climate Change states that greenhouse gas emissions must decline by 45 percent from 2010 levels by 2030 to limit global warming to 1.5 degrees Celsius. If that goal is not met, even more rapid reductions, at greater cost, will be required to compensate for the slow start on the path to global net zero emissions[1].

Even with the recent passage of the Inflation Reduction Act, critical gaps remain between Nationally Determined Contributions set by the US government and the actions required to prevent the worst effects of climate change. Domestically and internationally, companies have an important and constructive role to play in enabling policymakers to close these gaps. Corporate lobbying that is inconsistent with the Paris Agreement presents increasingly material risks to companies and their shareholders, as delays in emissions reductions undermine political stability, damage infrastructure, impair access to finance and insurance, and exacerbate health risks and costs. Further, companies face increasing reputational risks from consumers, investors, and other stakeholders if they appear to delay or block effective climate policy. Of particular concern are trade associations and other politically active organizations that say they speak for business but too often present forceful obstacles to addressing the climate crisis.

The latest Climate Action 100+ benchmark indicates that NextEra Energy, Inc's ("NextEra") Real Zero by 2045 goal and its medium-/short-term emissions reduction targets meet all the disclosure framework criteria, but NextEra's climate policy engagement does not meet any of the disclosure framework criteria[2].

Table IA A1: **Sample Formation**

This table presents the sample formation. In Panel A, we report how we match firms listed as clients in lobbying reports to U.S.-listed firms in Compustat. In Panel B, we detail how we identify relevant lobbying reports for inclusion in our sample. Panel C compares the lobbying reports and firm-year observations with political directions detected through contributions by executives and lobbyists.

Panel A: Matching from OpenSecret to Compustat					
All client names from OpenSecret	59,979				
Client names from listed firms in Compustat	5,586				
Client names from listed firms in Compustat North America	5,195				
- perfect match			3,875		
- fuzzy/manual match (if no perfect match)			1,320		
Client names from U.S.-listed firms in Compustat North America	4,036				
Panel B: Lobbying Reports					
All lobbying reports from OpenSecrets	1,235,401				
Lobbying reports from firms in Compustat	291,337				
Lobbying reports from U.S.-listed firms	250,598				
Step 1:		*Step 2:*			
Reports related to climate lobbying	25,394	Reports assigned to a political stance	148,411		
		- Republicans			81,352
		- Democrats			67,059
Reports related to climate lobbying & assigned to a political stance				15,084	
- Republicans					8,028
- Democrats					7,056

Panel C: Comparing Lobbying Directions Inferred from Political Contributions				
	Executives		Lobbyists	
	Lobbying Sample	Climate Lobbying	Lobbying Sample	Climate Lobbying
# of lobbying reports	104,498		43,913	
Average lobbying amount	122,692		53,220	
Average # of issue	2.45		1.86	
Average # of lobbyists	3.10		2.15	
# firm-year observations	8,638	1,898	6,199	824
Average anti-climate lobbying amount	78,282	356,272	12,617	94,916
Average pro-climate lobbying amount	52,413	238,539	8,007	60,236

Table IA A2: **Correlations of Key Variables**

This table presents correlations at the firm-year level for key variables used in the analysis. The sample consists of U.S.-listed firms that undertake lobbying. The sample period is from 2001 to 2022. Variables are defined in the Data Appendix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
$ClimateLobbyIntensity_{i,t}^{Anti}$	1.00										
$ClimateLobbyIntensity_{i,t}^{Pro}$	0.00	1.00									
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$	0.96	-0.27	1.00								
$ClimateLobbyIntensity_{i,t}^{Anti,Text}$	0.93	0.01	0.89	1.00							
$ClimateLobbyIntensity_{i,t}^{Pro,Text}$	0.00	0.78	-0.21	0.01	1.00						
$LobbyIntensity_{i,t}^{Rep}$	0.47	-0.01	0.45	0.42	-0.01	1.00					
$LobbyIntensity_{i,t}^{Dem}$	-0.00	0.20	-0.06	-0.00	0.09	-0.01	1.00				
$CarbonEmission_{i,t}$	0.19	0.01	0.09	0.23	0.03	-0.02	-0.04	1.00			
$CarbonIntensity_{i,t}$	0.19	0.03	0.07	0.22	0.06	-0.02	-0.04	0.70	1.00		
$GreenPatents_{i,t}$	0.06	0.14	-0.03	0.08	0.14	0.04	0.08	0.23	0.26	1.00	
$GreenInnovation_{i,t}$	0.09	0.16	-0.05	0.12	0.18	0.05	0.06	0.16	0.23	0.43	1.00

Table IA A3: **Climate Lobbying and Future Returns: Portfolio Sorting**

This table presents raw and risk-adjusted returns for portfolios sorted on $ClimateLobbyIntensity^{Anti}$. We sort firms within industries (Fama-French 49 industry classifications) and rebalance portfolios at the end of January on the basis of sorting variables measured in year t. In Panel A, the *High* (*Moderate*) portfolio includes firms with above (below) median values of $ClimateLobbyIntensity^{Anti}$. The *Low* portfolio contains firms without climate lobbying. We exclude months in which any portfolio contains fewer than ten firms. We track the performance of portfolios from February of year $t+1$ to January of year $t+2$. Portfolio returns are value-weighted by firms' market capitalizations. We first report the average excess returns for each portfolio and then calculate the risk-adjusted returns (α) by performing time-series regressions of portfolio returns on common risk factors. FF3-Mom α is the intercept when regressing portfolio returns on Fama-French three factors (Fama and French, 1996) plus the momentum factor (Carhart, 1997). FF5 α uses Fama-French five factors (Fama and French, 2015), and HXZ-q α employs Hou-Xue-Zhang q-factors (Hou et al., 2015). In Panel B, we regress *High*-minus-*Low* portfolio returns on four monthly aggregate climate-related political and legal risk indices, as well as common risk factors. The sample consists of U.S.-listed firms that undertake lobbying. The sample period is from January 2010 to December 2022. t-statistics, reported in parentheses, are based on standard errors using the Newey-West correction for six lags. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

Panel A: Univariate Portfolio Sorting

	Low	*Moderate*	*High*	*HMM*	*HML*
	(1)	(2)	(3)	(4)	(5)
Raw returns	0.86**	0.75**	1.02***	0.28*	0.16
	(2.20)	(2.09)	(3.65)	(1.67)	(0.83)
FF3 + Mom α	-0.08	-0.13	0.20	0.32*	0.28*
	(-0.57)	(-0.71)	(1.31)	(1.96)	(1.84)
FF5 α	-0.25	-0.26	0.15	0.41**	0.40**
	(-1.57)	(-1.52)	(1.06)	(2.21)	(2.32)
HXZ-q α	-0.25*	-0.30	0.07	0.37**	0.32**
	(-1.87)	(-1.39)	(0.47)	(2.06)	(2.08)

Panel B: Performance in Periods with Climate-related Political / Legal Risk Realization

	HML_t				
	(1)	(2)	(3)	(4)	(5)
$\mathbb{1}(PRisk_t^{High})$	-0.86**				
	(-2.31)				
$\mathbb{1}(PRisk_t^{EnvReg,High})$		-0.90**			-0.77**
		(-2.57)			(-2.15)
$\mathbb{1}(CIncidents_t^{High})$			-0.24		
			(-0.41)		
$\mathbb{1}(CCases_t^{High})$				-0.87**	-0.72**
				(-2.23)	(-2.02)
α_t	0.46***	0.46***	0.40**	0.48***	0.57***
	(2.68)	(2.70)	(2.42)	(2.97)	(3.24)
Factors	CAPM	CAPM	CAPM	CAPM	FF5
N	151	151	151	151	151

Table IA A4: **Climate Lobbying and Future Returns: Additional Controls**

This table presents weighted least square regression at the firm-month level relating excess stock returns to corporate climate lobbying. We use the following dependent variable: $ExcessReturn$ is the monthly return of month m. We consider returns from February of year t+1 to January of year t+2. We consider as independent variables a series of variables that potentially predict stock returns. The sample consists of U.S.-listed firms that undertake lobbying. The sample period covers returns from January 2010 to December 2022. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ExcessReturns_{i,m,t+1}$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.59***	0.59***	0.67***	0.64***	0.61***	0.53***	0.64***
	(3.86)	(3.59)	(3.81)	(5.69)	(4.23)	(3.54)	(3.92)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.32	-0.32	-0.22	-0.39	-0.36	-0.38	-0.37
	(-1.19)	(-0.64)	(-0.50)	(-1.10)	(-1.03)	(-1.11)	(-1.04)
$ESG_{i,t}$		-0.20					
		(-0.34)					
$Environment_{i,t}$			-0.48				
			(-1.29)				
$Log(CarbonEmission^{Scope2}_{i,t})$				0.09			
				(1.05)			
$CarbonIntensity^{Scope2}_{i,t}$					-0.07		
					(-0.70)		
$Log(CarbonEmission^{Scope3}_{i,t})$						0.24***	
						(3.39)	
$CarbonIntensity^{Scope3}_{i,t}$							-0.07*
							(-2.15)
$Beta_{i,t}$	-0.21						
	(-0.53)						
$Momentum_{i,t}$	0.26						
	(0.31)						
$IVol_{i,t}$	1.69						
	(0.52)						
$Liquidity_{i,t}$	-6.49***						
	(-5.67)						
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	82,052	61,292	59,348	59,399	59,399	59,399	59,399
R^2	0.33	0.29	0.30	0.31	0.31	0.31	0.31

Table IA A5: **Climate Lobbying and Future Returns: Impacts of Industry Shocks**

This table presents weighted least square regression at the firm-month level relating excess stock returns to corporate climate lobbying. We use the following dependent variable: $ExcessReturn$ is the monthly return of month m. We consider returns from February of year t+1 to January of year t+2. Columns 1–2 consider industry fixed effects based on SIC-2 codes or 10-K text-based Fixed Industry Classifications from Hoberg and Phillips (2016). Column 3 adds industry-year fixed effects. Column 4 excludes firms from the Petroleum & Natural Gas industry, while Columns 5–6 exclude firms from the top 3 industries for anti- and pro-climate lobbying, respectively. The sample consists of U.S.-listed firms that undertake lobbying. The sample period covers returns from January 2010 to December 2022. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ExcessReturns_{i,m,t+1}$					
	SIC-2	Text-based	FF49	w/o Oil	w/o Top3^{Anti}	w/o Top3^{Pro}
	(1)	(2)	(3)	(4)	(5)	(6)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.58***	0.57**	0.21**	0.45***	0.62**	0.62**
	(3.68)	(3.06)	(2.18)	(4.18)	(2.91)	(2.55)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.26	-0.37	-0.15	-0.25	-0.22	-0.53
	(-1.16)	(-1.13)	(-0.57)	(-1.05)	(-0.80)	(-1.53)
$LobbyIntensity^{Rep}_{i,t}$	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01
	(-0.74)	(-1.37)	(-1.00)	(-1.01)	(-1.06)	(-0.63)
$LobbyIntensity^{Dem}_{i,t}$	0.01	0.01	-0.01	0.01	0.01	0.01
	(0.47)	(0.20)	(-0.50)	(0.33)	(0.43)	(0.32)
$Log(Market\,Cap)_{i,t}$	-0.06	-0.12***	-0.04	-0.06	-0.04	-0.05
	(-1.07)	(-3.27)	(-0.85)	(-1.16)	(-0.91)	(-0.99)
$Log(B/M)_{i,t}$	-0.00	0.11	-0.24	-0.08	-0.10	-0.03
	(-0.02)	(0.44)	(-1.19)	(-0.28)	(-0.36)	(-0.12)
$ROA_{i,t}$	1.11	0.61	1.24	1.42	1.03	1.51
	(0.60)	(0.35)	(0.71)	(0.67)	(0.51)	(0.77)
$Capex/Assets_{i,t}$	-10.62	-9.30*	-4.60	-8.01	-8.23	-8.38
	(-1.48)	(-1.86)	(-1.54)	(-1.74)	(-1.56)	(-1.38)
$Leverage_{i,t}$	0.73	0.47	0.24	0.73	0.76	0.68
	(1.03)	(0.58)	(0.38)	(0.91)	(0.91)	(0.90)
$Tangibility_{i,t}$	0.61	1.27	0.32	0.51	0.25	-0.07
	(0.72)	(1.73)	(1.61)	(1.19)	(0.41)	(-0.17)
$Sales\,Growth_{i,t}$	-0.74***	-0.72**	-0.78**	-0.68***	-0.75***	-0.99***
	(-4.39)	(-6.57)	(-2.70)	(-3.70)	(-3.64)	(-5.97)
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	Yes	Yes	Yes
Industry-Year Fixed Effects	No	No	Yes	No	No	No
N	91,680	83,120	90,727	86,631	75,947	75,156
R^2	0.32	0.30	0.34	0.32	0.33	0.36

Table IA A6: **Climate Lobbying and Future Returns: Alternative Specifications**

This table presents weighted least square regression at the firm-month level relating excess stock returns to corporate climate lobbying. We use the following dependent variable: $ExcessReturn$ is the monthly return of month m. We consider returns from February of year t+1 to January of year t+2. Column 1 estimates effects among firms with non-zero climate lobbying expenses. Columns 2–3 use climate lobbying measures detected from text descriptions only. Column 4 replaces continuous climate lobbying measures with dummy variables. Column 5 clusters standard errors by industry and year. Column 6 addresses potential look-ahead bias by delaying the lobbying variables by six months post year-end. The sample consists of U.S.-listed firms that undertake climate lobbying (Column 1) or lobbying (Columns 2–6). The sample period covers returns from January 2010 to December 2022. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ExcessReturns_{i,m,t+1}$					
	(1)	(2)	(3)	(4)	(5)	(6)
$ClimateLobbyIntensity_{i,t}^{Anti}$	0.85**				0.57***	0.54**
	(2.37)				(3.76)	(2.56)
$ClimateLobbyIntensity_{i,t}^{Pro}$	-0.12				-0.29	-0.27
	(-0.31)				(-0.82)	(-1.43)
$ClimateLobbyIntensity_{i,t}^{Anti,\,Text}$		0.58**				
		(2.92)				
$ClimateLobbyIntensity_{i,t}^{Pro,\,Text}$		-0.32				
		(-0.90)				
$ClimateLobbyIntensity_{i,t}^{Anti,\,Text+Bill\,Titles}$			0.58***			
			(3.16)			
$ClimateLobbyIntensity_{i,t}^{Pro,\,Text+Bill\,Titles}$			-0.43			
			(-1.69)			
$\mathbb{1}(ClimateLobby_{i,t}^{Anti})$				0.42**		
				(2.52)		
$\mathbb{1}(ClimateLobby_{i,t}^{Pro})$				0.28		
				(1.24)		
$LobbyIntensity_{i,t}^{Rep}$	-0.05	-0.01	-0.01	-0.01	-0.02	-0.02
	(-0.75)	(-0.51)	(-0.71)	(-0.51)	(-0.85)	(-0.98)
$LobbyIntensity_{i,t}^{Dem}$	-0.04	0.00	0.01	-0.00	0.01	0.02
	(-0.64)	(0.19)	(0.46)	(-0.05)	(0.40)	(0.81)
$Log(MarketCap)_{i,t}$	-0.08	-0.06	-0.06	-0.09**	-0.06	-0.06
	(-0.71)	(-1.28)	(-1.29)	(-2.54)	(-1.09)	(-1.32)
$Log(B/M)_{i,t}$	0.18	-0.05	-0.05	-0.06	-0.05	-0.05
	(0.41)	(-0.17)	(-0.16)	(-0.20)	(-0.17)	(-0.16)
$ROA_{i,t}$	0.54	1.13	1.12	1.14	1.13	1.16
	(0.20)	(0.59)	(0.58)	(0.60)	(0.63)	(0.62)
$Capex/Assets_{i,t}$	-22.11**	-10.40	-10.37	-10.13*	-10.37*	-10.28*
	(-2.83)	(-1.77)	(-1.76)	(-1.80)	(-1.95)	(-1.79)
$Leverage_{i,t}$	2.23	0.79	0.80	0.83	0.80	0.76
	(1.05)	(0.89)	(0.90)	(0.97)	(0.89)	(0.81)
$Tangibility_{i,t}$	1.35	0.60*	0.59*	0.42	0.59*	0.76**
	(1.72)	(2.02)	(1.99)	(1.17)	(1.94)	(2.81)
$Sales\,Growth_{i,t}$	-0.20	-0.77***	-0.77***	-0.73***	-0.77***	-0.89***
	(-0.60)	(-6.96)	(-7.13)	(-6.65)	(-8.04)	(-6.66)
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	20,382	90,732	90,732	90,732	90,732	89,785
R^2	0.39	0.32	0.32	0.32	0.32	0.32

Table IA A7: **Climate Lobbying and Implied Cost of Capital**

This table presents regressions at the firm-year level relating the implied cost of capital (ICC) to corporate climate lobbying for U.S. sample firms. We use the following dependent variables. $ICC^{GLS}_{i,t+1}$ is the monthly residual income model-based ICC proposed by Gebhardt et al. (2001) (GLS), utilizing mechanical earnings forecasts from Hou et al. (2012)'s cross-sectional forecast model, as constructed by Lee et al. (2021). $ICC^{Mean}_{i,m,t+1}$ is a composite that takes the equal-weighted average of four commonly used ICC variants: the residual-income-model-based ICCs proposed by Gebhardt et al. (2001) (GLS) and Claus and Thomas (2001) (CAT) and the abnormal-earnings-model-based ICCs proposed by Easton (2004) (PEG) and Ohlson and Juettner-Nauroth (2005) (AGR). We link ICCs of month m from January to December of year t+1 to the lobbying intensity of year t. The sample consists of U.S.-listed firms that undertake lobbying in Columns 1/3 and climate lobbying in Columns 2/4. The sample period is from January 2010 to December 2022. We multiply the coefficients on the lobbying variables by 1,000. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ICC^{GLS}_{i,m,t+1}$		$ICC^{Mean}_{i,m,t+1}$	
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.19***	0.28***	0.42***	0.56***
	(6.90)	(6.07)	(5.59)	(7.60)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.11	0.01	-0.05	0.01
	(-1.22)	(0.06)	(-0.57)	(0.04)
$LobbyIntensity^{Rep}_{i,t}$	-0.01	-0.07**	-0.01	-0.11***
	(-0.96)	(-2.53)	(-0.74)	(-5.06)
$LobbyIntensity^{Dem}_{i,t}$	0.01	-0.04**	0.02	-0.04**
	(0.51)	(-2.91)	(0.76)	(-3.00)
$Log(MarketCap)_{i,t}$	-0.03***	-0.03***	-0.07***	-0.06***
	(-7.12)	(-4.10)	(-8.77)	(-5.28)
$Log(B/M)_{i,t}$	0.14***	0.14***	0.38***	0.33***
	(16.06)	(12.13)	(21.51)	(16.32)
$ROA_{i,t}$	0.51***	0.52***	0.46***	0.16
	(7.82)	(3.46)	(3.47)	(0.81)
$Capex/Assets_{i,t}$	-0.21	-0.04	-0.65**	-0.36
	(-1.51)	(-0.13)	(-2.25)	(-0.55)
$Leverage_{i,t}$	0.06*	0.03	0.16**	0.05
	(1.91)	(0.45)	(2.78)	(0.48)
$Tangibility_{i,t}$	-0.06*	-0.11*	-0.05	-0.14
	(-1.95)	(-1.82)	(-0.76)	(-1.04)
$Sale\,Growth_{i,t}$	0.02**	0.00	0.02	0.05*
	(2.20)	(0.07)	(0.78)	(1.96)
Year-Month Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	71,616	15,951	72,015	15,980
R^2	0.43	0.48	0.56	0.60

Table IA A8: **Fama-MacBeth Regressions: Exposure to HML^{Anti}**

This table presents Fama-MacBeth regressions of individual stock returns on the exposure to *High*-minus-*Low* portfolio returns sorted by $ClimateLobbyIntensity^{Anti}$. We conduct cross-sectional regressions of monthly returns in month t+1 on $Beta^{Anti}$ estimated for month t. $Beta^{Anti}$ is calculated using rolling firm-level time-series regressions of monthly returns on HML^{Anti} as well as the Fama-French five factors over the previous 60 months. The sample consists of U.S.-listed firms that undertake lobbying and covers returns from January 2010 to December 2022. t-statistics, reported in parentheses, are based on standard errors using the Newey-West correction for six lags. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ExcessReturn_{i,t+1}$		
	(1)	(2)	(3)
$Beta_{i,t}^{Anti}$	0.36**	0.27**	0.29***
	(2.62)	(2.54)	(3.10)
$Log(MarketCap)_{i,t}$			0.03
			(0.50)
$Log(B/M)_{i,t}$			-0.05
			(-0.78)
$ROA_{i,t}$			2.07***
			(2.70)
$Capex/Assets_{i,t}$			-2.00
			(-0.83)
$Leverage_{i,t}$			0.36
			(0.73)
$Tangibility_{i,t}$			0.24
			(0.68)
$Sales\,Growth_{i,t}$			-0.08
			(-0.35)
Industry Fixed Effects	No	Yes	Yes
N	68,708	68,023	63,010

Table IA A9: **Climate Lobbying and Earnings Surprises**

This table presents regression at the firm-year level relating earnings surprises to corporate climate lobbying. We use the following dependent variables: $SUE1_{i,t}$ ($SUE2_{i,t}$) is the 1-year (2-year) earnings surprise, measured as the actual earnings per share minus the consensus median analyst forecast eight (twenty) months before the end of the forecast period, scaled by the stock price, and multiplied by 100. The sample consists of U.S.-listed firms that undertake lobbying. The sample period is from 2010 to 2022. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$SUE1_{i,t}$	$SUE2_{i,t}$
	(1)	(2)
$ClimateLobbyIntensity_{i,t}^{Anti}$	0.13	-0.14
	(0.71)	(-1.46)
$ClimateLobbyIntensity_{i,t}^{Pro}$	-0.08	0.09
	(-1.45)	(0.47)
$LobbyIntensity_{i,t}^{Rep}$	-0.00	0.00
	(-0.60)	(0.51)
$LobbyIntensity_{i,t}^{Dem}$	-0.01	-0.01
	(-1.47)	(-1.29)
$Log(Asset)$	0.03	0.07**
	(1.27)	(2.75)
$ROA_{i,t}$	3.75***	7.20***
	(8.35)	(15.69)
$Capex/Assets_{i,t}$	-4.41*	-3.77*
	(-2.10)	(-1.90)
$Leverage_{i,t}$	-0.60***	-0.56***
	(-3.20)	(-3.43)
$Tangibility_{i,t}$	0.34	-0.28
	(0.93)	(-0.82)
$Sales\,Growth_{i,t}$	0.51	0.95*
	(1.76)	(1.99)
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
N	7,293	6,704
R^2	0.08	0.14

Table IA A10: **Climate Lobbying and Future Returns: Political Affiliations**

This table presents weighted least square regression at the firm-month level relating excess stock returns to corporate climate lobbying. We use the following dependent variable: $ExcessReturn$ is the monthly return of month m. We consider returns from February of year t+1 to January of year t+2. We control for party dummies in Column 1 and executive contributions to each party scaled by assets in Column 2. Column 3 focuses on firms mentioning more than five states in their 10-Ks, while Column 4 includes state-level headquarters fixed effects. Column 5 employs lobbying measures that infer corporate climate stance from InfluenceMap scores. The sample consists of U.S.-listed firms that undertake lobbying. The sample period covers returns from January 2010 to December 2022. We multiply the coefficients on the lobbying variables by 100. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and year. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	$ExcessReturns_{i,m,t+1}$				
	Political Connection		Geographical Concentration		InfluenceMap
	(1)	(2)	(3)	(4)	(5)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.59***	0.59***	0.46**	0.48***	
	(3.79)	(4.12)	(2.97)	(3.75)	
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.33	-0.29	-0.70	-0.45	
	(-1.24)	(-1.19)	(-1.39)	(-1.49)	
$ClimateLobbyIntensity^{Anti,\,IM}_{i,t}$					0.61*
					(1.82)
$ClimateLobbyIntensity^{Pro,\,IM}_{i,t}$					0.47
					(0.37)
$\mathbb{1}(Rep_{i,t})$	-0.04				
	(-0.36)				
$\mathbb{1}(Dem_{i,t})$	0.16				
	(0.72)				
$ContributionIntensity^{Rep}_{i,t}$		0.02			
		(1.44)			
$ContributionIntensity^{Dem}_{i,t}$		-0.01			
		(-0.77)			
$LobbyIntensity^{Rep}_{i,t}$	-0.01	-0.02	-0.00	-0.02	-0.01
	(-0.35)	(-1.28)	(-0.11)	(-0.81)	(-0.39)
$LobbyIntensity^{Dem}_{i,t}$	-0.00	0.01	0.02	0.01	0.00
	(-0.00)	(0.54)	(0.62)	(0.41)	(0.04)
$Log(MarketCap)_{i,t}$	-0.06	-0.06	-0.14***	-0.15***	-0.05
	(-1.38)	(-1.20)	(-3.20)	(-4.55)	(-1.15)
$Log(B/M)_{i,t}$	-0.03	-0.05	-0.05	0.07	-0.05
	(-0.13)	(-0.16)	(-0.18)	(0.21)	(-0.17)
$ROA_{i,t}$	1.18	1.10	0.98	1.22	0.75
	(0.64)	(0.58)	(0.54)	(0.63)	(0.41)
$Capex/Assets_{i,t}$	-10.78*	-10.39	-13.52	-15.43*	-8.98*
	(-1.85)	(-1.74)	(-1.75)	(-2.09)	(-1.97)
$Leverage_{i,t}$	0.85	0.81	0.76	0.92	0.91
	(0.98)	(0.90)	(0.74)	(1.04)	(1.02)
$Tangibility_{i,t}$	0.63*	0.58	0.99	1.28**	0.64*
	(2.08)	(1.75)	(1.52)	(2.22)	(1.94)
$Sales\,Growth_{i,t}$	-0.77***	-0.77***	-0.71***	-0.71***	-0.76***
	(-7.30)	(-7.48)	(-4.26)	(-5.33)	(-7.89)
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	No
N	90,732	90,732	58,446	77,511	84,438
R^2	0.32	0.32	0.30	0.32	0.32

B Indirect Lobbying via Trade Associations

In addition to direct lobbying, some firms engage in lobbying activities through trade associations, which represent the collective interests of their members and possess expertise in advocating, among other things, for favorable regulation (Hoberg and Neretina, 2024). By pooling resources, trade associations can amplify a firm's influence on climate policy. A challenge with identifying lobbying expenditures through trade associations is that they are hard to trace back to specific firms, a feature that appeals to some firms wishing to obscure their efforts.

In this section, we elaborate our method to compute indirect corporate climate lobbying via trade associations. We proceed in three steps: i) we identify quarterly climate lobbying amounts of selected trade associations; ii) we distinguish between anti- and pro-climate lobbying; iii) we allocate lobbying expenditures to member firms and aggregate each firm's indirect lobbying across different trade associations.

B.1 Measuring Climate Lobbying Amounts for Trade Associations

Like firms, trade associations are required to submit lobbying reports according to the Lobbying Disclosure Act. We focus in our analysis on key trade associations that lead in climate lobbying and outspend others; we thereby attempt to capture the most influential climate-related lobbying activities. To select the set of potentially climate-focused trade associations, we start with the list of 87 organizations identified by Brulle and Downie (2022). Their list is sourced from mentions in U.S. Senate/House hearings regarding climate change or from reports by the Union of Concerned Scientists. We supplement this list with associations from the InfluenceMap lobby platform, which conducts detailed research on how firms and industry associations engage with climate policy.[1] Additionally, we review the websites of the top five anti- and pro-climate corporate lobbyists in our sample (see Figure 5), and identify any trade associations listed on their political engagement disclosure pages.

These three approaches result in an initial pool of 419 trade associations. After matching with lobbying data from OpenSecrets, we find that 105 of them have filed at least one climate-related lobbying report. After filtering for the political stance and accounting for membership information in the next two steps below, this list is narrowed down to 73 trade associations. We report these organizations in Figure IA B1; the list includes sector-specific organizations like Airlines for America (transportation), the American Petroleum Institute (oil), and the Solar Energy Industries Association (renewable energy), as well as cross-sector associations

[1] See https://lobbymap.org/LobbyMapScores

like the U.S. Chamber of Commerce or the Business Roundtable. Taken together, these trade associations submitted 17,675 lobbying reports from 2001Q1 to 2023Q1. Of these, 4,877 or 27.6% are climate-related, as identified by climate keywords or bills in their issue descriptions.

B.2 Measuring Political Stance of Climate Lobbying

We assign a climate stance to each trade association's lobbying report using methods similar to those for firms, but we further augment our approach with information from InfluenceMap and PAC political contributions. We add some additional information for the classification as trade associations, due to their role in shaping policy outcomes, often have a more discernible climate stance (as we explain below, this makes lobbying scores from InfluenceMap and PAC contribution particularly informative). Specifically, we follow a sequential approach. First, InfluenceMap ranks selected industry groups on their climate policy engagement using information from corporate media, CDP responses, and direct consultation with governments. Their evaluation includes communication on climate science, alignment with IPCC on climate action, and stance on climate regulatory needs. They score 53 trade associations from North America on a scale from F to A. If a trade association has an InfluenceMap score above B-, we classify all their lobbying reports as pro-climate; if the score is below E+, they are classified as anti-climate.[2] This step assigns stances to 940 climate lobbying reports. Second, if a trade association has a PAC that donated over 75% of its contributions in the past three years to Republican/Democratic candidates, the lobby reports for that year are marked as anti-/pro-climate; this classification covers an additional 378 reports. Third, we employ individual contribution information from trade association executives and lobbyists, further adding information for 1,293 and 501 reports respectively.

Overall, this sequential approach implies that 3,112 out of the initial list of 4,877 climate lobbying reports can be assigned to a clear political stance: 1,976 reports, with total climate lobbying expenditures of $476.3m, are classified as anti-climate, and 1,136 reports, with expenditures of $98.8m, as pro-climate. When we sum the anti- or pro-climate expenses for each trade association per quarter, we obtain a total of 1,719 observations.

[2]Six associations score above B-. For example, the Zero Emission Transportation Association scores an A for consistently advocating for ambitious regulations to achieve 100% electric vehicle sales in the U.S. by 2030. Conversely, twenty trade associations score below E+. The Independent Petroleum Association of America, for instance, scores an F for actively opposing climate policies related to carbon taxes, renewable standards, and GHG emissions.

B.3 Allocating Lobbying Amounts to Member Firms

We allocate each trade association's quarterly lobbying amount to its member firms. When doing so, we do not simply apply a 1/N approach, but weigh the lobbying amounts by their member firms' annual revenues (they often determine membership dues). Membership information for each trade association is manually collected from their websites as of June 2024.[3] Given that associations with many members may not share a unified climate stance and board members are more likely to influence the association's climate attitude, we collect all members for smaller associations but only board members for those with over 100 members.[4]

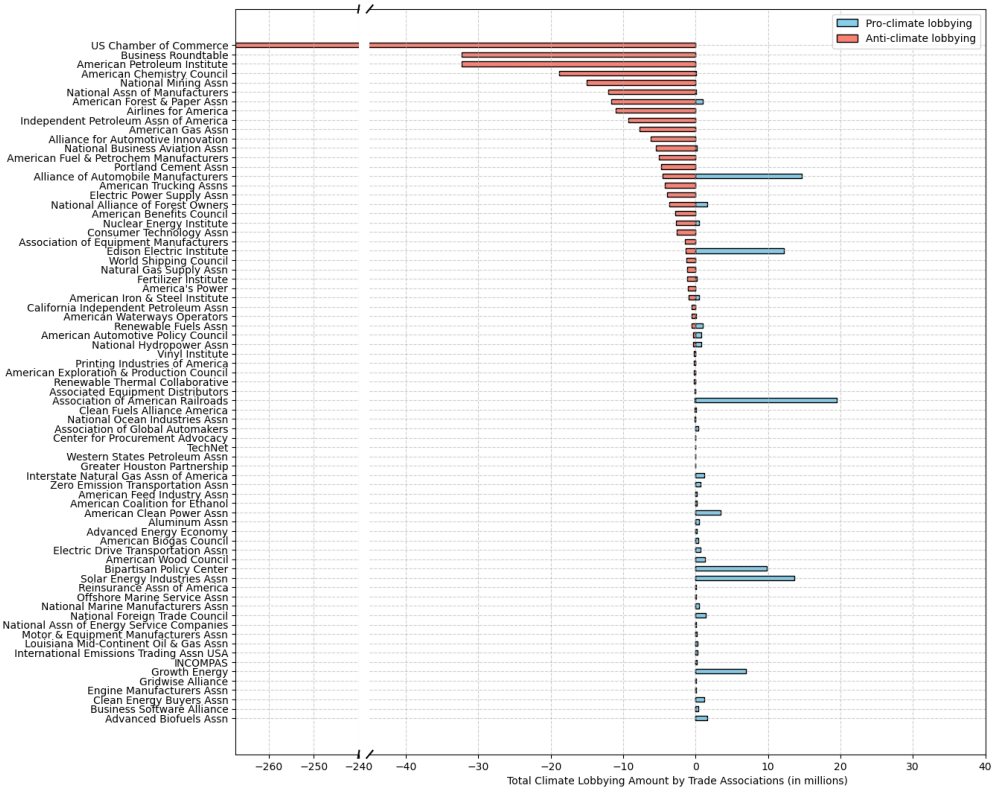
Overall, we identify 3,938 links between trade associations and members, including 2,046 links to global public firms. On average, each trade association contains 28 public firm members, with the National Association of Manufacturers having the most at 169. Each firm belongs, on average, to 1.72 associations, with Shell and BP involved in 14 each. We aggregate quarterly lobby amounts for each firm across different trade associations, resulting in 41,788 firm-quarter observations for 1,075 public firms around the world. Of the 14,837 firm-year observations in our baseline sample of U.S.-listed firms from OpenSecrets, 3,925 conduct climate lobbying through trade associations, with 1,614 engaging in both direct and indirect lobbying.

[3]The structure of this information varies widely: some trade associations list only the board of directors, others include members or leaders, and some provide no information. Members can be U.S. or global public/private companies, publicly owned entities, individuals, or other trade associations, with numbers ranging from 10 to over 1,000.

[4]Here we need to make two assumptions: i) each trade association's membership remains constant from 2001 to 2023, and ii) all lobbying funds for trade associations come from their public firm members, as only their financial data is available. For associations using board members, we supplement with contribution data, linking a trade association to a firm if transactions between their PACs and company PAC/employees exceed $1,000.

Figure IA B1: **Trade Associations with Climate Lobbying Expenses**

This figure shows the distribution of climate lobbying activities across 73 selected trade associations, ranked by the total anti-climate lobbying expenses (aggregated across sample years).

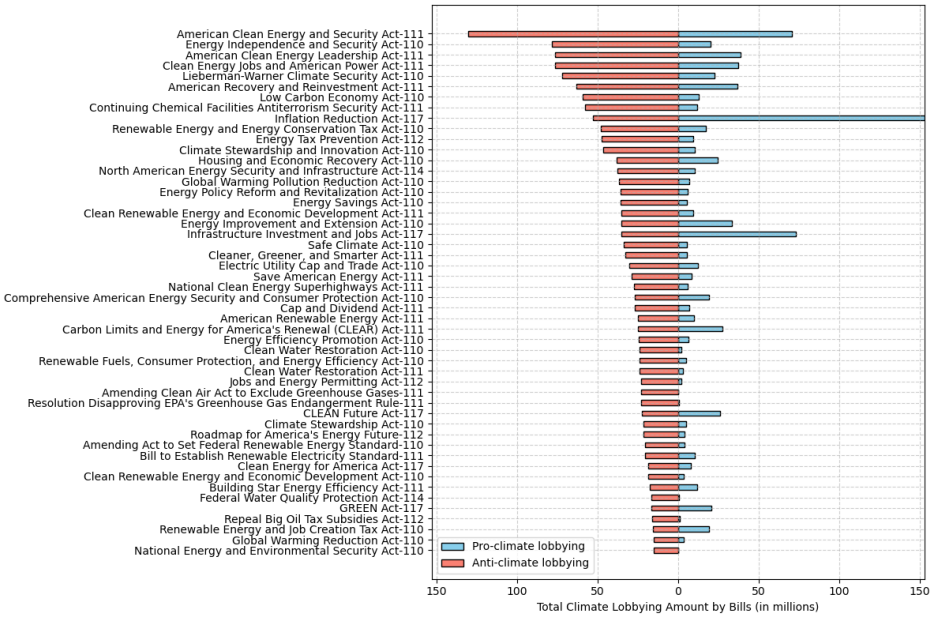


C Climate-related Bills under Lobbying Efforts

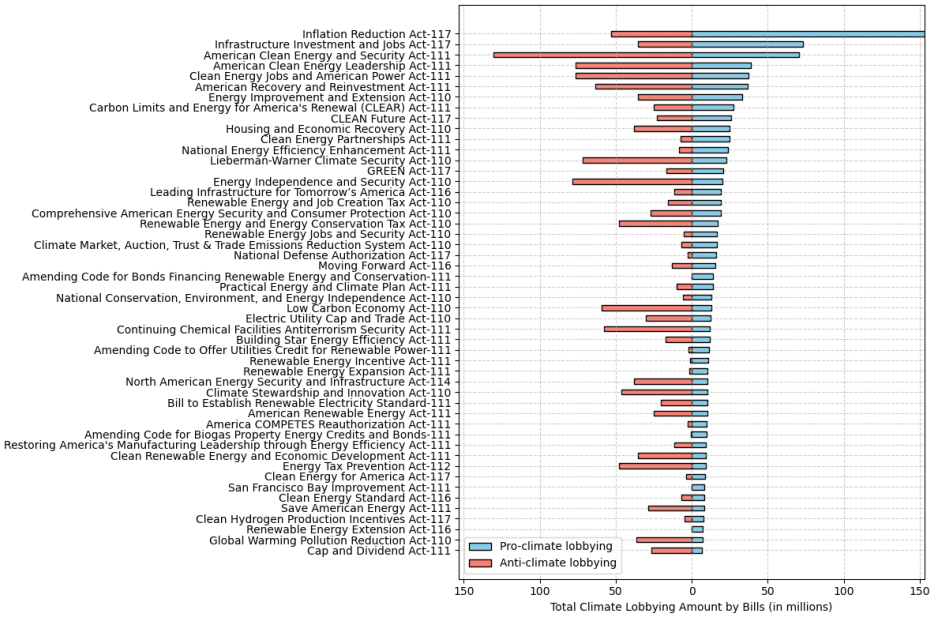
To understand the nature of climate lobbying, we present in Figure IA C1 the most heavily lobbied climate bills. We identify these bills based on the descriptions and bill codes in the lobbying reports. In the figure, we aggregate anti- and pro-lobbying amounts associated with specific bills across the sample. Panel A ranks bills based on total anti-climate lobbying expenses. The American Clean Energy and Security Act in the 111$^{\text{th}}$ election cycle from 2009 to 2010 received the highest anti-lobbying amounts (approximately \$130m). The Energy Independence and Security Act, the Clean Energy Jobs and American Power Act, and the American Clean Energy Leadership Act each attracted over \$76m in lobbying. In Panel B, we rank bills based on pro-climate lobbying expenses. Consistent with the time-series variation in Figure 2, the Inflation Reduction Act in the 117$^{\text{th}}$ election cycle drew the most pronounced pro-lobbying (about \$153m), with the Infrastructure Investment and Jobs Act, also from the 117$^{\text{th}}$ cycle, ranking second. The American Clean Energy and Security Act led in anti-climate lobbying, but it also attracted substantial pro-climate lobbying efforts, with around \$70m in total (or 54% of the associated anti-climate lobbying expenses).

Figure IA C1: **Top Bills with Corporate Climate Lobbying**

This figure provides an overview of the primary climate bills targeted by corporate lobbying in our sample. Panel A lists the bills receiving the highest anti-climate lobbying expenses, while Panel B lists those receiving the highest pro-climate lobbying expenses.



(a)



(b)

D Identification of Camouflaged Climate Lobbying

In this appendix, we provide details on how we identify camouflaged lobbying.

D.1 ChatGPT-based Keyword Identification

A concern may be that the camouflage effects we identify arise because our initial set of climate keywords does not capture the latest terms used in lobbying reports. To address this possibility, we use ChatGPT to expand the baseline climate keyword list to better reflect evolving terminology. While this updated list can still be incomplete, it doubles the number of climate keywords. We then re-calculate our measures of corporate climate lobbying and find that the proportion of lobbying that can be detected by keywords increases only modestly from 66% to 71%. In this calculation, the percentages are calculated as the aggregate anti- and pro-climate lobbying amounts identified from text, scaled by the aggregate anti- and pro-climate lobby amounts identified based on both text and bills (with the text-based measure being calculated without and with the ChatGPT enhancement). Hence, the baseline keywords are more commonly referenced, while new terms appear alongside them.

D.2 Measures of Camouflage Intensity

Next, we explain and illustrate how we identify the intensity of camouflaged climate lobbying using $Camouflage\,1_{i,t}^{X}$ and $Camouflage\,2_{i,t}$. Table IA D1, Panel A, illustrates the detection of climate lobbying issues using these two measures. Issues with climate keywords in descriptions or bill titles are recognized by both approaches. In contrast, issues presenting bill titles without climate keywords are identified exclusively with the second text-based measure. Table IA D1, Panel B lists the top ten climate bill titles found in lobbying reports lacking climate keywords.

In Table IA D1, Panel C, we provide examples for calculating the two camouflage measures. We use ExxonMobil's 2021Q4 lobbying report as an example. As their executives mainly donate to the Republican party, our methodology assumes that their lobbying efforts are anti-climate. The 2021Q4 lobbying report lists six issues with a total lobbying amount of \$2,390,000. None of the issue descriptions mention any predefined climate keywords, while one issue description references a climate bill title and another two descriptions cite climate bill codes. Based on our methods, this leads to detected anti-climate lobbying amounts of \$1,195,000, \$0, and \$398,333 across the three measurements, respectively. Consequently, $Camouflage1^{Anti}$ is calculated as (1,195,000-0)/1,195,000 = 100%, and $Camouflage2^{Anti}$ as

(1,195,000-398,333)/1,195,000 = 66.67%. These calculations are at the report level, but the same principle is extended to the firm-quarter level by aggregating lobbying expenditures from reports within the same quarter.

Across our full sample, of the 1,579 firm-years with anti-climate lobbying, 894 (57%) exhibit camouflaged lobbying through the omission of climate keywords in at least one lobbying issue description, and 699 (44%) do so by listing only bill codes. Among 1,260 firm-years with pro-climate lobbying, 776 (62%) and 610 (48%) contained the respective forms of camouflaging.

Table IA D1: **Identification of Camouflaged Climate Lobbying**

This table details the identification of camouflaged climate lobbying within lobbying reports. Panel A illustrates how climate-related issues are detected through various methods, leading to two distinct measures of camouflaged lobbying intensity. The *All* column indicates climate issues identified using predefined keywords, climate bill titles, and bill codes. The $Text$ column lists issues detected exclusively by climate keywords. Column $Text + Bill\,Titles$ denotes issues identified through climate keywords or bill titles. Panel B reports the top ten bill titles in lobbying issues that do not contain climate keywords. Panel C illustrates the calculation of climate lobbying amount detected using different methods and the corresponding camouflaged lobbying intensity at the report level.

Panel A: Examples of Climate-related Issues Identified

	Climate		
Issues in lobbying reports	All	Text	Text+Bill Titles
Fuel economy issues, *renewable energy* issues, H.R. 4011 Fuel Economy Harmonization Act, S. 1273 Fuel Economy Harmonization Act.	1	1	1
Provisions in H.R. 2701, the Transportation Energy Security and *Climate Change* Mitigation Act of 2007, relating to short sea shipping, green water practices, and CCF funding.	1	1	1
Issues related to tax credits for alcohol to jet sustainable aviation fuel in H.R. 5376, the Inflation Reduction Act.	1	0	1
Issues related to H.R. 1512; H.R.5376.	1	0	0
Corporate tax reform, Implementation of PL. 115-97, Tax Cuts and Jobs Act, Issues related to online sales tax.	0	0	0

Panel B: Top-10 Bill Titles Mentioned in Lobbying Issue Descriptions without Climate Keywords

Bill codes	Bill titles	Count
H.R. 3684 - 117	Infrastructure Investment and Jobs Act	6162
H.R. 1 - 111	American Recovery and Reinvestment Act of 2009	3891
H.R. 5376 - 117	Inflation Reduction Act	3463
H.R. 2 - 116	Moving Forward Act	1876
H.R. 1512 - 117	Clean Future Act	815
H.R. 910 - 112	Energy Tax Prevention Act of 2011	569
S. 2792 - 117	National Defense Authorization Act for Fiscal Year 2022	562
H.R. 8 - 114	North American Energy Security and Infrastructure Act of 2015	558
H.R. 83 - 113	Consolidated and Further Continuing Appropriations Act, 2015	446
S. 787 - 111	Clean Water Restoration Act	420

Panel C: Calculation of Camouflaged Lobbying Intensity

				Total	Climate				
Report	Client	QTR	Party	Issue/Amount	All	Text	Text+Bill Titles	$Camouflage^1$	$Camouflage^2$
1	ExxonMobil	2021q4	R	6/2390000	3/1195000	0/0	1/398333	1	66.67%
2	ExxonMobil	2009q3	R	15/7160000	7/3341333	5/2386667	5/2386667	28.57%	28.57%
3	Amazon	2008q3	D	1/30000	1/30000	0/0	0/0	1	1
4	Amazon	2022q1	D	23/4970000	4/864348	2/432174	3/648261	50.00%	25.00%

E Climate Lobbying and Political Party Affiliations

A key assumption in constructing our measures is that firms whose executives or lobbyists predominately support the Republican Party engage in anti-climate lobbying, while those mainly donating to the Democratic Party do more pro-climate lobbying. This raises the concern that our measures, and the detected return effects, indirectly reflect the impact of corporate connections to political parties. Addressing this concern is important as political connections could also influence stock returns. Cooper et al. (2010) demonstrates that firm-level contributions to U.S. political campaigns are positively and significantly correlated with future returns; such connectedness can add value to firms by increasing their likelihood of receiving government investment, procurement contracts, or higher future sales (Duchin and Sosyura, 2012; Goldman et al., 2013; Akey, 2015). In Table IA A10, we report three sets of robustness checks on the return regressions that show that our results are not simply driven by political affiliations.

First, we directly control for corporate political party affiliations in the regressions. We make use of two dummy variables, $\mathbb{1}(Rep_{i,t})$ and $\mathbb{1}(Dem_{i,t})$, that each equals one if a firm's executives donate more than 75% of their contributions to the respective party over the past three years (this is similar to how we assign the climate stances for climate lobbying reports).[5] Additionally, we calculate annual executive campaign contributions to each party, scaled by total assets, i.e., $ContributionIntensity_{i,t}^{Rep}$ and $ContributionIntensity_{i,t}^{Dem}$. If party affiliations merely drive our results, the observed effects will disappear after controlling for these measures. Columns 1–2 in Table IA A10 show that this is not the case.

Second, we exploit information on the geographical concentration of firms. The idea is that firms may choose to donate to the dominant party in their states, especially if their operations are concentrated in a few locations. In that case, the direction of political contribution might not reflect firms' attitudes towards climate change. To assess this, we re-run in Column 3 our return regressions for firms mentioning more than five states in their 10-Ks; this analysis assumes that dispersed locations reduce the dependency on a single state and a single party.[6] Again, our results are unaffected when applying this refinement. Controlling for state-fixed effects based on the location of headquarters in Column 4 obtains consistent findings.

[5] In our sample, 32% of the observations are linked to the Republican Party, while 27% are affiliated with the Democratic Party. Some observations are not assigned to either party based on executive contributions and their climate stance is based on the contributions of lobbyists in related reports.

[6] This text-based data is kindly shared by Gostlow (2024), using the same method as García and Øyvind Norli (2012). The states mentioned in the 10-Ks often indicate where firms' operations or facilities are located. This measure counts the occurrence of states in items 1, 2, 6, and 7 of the annual reports. We average the state numbers for each firm from 2001 to 2022 and use five (the median value) as a threshold for geographically dispersed companies.

Third, we use InfluenceMap scores to identify the corporate climate stance, thereby using an alternative classification. InfluenceMap provides climate political engagement scores for 524 companies worldwide. We match these firms to Compustat/CRSP and obtain 274 U.S.-listed firms with scores ranging from E- to B+. All climate lobbying reports from firms with scores below the median (D+, D, D-, E+, E, E-) are assigned an anti-climate lobbying stance, while all reports with scores above the median (B+, B, B-, C+, C, C-) are assigned a pro-climate stance.[7] This approach continues to deliver a (marginally significant) positive return effect for anti-climate lobbying in Column 5.

[7]For example, Tesla and Apple, with scores of B, are determined as pro-climate, while FedEx and Southern Company, scoring D, are anti-climate. In these tests, we exclude observations with climate lobbying but without InfluenceMap scores, focusing only on firms with clear climate stances. Eighty firms, spending $505m (60% of the total amounts whose stance could be detected by campaign contributions), are linked to anti-climate lobbying. In contrast, 81 firms with an expenditure of $286m (or 47%) are pro-climate.

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