Coporate Climate Lobbying

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Motivation

- **Climate lobbying**: communicating with policymakers to influence climate regulations.
  → Anti-climate side: efforts to undermine, delay, or avoid pro-climate policies.

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- **Why important?**
  - → May obstruct ambitious climate actions:
    - The failed Waxman-Markey Bill in 2010 – prob ↓ 13%, a social cost of $60 billion.
      (Meng and Rode, 2019)
    - Exxon Mobil lobbyist caught on tape – weaken President Biden's climate proposals.

The New York Times	Did we aggressively fight against some of the science?
In Video, Exxon Lobbyist Describes Efforts to Undercut Climate Action	Yes. — Keith McCoy, Exxon lobbyist

  - → **Scope 4 emissions**

- **Challenges**: behind the scenes - <u>depth</u> and <u>stance</u>.

Overview

Main contribution: (1) Quantify **anti-** and **pro-climate** lobbying expenses for U.S.-listed firms from 2001 to 2022 and (2) study **how it is priced** in the cross-section of stock returns.

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(1) Create new measures:
   (publicly available at: https://osf.io/md2jr/)
   $\rightarrow$ <u>Approach</u>: Analyze firms' lobbying reports and political contributions.

▶ Oil and utility firms lead anti-climate lobbying.

▶ Recently, firms have tried to **camouflage** their climate lobbying activities.

▶ Anti-climate lobbyists - **carbon emissions** ↑, **climate incidents** ↑;
   Pro-climate lobbyists - **green innovation** ↑.

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   Pro-climate lobbyists - **green innovation** ↑.

(2) Document risk premium:

▶ Firms that spend more on anti-climate lobbying earn **higher returns**.

▶ Their stock prices went up when the Waxman-Markey Cap-and-Trade Bill failed, and down when the Inflation Reduction Act was announced.

Quantifying - Step 1

▶ Step 1: Measuring climate-related lobbying amounts.

▶ Step 2: Differentiating between pro- and anti-climate lobbying.

Quarterly lobbying reports: required by the Lobbying Disclosure Act of 1995.

- 1. Identify climate-related issues in each report.
  - Climate keywords OR climate-related bills.
- 2. Report-level climate lobbying expenses.

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

Example: Exxon Mobil 2010 Q1

16. Specific lobbying issues
HR 3619: Coast Guard Authorization Act; provisions related to wetlands, liquefied natural gas and New York;
HR 4396: Save our Energy Jobs Act: provisions regarding greenhouse gas regulations;
HR 4753: Stationary Source Regulations Delay Act; provisions regarding greenhouse gas regulations;

$$\frac{5}{16} \times 3,390,000 = \$1,059,375$$

Quantifying - Step 2

▶ Step 1: Measuring climate-related lobbying amounts.

▶ Step 2: Differentiating between pro- and anti-climate lobbying.

Follow Kwon et al. (2023) and infer from executive or lobbyist <u>campaign contributions</u>:

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

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

Confirm in the paper:

- Republican Congress members are typically more anti-climate, as reflected in voting records.
- 69% executives and 89% lobbyists exclusively donate to one party.
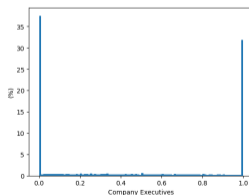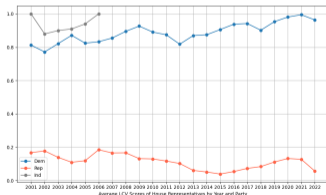
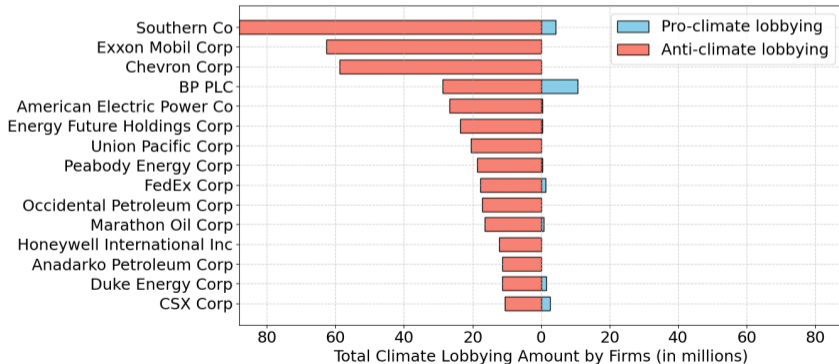Examples:

Exxon Mobil - 2010: 93.7% to R → anti-climate   Microsoft - 2022: 91.9% to D → pro-climate

Quantifying - Industry and Firm Distribution

- Leading industry:
  - Anti-climate: **Utilities** and **Petroleum & Natural Gas** each spent $232m from 2001 to 2022.
  - Pro-climate: More dispersed - **Utilities**, **Automobiles**, and **Electronic Equipment**.
- Anti-climate ranking by firms:

Motives - Carbon Emissions

$$Climate\ LobbyIntensity_{i,t}^{S} = \beta_0 + \beta_1 Transition_{i,t} + \beta_2\mathbf{X}_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t},\ S \in (Anti, Pro)$$

▶ 1 STD ↑ emissions → 2.60 ↑ anti (0.45 ↓ pro)-climate lobbying, 88% (18%) sample mean.

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

Motives - Green Innovation

► 1 STD ↑ in the green patents (green innovation discussion)
  → 5.88 (7.03) ↑ pro-climate lobbying intensity, 133% (159%) sample mean

► No link with anti-climate lobbying.

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

Motives - Electricity Generation

- Coal / natural gas / oil $\uparrow \rightarrow \uparrow$ anti-climate lobbying, $\downarrow$ pro-climate lobbying.
- Nuclear energy $\uparrow \rightarrow \uparrow$ pro-climate lobbying.
  (Use power-plant-level data provided by the EIA and aggregate at the firm level.)

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

Motives - Future Incidents

$$Climate\ Perf_{i,t+1} = \beta_0 + \beta_1 Climate\ LobbyIntensity_{i,t}^{Anti} + \beta_2 Climate\ LobbyIntensity_{i,t}^{Pro}$$
$$+ \beta_3 \mathbf{X}_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t+1}$$

▶ 1 STD ↑ in anti-climate lobbying → 2.8% ↑ in incidents, no link to pro-climate lobbying.

	Log($ClimateIncidents_{i,t+1}^{Number}$)		Log($ClimateIncidents_{i,t+1}^{Severity}$)	
	(1)	(2)	(3)	(4)
$ClimateLobbyIntensity_{i,t}^{Anti}$	0.028**		0.032***	
	(2.60)		(2.79)	
$ClimateLobbyIntensity_{i,t}^{Pro}$	0.007		0.008	
	(1.31)		(1.32)	
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$		0.017**		0.020***
		(2.56)		(3.14)
Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
N	2,766	2,766	2,766	2,766
R^2	0.53	0.53	0.50	0.50

Climate Lobbying and Stock Returns

$$Excess\ Return_{i,t+1} = \beta_0 + \beta_1 ClimateLobbyIntensity_{i,t}^{Anti} + \beta_2 ClimateLobbyIntensity_{i,t}^{Pro}$$
$$+ \beta_3 \mathbf{X}_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t+1}$$

Regressions follow Bolton and Kacperczyk (2021, 2023).

- 1 STD ↑ anti-climate lobbying → 0.32% (=0.44×73/100) ↑ monthly returns.
- Portfolio sorting obtains consistent results.

	$ExcessReturn_{i,m,t+1}$							
	2001-2009				2010-2022			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$ClimateLobbyIntensity_{i,t}^{Anti}$	-0.30	-0.29			0.44***	0.57***		
	(-0.65)	(-0.48)			(5.92)	(4.24)		
$ClimateLobbyIntensity_{i,t}^{Pro}$	-0.25*	-0.43			-0.34	-0.29		
	(-2.16)	(-1.59)			(-1.31)	(-1.18)		
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$			-0.15	-0.04			0.39**	0.43**
			(-0.44)	(-0.09)			(2.54)	(2.56)
Control	No	Yes	No	Yes	No	Yes	No	Yes
Year-Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	50,462	45,420	50,462	45,420	100,016	90,732	100,016	90,732
R^2	0.25	0.25	0.25	0.25	0.32	0.32	0.32	0.32

Climate Lobbying and Stock Returns

▶ Return patterns hold after
  - Controlling for <u>carbon emissions</u>.
  - Considering indirect lobbying through <u>trade associations</u>.
    e.g., U.S. Chamber of Commerce, Business Roundtable, and American Petroleum Institute.
  - Controlling for political connection to different parties.

▶ Risk premium versus mispricing
  - Anti-climate lobbyists can be perceived as riskier.
    - → ESG rating agency Sustainalytics' view:
      - Damage trust in firms (reputation risk)
      - Slow business model adjustment (transition risk)

    Consistent when using *Implied Costs of Capital* to proxy expected returns (Eskildsen et al., 2024).
  - Do not seem to reflect mispricing (no evidence of more earnings surprises (Atilgan et al., 2023)).

Event Study Evidence

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

1. Senator Lindsey Graham dropped support for the Waxman-Markey Bill on April 23, 2010. Anti(Pro)-climate lobbying ↑, stock prices ↑(↓). 1 STD ↑ Anti, 0.30% ↑ CAR[0,1].

	CAR[0,1]	CAR[0,2]	CAR[0,3]	CAR[0,1]	CAR[0,2]	CAR[0,3]
	(1)	(2)	(3)	(4)	(5)	(6)
$ClimateLobbyIntensity_{i,t}^{Anti}$	0.54**	0.51*	0.70**			
	(2.17)	(1.76)	(2.06)			
$ClimateLobbyIntensity_{i,t}^{Pro}$	-0.27***	-0.51***	-0.49***			
	(-3.11)	(-6.05)	(-5.24)			
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$				0.29***	0.51***	0.51***
				(4.32)	(6.68)	(7.07)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	519	519	519	519	519	519
R^2	0.13	0.08	0.08	0.14	0.08	0.08

Event Study Evidence

2. The passage of the Inflation Reduction Act on July 28, 2022 (opposite reaction).
   Anti(Pro)-climate lobbying ↑, stock prices ↓(↑). 1 STD ↑ Anti, 0.29% ↓ CAR[0,1].

	CAR[0,1]	CAR[0,2]	CAR[0,3]	CAR[0,1]	CAR[0,2]	CAR[0,3]
	(1)	(2)	(3)	(4)	(5)	(6)
$ClimateLobbyIntensity_{i,t}^{Anti}$	-0.53***	-0.68***	-0.20			
	(-4.58)	(-5.81)	(-1.44)			
$ClimateLobbyIntensity_{i,t}^{Pro}$	1.81*	2.38***	2.60**			
	(1.91)	(2.76)	(2.07)			
$ClimateLobbyIntensity_{i,t}^{Anti-Pro}$				-0.78**	-1.01**	-0.67
				(-2.23)	(-2.57)	(-1.42)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	685	685	685	685	685	685
R^2	0.23	0.23	0.16	0.22	0.23	0.15

Conclusion

▶ We quantify anti- and pro-climate lobbying expenses for U.S. firms from 2001 to 2022. (publicly available at: https://osf.io/md2jr/)

▶ Anti-climate lobbyists are more carbon-intensive and face more climate incidents; pro-climate firms engage more in green innovation.

▶ Firms that spend more on anti-climate lobbying earn higher returns.

▶ Their stock prices went up when the Waxman-Markey Cap-and-Trade Bill failed, and down when the Inflation Reduction Act was announced.

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