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Corporate Climate Lobbying

Markus Leippold, Zacharias Sautner, Tingyu Yu*

May 2026

Abstract

A frequently voiced concern is that corporate lobbying, at least in part, hinders the implementation of ambitious climate policies. We quantify anti- and pro-climate lobbying expenditures by U.S.-listed firms and identify the largest corporate lobbyists and their motives. Firms spend, on average, $267k per year on anti-climate lobbying and $195k on pro-climate lobbying. Anti-climate lobbyists have more carbon-intensive business models, whereas pro-climate lobbyists exhibit more green innovation. Firms that spend more on anti-climate lobbying earn higher expected returns, consistent with a risk-based channel. Our results support the increasingly common investor view that anti-climate lobbying represents an investment risk.

*The corporate climate lobbying data used in this paper is publicly available at https://osf.io/md2jr/. Leippold is from University of Zurich and Swiss Finance Institute, email: markus.leippold@df.uzh.ch; Sautner (corresponding author) is from University of Zurich and Swiss Finance Institute, email: zacharias.sautner@df.uzh.ch; Yu is from University of Zurich, email: tingyu.yu@df.uzh.ch. Sautner is on the Sustainability Council of Lampe Asset Management and a Regular Research Visitor at the ECB. We would like to thank Pat Akey, Runjing Lu, Markus Schmid, Luke Stein, Michela Verardo, and seminar participants at Shanghai Advanced Institute of Finance, ESADE, LMU Munich, Stockholm School of Economics, Utrecht University, HEC Paris, Ceres, Copenhagen Business School, University of Mannheim, Chinese University of Hong Kong, National University of Singapore, Singapore Management University, CUNEF University Madrid, University of Hamburg, University of Cologne, St. Gallen Financial Economics Workshop, the 12th Annual Corporate Finance Conference in Bristol, CEPR Webinar on Climate Policy and the Role of Finance, 2024 IFFR/EBRD Conference on ESG for Banks, Firms and Institutional Investors: Advances and Challenges, SFI Research Days 2024, CEPR-ESSEC-Luxembourg Conference on Sustainable Financial Intermediation 2024, 2nd HKU Enterprise Sustainability Conference 2024, EFA 2024, Alpine Finance Summit 2024, GRASFI Annual Conference 2024, SITE 2024: New Research in Asset Pricing, and NFA 2024. This paper has received funding from the Swiss National Science Foundation (SNSF) under the project "How sustainable is sustainable finance? Impact evaluation and automated greenwashing detection" (Grant Agreement No. 100018_207800).

1 Introduction

Climate change requires regulatory action to limit the increase in global temperature to internationally agreed levels. Despite this necessity, most countries' climate efforts remain 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 part, 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 affects climate change more negatively than their Scope 1, 2, or 3 emissions would indicate (InfluenceMap, 2022).

Lobbying against climate action is not a sideshow but has real effects on climate policies. For example, corporate lobbying and various lawsuits had a major impact on the failure of the U.S. Clean Power Plan, which set standards to reduce emissions. Auto industry lobbying has also arguably compromised vehicle climate rules in the U.S. and EU. In addition, an ExxonMobil lobbyist was recorded saying that the firm had fought climate science through "shadow groups" and targeted influential senators to weaken President Biden's climate proposals (Tabuchi, 2021). The associated social costs are potentially large. Meng and Rode (2019) estimate that such lobbying in the U.S. lowered the probability of enacting the (eventually failed) Waxman-Markey Cap-and-Trade Bill by 13 percentage points, implying a social cost of $60 billion. That said, climate lobbying is not necessarily only anti-climate; pro-climate lobbying may counter attempts to obstruct stricter legislation or even encourage it.

Despite its importance in shaping regulation and, ultimately, efforts to address the global climate crisis, corporate climate lobbying remains poorly understood. One reason is that lobbying often occurs behind the scenes and sometimes even collides with a firm's public commitment to combat climate change.[1] In recent proxy seasons, such misalignment was a key issue raised by institutional investors. Climate lobbying also emerged as a major topic of concern in shareholder engagement (Dimson et al., 2026; Ceres, 2022; ClimateAction100+, 2023), and several investors and investor groups published expecta-

[1]For example, ExxonMobil, Glencore, and Stellantis, among others, made public statements to become greener (e.g., through net-zero pledges), but quietly conducted lobbying against climate action (InfluenceMap, 2023). Similar misalignment is also present in other areas, such as between banks' environmental disclosures and their lending activities (Giannetti et al., 2026).

tions on climate lobbying for their portfolio firms, including guidance on the goals and transparency of such activities (e.g., PRI, 2018b; NBIM, 2023).

In this paper, we provide a comprehensive analysis of climate lobbying activities by U.S.-listed firms from 2001 to 2025. 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. Our analysis focuses on federal lobbying, which accounts for 70% of total federal and state lobbying expenses since 2015 (OpenSecrets, 2024).[2]

We construct lobbying measures from quarterly lobbying reports, which firms are legally required to file through in-house lobbyists or external lobbying firms. The construction comprises two steps. In step one, we identify 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). We classify an issue as "climate-related" if its description contains climate-specific keywords or refers to climate-related bills. Such issues feature in 28,290 (or about 10%) of the 288,596 reports filed by our sample firms. We quantify the associated climate lobbying amounts by proportionally allocating each report's total lobbying expenditures across the listed issues (there are no data on issue-level spending).

In step two, we differentiate between anti- and pro-climate lobbying. Because firms are not required to disclose whether they support or oppose the legislation they lobby on, we infer their climate stance from campaign contributions made by their executives or hired lobbyists. Specifically, climate lobbying reports associated with executives or lobbyists who primarily donate to Republicans are classified as more likely to oppose climate action ("anti-climate"), whereas reports linked to individuals who primarily donate to Democrats are classified as more likely to support climate action ("pro-climate").[3] This classification follows a similar approach in Kwon et al. (2026), who use lobbyist contributions to identify green and brown environmental lobbying; by contrast, our approach relies primarily on executive contributions.

Our inference is based on two empirically supported assumptions. First, we show that Republicans and Democrats have differed systematically in their climate policy positions

[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).

[3]We use contributions by executives and lobbyists because *corporate* donations are much less informative about a firm's climate stance as they rarely donate most of their contributions to just one party.

according to voting records, with Democrats generally supporting a more pro-climate agenda. This sharp partisan separation makes campaign contributions to the two parties particularly informative about firms' policy preferences in the climate setting. Second, executives (and lobbyists) tend to donate predominantly to one party rather than split contributions evenly across parties. This concentration allows us to infer their partisan leanings, which should be informative about the positions they are likely to represent for their firms, including on climate policy. Supporting the relevance of executives' political leanings for firm decisions, Kempf et al. (2025) shows that executives misaligned with their management team's political majority are more likely to depart.

We validate our stance assignment using both internal and external benchmarks that capture firms' climate policy positions. Internally, we analyze a subsample of lobbying reports whose issue descriptions are informative enough to allow an LLM to classify them as anti- or pro-climate. Although most reports do not explicitly state information that enables the identification of the lobbying direction, our measures strongly predict, in this subsample, the LLM-identified stances in the expected direction. Externally, we compare our measures to indicators from CDP disclosures (an investor-led survey on climate topics) and InfluenceMap (an NGO that tracks lobbying), both of which provide firm-level assessments of climate policy engagement. Despite differences in sample coverage and distribution, our measures are consistently aligned with these external stance indicators. These tests confirm that our approach effectively identifies firms' climate lobbying stance while providing much wider coverage than the validation benchmarks.[4]

Building on our newly created metrics, we provide a detailed transition-related anatomy of corporate climate lobbying in the U.S. On average, spending on anti-climate lobbying amounts to $267k per year and pro-climate lobbying to $195k (calculated at the intensive margin for firms engaging in climate lobbying); both measures exhibit large cross-sectional variation.[5] Anti-climate lobbying is highly concentrated, with Petroleum & Natural Gas firms and Utilities spending the most (about $262m and $251m, respectively, from 2001

[4]Despite this validation, a concern is that political contributions by executives and lobbyists may not perfectly align with (or represent) climate interests for every firm, in turn introducing large measurement error. We quantify the extent of this error following the approach of Hassan et al. (2019) and Sautner et al. (2023). The estimated measurement error share is modest, especially for anti-climate lobbying, and broadly comparable to those documented in other studies that employ firm-level variables derived from accounting data (Bloom et al., 2018; Hassan et al., 2019). This further alleviates concerns that our measure is dominated by misclassification.

[5]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, are $512k ($462k) p.a.

to 2025); this ranking aligns with Pástor et al. (2026), who demonstrate that these two sectors have the highest carbon burden (present value of social costs of their future carbon emissions) relative to their market values. Pro-climate lobbying is more dispersed across sectors. Interestingly, Utilities also rank first in aggregate amount of pro-climate lobbying, followed by Automobiles & Trucks, Electronic Equipment, and Pharmaceuticals.[6]

To understand the motives behind climate lobbying, we evaluate whether lobbying activities relate to firm-specific characteristics 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). Lobbying reflects firms' incentives to shape the direction and stringency of climate policy, implying that anti- and pro-climate lobbying should differ systematically with firms' transition risks and opportunities. We find such distinct patterns. 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. Within-sector variation in business models also drives diverging lobbying choices. We examine this by zeroing in on the Utilities sector, which is heterogeneously affected by the transition away from fossil fuels as electricity providers vary in their reliance on different fuels. Firms dependent on coal and gas conduct more anti-climate lobbying, whereas those heavily reliant on nuclear energy—a "green" activity according to the EU Taxonomy—engage in more pro-climate lobbying.

Having documented transition-related motives for climate lobbying, we ask whether investors care about such activities when pricing stocks, especially given the increased attention some major investors have paid to anti-climate lobbying in recent years (PRI, 2018b). One potential channel through which such lobbying might affect stock returns is that anti-climate lobbyists are riskier as they are more exposed to climate policy risk. For this channel, "policy" can be interpreted narrowly as government climate regulations (e.g., a carbon tax) or, more broadly, as societal or market pressures related to the climate transition (e.g., investor activism, litigation threats, or reputational scrutiny). Firms that expect to lose more from a policy regime that is consistent with a low-carbon transition have

[6]Besides direct lobbying, some firms leverage trade associations for indirect lobbying purposes, especially for anti-climate activities (e.g., via the American Petroleum Institute). We estimate these indirect lobbying expenses and show that our results are unaffected when accounting for them. 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.

stronger incentives to oppose stricter policies. Anti-climate lobbying can therefore signal a firm's private assessment of its own exposure, especially when investors cannot fully observe its compliance costs. Such lobbying may also amplify the risk exposure if firms consequently postpone emission reductions, or even increase emissions, in the hope of successful lobbying and delayed regulation. When climate policy tightens, these firms are more adversely affected because their operations and public stance make them less adaptable. Investors hence might demand higher expected returns as compensation for holding their stocks. Importantly, this prediction should hold even after controlling for observable climate risk measures, such as emissions, because lobbying captures residual exposure that is not fully absorbed by other public data. Thus, we posit that anti-climate lobbying constitutes an informative corporate action that reveals, and potentially reinforces, otherwise imperfectly observed climate policy exposure. We formalize the mechanism using a simple theoretical framework that builds on Hsu et al. (2023) and Pástor and Veronesi (2012, 2013). The mechanism we propose aligns closely with views from market participants. For example, investors increasingly target anti-climate lobbying through shareholder proposals and argue that it reflects material risk exposure to climate policies. Sustainalytics (2023) warns that such lobbying may slow firms' transition efforts, damage trust, and trigger "name and shame" actions. Similarly, PRI (2018a) notes that lobbying inconsistent with firms' public climate positions can mislead investors and create legal consequences.

Consistent with our prediction, our asset pricing tests find that firms with more anti-climate lobbying earn higher expected returns, but only in the more recent part of our sample (since 2010). Following Bolton and Kacperczyk (2021, 2023), our analysis estimates cross-sectional regressions using a characteristic-based approach, with future realized returns as a proxy for expected returns. A one-standard-deviation increase in anti-climate lobbying is associated with 0.25% higher monthly returns, or 2.96% annually, with a t-statistic of 4.49. This result is robust to portfolio sorting approaches, Fama-MacBeth regressions, and the use of implied cost of capital estimates instead of realized returns (Pástor et al., 2022; Eskildsen et al., 2026). Notably, the return effects are not explained by the carbon risk premium, suggesting that anti-climate lobbying captures additional priced information beyond standard climate transition risk measures. We find similar results when we include indirect lobbying through trade associations and confirm that the effect does not simply reflect firms' political connections to different parties. By contrast, pro-climate lobbying is unrelated to returns.

If the return dynamics reflect the risk channel, then—from an equilibrium perspective—

the stock prices of anti-climate lobbyists should adjust downward when news about lobbying is disclosed to investors or when climate policy risk materializes. The policy risk revealed by lobbying would, in turn, be impounded into stock prices, as lower (higher) prices imply higher (lower) expected returns. Two tests that implement this idea support the risk-based interpretation. First, stock markets react negatively when firms disclose anti-climate lobbying activities in lobbying reports, suggesting that investors view lobbying as informatively revealing firms' exposure to climate policy risk (we also show that the component that is "unexpected" relative to the previous quarter is significantly priced). This stock price reaction partly originates from selling by climate-conscious institutional investors (e.g., PRI signatories). Second, stock prices of anti-climate lobbyists are bid down around important regulatory events that increase the perceived likelihood of stricter climate regulation and bid up around events that decrease it. We document this pattern using two opposing events: the failure of the Waxman-Markey Bill (WMB) and the announcement of the Inflation Reduction Act (IRA).[7]

We also evaluate an alternative mispricing interpretation of the return results, which holds that anti-climate lobbyists may generate *unexpectedly* higher earnings that subsequently cause investors to revise prices upward.[8] Such earnings surprises could occur if anti-climate lobbying is successful and unexpectedly results in less stringent regulation or lower regulatory costs. Using three measures of earnings surprises from Atilgan et al. (2024), we find that anti-climate lobbying firms do *not* exhibit unexpectedly higher earnings or positive earnings announcement news in the current or following years. This suggests that the return effects we observed are unlikely to be driven by mispricing related to unanticipated improvements in expected cash flows.

Related Literature. We contribute to the literature on lobbying as a corporate strategy in the climate transition. Most related is Kwon et al. (2026), who identify corporate environmental stances using campaign contributions and examine in detail the interaction between environmental lobbying and green innovation. We differ methodologically from their work by focusing on climate lobbying and placing more emphasis on executive (instead of lobbyist) contributions; in terms of content, we also investigate the lobbying impacts on the financial market. Also relatedly, Kang (2016) quantifies the impact of en-

[7]The WMB would have significantly changed U.S. climate policy by establishing a national cap-and-trade system and has been used as an exogenous shock in Meng (2017). The IRA is the most ambitious and comprehensive U.S. climate change legislation to date.

[8]This channel requires unexpectedly higher earnings, as expected earnings should already be capitalized in a stock's market value and therefore should not predict returns.

ergy firms' lobbying on policy enactment; Brulle (2018) provides a sector-level analysis of climate lobbying spending; and Delmas et al. (2016) demonstrate a U-shaped relationship between emissions and lobbying expenses; and Jiao et al. (2026) link environmental lobbying to firm value.[9] Relative to the studies that focus on aggregate lobbying expenses, our distinction between anti- and pro-climate lobbying allows us to systematically analyze the motives and asset pricing implications of different types of corporate climate lobbying.

We add to the broader literature on political connections and ESG performance. Prior studies show that Democratic-leaning corporate stakeholders are more inclined toward CSR practices than Republican-leaning ones (Di Giuli and Kostovetsky, 2014; Gupta et al., 2016; Kempf and Tsoutsoura, 2024). Heitz et al. (2023) find fewer environmental enforcement actions and lower penalties for politically connected firms. Fich and Xu (2026) demonstrate that "involuntarily" green firms increase political donations to traditionalist politicians to reduce compliance burdens. Gao and Huang (2026) show that U.S. Congress members who receive large campaign contributions from carbon-emitting firms are more likely to cast climate-skeptic votes. We contribute to this literature by studying climate lobbying as an active and important political strategy.

We also build on the work linking lobbying or political connections to returns (Akey et al., 2025). Closely related is work by Grotteria (2024), who documents a positive risk premium associated with corporate lobbying, as lobbying competition enables firms to become industry leaders temporarily and creates heterogeneous exposure to priced government risk. Our paper complements this perspective by showing that the direction of corporate lobbying matters for asset prices. Climate lobbying provides a setting in which the direction of lobbying has a clear economic interpretation, with anti-climate lobbying revealing firms that expect to lose from stricter climate regulation. This allows us to identify a climate transition risk channel that is related to, but distinct from, the broader political rent channel emphasized in the general lobbying literature. Although we study one form of lobbying, the directional nature and connection to salient environmental externalities make it an important yet underexplored component of political activity. We also relate to Borisov et al. (2015), which uses a shock that limits firms' ability to lobby to provide evidence that lobbying is value-enhancing for firms. We complement this evidence by showing that its financial implications also depend on the lobbying direction and the policy outcome. More broadly, Cooper et al. (2010) study how contributions to political

[9] Rendina et al. (2023) examine how firms respond to environmental concerns through clean innovation and environmental lobbying.

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 losers; Neretina (2024) shows that non-lobbying firms lose market value around the passage of federal legislation that attracts lobbying from competitors.

Lastly, we speak to studies examining the link between climate risks and expected returns, including Bolton and Kacperczyk (2021, 2023) and Pástor et al. (2021, 2022). We add to this literature by showing that climate lobbying provides an informative signal of latent climate policy exposure and contains priced information that is not fully reflected in standard climate risk measures.

2 Data Sources and Sample Construction

2.1 Data on Lobbying Reports

Our analysis of corporate lobbying expenditures builds on 1,429,372 U.S. federal lobbying reports filed from 2001Q1 to 2025Q4 (cross-sectional tests use lobbying data until 2024 due to the availability of most other data). We download these reports from OpenSecrets, a nonprofit organization that publishes data on lobbying and campaign finance, and supplement them with recent filings from the Secretary of the Senate. These data are available because the Lobbying Disclosure Act of 1995 requires both in-house lobbyists and external lobbying firms that lobby on behalf of clients to file lobbying reports.[10] The reports identify the firm names (or clients), the issues lobbied on, the houses of Congress/federal agencies contacted, the individual lobbyists involved, and the lobbying amounts. Quarterly reports have filing deadlines shortly after each calendar quarter, with Q1, Q2, Q3, and Q4 reports due on April 20, July 20, October 20, and January 22, respectively. These reports are typically available for public viewing within a few days after submission.

Our initial sample covers 59,979 clients. Among these clients, 53,528 submitted 1,203,648 reports through 7,839 external lobbying firms, and 7,329 filed 225,724 reports through in-house lobbyists. Some clients use both in-house and external lobbyists, and some file multiple reports in a given period as they work with multiple lobbying firms.

[10] Firms were required to file reports on a semi-annual basis before 2008 and quarterly thereafter. For simplicity, we refer to a quarterly frequency throughout the paper. Most of our tests aggregate lobbying data at the annual frequency; we explain below how we account for the semi-annual frequency when using quarterly data.

We consolidate client reports to the firm level in subsequent steps. We match lobbying clients with Compustat firms using exact name matches and fuzzy matching, followed by manual verification. Table IA A1 shows that 5,586 of the 59,979 clients are listed firms, of which 4,036 are U.S.-listed firms that filed 288,596 reports during our sample period.

2.2 Data on Campaign Contributions

We collect data on individual campaign contributions by executives and lobbyists from the Federal Election Commission (FEC). U.S. federal law requires all political committees, including candidates' campaign committees, Political Action Committees (PACs), and party committees, to report the contributions they receive to the FEC.[11] The data include information on the donors' employers and their occupations (e.g., CEO or lobbyist), which allows us to link individual names 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

We obtain emissions data from the MSCI (2008-2024), green innovation data from the U.S. Patent and Trademark Office (USPTO, 2001-2024) and Leippold and Yu (2026) (2001-2022), electricity generation data from the Energy Information Administration (EIA, 2001-2024), and accounting data from Compustat (2001-2024). We utilize monthly stock returns for firms traded on NYSE, AMEX, and NASDAQ from CRSP (2001-2025).

3 Quantifying Corporate Climate Lobbying

3.1 Measuring Climate Lobbying Amounts

We develop several measures of corporate climate lobbying. In step one, we quantify climate-related lobbying amounts by analyzing the specific "issues" addressed in each report. Lobbying reports describe activities at the issue level and we classify an issue as

[11] 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.

"climate-related" if its description contains at least one climate-specific keyword or mentions a climate-related bill.[12] Climate-related issues feature in 28,290 reports, representing 9.8% of the reports filed by our sample firms. On average, each report addresses 2.4 lobbying issues and 0.16 of them are climate-related. Because lobbying reports disclose spending only at the report level, instead of separately by *individual* issues, we allocate total report level expenditures in proportion to the share of issues classified as climate-related:[13]

$$ClimateLobby_{r,i,q,t} = \frac{N^{ClimateIssue}_{r,i,q,t}}{N^{Issue}_{r,i,q,t}} \times LobbyAmount_{r,i,q,t},$$

where $LobbyAmount_{r,i,q,t}$ is the lobbying expenses of report r filed by firm i (or its external lobbyists) in quarter q of year t, $N^{ClimateIssue}_{r,i,q,t}$ is the number of issues containing climate keywords or bills in report r and $N^{Issue}_{r,i,q,t}$ is the total number of issues. As an alternative measure, $ClimateLobby^{Text}_{r,i,q,t}$ identifies climate-related issues only when its description includes a climate keyword (i.e., we ignore bill titles and bill codes).

3.2 Measuring Climate Lobbying Stance

In step two, we infer whether climate-related lobbying is more likely to be anti- or pro-climate. This stance is not directly observable because firms are not required to reveal whether they lobby for or against any legislation or regulation. We therefore deduce the climate lobbying stance indirectly by analyzing the campaign contributions made by their executives or hired lobbyists. Specifically, we infer climate lobbying reports associated with executives or lobbyists who primarily donate to Republicans as more likely to reflect anti-climate lobbying, and reports linked to individuals who primarily support Democrats as more likely to reflect pro-climate lobbying. Throughout the paper, we use "anti-climate" and "pro-climate" as shorthand for contribution-inferred lobbying stances; validation tests below show that this inferred stance aligns with independent measures

[12] 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 take these keywords from Sautner et al. (2023) that are plausibly related to climate lobbying. We consider a bill as climate-related if its title or subtitles contain any predefined climate keywords. Bills are proposals introduced by a member of Congress to create new laws or substantially modify existing ones. We identify 3,157 climate bills (out of 251,084 bills) from Congress.gov.

[13] While this proportional allocation may introduce measurement error when spending is unevenly distributed across issues, we show in Section 5 that our main empirical results are robust to using only reports in which all listed issues are climate-related, for which no allocation is required.

of firms' climate policy positions.

Our approach relies on two assumptions. First, Republicans and Democrats differ systematically in their climate policy positions, with Democrats generally supporting a more pro-climate agenda; as a result, political contributions to the two parties can capture meaningfully different climate policy preferences. Second, executives donate predominantly to one party rather than split contributions evenly across both parties; this concentrated giving pattern allows us to infer their partisan leanings, which are informative about the positions they are likely to represent for their firms, including those related to climate policy (and likewise for lobbyists who service a firm).

We provide evidence in support of both assumptions. Figure 1, Panels A and B, support the first assumption by reporting LCV scores for politicians from both parties. This score tracks the voting records of Congress members and ranges from zero to one, with higher scores reflecting a stronger pro-environmental stance. The contrast is stark in both the House (Panel A) and the Senate (Panel B): average scores for Democrats are always above 0.8, whereas nearly all Republican scores fall below 0.2. A case in point is the Inflation Reduction Act, the most significant U.S. pro-climate legislation according to the EPA. When the House passed the bill, all Republicans voted against it while all (except one) Democrats voted in favor. This sharp partisan separation suggests that party connections could be particularly informative about firms' policy preferences in the climate setting. Consistent with these partisan differences, Bisetti et al. (2026) show that close Democrat wins in U.S. congressional races are associated with lower plant-level emissions and higher abatement.

Figure 1, Panels C and D, supports the second assumption by showing that executives and lobbyists direct most of their political donations to a single party.[14] This important feature contrasts with corporate-affiliated PACs, whose contributions are typically more bipartisan and therefore less informative about a firm's political stance.[15] Among ex-

[14]We detect individuals as executives if their reported occupation in the contribution dataset indicates a senior leadership role, including "executive," "CEO," "CFO," "president," "vice president," "chairman," "executive director," "owner," and common variants of these titles.

[15]Firms can 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. In our sample, we calculate that fewer than 20% of the 1,384 U.S.-listed firms and 1,053 trade associations that both lobby and donate to parties directed their donations (over the past three years) predominantly to a single party. We exclude Super PACs as they are governed by different rules and represent a more recent development in campaign finance after the 2010 U.S. Supreme Court decision. Following Akey (2015) and Fich and Xu (2026), we exclude them due to higher

ecutives, 83% donate more than 75% of their contributions to one party (donations are aggregated by firm-year over the previous three years), with 46% primarily donating to Republicans and 37% primarily to Democrats. Similarly, 94% of the 4,281 lobbyists in our sample donate more than 75% of their contributions to one party. Using a stricter 100% threshold, 66% of executives and 89% of lobbyists donate exclusively to a single party. Moreover, Kempf et al. (2025) document that executive teams are increasingly partisan and, more importantly, executives misaligned with their team's political majority are more likely to leave, suggesting that partisan leanings are salient within firms rather than merely personal traits.

The climate implications of our two assumptions are also consistent with prior evidence and illustrative examples. Di Giuli and Kostovetsky (2014) show that firms headed by Democratic-leaning CEOs exhibit higher CSR performance, of which climate performance is a part, relative to firms led by CEOs who donate to Republicans. The cases of ExxonMobil and General Motors (GM) provide an illustration. Since 2010, executives at ExxonMobil, a firm with weak climate commitments, have donated $991k (97%) to Republicans and only $34k (3%) to Democrats. Its CEO Darren Woods supported policies to encourage investment in oil and gas in testimony to the House Committee on Energy and Commerce in April 2022. By comparison, executives at GM, a firm with an increasingly pro-climate positioning, contributed only $30k (22%) to Republicans but $106k (78%) to Democrats. GM's CEO Mary Barra stated in 2020 that "Climate change is real; that is indisputable and we take the challenges it presents seriously."[16]

Building on these assumptions, we primarily use executive contributions to infer a firm's climate lobbying stance. We start by assigning a political leaning to a firm-year when the firm's executive team directs at least 75% of its political contributions over the previous three years to one party.[17] If executives either make no contributions or do not

complexity and lower transparency.

[16]ExxonMobil engages negatively in climate policy and advocates for the continued role of fossil fuels in regulations. For instance, the firm's Proxy Statement 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 transport.

[17]The 75% threshold excludes 17% of firm-year observations with executive contribution information to avoid assigning firms with ambiguous political affiliations. To address potential sample selection concerns, we conduct a robustness check that constructs climate lobbying measures by weighting lobbying intensity by the relevant party contribution share rather than imposing the 75% threshold. Section 5.3.2 shows that the baseline empirical results are robust to this alternative measure. The

meet the 75% threshold, we assign the report's stance using lobbyist contributions and similarly require each lobbyist to direct more than 75% of historical contributions to a single party.[18] Specifically, we calculate the anti- and pro-climate lobbying amounts for report r of firm i in quarter q of year t as:

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

where $ClimateLobby_{r,i,q,t}$ is the total climate lobbying expense in the 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.

Using this approach, we can identify the political stance of 170,410 of the 288,596 lobbying reports filed by U.S.-listed firms (Table IA A1, Panel B). Out of this total, 89,024 lobbying reports are associated with the Republican Party based on our political contributions data and 81,386 with the Democratic Party. Our analysis then focuses on the sample for which we can assign a political stance. Within this sample, 16,749 reports are classified as climate-related as at least one issue relates to a climate topic based on our approach, with 8,710 of these reports being signed as "anti-climate" and 8,039 as "pro-climate." Executive contributions allow us to infer the political leaning of 71.8% of reports in this sample, which account for 89% of total lobbying expenditures. The average amounts of anti- and pro-climate lobbying identified using executive contributions are about four times those identified using lobbyist contributions, indicating that executive donations are particularly useful (see Table IA A1, Panel C, for more details).

We make two final adjustments. First, we create annual measures by summing lobbying amounts across all reports filed by firm i over the four quarters of year t to smooth

results are also similar when we replace the three-year window with two- or one-year windows. Among the 15,752,987 individual contributions by employees of U.S.-listed firms in the FEC database, 896,527 are from executives and 226,471 of them clearly indicate the recipient's party (we use this subset to obtain a clear and robust measure). Individuals may contribute to political candidates, political parties, PACs, Super PACs, and other groups, with party information only unambiguously known for donations to political candidates and parties and often unknown in other cases.

[18] We assign a report's stance if more than 50% of its listed lobbyists make political contributions and all contributing lobbyists primarily donate to the same party (the average lobbying report lists 2.65 lobbyists). Figure IA A1, Panel A, plots the total contributions from executives to the two parties over the sample period; Panel B reports the corresponding value for lobbyists.

within-year variation. Second, we scale lobbying expenditures by firm i's total assets:

$$ClimateLobbyIntensity_{i,t}^{Anti} = \frac{\sum_{q=1}^{4}\sum_{r\in q} ClimateLobby_{r,i,q,t}^{Anti}}{Assets_{i,t}}$$

$$ClimateLobbyIntensity_{i,t}^{Pro} = \frac{\sum_{q=1}^{4}\sum_{r\in q} ClimateLobby_{r,i,q,t}^{Pro}}{Assets_{i,t}}.$$

3.3 Validating the Climate Lobbying Stance

To address the concern that our climate lobbying stance assignment merely captures broad partisan ideology rather than climate preferences, we validate our measure using both internal and external benchmarks of a firm's climate policy positions. Although available only for a subset of firms, these validations allow us to corroborate that our method captures meaningful variation in firms' climate policy stance. Internet Appendix B describes how these benchmarks are constructed.

The internal validation uses a subsample of climate lobbying reports whose issue descriptions reveal a clear climate policy stance. We ask OpenAI's Large Language Model GPT-4 to classify each climate-related issue description as anti-climate, pro-climate, or unclear, based on whether the lobbying activity reported in the issue description appears to weaken or strengthen climate regulation. Consistent with the limited directional information in the LDA filings that we use, more than 76% of climate-related reports cannot be assigned a clear stance. Among the remaining reports, 4% are classified as anti-climate and 20% as pro-climate (it is plausible that anti-climate lobbying is less likely to be stated explicitly). We then estimate logit models with indicators for the GPT-based classifications as outcomes ($ClimateIssue^{Anti}$ and $ClimateIssue^{Pro}$) and assess whether our contribution-based lobbying measures predict these internally validated stances in the expected direction.

Table 2, Panel A, presents the results. $ClimateLobbyIntensity^{Anti}$ and $ClimateLobbyIntensity^{Pro}$ exhibit different predictive power for the stances revealed in issue descriptions. In Column 1, anti-climate lobbying intensity positively predicts the anti-climate indicator, whereas pro-climate lobbying does not. Quantitatively, a one-standard-deviation increase in $ClimateLobbyIntensity^{Anti}$ raises the predicted probability of an anti-climate classification by 8.3% for an observation with otherwise average characteristics. In Column 2, where the dependent variable is the pro-climate indicator, this pattern reverses. This evidence indicates that our contribution-based classifications capture firms' climate

lobbying stances well.

The external validation uses two independent lobbying-direction measures from CDP and InfluenceMap. CDP is an investor-led non-profit organization that collects corporate environmental disclosures. Its survey asks firms whether they engage with policymakers, the relevant policy area, their position on the legislation (e.g., support, support with major exceptions, or oppose), and details of the engagement. With these disclosures, we use GPT-4 to classify the reported policy engagements as anti-climate, pro-climate, or unclear. Since 2013, 388 firms in our sample have provided usable responses to the CDP survey. For these firms, we can classify 112 firm-years as anti-climate, 1,073 as pro-climate, and 715 as unclear. InfluenceMap provides an alternative measure by scoring firms' climate policy engagement using public information, such as regulatory comments and media reports. It uses a letter grade system from A to F, with A indicating alignment with pro-climate policies and F representing significant opposition. We classify firms graded D to F as anti-climate (132 firms) and those graded A to C as pro-climate (165 firms).

Table 2, Panel B, reports the results using the CDP-based indicators (CDP^{Anti} and CDP^{Pro}) and Panel C for the InfluenceMap-based indicators (IM^{Anti} and IM^{Pro}). Also in these two validations, our measures predict the corresponding climate stances in the expected direction. The results are particularly striking for the InfluenceMap-based indicators in Panel C. $ClimateLobbyIntensity^{Anti}$ positively predicts the anti-climate indicator in Column 1 and negatively predicts the pro-climate one in Column 2, with both estimates being significant at the 1% level. Conversely, $ClimateLobbyIntensity^{Pro}$ predicts the two indicators in the opposite direction.

To complement this validation, Internet Appendix C quantifies the measurement error from using executive and lobbyist contributions to infer the direction of corporate climate lobbying, following the approach of Hassan et al. (2019) and Sautner et al. (2023). The estimated measurement error share is modest, further alleviating concerns that our measure is dominated by misclassification.

3.4 Accounting for Trade Association and General Lobbying

We construct additional measures to account for effects from (i) lobbying through trade associations and (ii) general lobbying by political leaning. To account for trade association lobbying, we first measure each association ta's anti- and pro-climate lobbying amounts in quarter q of year t. Internet Appendix D describes how we select climate-

related trade associations and measure their lobbying amounts. We then allocate these amounts to member firms in proportion to their annual revenues. Lastly, we aggregate firm i's indirect climate lobbying across climate-related trade associations TA^i to which it belongs and combine this amount with our direct lobbying measure:

$$ClimateLobby_{i,q,t}^{Anti,TA} = \sum_{ta \in TA^i} \omega_{i,ta,t} \sum_{r \in q} ClimateLobby_{r,ta,q,t}^{Anti}, \text{ with } \omega_{i,ta,t} = \frac{Rev_{i,t}}{\sum_{m \in ta} Rev_{m,t}},$$

$$ClimateLobbyIntensity_{i,t}^{Anti,Combo} = \frac{\sum_{q=1}^{4} \left(ClimateLobby_{i,q,t}^{Anti} + ClimateLobby_{i,q,t}^{Anti,TA} \right)}{Assets_{i,t}}.$$

As our measure of indirect lobbying requires stronger assumptions and is likely to be more affected by measurement error, we consider it primarily in robustness checks.

To account for general lobbying by political leaning, we construct two control variables. $LobbyIntensity_{i,t}^{Rep}$ quantifies lobbying expenditures, irrespective of whether they are climate-related, by firms whose executives (or lobbyists) predominantly donate to the Republican party according to the contribution-based procedure described above, scaled by total assets. $LobbyIntensity_{i,t}^{Dem}$ is defined accordingly for Democratic-leaning firms.

3.5 Summary Statistics

Table 1 presents summary statistics of our climate lobbying measures at the firm-year level. Panel A includes U.S.-listed firms with data on lobbying reports, independent of whether the lobbying is climate-related. In this sample, the average firm spends \$85k annually on climate-related lobbying. Anti-climate lobbying expenses are about 37% larger than those on pro-climate lobbying, with yearly averages of \$49k and \$36k, respectively.[19] Anti-climate lobbying occurs in 10.4% of firm-years and pro-climate lobbying in 8.7%. For comparison, $Lobby^{Rep}$ ($Lobby^{Dem}$), lobbying expenses by firms whose executives or lobbyists primarily contribute to Republicans (Democrats), amounts on average to \$512k (\$462k) per year. Panel B reports statistics among firms that undertake climate lobbying. At this intensive margin, the averages for $ClimateLobby^{Anti}$ and $ClimateLobby^{Pro}$ are \$267k and \$195k, respectively. All variables come with large standard deviations,

[19] Figure IA D1 shows that some trade associations play an important role in climate lobbying, particularly when it comes to anti-climate lobbying. On average, indirect anti-climate lobbying amounts to about 13% of direct lobbying, while indirect pro-climate lobbying accounts for roughly 4%. Table 1 also reports summary statistics on the measures that include this indirect lobbying.

reflecting significant cross-sectional variation. Table IA A2 reports selected correlations.

4 Climate Lobbying and Transition Exposure

4.1 Climate Lobbying over Time and Across Industries

How has corporate climate lobbying evolved over time, and how does this evolution relate to major policy changes? Figure 2 plots quarterly trends in climate lobbying amounts (Panel A) and the number of anti- and pro-climate lobbying firms (Panel B). Climate lobbying was low before 2006, reflecting limited corporate and societal awareness of climate issues and few related bills or regulations.[20] From 2008 to 2010, climate lobbying peaked for the first time for both types, coinciding with a surge in climate legislation, including the ultimately unsuccessful Waxman-Markey Bill (formally American Clean Energy and Security Act). The period under President Trump's first administration, from 2017 to 2021, saw the least lobbying activity, likely because the administration's deregulatory climate agenda made pro-climate regulation less likely and thereby muted lobbying incentives on both sides. In 2022, climate lobbying reached a second peak, with pro-climate expenses exceeding anti-climate expenses. The surge appears closely related to President Biden's administration, which proposed more stringent climate regulations and expanded green subsidies. Spending declined again thereafter.[21]

How does climate lobbying vary by industry? Figure 3 reports climate lobbying expenditures across sectors. Panel A reports total expenses and Panel B reports averages at the firm-quarter level. Both panels show anti- and pro-climate expenses, with sectors ranked by anti-climate lobbying amounts. In Panel A, anti-climate lobbying is highly concentrated, with firms in the Petroleum & Natural Gas and Utilities sectors spending the largest total amounts (around $261.7m and 251.3m over the sample years, respectively). When considering firm-quarter averages in Panel B, Coal also emerges as a major sec-

[20] Lobbying reports were semi-annual before 2008; thus, in the figure, we divide pre-2008 semi-annual expenditures by two to approximate quarterly amounts.

[21] The trends do not simply reflect variation in aggregate lobbying expenses by Republican- or Democratic-leaning firms. Figure IA A2 documents this by plotting the time series of $Lobby_{i,t}^{Rep}$ 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 further compare climate-related versus general lobbying. The number of firms involved in general lobbying grew until 2008 and then stabilized. 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. Internet Appendix E reports the most heavily lobbied climate bills.

tor that spends large resources on anti-climate lobbying.[22] Pro-climate lobbying is more dispersed. The Utilities sector ranks highest in the aggregate amount of pro-climate lobbying and the per-firm-quarter average. Other sectors with high pro-climate expenses include Automobiles & Trucks, Electronic Equipment, and Pharmaceuticals. Figure IA A3 lists the top anti- and pro-climate corporate lobbyists.

4.2 Climate Lobbying and the Net-Zero Transition

Do firms' transition characteristics relate to the direction of their climate lobbying? If our measures reflect firms' incentives to shape the stringency of climate policies, anti- and pro-climate lobbying firms should differ in their transition risks and opportunities. To evaluate whether this is the case, we consider two key characteristics: (i) carbon emissions as a proxy for transition risk (Bolton and Kacperczyk, 2021, 2023; Ilhan et al., 2021) and (ii) green innovation as a proxy for transition-related opportunities (Sautner et al., 2023; Cohen et al., 2026; Bolton et al., 2025). We then estimate for firm i and year t:

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

where $ClimateLobbyIntensity^{X}$ ($X \in \{Anti, Pro\}$) are firm i's scaled anti- or pro climate lobbying expenses in year t. *TransitionVariable* is one of four variables: Log(*Carbon Emissions*), *CarbonIntensity*, *GreenPatents* (granted green patents scaled by total patents), or *GreenInnovation* (the fraction of an earnings call discussing green innovation, following Leippold and Yu, 2026). $\mathbf{X}_{i,t}$ includes firm characteristics. We use year fixed effects (γ_t) to identify effects from the cross-section and add industry fixed effects (δ_j) (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 by industry. The sample includes all firms with lobbying reports.

Table 3 reports the results. Panel A explores the role of carbon emissions. In Columns 1–2, firms with more carbon-intensive business models spend significantly more on anti-climate lobbying. A one-standard-deviation increase in *CarbonIntensity* is associated

[22] The difference from Panel A arises as the Coal sector has fewer firms than the Utilities sector. In Coal, 128 (or 33%) out of 388 firm-quarters contain lobbying against climate actions (untabulated). Similarly, in Petroleum & Natural Gas, 556 (or 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.

with a 1.18 increase in the anti-climate lobbying intensity, or 42% of the mean. The pattern differs sharply for pro-climate lobbying. The coefficient on Log(*Carbon Emissions*) is insignificant in Column 3 and turns negative for *CarbonIntensity* in Column 4. Panel B shows in Columns 1–2 no link between green innovation and anti-climate lobbying. In contrast, significant and positive correlations emerge with pro-climate lobbying in Columns 3–4, with point estimates being much larger. A one-standard-deviation increase in *GreenPatents* (*GreenInnovation*) is associated with a 4.53 (7.01) increase in the pro-climate lobbying intensity; the estimates are sizable as they correspond to 108% (158%) of the variables' means in the regression sample.[23]

4.3 Climate Lobbying and Electricity Generation Sources

Does heterogeneity within a sector in how firms are affected by the net-zero transition help explain divergent lobbying choices? We evaluate this question in the Utilities sector, which ranks highest in both anti- and pro-climate lobbying. Utility firms differ substantially in their electricity generation sources, which shape the costs and potential benefits they face from climate policies during the energy transition and therefore may affect their incentives to support or oppose such policies. To measure the differences in generation sources, we aggregate power-plant-level data from the EIA to the firm level. We then classify generation sources into five categories: coal, oil, natural gas, nuclear, and renewables, and scale the megawatt-hours generated from each fuel type by firm assets (in $ millions).[24] We estimate:

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

where $ClimateLobbyIntensity^{X}_{i,t}$ is defined as above and $\textbf{Fuel Sources}_{\mathbf{i,t}}$ includes the five scaled fuel source measures for firm i in year t; other variables are defined as before.

Table 4 shows in Column 1 that firms with greater reliance on coal engage in signifi-

[23] We also include carbon emissions and green innovation measures simultaneously to examine each characteristic's association with climate lobbying conditional on the other and find similar results.

[24] These data are available for firms operating electricity plants in the Utilities, Oil, Chemicals, and Steel industries. We use data from the Form EIA-923 survey, which provides electricity generation data for 9,108 electricity plants. By matching plant operators with Compustat firms, we aggregate data on all electricity plants of an electricity generator to the firm-year level. The sample in this test 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 firms that generate electricity.

cantly more anti-climate lobbying. A one-standard-deviation increase in coal intensity is associated with a 0.37 increase in the anti-climate lobbying intensity, or 9% of the mean. Natural gas intensity exhibits a similar positive association. Column 2 shows that nuclear generation correlates significantly with increased pro-climate lobbying expenses, whereas oil use is associated with lower levels of it. Somewhat unexpectedly, firms relying on renewable energy do not spend more on pro-climate lobbying.

5 Climate Lobbying and Stock Returns

5.1 Return Estimates: Main Results

Do investors care about a firm's lobbying activities when pricing stocks? To explore the return effects of corporate climate lobbying, we follow Bolton and Kacperczyk (2023, 2021) and estimate cross-sectional regressions using a characteristic-based approach, with future realized returns as a proxy for expected returns.[25] Specifically, we link firm i's monthly excess returns from February of year t+1 to January of year t+2 to its climate lobbying intensity measured at the end of year t. Lobbying reports are typically available within one month after the calendar quarter ends, so our one-month lag ensures the lobbying information is publicly available to investors before the return window and avoids capturing contemporaneous price reactions. We estimate the following regressions for firms with lobbying expenses:

$$\begin{aligned} Excess\ Return_{i,m,t+1} = \beta_0 + \beta_1 ClimateLobbyIntensity_{i,t}^{Anti} \\ +\beta_2 ClimateLobbyIntensity_{i,t}^{Pro} + \beta_3 \mathbf{X}_{i,t} + \gamma_{m,t+1} + \delta_j + \epsilon_{i,m,t+1}, \end{aligned} \tag{3}$$

where $ExcessReturn$ is firm i's monthly return in excess of the risk-free rate in month m of year t+1. $ClimateLobbyIntensity^{Anti}$ and $ClimateLobbyIntensity^{Pro}$ are firm i's anti- or pro-climate lobbying intensities. We control for lobbying expenses related to the Republican or Democratic Party and firm characteristics and follow Bolton and Kacperczyk (2021) by including year-month ($\gamma_{m,t+1}$) and industry (δ_j) fixed effects and double clustering standard errors by firm and year. As in Zhang (2025), we use weighted least

[25] 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.

squares regression to avoid small stocks influencing the estimates. Using the 2002–2025 period as our returns sample, we estimate the regressions separately for the pre- and post-2010 periods. The 2010 breakpoint is motivated by the growing salience of climate risk to investors starting from around this year. Engle et al. (2020), for example, show that climate news coverage in financial media started to exhibit a first spike towards the end of 2009 (around the UN Climate Conference in Copenhagen). In addition, lobbying disclosures became more standardized and comparable for investors from around that time following the Honest Leadership and Open Government Act.

Table 5 reports the results. In Columns 1–2, which cover 2002 to 2009, we find no evidence that climate lobbying predicts returns: coefficients are small and insignificant. This is sharply different during the 2010–2025 period in Columns 3–4. In Column 3, a one-standard-deviation increase in $ClimateLobbyIntensity^{Anti}$ is associated with 0.25% higher monthly returns (or 2.96% annually), with a t-statistic of 4.49. The estimates are similar when adding control variables in Column 4. By contrast, pro-climate lobbying is unrelated to returns. These results establish our baseline finding that anti-climate lobbying predicts significantly higher expected returns in the post-2010 period. We show below that this finding remains robust when we apply portfolio sorting, employ Fama-MacBeth regressions, or use the implied cost of capital as an alternative proxy for expected returns (Pástor et al., 2022; Eskildsen et al., 2026).

Do the return effects simply reflect a carbon risk premium? This is an important concern because Bolton and Kacperczyk (2021, 2023) demonstrate that firms with higher carbon emissions earn higher returns, caused by investors seeking compensation for carbon risk exposure, and Section 4.2 shows that anti-climate lobbying is positively correlated with emissions. We therefore examine in Table 6, Columns 1–4, whether anti-climate lobbying contains pricing information beyond carbon risk exposure. After adding Log($CarbonEmissions$) or $CarbonIntensity$ to the baseline return regressions in Columns 1–2, the coefficient on $ClimateLobbyIntensity^{Anti}$ continues to be positive and significant.[26] Moreover, Columns 3–4 show that the return effect continues to hold when using residualized lobbying measures obtained from regressing anti- and pro-climate lobbying intensities on emission levels or intensities.[27] Table IA A4 provides complementary

[26]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, 2025). 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.

[27]The absence of a significant relation between emissions and returns within our sample of lobbying firms—despite a significant relation documented in broader samples—should be interpreted cautiously.

portfolio evidence through independent double sorting that compares firms with similar emissions but different lobbying intensities (details below). Hence, measured anti-climate lobbying captures priced information beyond standard carbon risk measures.

Does indirect lobbying through trade associations affect the return effects? Table 6, Column 5, examines this possibility by estimating the combined effects of direct and indirect lobbying. We find that an increase in $ClimateLobbyIntensity^{Anti,Combo}$ by one standard deviation correlates with 0.19% higher monthly returns, or 2.28% per year (t-statistic of 2.26). The effect is slightly smaller than that for direct lobbying, possibly because trade association lobbying is harder to attribute to individual firms or less salient to investors.

Do the return effects of anti-climate lobbying purely reflect firms' affiliations with the Republican Party? While our return regressions already control for general lobbying intensity by Republican-leaning firms, we further address this possibility in Table 6, Columns 6–9, using three tests (we provide a detailed discussion in Internet Appendix F). First, Columns 6–7 show that the results are unchanged after controlling for a firm's party connection or its campaign contributions to congressional candidates. Second, Column 8 reports placebo tests using the Republican-leaning non-climate lobbying intensity and shows that it does not similarly predict returns. Third, Column 9 includes headquarters-state fixed effects to address the concern that firms may choose to donate to the dominant party in their state so that political contribution simply captures local party affiliation rather than climate stance; the return results remain robust.[28]

5.2 Return Estimates: Evidence for a Risk-based Channel

5.2.1 Conceptual Framework

What economic mechanism explains the positive relation between anti-climate lobbying and expected returns? One potential channel is that anti-climate lobbying firms are riskier as they are more exposed to climate policy risk. For this channel, "policy" can be interpreted narrowly as government climate regulations (e.g., a carbon tax) or, more broadly, as societal or market pressures related to the net-zero transition (e.g., investor activism, litigation threats, or reputational scrutiny). Firms with more to lose from a

One explanation is that our sample is comparatively homogeneous with respect to high emissions exposure, which may reduce cross-sectional variation in emissions and attenuate any relation with returns.

[28] Table IA A4 also reports consistent results in double sorting that compare anti-climate lobbying among firms with a similar level of Republican-leaning lobbying intensity.

stringent transition have stronger incentives to oppose climate policy. Anti-climate lobbying therefore may signal a firm's private assessment of its own exposure, especially when investors cannot fully observe the costs the firm would incur under stricter policy or the difficulty it would face in adjusting its business model. Lobbying may also amplify such exposure if firms expect lobbying to delay regulation and consequently postpone costly adjustment, leaving them less prepared when climate policy eventually tightens. Thus, anti-climate lobbying is an informative corporate choice that reveals and potentially reinforces otherwise imperfectly observed climate policy exposure.

Under this interpretation, firms engaged in anti-climate lobbying should be more negatively exposed to a shift toward stricter climate policy because their operations and public stance are less adaptable in high-transition states. Investors thus require higher expected returns to hold such stocks as compensation for bearing the risk. Importantly, lobbying may predict a higher expected return even after controlling for observable transition risk measures, such as emissions, as it reveals residual exposure that is otherwise difficult for investors to observe. Internet Appendix G formalizes this mechanism in a simple theoretical framework.

The mechanism we propose is consistent with how market participants view anti-climate lobbying. Investors have targeted such activities through shareholder proposals. For instance, CCLA Investment Management, on behalf of the investor coalition Climate Action 100+, filed a proposal at NextEra Energy arguing that the firm's climate lobbying was inconsistent with the Paris Agreement and represented a material investment risk (see Figure IA A4). Moreover, Sustainalytics (2023), a major ESG rater, argues that anti-climate lobbying may slow down corporate preparation by protecting existing business models and limiting the development of transition solutions, which further damages trust and invites "name and shame" actions. Relatedly, PRI (2018a) notes that when lobbying contradicts public positions on climate policies, it may be viewed as misleading investors or consumers, creating additional legal consequences. In the next sections, we provide empirical evidence supporting the risk-based interpretation.

5.2.2 Return Reactions to Climate Lobbying Disclosures

If anti-climate lobbying conveys an informative signal about firms' exposure to climate policy risk, we expect markets to adjust firm valuations downwards when news about such lobbying activities is released to investors. We test this prediction by examining

the immediate stock market reaction to climate lobbying disclosures.[29] As discussed before, firms are required to submit quarterly lobbying reports under the LDA, with filing deadlines typically 20 days after the end of each reporting period. To capture timely disclosures, we focus on reports submitted within one month after the reporting period. In our sample, 124,879 out of 134,882 lobby reports can be linked to a disclosure date for the 2010–2025 period. Since firms may file multiple reports on the same day (either in-house or via external lobbying firms), we aggregate anti- and pro-climate lobbying amounts across reports filed by the same firm on the same release date. We then estimate for firm i on disclosure date t from 2010 to 2025:

$$\begin{aligned} CAR_{i,t} = \beta_0 + \beta_1 ClimateLobbyIntensity_{i,t}^{Anti} + \beta_2 ClimateLobbyIntensity_{i,t}^{Pro} \\ + \beta_3 \mathbf{X}_{i,t} + \delta_j \times \delta_t + \epsilon_{i,t}, \end{aligned} \tag{4}$$

where CAR 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 disclosure date t. We include industry-date fixed effects to control for industry-specific shocks that might confound the return relationship ($\delta_j \times \delta_t$) and double cluster standard errors by firm and date.

Table 7 shows that markets react negatively to the release of LDA reports that include anti-climate lobbying. Columns 1–3, which cover all lobbying reports, show that a one-standard-deviation increase in disclosed anti-climate lobbying ($ClimateLobbyIntensity^{Anti}$) is associated with 0.05% lower CARs over a 2-day window. The effect remains significant over the 3-day window. Columns 5–7 identify effects within the set of reports mentioning climate issues and find that the negative reaction to anti-climate lobbying is even stronger. A one-standard-deviation increase in the associated lobbying intensity corresponds to a 0.36% decline in returns over two days. We further decompose climate lobbying disclosures into expected and unexpected components. $ClimateLobbyIntensity^{Anti,Exp}$ is calculated as the average lobbying intensity disclosed in the previous quarter, measured over a rolling 91-calendar-day window. $ClimateLobbyIntensity^{Anti,Unexp}$ is the difference between the intensity disclosed on date t and the expected component, capturing whether a firms disclose *unexpectedly* higher or lower anti-climate lobbying. Column 4 shows that the unexpected component drives the market reaction in the full lobbying sample, while Column 8 indicates that both expected and unexpected parts contribute to the reaction within the climate lobbying sample.

[29] The dates on which lobbying reports are posted are obtained from the Secretary of the Senate website.

The negative price reaction suggests that certain investors exit anti-climate lobbyists, possibly because they view such lobbying as revealing exposure to climate policy risk. We test whether "climate-conscious" institutions reduce holdings in anti-climate lobbyists after learning about their lobbying. We consider ownership changes of such institutions from the end of year t-1 to the end of year t around the filing of lobbying reports. We measure climate-conscious ownership in two ways. First, following Ilhan et al. (2023), we identify universal investors as institutions that rank in the top 1% by the number of stocks held in a year. These investors own large parts of the economy and are thus particularly subject to climate externalities. Second, we consider ownership by PRI signatories. Table IA A3, Columns 1–2, use all lobbying reports and find a weak decline in climate-conscious ownership when news on anti-climate lobbying is released. The effect becomes stronger in Columns 3–4, which restrict the sample to climate lobbying reports. A one-standard-deviation increase in anti-climate lobbying is associated with a 0.9pp (1.7pp) decrease in ownership by universal investors (PRI signatories).[30]

5.2.3 Return Reactions to Climate Regulatory Events

If the return effects reflect a risk-based channel, stock prices of anti-climate lobbyists should be bid down (bid up) around major events that increased (decreased) the perceived likelihood or salience of climate policy tightening. We examine two events that plausibly had these effects. The first is when Senator Graham, a Republican from South Carolina, dropped support for the Waxman-Markey Bill (WMB). This bill aimed to establish a national cap-and-trade system to reduce emissions to 83% below 2005 levels by 2025 and led firms to hire lobbyists on a large scale. The WMB passed the House by a narrow margin (219 to 212) on June 26, 2009, but was never brought to the Senate. A turning point occurred on April 23, 2010, when Senator Graham withdrew his support, which implied the bill's eventual failure. Under the risk-based channel, this decline in regulatory risk should increase valuations for anti-climate lobbyists as uncertainty about bill-related immediate regulatory and financial costs no longer exists.

The second event is the Inflation Reduction Act (IRA), the most ambitious and comprehensive U.S. climate legislation to date. The IRA targeted a 41% reduction in emissions by 2030 and allocated $370 billion toward climate-related spending and tax credits,

[30]We include the lagged value of overall institutional ownership as a control, along with the financial characteristics we used before. To align with the CAR analysis, we restrict the sample to reports covered in Table 7 and aggregate lobby amounts within the year.

which substantially heightened uncertainty about regulatory costs for firms reliant on fossil fuels while favoring firms that benefit from the transition. The IRA was unexpectedly announced on July 27, 2022, when Senator Manchin and Senate Majority Leader Schumer released a statement supporting the bill; this came as a surprise due to Manchin's previous pessimistic attitude. Following Deng et al. (2023), we use July 28 as the event date because the announcement became widely known after the market closed. Under the risk-based channel, anti-climate lobbyists should experience valuation declines after this event.

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

$$\begin{aligned} CAR_i^e = \beta_0 + \beta_1 ClimateLobbyIntensity_i^{Anti} + \beta_2 ClimateLobbyIntensity_i^{Pro} \\ + \beta_3 \mathbf{X}_i + \delta_j + \epsilon_i, \end{aligned} \tag{5}$$

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 measures now only include issues that reference the two bills, with lobbying expenses calculated over the 1-year period ending in the most recent completed quarter before the event date. We include industry fixed effects (δ_j) and cluster standard errors at the industry level.

Table 8 reports the event study evidence. Panel A shows that, around the WMB failure, firms with higher anti-climate lobbying expenses outperform their industry counterparts. In Column 1, a one-standard-deviation increase in anti-climate lobbying is associated with 0.29% higher CARs in the one-day window; this effect rises to 0.52% in Column 3. Pro-climate lobbying correlates with a decrease in stock prices. Panel B shows the opposite pattern around the IRA announcement. An increase in anti-climate lobbying by a standard deviation correlates with a 0.29% valuation decrease over the one-day window. This effect increases over the two-day window and then weakens. For pro-climate lobbying, the coefficients are positive. These return dynamics are consistent with the interpretation that anti-climate lobbying activities informatively reveal corporate exposure to climate policy risk, with stock prices bid down (up) around events that increase (decrease) investor beliefs about climate regulation.

5.3 Return Estimates: Robustness and Alternative Explanations

5.3.1 Robustness: Portfolio Sorting and Fama-MacBeth Regressions

Our return results are robust to portfolio sorting following Fama and French (1992, 1993). We form portfolios at the end of January in year $t+1$ based on annual lobbying expenses from January to December of year t. Within each industry, we sort firms by $ClimateLobbyIntensity^{Anti}$ into three groups: *High* includes firms above the median among positive lobbyists, *Moderate* includes firms below the median among positive lobbyists, and *Low* includes firms with no climate lobbying.[31] We construct 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 (February of t+1 to January of t+2). Table IA A4 shows that, for raw returns, the HML spread is positive but insignificant, while the HMM spread is positive at 0.22% (t-statistic of 1.68). The spreads become larger and statistically significant after adjusting for common risk factors in time-series regressions. We also conduct independent portfolio sorting on $ClimateLobbyIntensity^{Anti}$ and Scope 1 carbon emission levels. Each year, we first sort firms into two groups based on carbon emissions within the Fama-French 49 industries; within each emission group, we then form high-minus-low portfolios based on anti-climate lobbying intensity; we lastly average the return spread across the two emission groups. The resulting adjusted returns remain positive and significant, indicating that anti-climate lobbyists earn higher returns among firms with comparable carbon emissions. Sorting on $ClimateLobbyIntensity_{i,t}^{Pro}$ yields insignificant results (untabulated).

Table IA A5 reports Fama-MacBeth regressions based on firms' exposures to HML portfolio returns constructed from $ClimateLobbyIntensity^{Anti}$. We interpret these exposures as return-based proxies for firms' sensitivity to climate policy risk that anti-climate lobbying helps reveal. Specifically, we estimate $Beta_{i,t}^{Anti}$ from rolling 60-month time-series regressions of stock returns on the HML portfolio return and the Fama-French five factors. The cross-section Fama-MacBeth regressions of returns on $Beta_{i,t}^{Anti}$ generate a strong positive coefficient. This suggests that firms that are more sensitive to climate

[31] The *High/Moderate* split is defined 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.

policy risk, as signaled by anti-climate lobbying, earn higher expected returns.

5.3.2 Robustness: Implied Cost of Capital and Alternative Specifications

The return effects remain robust across several additional tests. First, Table IA A6 shows significant results when expected returns are measured using firms' implied cost of capital. This addresses concerns about using future realized returns as proxies for expected returns in the climate finance context, which is characterized by a short sample and evolving investor perceptions (Pástor et al., 2022; Eskildsen et al., 2026). Second, Table IA A7, Panel A, shows that results are unchanged after controlling for additional return predictors, including market beta, momentum, idiosyncratic volatility, and liquidity, as well as ESG/E ratings and total emissions from Scopes 1 and 2. Third, Table IA A7, Panel B, shows that results are not driven by industry shocks, as the estimates remain similar when we consider other industry fixed effects (SIC-2 codes or the classification by Hoberg and Phillips, 2016), use industry-by-year-month fixed effects, or exclude the top lobbying industries. Fourth, Table IA A7, Panel C, shows that the results are robust to alternative measurement choices. They hold when we (i) use $ClimateLobbyIntensity^{Anti-Pro}$ to capture the net effect from anti- and pro-climate lobbying intensity; (ii) detect climate lobbying only use climate keywords instead of bills; (iii) assign lobbying amounts by multiplying the party-share of political contributions rather than using the 75% threshold; and (iv) restrict the measure to reports in which all issues are climate-related. Fifth, Column 5 of Panel C shows that the results are consistent after excluding major climate policy shock periods, including the 2016 and 2024 Trump election wins in November, the 2020 Biden election win in November, the April 2010 failure of the Waxman-Markey bill, and the July 2022 passage of the Inflation Reduction Act, reducing the concern that the return effect is driven by realized policy shocks.

5.3.3 Alternative Explanation: Mispricing and Earnings Surprises

An alternative interpretation for the return effect that we document is that anti-climate lobbyists earn higher future realized returns because they generate *unexpectedly* higher earnings. For example, lobbying may unexpectedly lower regulatory costs by delaying or preventing climate regulations, which could lead to positive earnings surprises. An important element of such a mispricing explanation is that it requires earnings to be *unexpectedly* high, since expected earnings should already be incorporated into stock prices, with-

out affecting future returns. We test this channel using three measures of earnings surprises from Atilgan et al. (2024). Table IA A8, Columns 1–2, shows that climate lobbying does *not* significantly correlate with the two annual-level analyst forecast error measures. Considering lobbying outcomes may take time to affect cash flow, Columns 4–5 relate current lobbying intensity to next-year earnings surprises and the results remain insignificant. Columns 3 and 6 use a higher-frequency market-based measure that calculates the three-day abnormal returns around the quarterly earnings announcements, and again find no significant relation. Although these tests do not rule out every mispricing-based explanation, they provide little support for a cash-flow-surprise channel in which anti-climate lobbying predicts unexpectedly higher earnings or positive earnings announcement news.

6 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 accounting for the largest total expenditures. Pro-climate lobbying is more dispersed across sectors, although Utilities also contribute the largest aggregate amount. Climate lobbying positions differ systematically with firms' transition risks and opportunities. Firms with more carbon-intensive business models spend significantly more on anti-climate lobbying. In contrast, firms with more green innovation engage more in pro-climate lobbying. Operational differences, such as electricity generation sources, are also associated with divergent lobbying choices. Importantly, firms with more anti-climate lobbying earn higher future returns, even after controlling for carbon emissions. Multiple tests support a risk-based interpretation, as anti-climate lobbying provides an informative signal of firms' exposure to climate policy risk and firms with greater such lobbying are more adversely affected when climate policy tightens. By contrast, we find little evidence that the return pattern reflects unanticipated cash flow changes, as anti-climate lobbying does not predict earnings surprises.

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 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 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 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
$ClimateLobby_{i,t}^{Anti,\,Combo}$	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
$ClimateLobbyIntensity_{i,t}^{Anti}$	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
$ClimateLobbyIntensity_{i,t}^{Pro}$	Pro-climate lobbying expenses (in \$) divided by total assets (in \$ million). Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$LobbyIntensity_{i,t}^{Rep}$	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

Variables	Definitions	Sources
$LobbyIntensity_{i,t}^{Dem}$	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
$ClimateIssue_{i,t}^{Anti}$	Equals 1 if the firm-year contains at least one lobbying report whose issue description is classified as anti-climate and no report is classified as pro-climate by an LLM.	OpenSecrets
$ClimateIssue_{i,t}^{Pro}$	Equals 1 if the firm-year contains at least one lobbying report whose issue description is classified as pro-climate and no report is classified as anti-climate by an LLM.	OpenSecrets
$CDP_{i,t}^{Anti}$	Equals 1 if CDP policy engagement disclosures indicate an anti-climate stance.	CDP
$CDP_{i,t}^{Pro}$	Equals 1 if CDP policy engagement disclosures indicate a pro-climate stance.	CDP
$IM_{i,t}^{Anti}$	Equals 1 if the firm's InfluenceMap score is between D and F.	InfluenceMap
$IM_{i,t}^{Pro}$	Equals 1 if the firm's InfluenceMap score is between A and C.	InfluenceMap
$ClimateLobbyIntensity_{i,t}^{Anti,\,Res1}$	The residual component when regress anti-climate lobbying intensity on carbon emission levels. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC, MSCI
$ClimateLobbyIntensity_{i,t}^{Pro,\,Res1}$	The residual component when regress pro-climate lobbying intensity on carbon emission levels. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC, MSCI
$ClimateLobbyIntensity_{i,t}^{Anti,\,Res2}$	The residual component when regress anti-climate lobbying intensity on carbon emission intensity. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC, MSCI
$ClimateLobbyIntensity_{i,t}^{Pro,\,Res2}$	The residual component when regress pro-climate lobbying intensity on carbon emission intensity. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC, MSCI
$LobbyIntensity_{i,t}^{Rep,\,NonClimate}$	Republican-leaning lobbying intensity that is not climate-related. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$LobbyIntensity_{i,t}^{Rep,\,NonClimate}$	Democratic-leaning lobbying intensity that is not climate-related. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$ClimateLobbyIntensity_{i,t}^{Anti,\,Exp}$	Average anti-climate lobbying intensity disclosed during the quarter preceding date t, measured over a rolling 91-calendar-day window. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$ClimateLobbyIntensity_{i,t}^{Pro,\,Exp}$	Average pro-climate lobbying intensity disclosed in the previous quarter of date t, measured over a rolling 91-calendar-day window. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$ClimateLobbyIntensity_{i,t}^{Anti,\,Unexp}$	The difference between the anti-climate lobbying intensity disclosed on date t and the expected component. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$ClimateLobbyIntensity_{i,t}^{Pro,\,Unexp}$	The difference between the pro-climate lobbying intensity disclosed on date t and the expected component. Winsorized at the 1% and 99.9% levels.	OpenSecrets, FEC
$ClimateLobbyIntensity_{i,t}^{Anti,\,IM}$	Anti-climate lobbying intensity that assign climate stance based on InfluenceMap indicators ($IM_{i,t}^{Anti}$). Winsorized at the 1% and 99.9% levels.	OpenSecrets, InfluenceMap
$ClimateLobbyIntensity_{i,t}^{Pro,\,IM}$	Pro-climate lobbying intensity that assign climate stance based on InfluenceMap indicators ($IM_{i,t}^{Pro}$). Winsorized at the 1% and 99.9% levels.	OpenSecrets, InfluenceMap
$ClimateLobbyIntensity_{i,t}^{Anti,\,BA}$	Anti-climate lobbying intensity (based on business activities) from firms with above-median carbon intensity and below-median green innovations (compared within industry-year). Winsorized at the 1% and 99.9% levels.	OpenSecrets, MSCI, USPTO

Variables	Definitions	Sources
$ClimateLobbyIntensity_{i,t}^{Pro,\,BA}$	Pro-climate lobbying intensity (based on business activities) from firms with below-median carbon intensity and above-median green innovations (compared within industry-year). Winsorized at the 1% and 99.9% levels.	OpenSecrets, MSCI, USPTO
$CarbonEmissions_{i,t}$	Scope 1 carbon emissions (in CO_2-equivalent tonnes). Winsorized at the 1% and 99% levels.	MSCI
$CarbonIntensity_{i,t}$	Scope 1 carbon emissions (in CO_2-equivalent tonnes) divided by revenues (in \$ million). Winsorized at the 2.5% and 97.5% levels.	MSCI
$CarbonEmission_{i,t}^{Scope12}$	Total carbon emissions (in CO_2-equivalent tonnes) from Scopes 1 and 2. Winsorized at the 1% and 99% levels.	MSCI
$CarbonIntensity_{i,t}^{Scope12}$	Total carbon emissions (in CO_2-equivalent tonnes) from Scope 1 and 2 divided by revenues (in \$ million). Winsorized at the 2.5% and 97.5% levels.	MSCI
$Coal/Asset_{i,t}$	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
$GreenPatents_{i,t}$	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 (2026)
$\mathbb{1}(Rep_{i,t})$	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
$Log(Assets)_{i,t}$	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

Variables	Definitions	Sources
$Momentum_{i,t}$	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 (dollar) trading volume on that day, following the method of Amihud (2002). Winsorized at the 1% and 99% levels.	CRSP
$ESG_{i,t}$	ESG Scores. Winsorized at the 1% and 99% levels.	MSCI
$Environment_{i,t}$	Environment pillar scores. Winsorized at the 1% and 99% levels.	MSCI
$ExcessReturn_{i,m,t}$	Monthly excess return (delisting-adjusted raw returns minus the risk-free rate) during each month m. Winsorized at the 1% and 99% levels.	CRSP
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
$\Delta IO_{i,t}^{Universal}$	Change in ownership from the end of year t-1 to the end of year t by universal investors, which are defined as institutions in the top 1% by number of firms they own in a year, following Ilhan et al. (2023). Winsorized at the 1% and 99% levels.	S34
$\Delta IO_{i,t}^{PRI}$	Change in ownership from the end of year t-1 to the end of year t by PRI signatories. Winsorized at the 1% and 99% levels.	S34, PRI
$Beta_{i,t}^{Anti}$	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
$EAR_{i,q,t}$	The three-day abnormal earnings announcement returns, measured over the (-1, +1) window and estimated using a market model over days (-300, -46), in quarter q of year t. Winsorized at the 1% and 99% levels.	CRSP
$ICC_{i,m,t}^{GLS}$	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)

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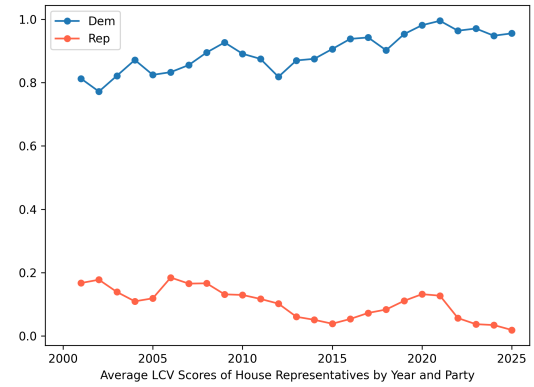
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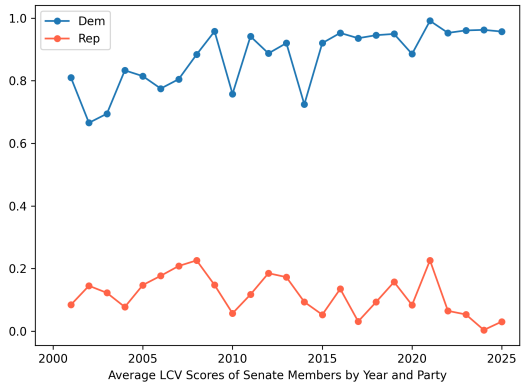
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Figure 1: **Evidence Supporting Climate Stance Assignment**

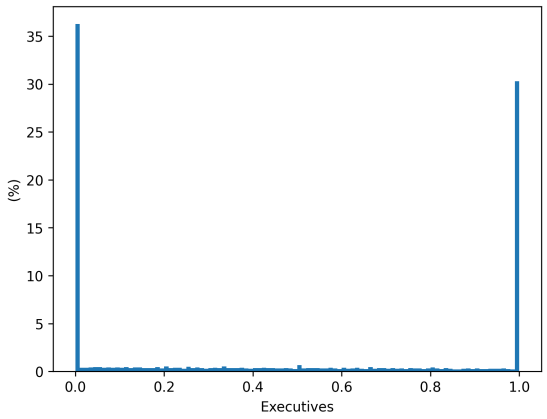
This figure provides evidence consistent with the assumptions underlying our climate stance assignment. Panels A and B present the average National Environmental League of Conservation Voters (LCV) scores of Congress members from different political parties over time. Panel A illustrates LCV scores for 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. Panels C and D illustrate 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 C presents contributions by corporate executives (based on their contributions over the past three years). Panel D displays results for lobbyists (based on their total historical contributions).



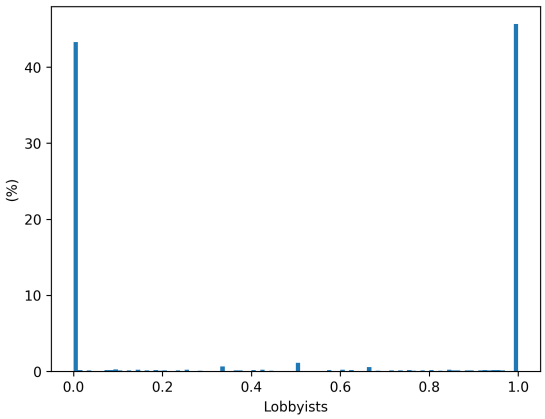
(a)



(b)



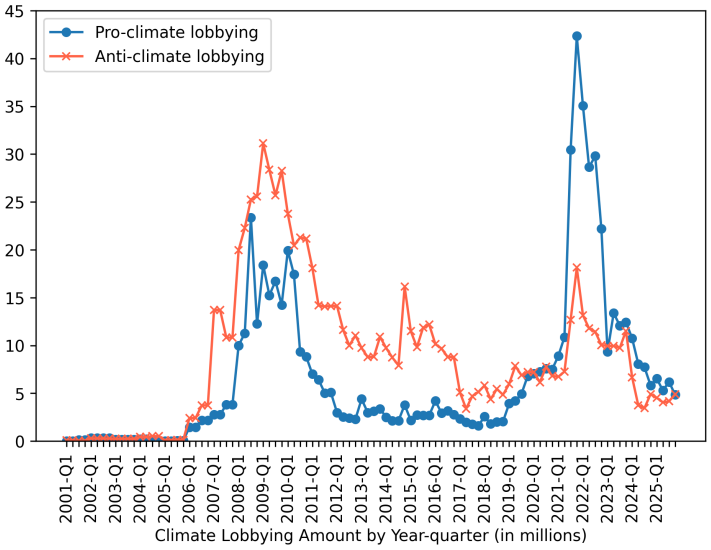
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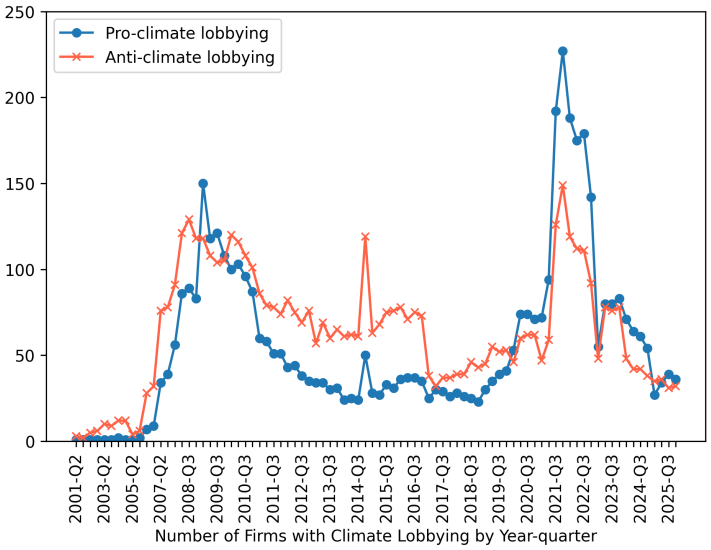
(d)

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 number of distinct firms engaged in anti- or pro-climate lobbying by quarter.



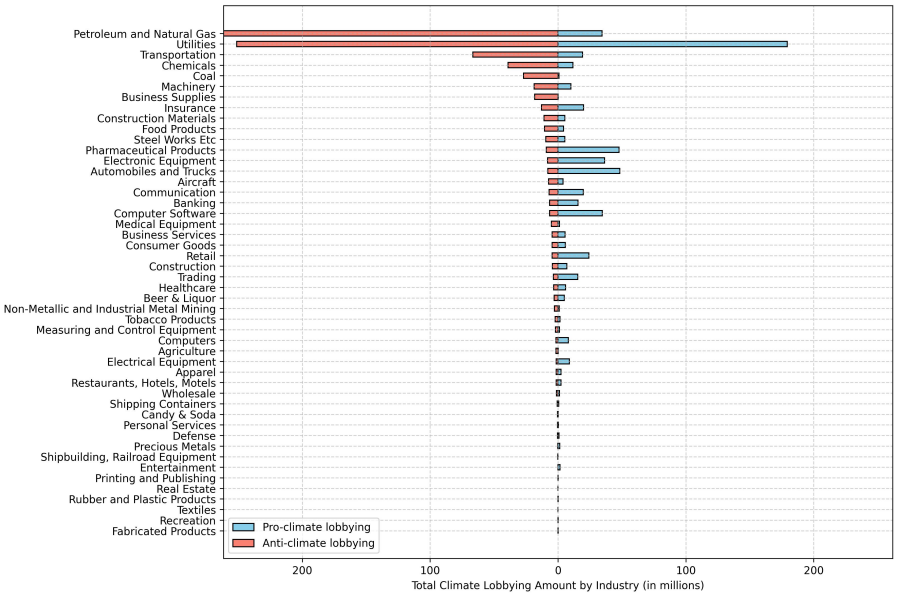
(a)



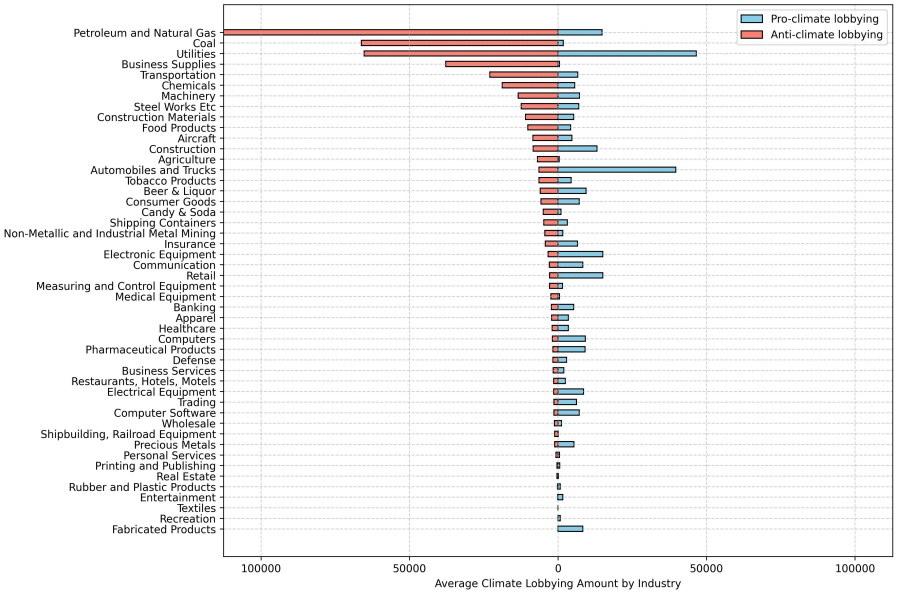
(b)

Figure 3: **Industry Distribution of Corporate Climate Lobbying**

This figure shows the distribution of spending on climate lobbying across sectors (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 averages by industry (across the sample period). Both panels are sorted by the amount of anti-climate lobbying.



(a)



(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 2025. 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
$ClimateLobby_{i,t}$	84,877	503,909	0	0	374,738	16,804
$ClimateLobby_{i,t}^{Anti}$	49,060	395,222	0	0	140,000	16,804
$ClimateLobby_{i,t}^{Pro}$	35,817	317,264	0	0	106,667	16,804
$ClimateLobby_{i,t}^{Anti-Pro}$	13,243	509,696	-100,000	0	134,909	16,804
$ClimateLobby_{i,t}^{Anti,\,Text}$	35,390	337,375	0	0	63,636	16,804
$ClimateLobby_{i,t}^{Pro,\,Text}$	20,974	255,102	0	0	23,333	16,804
$ClimateLobby_{i,t}^{Anti,\,Combo}$	55,295	407,109	0	0	188,190	16,804
$ClimateLobby_{i,t}^{Pro,\,Combo}$	37,326	319,627	0	0	117,413	16,804
$ClimateLobbyIntensity_{i,t}^{Anti}$	5.92	176.07	0	0	8.00	16,804
$ClimateLobbyIntensity_{i,t}^{Pro}$	4.15	51.28	0	0	5.26	16,804
$Lobby_{i,t}^{Rep}$	511,880	1,663,077	0	45,000	2,480,000	16,804
$Lobby_{i,t}^{Dem}$	462,067	1,612,655	0	0	2,340,000	16,804
$CarbonEmission_{i,t}$	4,645,218	15,105,990	517	102,200	27,900,000	6,301
$CarbonIntensity_{i,t}$	250.81	718.47	0.14	8.49	1,638.88	6,208
$GreenPatents_{i,t}$	9.4%	20.1%	0	0.7%	50.0%	7,812
$GreenInnovation_{i,t}$	0.1%	0.3%	0	0	0.4%	10,070
$Coal/Asset_{i,t}$	208.09	796.92	0	0	1,346.78	1,040
$NaturalGas/Assets_{i,t}$	146.25	407.68	0	1.28	882.92	1,040
$Oil/Assets_{i,t}$	27.03	178.26	0	0	10.47	1,040
$Nuclear/Assets_{i,t}$	36.88	205.45	0	0	0	1,040
$Renewable/Assets_{i,t}$	85.37	297.34	0	0	642.56	1,040
Panel B: Climate Lobbying Sample						
Variable	Mean	SD	5%	50%	95%	N
$ClimateLobby_{i,t}$	462,025	1,099,220	15,000	142,167	1,958,000	3,087
$ClimateLobby_{i,t}^{Anti}$	267,056	890,091	0	25,000	1,279,500	3,087
$ClimateLobby_{i,t}^{Pro}$	194,969	719,045	0	0	915,000	3,087
$ClimateLobby_{i,t}^{Anti-Pro}$	72,086	1,187,557	-913,333	20,000	1,279,500	3,087
$ClimateLobby_{i,t}^{Anti,\,Text}$	192,646	767,753	0	0	976,083	3,087
$ClimateLobby_{i,t}^{Pro,\,Text}$	114,173	586,254	0	0	567,185	3,087
$ClimateLobby_{i,t}^{Anti,\,Combo}$	287,907	913,114	0	40,000	1,345,051	3,087
$ClimateLobby_{i,t}^{Pro,\,Combo}$	200,348	722,993	0	10,053	924,361	3,087
$ClimateLobbyIntensity_{i,t}^{Anti}$	32.24	409.82	0	0.70	69.16	3,087
$ClimateLobbyIntensity_{i,t}^{Pro}$	22.61	117.89	0	0	76.53	3,087
$Lobby_{i,t}^{Rep}$	1,205,397	2,813,723	0	150,000	6,279,767	3,087
$Lobby_{i,t}^{Dem}$	1,098,598	2,872,950	0	60,000	5,625,000	3,087

Table 2: **Validation of Climate Lobbying Stance**

This table presents logit regressions at the firm-year level relating corporate climate lobbying to internal and external benchmarks that reveal firms' climate policy positions. We use the following dependent variables: $ClimateIssue^{Anti}$ ($ClimateIssue^{Pro}$) equals one if the firm-year contains at least one lobbying report whose issue description is classified as anti-climate (pro-climate) and no report is classified as pro-climate (anti-climate) by an LLM (both variables equal zero when the issue descriptions lack sufficient detail and are classified as unclear). CDP^{Anti} (CDP^{Pro}) equals one if the firm's CDP climate policy engagement disclosure indicates an anti-climate (pro-climate) stance. IM^{Anti} (IM^{Pro}) equals one if a firm's InfluenceMap letter grade is between D and F (between A and C). 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 $Log(Asset)$, 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 that undertake lobbying. The sample period is from 2001 to 2025 for Panels A and C and from 2013 to 2024 for Panel B (due to CDP 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: Internal Validation – Climate Issue Descriptions		
	$ClimateIssue^{Anti}_{i,t}$	$ClimateIssue^{Pro}_{i,t}$
	(1)	(2)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.33***	0.41
	(4.69)	(1.24)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.17	0.41***
	(-0.45)	(3.33)
Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
N	7,641	13,577
R^2	0.32	0.25
Panel B: External Validation – CDP Disclosures		
	$CDP^{Anti}_{i,t}$	$CDP^{Pro}_{i,t}$
	(1)	(2)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.31**	0.02
	(2.41)	(0.14)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.02	0.31***
	(-0.07)	(3.85)
Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
N	1,690	2,500
R^2	0.19	0.12
Panel C: External Validation – InfluenceMap Scores		
	$IM^{Anti}_{i,t}$	$IM^{Pro}_{i,t}$
	(1)	(2)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.56***	-0.60***
	(3.02)	(-5.06)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.20**	0.12**
	(-2.30)	(2.30)
Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
N	2,006	2,083
R^2	0.26	0.26

Table 3: **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. 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 2008 to 2024 (due to emission data availability), and in Panel B, the sample period is from 2001 to 2024. 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				
	$ClimateLobbyIntensity^{Anti}_{i,t}$		$ClimateLobbyIntensity^{Pro}_{i,t}$	
	(1)	(2)	(3)	(4)
$\text{Log}(CarbonEmissions_{i,t})$	0.66**		0.66	
	(2.48)		(1.08)	
$CarbonIntensity_{i,t}$		1.18***		-0.07
		(3.67)		(-0.09)
Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	6,032	5,941	6,032	5,941
R^2	0.05	0.04	0.05	0.06
Panel B: Green Innovation				
	$ClimateLobbyIntensity^{Anti}_{i,t}$		$ClimateLobbyIntensity^{Pro}_{i,t}$	
	(1)	(2)	(3)	(4)
$GreenPatents_{i,t}$	3.32		4.53**	
	(1.41)		(2.14)	
$GreenInnovation_{i,t}$		4.11		7.01***
		(1.16)		(4.11)
Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	7,554	9,691	7,554	9,691
R^2	0.01	0.02	0.04	0.05

Table 4: **Climate Lobbying and Electricity Generation Sources**

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. We use the following independent variables of interest: $Coal/Assets$ is electricity net generation from coal divided by total assets. $NaturalGas/Assets$, $Oil/Assets$, $Nuclear/Assets$, and $Renewable/Assets$ 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 2024. 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.

	$ClimateLobbyIntensity^{Anti}_{i,t}$	$ClimateLobbyIntensity^{Pro}_{i,t}$
	(1)	(2)
$Coal/Assets_{i,t}$	0.37**	-1.71**
	(2.46)	(-2.28)
$NaturalGas/Assets_{i,t}$	1.02**	-3.52
	(2.54)	(-1.54)
$Oil/Assets_{i,t}$	-0.32	-2.78**
	(-1.71)	(-2.53)
$Nuclear/Assets_{i,t}$	0.23	3.41*
	(0.35)	(1.83)
$Renewable/Assets_{i,t}$	0.64	-0.06
	(0.68)	(-0.02)
Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
N	1,001	1,001
R^2	0.07	0.27

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

This table presents weighted least squares regressions 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. The sample consists of U.S.-listed firms that undertake lobbying. In Columns 1–2, the sample period covers returns from January 2002 to December 2009, and in Columns 3–4, from January 2010 to December 2025. 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		2010-2025	
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity^{Anti}_{i,t}$	-0.30	-0.29	0.37***	0.37**
	(-0.65)	(-0.48)	(4.49)	(2.63)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.25*	-0.43	-0.41	-0.33
	(-2.16)	(-1.60)	(-1.51)	(-1.39)
$LobbyIntensity^{Rep}_{i,t}$		-0.03		0.01
		(-1.50)		(0.26)
$LobbyIntensity^{Dem}_{i,t}$		0.09		0.00
		(1.24)		(0.01)
$Log(MarketCap)_{i,t}$		-0.26***		0.07
		(-3.80)		(0.97)
$Log(B/M)_{i,t}$		0.17		-0.00
		(0.83)		(-0.02)
$ROA_{i,t}$		1.01		-0.44
		(0.48)		(-0.29)
$Capex/Assets_{i,t}$		-7.01		-0.20
		(-1.62)		(-0.03)
$Leverage_{i,t}$		0.05		0.42
		(0.11)		(0.61)
$Tangibility_{i,t}$		1.27*		-0.11
		(2.01)		(-0.20)
$Sales\,Growth_{i,t}$		-0.16		0.11
		(-0.47)		(0.20)
Year-Month Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	50,462	45,420	124,853	112,764
R^2	0.25	0.25	0.27	0.27

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

This table presents weighted least squares regressions 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 1–4 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. Column 5 examines the combined effect of direct and indirect lobbying through trade associations. Columns 6–9 account for the effects of pure political affiliations. 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. The sample period covers returns from January 2010 to December 2025. 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	Political Affiliations			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.69***	0.61**				0.37**	0.38**		0.39***
	(3.25)	(2.15)				(2.73)	(2.68)		(2.95)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.31	-0.40				-0.45*	-0.33		-0.37
	(-0.69)	(-0.91)				(-1.76)	(-1.38)		(-1.33)
$ClimateLobbyIntensity^{Anti,\,Combo}_{i,t}$					0.36**				
					(2.26)				
$ClimateLobbyIntensity^{Pro,\,Combo}_{i,t}$					-0.34				
					(-1.43)				
$ClimateLobbyIntensity^{Anti,\,Res1}_{i,t}$			0.71***						
			(3.24)						
$ClimateLobbyIntensity^{Pro,\,Res1}_{i,t}$			-0.34						
			(-0.78)						
$ClimateLobbyIntensity^{Anti,\,Res2}_{i,t}$				0.63**					
				(2.19)					
$ClimateLobbyIntensity^{Pro,\,Res2}_{i,t}$				-0.42					
				(-0.93)					
$LobbyIntensity^{Rep,\,NonClimate}_{i,t}$								0.02	
								(0.61)	
$LobbyIntensity^{Dem,\,NonClimate}_{i,t}$								-0.01	
								(-0.22)	
$Log(CarbonEmission_{i,t})$	-0.14								
	(-1.63)								
$CarbonIntensity_{i,t}$		0.05							
		(1.33)							
$\mathbb{1}(Rep_{i,t})$						0.06			
						(0.57)			
$\mathbb{1}(Dem_{i,t})$						0.31			
						(1.47)			
$ContributionIntensity^{Rep}_{i,t}$							0.02		
							(1.62)		
$ContributionIntensity^{Dem}_{i,t}$							-0.01		
							(-0.47)		
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	No	No	No	No	No	Yes
N	64,002	63,007	64,002	63,007	112,764	112,764	112,764	112,764	91,194
R^2	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.27	0.29

Table 7: **Climate Lobbying Report Filings and Stock Price Reactions**

This table presents regressions at the firm-date level relating cumulative abnormal returns around the release dates of lobbying reports to corporate climate lobbying. 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: $ClimateLobbyIntensity^{Anti}$ ($ClimateLobbyIntensity^{Pro}$) measures the firm's anti-climate (pro-climate) lobbying expenses from lobbying reports posted on a given date, divided by total assets. $ClimateLobbyIntensity^{Anti,\,Exp}$ ($ClimateLobbyIntensity^{Pro,\,Exp}$) is calculated as the average anti-climate (pro-climate) lobbying intensity disclosed in the previous quarter. $ClimateLobbyIntensity^{Anti,\,Unexp}$ ($ClimateLobbyIntensity^{Pro,\,Unexp}$) is the difference between the anti-climate (pro-climate) lobbying intensity disclosed on date t and the expected component. The sample consists of U.S.-listed firms that undertake lobbying in Columns 1–4 and climate lobbying in Columns 5–8. We multiply the coefficients on the lobbying variables by 100. The sample period is from 2010 to 2025. t-statistics, reported in parentheses, are based on standard errors double clustered by firm and date. *** p<0.01, ** p<0.05, * p<0.1. Variables are defined in the Data Appendix.

	CAR[0,1]	CAR[0,2]	CAR[0,3]	CAR[0,3]	CAR[0,1]	CAR[0,2]	CAR[0,3]	CAR[0,3]
	All Lobby Reports				Climate Lobby Reports			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$ClimateLobbyIntensity_{i,t}^{Anti}$	-0.21	-0.66***	-0.56**		-1.06*	-1.69**	-1.69**	
	(-1.07)	(-2.84)	(-2.01)		(-1.85)	(-2.38)	(-2.12)	
$ClimateLobbyIntensity_{i,t}^{Pro}$	-0.19	-0.30*	-0.34		-0.1	-0.13	0.34	
	(-1.25)	(-1.65)	(-1.44)		(-0.33)	(-0.30)	(0.58)	
$ClimateLobbyIntensity_{i,t}^{Anti,\,Unexp}$				-0.49*				-1.44*
				(-1.92)				(-1.86)
$ClimateLobbyIntensity_{i,t}^{Anti,\,Exp}$				-0.87				-3.07*
				(-1.32)				(-1.82)
$ClimateLobbyIntensity_{i,t}^{Pro,\,Unexp}$				-0.33				0.47
				(-1.43)				(0.67)
$ClimateLobbyIntensity_{i,t}^{Pro,\,Exp}$				-0.41				-0.17
				(-1.05)				(-0.21)
$LobbyIntensity_{i,t}^{Rep}$	-0.01	-0.02	-0.02	-0.02	0.48	0.52	0.42	0.36
	(-1.18)	(-1.28)	(-1.52)	(-1.43)	(1.39)	(1.2)	(0.83)	(0.71)
$LobbyIntensity_{i,t}^{Dem}$	-0.02	0.00	0.01	0.01	0.12	0.19	-0.16	-0.19
	(-1.43)	(0.24)	(0.54)	(0.54)	(0.55)	(0.82)	(-0.60)	(-0.73)
$Log(MarketCap)_{i,t}$	0.01	-0.00	-0.01	-0.01	-0.01	-0.03	-0.10*	-0.11*
	(0.53)	(-0.07)	(-0.67)	(-0.69)	(-0.24)	(-0.66)	(-1.70)	(-1.96)
$Log(B/M)_{i,t}$	-0.01	-0.01	-0.01	-0.01	0.00	-0.07	-0.14	-0.16*
	(-0.56)	(-0.45)	(-0.27)	(-0.29)	(0.00)	(-0.79)	(-1.53)	(-1.74)
$ROA_{i,t}$	0.11	0.5	0.76**	0.76**	0.07	1.57**	0.91	0.85
	(0.43)	(1.59)	(2.24)	(2.24)	(0.08)	(2.06)	(1.08)	(1.01)
$Capex/Assets_{i,t}$	-0.51	-1.84**	-2.97***	-2.97***	-0.7	-0.8	-1.06	-0.92
	(-0.78)	(-2.26)	(-3.26)	(-3.26)	(-0.48)	(-0.36)	(-0.42)	(-0.37)
$Leverage_{i,t}$	0.02	0.09	0.1	0.10	0.25	0.15	-0.25	-0.30
	(0.17)	(0.65)	(0.62)	(0.60)	(0.57)	(0.32)	(-0.47)	(-0.57)
$Tangibility_{i,t}$	-0.06	-0.02	0.06	0.06	-0.32	-0.42	-0.37	-0.35
	(-0.48)	(-0.14)	(0.33)	(0.34)	(-0.81)	(-0.87)	(-0.63)	(-0.60)
$Sales\,Growth_{i,t}$	-0.18***	-0.26***	-0.34***	-0.34***	0.32	0.11	-0.15	-0.13
	(-2.67)	(-3.18)	(-3.62)	(-3.62)	(1.64)	(0.44)	(-0.52)	(-0.45)
Industry-Date Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	43,167	43,167	43,167	43,167	4,439	4,439	4,439	4,439
R^2	0.16	0.15	0.15	0.15	0.33	0.29	0.30	0.30

Table 8: **Climate Policy Events and Stock Price Reactions**

This table presents regressions at the firm level relating cumulative abnormal returns around two events to corporate climate lobbying. We conduct an event study for the failure of the Waxman-Markey Bill in Panel A and for the announcement of the Inflation Reduction Act in Panel B. 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

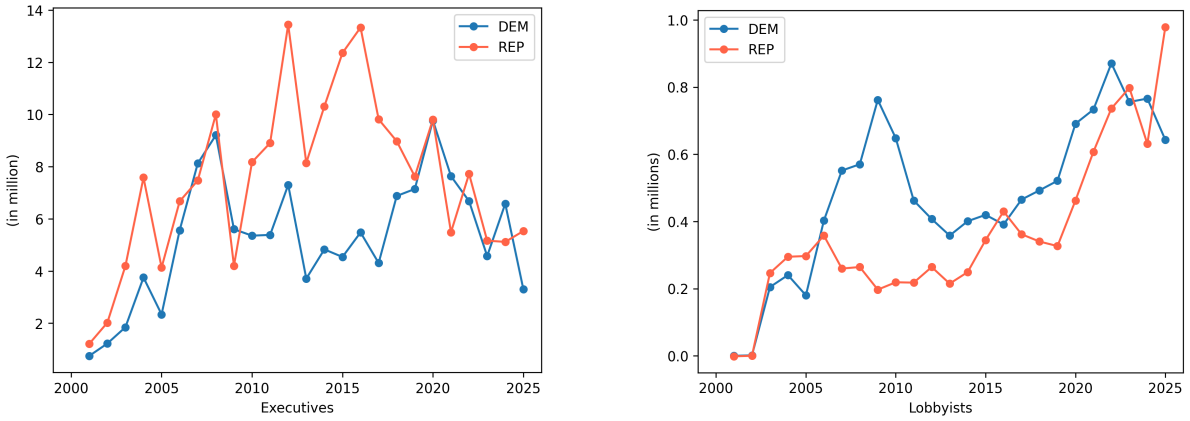
Corporate Climate Lobbying

This Internet Appendix provides additional material supporting the main text. Section A reports additional figures and tables for the empirical analysis. Section B introduces alternative climate position measures that do not rely on contribution data. Section C quantifies measurement error in the lobbying variables. Section D describes the estimation of firms' indirect climate lobbying through trade associations. Section E presents the most heavily lobbied climate bills. Section F reports robustness checks showing that the return effects are not driven by corporate political affiliations. Section G presents a simple theoretical framework explaining why firms engaged in anti-climate lobbying may earn higher expected returns.

A Additional Figures and Tables

Figure IA A1: **Contributions to Political Parties**

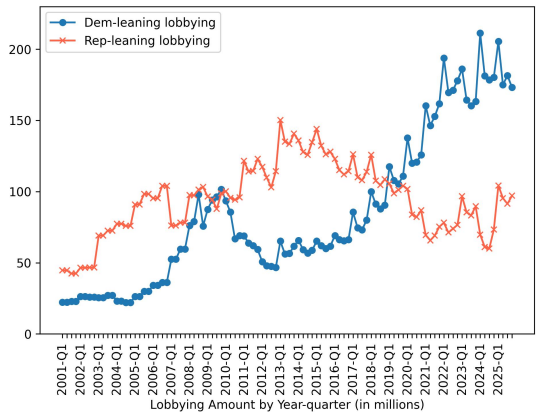
This figure depicts the time-series variation in contributions to the Republican and Democratic parties from corporate executives (Panel A) and lobbyists (Panel B).



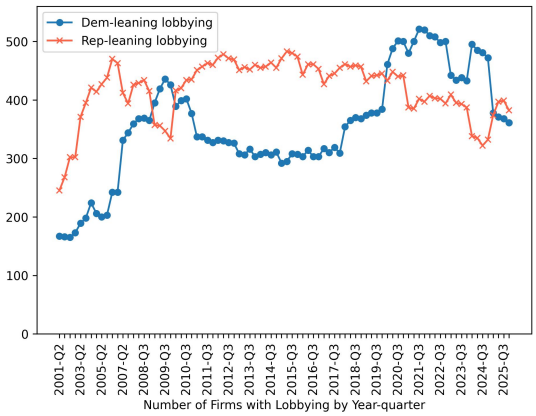
(a) (b)

Figure IA A2: **Time-Series Variation of Corporate Lobbying**

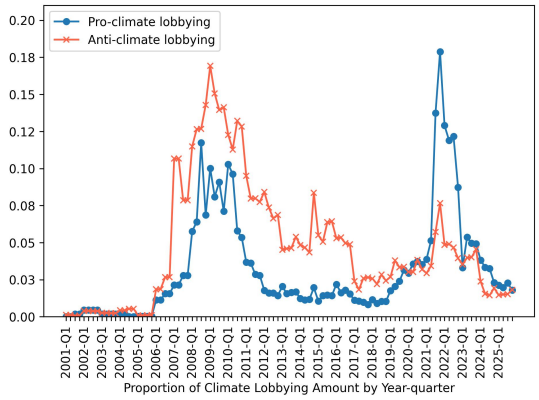
This figure illustrates spending on lobbying across firms over time. Panel A shows the quarterly aggregate lobbying amounts linked to the Republican and Democratic parties. Panel B displays the number of distinct firms with lobbying activity linked to each party per quarter. Panel C illustrates the proportion 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.



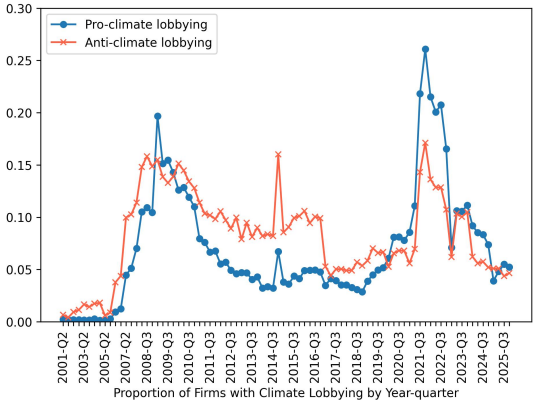
(a)



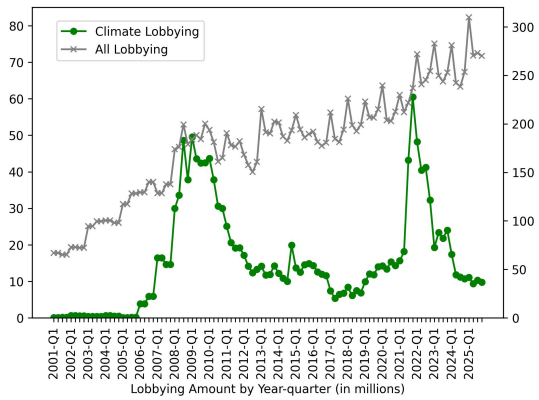
(b)



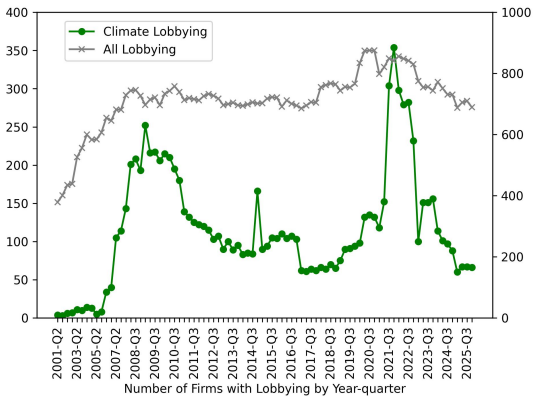
(c)



(d)



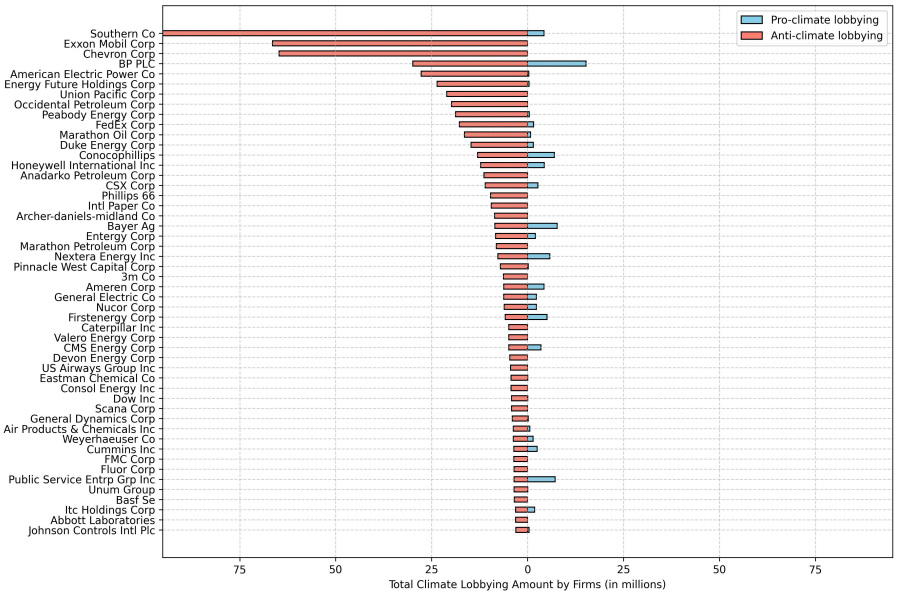
(e)



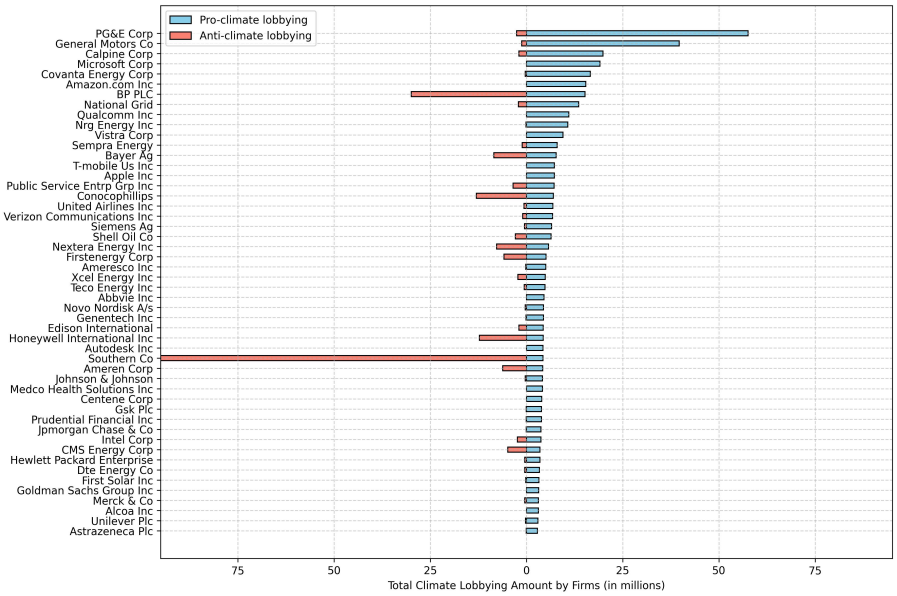
(f)

Figure IA A3: **Top-50 Firms with 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.



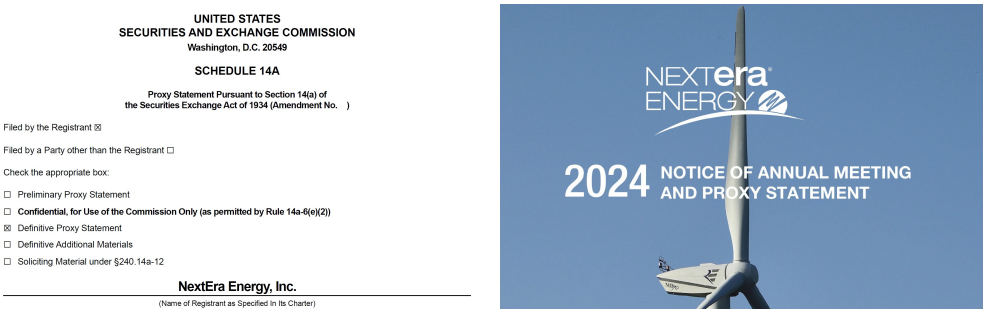
(a)



(b)

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 and the Secretary of the Senate	1,429,372				
Lobbying reports from firms in Compustat	335,663				
Lobbying reports from U.S.-listed firms	288,596				
Step 1:		*Step 2:*			
Reports related to climate lobbying	28,290	Reports assigned to a political stance	170,410		
		- Republicans		89,024	
		- Democrats		81,386	
Reports related to climate lobbying & assigned to a political stance			16,749		
- Republicans				8,710	
- Democrats				8,039	

Panel C: Comparing Lobbying Directions Inferred from Political Contributions				
	Executives		Lobbyists	
	Lobbying Sample	Climate Lobbying	Lobbying Sample	Climate Lobbying
# of lobbying reports	122,274		48,136	
Average lobbying amount	125,989		53,536	
Average # of issue	2.47		1.88	
Average # of lobbyists	3.10		2.15	
# firm-year observations	11,704	2,366	9,160	1,104
Average anti-climate lobbying amount	68,193	337,331	10,251	85,058
Average pro-climate lobbying amount	50,817	251,378	7,863	65,241

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 2024. 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	-0.28	1.00								
$ClimateLobbyIntensity_{i,t}^{Anti,\,Text}$	0.93	0.01	0.89	1.00							
$ClimateLobbyIntensity_{i,t}^{Pro,\,Text}$	0.00	0.76	-0.21	0.01	1.00						
$LobbyIntensity_{i,t}^{Rep}$	0.46	-0.01	0.45	0.41	-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	0.11	0.26	0.02	-0.00	-0.08	1.00			
$CarbonIntensity_{i,t}$	0.12	0.04	0.04	0.19	0.05	-0.01	-0.06	0.68	1.00		
$GreenPatents_{i,t}$	0.05	0.13	-0.03	0.07	0.14	0.04	0.08	0.24	0.30	1.00	
$GreenInnovation_{i,t}$	0.09	0.16	-0.05	0.12	0.18	0.05	0.06	0.13	0.24	0.43	1.00

Table IA A3: **Climate Lobbying and Climate-Conscious Institutional Ownership**

This table presents regressions at the firm-year level relating climate-conscious institutional ownership to corporate climate lobbying. We use the following dependent variables: $\Delta IO_{i,t}^{Universal}$ is the change in ownership from the end of year t-1 to the end of year t by universal investors, which are defined as institutions in the top 1% by number of firms held in a year, following Ilhan et al. (2023). $\Delta IO_{i,t}^{PRI}$ is the change in ownership by PRI signatories. We use the following independent variables of interest: $ClimateLobbyIntensity^{Anti}$ measures anti-climate lobbying expenses disclosed in year t divided by total assets. $ClimateLobbyIntensity^{Pro}$ measures pro-climate lobbying expenses disclosed in year t divided by total assets. Control variables (not reported) include $LobbyIntensity_{i,t}^{Rep}$, $LobbyIntensity_{i,t}^{Dem}$, $Log(Asset)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, $Sales\,Growth$, and lagged IO. The sample period is from 2010 to 2024. 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.

	$\Delta IO_{i,t}^{Universal}$	$\Delta IO_{i,t}^{PRI}$	$\Delta IO_{i,t}^{Universal}$	$\Delta IO_{i,t}^{PRI}$
	All Lobby Reports		Climate Lobby Reports	
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity_{i,t}^{Anti}$	-0.45	-0.44	-0.99*	-1.90**
	(-1.55)	(-1.19)	(-1.70)	(-2.40)
$ClimateLobbyIntensity_{i,t}^{Pro}$	0.18	0.08	0.49	0.16
	(1.14)	(0.57)	(1.13)	(0.41)
Controls	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes
N	6,375	6,375	1,075	1,075
R^2	0.06	0.16	0.06	0.20

Table IA A4: **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 in year $t+1$ on the basis of sorting variables measured in year t. 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). The sample consists of U.S.-listed firms that undertake lobbying. The sample period is from January 2010 to December 2024. 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.

	Low	*Moderate*	*High*	*HMM*	*HML*	$HML^{Anti\|Carbon}$	$HML^{Anti\|Rep}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Raw returns	0.77**	0.73**	0.95***	0.22*	0.18	0.26	0.21
	(2.34)	(2.44)	(3.74)	(1.68)	(1.08)	(1.29)	(1.10)
FF3 + Mom α	-0.29*	-0.23	0.03	0.26*	0.32**	0.35**	0.33*
	(-1.95)	(-1.51)	(0.18)	(1.92)	(2.18)	(2.02)	(1.87)
FF5 α	-0.40***	-0.33**	-0.00	0.32**	0.39**	0.46**	0.41**
	(-2.67)	(-2.11)	(-0.02)	(2.07)	(2.47)	(2.33)	(2.14)
HXZ-q α	-0.38***	-0.35*	-0.06	0.29**	0.32**	0.37**	0.37*
	(-2.67)	(-1.84)	(-0.35)	(2.03)	(2.23)	(2.09)	(1.93)

Table IA A5: **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 2025. 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)
$Beta_{i,t}^{Anti}$	0.33***	0.24**	0.25***
	(2.69)	(2.38)	(2.61)
$Log(MarketCap)_{i,t}$			0.02
			(0.45)
$Log(B/M)_{i,t}$			-0.09
			(-1.58)
$ROA_{i,t}$			1.63**
			(2.06)
$Capex/Assets_{i,t}$			-2.83
			(-1.20)
$Leverage_{i,t}$			-0.00
			(-0.00)
$Tangibility_{i,t}$			0.25
			(0.79)
$Sales\,Growth_{i,t}$			-0.01
			(-0.07)
Industry Fixed Effects	No	Yes	Yes
N	86,624	85,848	78,966

Table IA A6: **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. 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 (due to ICC data availability). 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***
	(6.89)	(6.07)	(5.59)	(7.60)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.10	0.01	-0.05	0.01
	(-1.22)	(0.05)	(-0.56)	(0.04)
$LobbyIntensity^{Rep}_{i,t}$	-0.01	-0.07**	-0.01	-0.11***
	(-0.97)	(-2.54)	(-0.74)	(-5.07)
$LobbyIntensity^{Dem}_{i,t}$	0.01	-0.04**	0.02	-0.04**
	(0.50)	(-2.90)	(0.76)	(-3.00)
$Log(MarketCap)_{i,t}$	-0.03***	-0.03***	-0.07***	-0.06***
	(-7.12)	(-4.09)	(-8.77)	(-5.27)
$Log(B/M)_{i,t}$	0.14***	0.14***	0.38***	0.33***
	(16.06)	(12.13)	(21.52)	(16.32)
$ROA_{i,t}$	0.51***	0.52***	0.46***	0.16
	(7.79)	(3.45)	(3.45)	(0.80)
$Capex/Assets_{i,t}$	-0.20	-0.03	-0.64**	-0.35
	(-1.46)	(-0.09)	(-2.20)	(-0.53)
$Leverage_{i,t}$	0.06*	0.03	0.16**	0.05
	(1.90)	(0.44)	(2.76)	(0.47)
$Tangibility_{i,t}$	-0.06*	-0.11*	-0.05	-0.14
	(-1.95)	(-1.82)	(-0.77)	(-1.03)
$Sale\,Growth_{i,t}$	0.02**	0.00	0.02	0.05*
	(2.24)	(0.11)	(0.81)	(1.98)
Year-Month Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	71,622	15,956	72,021	15,985
R^2	0.43	0.48	0.56	0.60

Table IA A7: **Climate Lobbying and Future Returns: Robustness Checks**

This table presents weighted least squares regressions 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. Panel A considers a series of variables that potentially predict stock returns as additional control variables. Panel B assesses the impact of industry shocks. Panel C employs alternative empirical specifications. The sample consists of U.S.-listed firms that undertake lobbying. The sample period covers returns from January 2010 to December 2025. 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.

Panel A: Additional Controls					
	$ExcessReturns_{i,m,t+1}$				
	(1)	(2)	(3)	(4)	(5)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.58***	0.56*	0.55*	0.64**	0.60**
	(3.94)	(1.82)	(1.79)	(2.24)	(2.17)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.36	-0.54	-0.55	-0.41	-0.40
	(-1.54)	(-1.42)	(-1.41)	(-0.93)	(-0.90)
$ESG_{i,t}$		0.03			
		(0.60)			
$Environment_{i,t}$			0.02		
			(0.68)		
$Log(CarbonEmission^{Scope12}_{i,t})$				0.01	
				(0.13)	
$CarbonIntensity^{Scope12}_{i,t}$					0.06
					(1.36)
$Beta_{i,t}$	0.18				
	(0.37)				
$Momentum_{i,t}$	-0.05				
	(-0.06)				
$IVol_{i,t}$	1.44				
	(0.48)				
$Liquidity_{i,t}$	-5.11***				
	(-4.03)				
Controls	Yes	Yes	Yes	Yes	Yes
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	89,184	88,863	88,839	63,019	63,019
R^2	0.32	0.27	0.27	0.28	0.28

Panel B: Impacts of Industry Shocks					
	$ExcessReturns_{i,m,t+1}$				
	SIC-2	TextInd	IndYM	w/o Oil	w/o Util
	(1)	(2)	(3)	(4)	(5)
$ClimateLobbyIntensity^{Anti}_{i,t}$	0.40***	0.57***	0.28**	0.32**	0.39**
	(2.96)	(3.19)	(2.76)	(2.32)	(2.14)
$ClimateLobbyIntensity^{Pro}_{i,t}$	-0.31	-0.36	-0.15	-0.33	-0.42
	(-1.31)	(-1.21)	(-0.65)	(-1.43)	(-1.49)
Controls	Yes	Yes	Yes	Yes	Yes
Year-Month Fixed Effects	Yes	Yes	No	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	Yes	Yes
Industry-YearMonth Fixed Effects	No	No	Yes	No	No
N	113,832	83,701	75,296	107,867	105,362
R^2	0.27	0.33	0.64	0.27	0.27

(Continued)

(Continued)

Panel C: Alternative Specifications					
	$ExcessReturns_{i,m,t+1}$				
	NetMeasure	TextMeasure	ContinuousShare	PureClimate	ExcPolicyShock
	(1)	(2)	(3)	(4)	(5)
$ClimateLobbyIntensity_{i,t}^{Anti}$			0.38*	0.27*	0.42**
			(2.03)	(1.94)	(2.71)
$ClimateLobbyIntensity_{i,t}^{Pro}$			-0.35	-0.38	-0.46*
			(-1.60)	(-0.80)	(-1.76)
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$	0.35**				
	(2.39)				
$ClimateLobbyIntensity_{i,t}^{Anti,Text}$		0.42*			
		(2.06)			
$ClimateLobbyIntensity_{i,t}^{Pro,Text}$		-0.63			
		(-1.36)			
Controls	Yes	Yes	Yes	Yes	Yes
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	112,764	112,764	117,103	110,186	109,787
R^2	0.27	0.27	0.27	0.27	0.26

Table IA A8: **Climate Lobbying and Earnings Surprises**

This table presents regressions 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. $EAR_{i,q,t}$ is the three-day abnormal earnings announcement returns over the market model during quarter q in year t. All dependent variables are multiplied by 100. The sample consists of U.S.-listed firms that undertake lobbying. The sample period is from 2010 to 2025. 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.

	$SUE1_{i,t}$	$SUE2_{i,t}$	$EAR_{i,q,t}$	$SUE1_{i,t+1}$	$SUE2_{i,t+1}$	$EAR_{i,q,t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)
$ClimateLobbyIntensity_{i,t}^{Anti}$	0.09	-0.05	-0.18*	0.06	-0.10	0.20
	(0.51)	(-0.50)	(-1.94)	(0.70)	(-0.69)	(1.38)
$ClimateLobbyIntensity_{i,t}^{Pro}$	-0.11	0.06	0.11	-0.06	-0.06	0.14
	(-1.44)	(0.35)	(1.56)	(-0.94)	(-0.51)	(1.25)
$LobbyIntensity_{i,t}^{Rep}$	-0.00	-0.00	0.02*	-0.00	-0.00	0.01
	(-1.09)	(-0.33)	(1.94)	(-1.16)	(-0.16)	(1.41)
$LobbyIntensity_{i,t}^{Dem}$	-0.01	-0.01	-0.00	-0.01	-0.02	-0.02*
	(-0.90)	(-1.73)	(-0.11)	(-1.45)	(-1.43)	(-2.05)
$Log(Asset)_{i,t}$	0.02	0.06**	-0.05	0.05	0.05	-0.02
	(0.99)	(2.25)	(-1.13)	(1.70)	(1.54)	(-0.50)
$ROA_{i,t}$	3.47***	6.75***	3.87***	0.68*	2.81***	0.79*
	(10.11)	(13.13)	(7.53)	(1.79)	(4.09)	(1.76)
$Capex/Assets_{i,t}$	-3.82**	-3.58*	-4.41**	-1.72	-7.96***	-4.11**
	(-2.20)	(-2.06)	(-2.84)	(-1.02)	(-4.14)	(-2.42)
$Leverage_{i,t}$	-0.63***	-0.69***	-0.64*	-0.09	-0.36	0.16
	(-3.83)	(-3.94)	(-2.09)	(-0.45)	(-1.60)	(0.63)
$Tangibility_{i,t}$	0.07	-0.54*	-0.42	-0.02	0.26	-0.38
	(0.20)	(-1.80)	(-1.63)	(-0.05)	(0.74)	(-1.20)
$Sales\,Growth_{i,t}$	0.61**	1.29***	0.39	-0.02	0.57***	0.04
	(2.35)	(3.30)	(1.14)	(-0.17)	(3.83)	(0.41)
Year Fixed Effects	Yes	Yes	No	Yes	Yes	No
Year-Quarter Fixed Effects	No	No	Yes	No	No	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	8,763	8,075	39,650	6,838	6,353	37,494
R^2	0.07	0.14	0.01	0.03	0.08	0.01

B Alternative Measures for Climate Lobbying Stance

Our baseline measure assigns firms' climate lobbying stance based on campaign contributions by executives and lobbyists. We evaluate this approach in two ways. First, we validate the stance assignment by showing that our measure can strongly predict internal and external benchmark indicators of firms' climate positions in the expected directions. Second, we quantify the potential measurement error using alternative climate lobbying intensity measures that assign stance without relying on contribution data and find that the error is limited. This section describes the construction of validation benchmarks as well as the instruments used in measurement error tests.

B.1 Construction of Validation Benchmarks

The internal validation benchmark is based on a gold-standard subsample of climate lobbying reports whose issue descriptions reveal a clear climate policy position. We use GPT-4o-mini to classify each climate-related issue description as anti-climate, pro-climate, or unclear, depending on whether the lobbying activity appears to weaken or strengthen climate regulation (the classification prompt is reported below). We classify a report as anti-climate if it contains at least one anti-climate issue and no pro-climate issues, and as pro-climate if it contains only pro-climate issues and no anti-climate issues. This procedure classifies 4% of climate lobbying reports as anti-climate, 20% as pro-climate, and the remaining 76% as unclear. We then aggregate the classifications to the firm-year level and define $ClimateIssue^{Anti}$ ($ClimateIssue^{Pro}$) as an indicator equal to one if the firm-year has at least one anti-climate (pro-climate) lobbying report and no pro-climate (anti-climate) lobbying reports.

The two external validation benchmarks are based on CDP and InfluenceMap. CDP is a non-profit organization that collects corporate environmental disclosures. Its survey asks firms (in question 2.3a before 2017 and question 12.3a afterward) whether they engage with policymakers, the relevant policy area, their position on the legislation (e.g., support, support with major exceptions, or oppose), and details of the engagement. We use GPT-4o-mini to classify reported policy engagement entries as anti-climate, pro-climate, or unclear (the classification prompt is reported below). Because firms answer this question separately by policy area (e.g., energy efficiency or mandatory reporting), a firm-year response may contain multiple entries if the firm engages in more than one

policy domain. We define CDP^{Anti} (CDP^{Pro}) as an indicator equal to one if the firm-year contains at least one anti-climate (pro-climate) entry and no pro-climate (anti-climate) entries; the remaining firm-years are classified as unclear. This procedure leads to 112 anti-climate, 1,073 pro-climate, and 715 unclear firm-years.

InfluenceMap provides an alternative measure by scoring climate policy engagement using public information, such as regulatory comments and media reports, for 524 companies worldwide. We match these firms to Compustat/CRSP and obtain 274 U.S.-listed firms with scores ranging from A to F. We construct IM^{Anti} as an indicator equal to one for firms with scores below the median grade (i.e., D, D-, E+, E, E-, F+, F), and IM^{Anti} as a indicator equal to one for firms with scores above the median grade (i.e., A, A-, B+, B, B-, C+, C).[1] We exclude firms in the median score categories (i.e., C- and D+), which provide less clear information about whether firms are more likely to engage in anti- or pro-climate lobbying. In our sample, 132 firms are classified as anti-climate and 165 as pro-climate.

```
*** GPT prompt for classifying climate stance from lobbying issue descriptions
***

You are classifying the climate policy stance of a lobbying issue description.

Labels:
- anti-climate
- pro-climate
- unclear

Decision rule:
- Choose anti-climate if the issue tends to weaken, delay, roll back, or counter
climate mitigation policy, or expand high-emissions activity in a way that
likely hinders climate mitigation.
- Choose pro-climate if the issue supports or strengthens climate mitigation
policy.
- Choose unclear if the text is vague, non-climate, mixed, or does not reveal
the climate implication.
```

[1]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.

```
Important:
- "Support" or "oppose" alone is not enough.  Determine whether the underlying
policy is anti- or pro-climate.
- Use only the text provided.
- If multiple issues are listed together and point in different directions,
choose unclear unless one climate direction clearly dominates.

Output MUST be valid JSON with exactly these keys:
{{ "label":  "anti-climate|pro-climate|unclear",
"rationale":  "<=30 words citing the key phrases that drove your decision>" }}

Issue description:  {specificIssue}
Return JSON only.  No extra text.


*** GPT prompt for classifying climate stance from CDP responses ***

You are labeling corporate climate policy engagement entries from the CDP C12.3a
questionnaire for academic research.

Input fields:
- PolicyFocus
- PolicyPosition
- EngagementDetails
- LegislativeSolution

Goal:
Classify THIS ENTRY as anti-climate, pro-climate, or unclear based on the
overall substance across ALL fields.

Rules:
1) Be conservative.  If the entry is generic (e.g., "climate policy",
"environmental regulation", "energy") and does not clearly indicate whether
the firm is strengthening or weakening climate policy, output "unclear."
2) Do NOT treat "Support" as automatically pro-climate.  Entries may say
"support" while proposing weakening details.  Use EngagementDetails and
LegislativeSolution to decide.
3) Label "anti-climate" if the text indicates any of:
- seek delays, phase-ins, extensions, or postponed compliance
- obtain exemptions, carve-outs, or reduced coverage
- weaken monitoring, reporting, verification, or transparency
```

```
- weaken enforcement or penalties
- reduce policy scope (e.g., excluding scope 3)
- expand offsets or crediting in ways that reduce stringency
- roll back climate standards or limit regulator authority
- preempt stronger subnational rules
- shift binding rules to voluntary approaches
4) Label "pro-climate" only if the text clearly supports strengthening climate
policy (e.g., carbon pricing with integrity, stronger emissions standards,
methane rules, clean power standards, mandatory disclosure) AND does not include
weakening elements.
5) If both anti- and pro-signals appear, choose "unclear" (or "anti-climate"
only if weakening elements are explicit and substantive).

Output MUST be valid JSON with exactly these keys:
{{ "entry-stance": "anti-climate|pro-climate|unclear",
"rationale": "<=50 words citing the key phrases that drove your decision>" }}

Now code this entry:
PolicyFocus: {PolicyFocus}
PolicyPosition: {PolicyPosition}
EngagementDetails: {EngagementDetails}
LegislativeSolution: {LegislativeSolution}
Return JSON only. No extra text.
```

B.2 Construction of Alternative Climate Lobbying Measures

We construct two alternative climate lobbying intensity measures as instruments for measurement error tests. These measures differ from the validation benchmarks, which are indicators used to ask whether the stance assignment correctly identifies firms' climate positions; the measurement error tests instead ask how much noise is contained in the continuous variable $ClimateLobbyIntensity^X$ and thus require alternative continuous proxies for the same latent lobbying intensity measure.

Both instruments first compute lobbying intensity following the baseline approach and then assign the climate stance using methods that do not rely on contribution data. The first measure assigns stance using InfluenceMap-based indicators constructed above. We use InfluenceMap rather than the other validation benchmarks because it provides more balanced coverage across anti- and pro-climate firms and, as an externally assessed score, is less susceptible to firms' voluntary disclosure incentives and potential greenwashing.

The second measure infers climate stance from firms' business activities. Within each industry-year, we classify reports from firms with above-median carbon intensity and below-median green patent share as anti-climate, and those with below-median carbon intensity and above-median green patent share as pro-climate. Climate lobbying reports that cannot be assigned to a stance are excluded. This approach, as inspired by Section 4.2, is grounded in the rationale that high-emitting firms reliant on carbon-intensive business models face incentives to resist decarbonization policies, while those actively pursuing green innovation are more likely to support progressive climate regulations as they may benefit from the net-zero transition. This measure requires both emission and green patent data, hence decreasing the sample size.

C Quantifying Measurement Error in Climate Lobbying

This section quantifies the measurement error introduced when we use campaign contributions by executives or lobbyists to infer the direction of corporate climate lobbying. As shown in Section 3.3, our approach correlates with external benchmarks of corporate climate policy positions. Yet, it may not perfectly assign a stance for every firm and lead to large measurement error. We quantify such measurement error following the approach of Hassan et al. (2019) and Sautner et al. (2023). We therefore assume that "true" (unobserved) climate lobbying follows a first-order autoregressive process and that $ClimateLobbyIntensity^{X}_{i,t}$ ($X \in \{Anti, Pro\}$) captures this latent exposure with classical (*i.i.d.*) measurement error. Under this structure, an OLS regression on the lagged measured variable suffers from attenuation bias, whereas an IV that is correlated with the true variable but not with the measurement noise can recover the true autoregressive coefficient. Comparing OLS and IV coefficients then provides an estimate of the measurement error (noise-to-signal ratio).

To obtain such an IV, we construct two alternative climate lobbying intensity proxies that do not rely on campaign contributions (see Internet Appendix B for details). The first proxy leverages InfluenceMap's climate policy engagement scores. We construct climate lobbying intensity as in our baseline measure but assign the stance using the InfluenceMap-based indicator. The second proxy infers the climate stance from firms' real activities, which captures whether they appear more naturally exposed to, or aligned with, the climate transition. Within each industry-year, we classify firms as anti-climate lobbyists if they have an above-median carbon intensity and below-median green patent share (pro-climate are those with a below-median carbon intensity and above-median green innovation) and then compute the lobbying intensity for the assigned stance. Although both proxies have limitations, their classification errors are plausibly sufficiently independent of those in our baseline measure. The IV approach does not require the alternative proxies to have lower measurement error and, indeed, it is likely to be higher.

Table IA C1, Columns 1 and 3, estimate the autocorrelation in anti- and pro-climate lobbying. In Columns 2 and 4, we instrument the lagged measures with the alternative proxies. The IV estimates are larger than the OLS, consistent with attenuation from measurement noise in the contribution-based stance assignment. We then use the gap between the OLS and IV estimates to calculate the implied noise ratio, which quantifies

the fraction of persistent variation in our measure that is not shared with the alternative proxies. Using this approach, we estimate that the implied measurement error accounts for 3.3% (24.4%) of the variation in anti-climate (pro-climate) lobbying; the estimates are similar with industry and year fixed effects in Panel B. This cross-source agreement provides quantitative evidence against the concern that our measure is dominated by misclassification. The calculated measurement error share is also broadly comparable to those documented in other studies employing firm-level variables derived from accounting data (Bloom et al., 2018; Hassan et al., 2019). These estimates suggest that our measures retain substantial signal rather than reflecting noise alone.

Table IA C1: **Quantifying Measurement Error**

This table shows AR(1) regressions of corporate climate lobbying to gauge the extent of measurement error. Regressions are estimated at the firm-year level. Following Hassan et al. (2019) and Sautner et al. (2023), all climate lobbying measures in this table are standardized by subtracting the sample mean and dividing by the sample standard deviation. *Implied Share Measurement Error* is calculated as 1-$\hat{\beta}_{OLS}/\hat{\beta}_{IV}$, where $\hat{\beta}_{OLS}$ is the estimated coefficient in $ClimateLobbyIntensity^{X}_{i,t} = \alpha + \beta ClimateLobbyIntensity^{X}_{i,t-1} + \epsilon$ and $\hat{\beta}_{IV}$ is the coefficient on the instrumented $ClimateLobbyIntensity^{X}_{i,t-1}$ in the same specification. We use both $ClimateLobbyIntensity^{X,IM}_{i,t-1}$ and $ClimateLobbyIntensity^{X,BA}_{i,t-1}$ as our instruments, which measure climate lobbying intensity as in our baseline measure but assign the stance using the InfluenceMap-based and business activity-based indicators, respectively. All specifications control for the lag of $Log(Asset)$, ROA, $Capex/Assets$, $Leverage$, $Tangibility$, and $Sales\,Growth$. The sample consists of U.S.-listed firms that undertake lobbying. The sample period is from 2001 to 2025. 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: Overall Variation				
	$ClimateLobbyIntensity^{Anti}_{i,t}$		$ClimateLobbyIntensity^{Pro}_{i,t}$	
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity^{Anti}_{i,t-1}$	0.69***	0.71***		
	(9.53)	(9.81)		
$ClimateLobbyIntensity^{Pro}_{i,t-1}$			0.32***	0.43**
			(2.80)	(2.40)
Model	OLS	IV	OLS	IV
Year Fixed Effects	No	No	No	No
Industry Fixed Effects	No	No	No	No
N	4,674	4,674	4,674	4,674
Implied Share Measurement Error		3.26%		24.36%
Panel B: Firm-Level Variation				
	$ClimateLobbyIntensity^{Anti}_{i,t}$		$ClimateLobbyIntensity^{Pro}_{i,t}$	
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity^{Anti}_{i,t-1}$	0.68***	0.70***		
	(9.00)	(9.17)		
$ClimateLobbyIntensity^{Pro}_{i,t-1}$			0.29**	0.41**
			(2.53)	(2.20)
Model	OLS	IV	OLS	IV
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	4,674	4,674	4,674	4,674
Implied Share Measurement Error		3.39%		27.45%

D 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, 2025). 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.

D.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 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.[2] Additionally, we review the websites of the top five anti- and pro-climate corporate lobbyists in our sample (see Figure IA A3), 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

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

membership information in the next two steps below, this list is narrowed down to 71 trade associations. We report these organizations in Figure IA D1; 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 like the U.S. Chamber of Commerce or the Business Roundtable. Taken together, these trade associations submitted 18,260 lobbying reports from 2001Q1 to 2025Q4. Of these, 4,774 or 26.1% are climate-related, as identified by climate keywords or bills in their issue descriptions.

D.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 contributions 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 A to F. 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.[3] This step assigns stances to 1,130 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 820 reports. Third, we employ individual contribution information from trade association executives and lobbyists, further adding information for 2,119 and 705 reports, respectively. Among the 4,774 climate lobbying reports that can be assigned to a clear political stance: 3,010 reports, with total climate

[3]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.

lobbying expenditures of $662.3m, are classified as anti-climate, and 1,764 reports, with expenditures of $149.7m, as pro-climate. When we sum the anti- or pro-climate expenses for each trade association per quarter, we obtain a total of 2,832 observations.

D.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.[4] 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.[5]

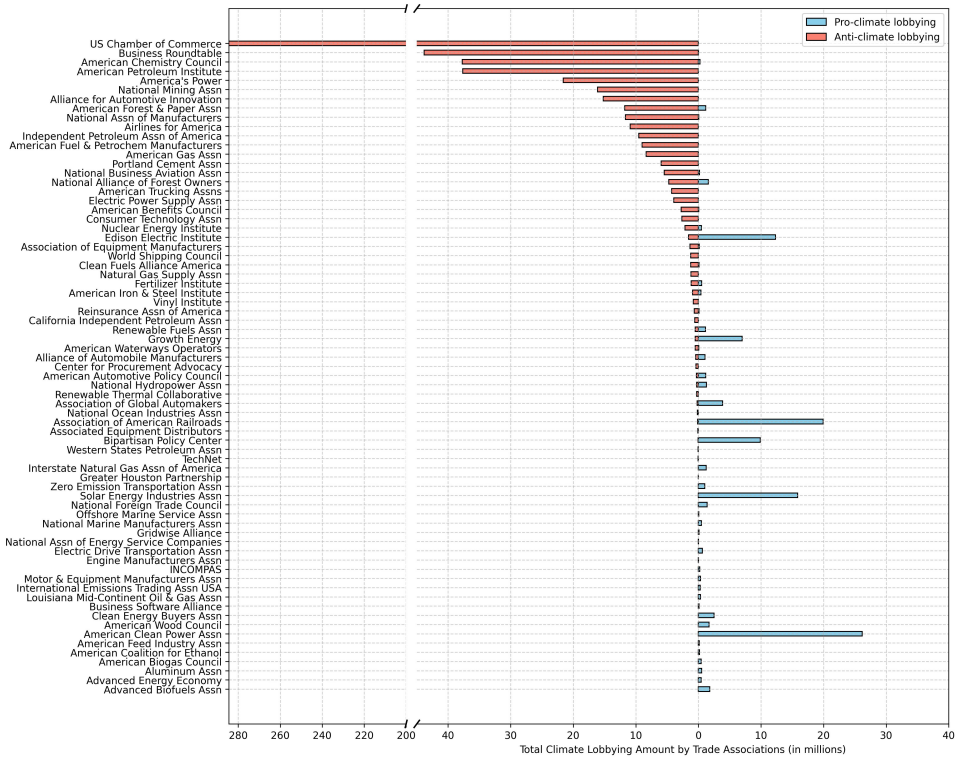
Overall, we identify 3,938 links between trade associations and members, including 2,046 links to global public firms. On average, each trade association contains 28 public firm members, with the National Association of Manufacturers having the most at 169. Each firm belongs, on average, to 1.72 associations, with Shell and BP involved in 14 each. We aggregate quarterly lobby amounts for each firm across different trade associations, resulting in 47,138 firm-quarter observations for 1,076 public firms around the world. Of the 16,804 firm-year observations in our baseline sample of U.S.-listed firms from OpenSecrets, 4,467 conduct climate lobbying through trade associations, with 1,828 engaging in both direct and indirect lobbying.

[4]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.

[5]Here we need to make two assumptions: i) each trade association's membership remains constant from 2001 to 2025, and ii) all lobbying funds for trade associations come from their public firm members, as only their financial data is available. To mitigate potential overestimation from the second assumption, we conservatively attribute only 30% of association lobbying expenditures to public firms; the results are similar without this adjustment. 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 D1: **Trade Associations with Climate Lobbying Expenses**

This figure shows the distribution of climate lobbying activities across 71 selected trade associations, ranked by the total anti-climate lobbying expenses (aggregated across sample years).

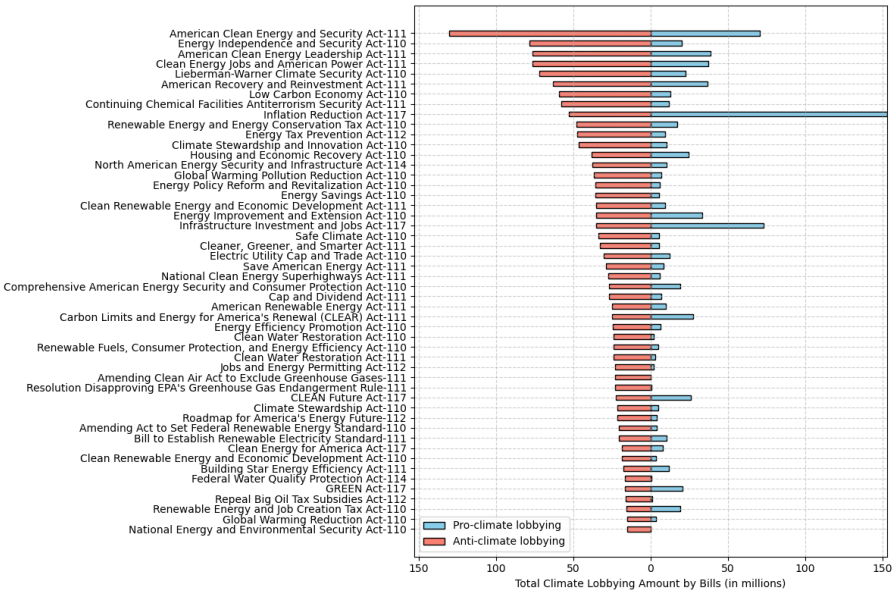


E Climate-related Bills under Lobbying Efforts

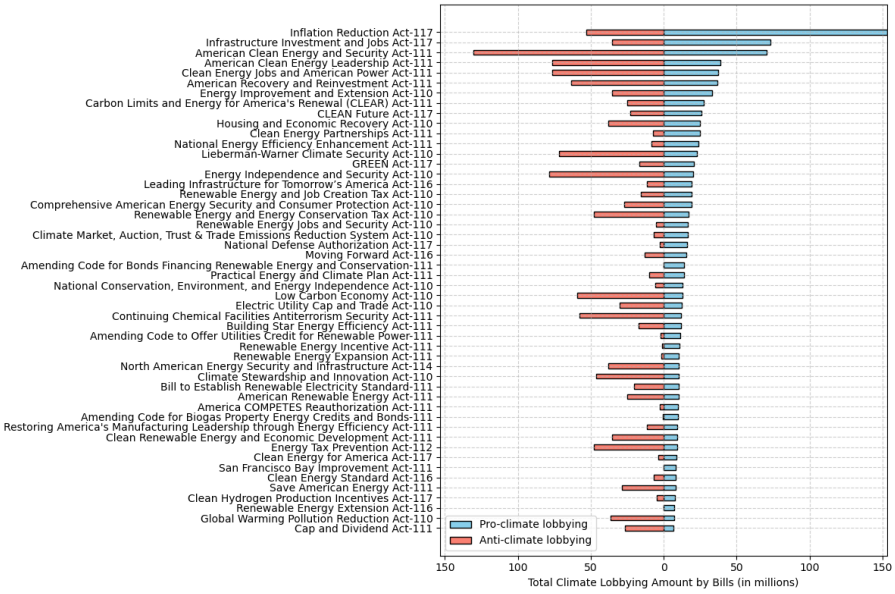
To understand the nature of climate lobbying, we present in Figure IA E1 the most heavily lobbied climate bills. We identify these bills based on the descriptions and bill codes in the lobbying reports. In the figure, we aggregate anti- and pro-lobbying amounts associated with specific bills across the sample. Panel A ranks bills based on total anti-climate lobbying expenses. The American Clean Energy and Security Act in the 111th 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 117th election cycle drew the most pronounced pro-lobbying (about \$153m), with the Infrastructure Investment and Jobs Act, also from the 117th 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 E1: **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)

F Climate Lobbying and Political Party Affiliations

A key assumption in constructing our measures is that climate lobbying by firms whose executives or lobbyists predominantly support the Republican (Democratic) Party is more likely to be anti-climate (pro-climate). 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). While our return regressions already control for general lobbying intensity by Republican-leaning firms and Table IA A4 also reports consistent results in double sorting that compare anti-climate lobbying among firms with a similar level of Republican-leaning lobbying intensity, we further report three sets of robustness checks on the return regressions and 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).[6] 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 6–7 in Table 6 show that this is not the case.

Second, we conduct placebo tests using the Republican-leaning non-climate lobbying intensity. If the return effects were driven by Republican political affiliation per se, then Republican-leaning lobbying on non-climate issues should also predict higher future returns. Column 8 of Table 6 shows that this placebo measure does not significantly predict returns.

[6] 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.

Third, we exploit information on firms' geographical locations. The idea is that firms may choose to donate to the dominant party in their headquarters states. In that case, the direction of political contribution might not reflect firms' attitudes towards climate change but local partisan alignment. To assess this, we control for state-fixed effects based on the location of headquarters in Column 9 of Table 6 and obtain consistent findings.

G Framework to Understand Climate Lobbying and Expected Returns

This appendix presents a simple conceptual framework to understand why firms that engage in anti-climate lobbying exhibit higher expected returns. We build on the equilibrium asset pricing models in Hsu et al. (2023) and Pástor and Veronesi (2012, 2013) and adapt their setting to incorporate firm-level anti-climate lobbying as an endogenous corporate response to climate policy exposure.

The basic idea is that lobbying can signal, and potentially reinforce, firms' vulnerability to climate policy risk. Firms differ in their exposure to stringent climate policy. Some of this exposure is observable to investors, such as emissions or green innovation; other exposure is harder to observe, including private information about how costly it is for the firm to transition, the extent to which current profits depend on carbon-intensive activities, and management's reluctance to adjust the business model. Anti-climate lobbying helps reveal this latent exposure because firms with more to lose from stringent climate regulation have stronger incentives to lobby to weaken climate policy. Moreover, lobbying may also amplify such exposure if firms expect lobbying to delay regulation and therefore postpone costly adjustment, leaving them less prepared when climate policy eventually tightens. Thus, anti-climate lobbying is an informative corporate choice that helps reveal otherwise imperfectly observed climate policy exposure. If climate policy risk is priced, firms with greater lobbying-implied exposure should command higher expected returns as compensation for bearing this risk. The framework, therefore, rationalizes why anti-climate lobbying predicts higher expected returns even after controlling for observable measures of transition exposure, such as emissions.

Setup. Consider an economy with a finite horizon $[0, T]$ and a continuum of firms $i \in [0, 1]$. The economy starts in a weak climate policy regime W and may shift irreversibly to a strong regime S at a random future time τ $(0 < \tau < T)$. The strong regime captures a tightening of climate policy, such as carbon pricing or emission reporting standards. Firm i is characterized by two parameters: $x_i = a_i + b_i \geq 0$ represents the firm's climate policy exposure, which contains the component a_i that is observable and b_i that is unobservable to investors; $l_i = l(x_i)$ denotes the chosen anti-climate lobbying intensity in response to firms' climate exposure. Let $d\Pi_t^i$ denote firm i's profitability over its book value at time t, which follows:

$$d\Pi_t^i = [\mu + (x_i + \nu\, l_i) g_t]dt + \sigma dZ_t + \sigma_I dZ_t^i,$$

where (μ, σ, σ_I) are constants, Z_t is a Brownian motion, and Z_t^i is an independent Brownian motion specific to firm i. $g_t \in \{g^W, g^S\}$ captures the impact of prevailing climate policy on expected profitability, with $g^S < 0 < g^W$ so that a transition from a weak to a strong policy reduces average profitability due to the transition costs. Firms with greater climate policy exposure benefit more from the continuation of weak climate policy but suffer larger profitability losses when climate policy tightens. The term $\nu\, l_i$ captures the component of climate policy exposure associated with anti-climate lobbying. This lobbying-linked greater sensitivity can arise because lobbying reveals latent vulnerability not fully captured by observable firm characteristics, such as resistance to transition, or because it reinforces vulnerability due to delayed adjustments. In both cases, a firm that engages more in anti-climate lobbying has greater implied exposure to the climate policy regime and is therefore more vulnerable if strong policy arrives than an otherwise similar firm that does not lobby.

Firm lobbying decision. Firm i chooses its anti-climate lobbying intensity to maximize expected profits, or in other words, the firm pays a cost $C(l_i)$ (with $C'(l_i) > 0$ and $C''(l_i) > 0$) only if the expected benefit of preserving or shaping weak policy is large enough. Lobbying matters in two related ways. First, in the cross-section, it serves as a signal that the firm itself perceives high policy exposure. Investors who cannot directly observe a firm's exposure update upward when they see anti-climate lobbying. We capture this idea with the reduced-form condition:

$$\frac{\partial l_i}{\partial x_i} > 0,$$

which can be interpreted as the outcome of a lobbying choice problem in which the marginal benefit of lobbying is increasing in x_i. Since $x_i = a_i + b_i$ and b_i is not fully observable to investors, anti-climate lobbying can predict climate policy exposure even after controlling for observable transition risk measures. Second, in the aggregate, lobbying may reduce the probability or speed of policy tightening, with:

$$p_S = p(l^{agg}), \quad p'(l^{agg}) < 0, \quad l^{agg} = \int l_i \, di.$$

While a single firm is too small to determine policy by itself, aggregate anti-climate lobbying helps preserve the weak policy regime. This could cause the firm to be more exposed when policy tightens by reducing investment in transition technologies or locking in carbon-intensive capital. Overall, cross-sectional differences in anti-climate lobbying

not only reveal but may also increase the firm's conditional sensitivity to climate policy realization and can translate into differences in equilibrium expected returns.

Asset pricing implications. The stochastic discount factor (SDF) follows:

$$\frac{d\pi_t}{\pi_t} = E_t\left[\frac{d\pi_t}{\pi_t}\right] - \lambda dZ_t - \lambda_{c,t} d\hat{Z}_t^c,$$

where λ is the market price of risk for fundamental shocks and $\lambda_{c,t}$ the sensitivity of the SDF to climate policy risk. A transition from the weak to strong policy negatively affects economic-wide average profitability, which corresponds to an upward jump in the marginal utility of wealth and thus the SDF (implying $\lambda_{c,t} < 0$). The expected return on the stock of firm i is determined by an Euler equation, which characterizes the covariance of a firm's returns with the SDF:

$$E_t\left[\frac{dM_t^i}{M_t^i}\right] = -Cov_t\left(\frac{dM_t^i}{M_t^i}, \frac{d\pi_t}{\pi_t}\right) = \sigma\lambda dt + \beta_{M,t}^i \lambda_{c,t} dt,$$

where σ reflects that all firms face the same exposure to fundamental shocks and $\beta_{M,t}^i$ captures firm i's risk exposure to policy shocks (i.e., the sensitivity of returns to climate policy uncertainty). Upon a *positive* policy shock (change from the weak to the strong policy), stock prices fall ($\beta_{M,t}^i < 0$) precisely when the marginal utility is high. Firms with a higher anti-climate lobbying intensity l_i are more exposed to these adverse shocks and experience a stronger value decrease than low-lobbying firms:

$$\frac{\partial \beta_{M,t}^i}{\partial(x_i + \nu\, l_i)} < 0, \quad \frac{\partial \beta_{M,t}^i}{\partial l_i} < 0,$$

that is, a higher value of l_i is associated with greater negative exposure to priced climate policy risk. Stocks with more negative betas thus deliver higher expected returns to compensate risk-averse investors. Thus, firms' political behavior reveals a priced dimension of climate policy risk that standard climate-related variables cannot capture. This mechanism generates cross-sectional variation in expected returns as a function of firms' anti-climate lobbying behavior.

Empirical predictions. Our framework generates three empirical predictions. First, firms with greater observable exposure to stringent climate policy engage in more anti-climate lobbying. Consistent with this prediction, we find that anti-climate lobbying is concentrated among carbon-intensive firms, firms reliant on fossil fuel generation, and

industries such as Energy and Utilities. Such lobbying also increases around major climate policy debates, when the value of influencing policy is likely to be high. Second, anti-climate lobbying should identify firms that are more negatively exposed to climate policy shocks. Accordingly, these firms should experience value declines when lobbying disclosures reveal information about their climate policy exposure. Third, if climate policy risk is priced, firms with greater anti-climate lobbying should earn higher expected returns. More importantly, conditional on the observable climate risk measure, lobbying should predict more expected return as it reveals residual exposure not fully captured by emissions or other observable firm characteristics. All these predictions are supported by our empirical tests in Section 5.

Pro-climate lobbying. This framework focuses on anti-climate lobbying and it may not naturally extend in symmetrical ways to pro-climate lobbying. Firms engage in pro-climate lobbying may face near-term transition costs, including technological challenges or capital expenditures, which may limit their hedging effectiveness. Empirically, we do not observe significantly lower expected returns for pro-climate lobbyists. This may suggest that the risk channel we identify operates asymmetrically, concentrated among firms with more to lose from policy tightening rather than those positioned to benefit.

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