Energy Community

"Wind of Change: How Climate Change Shapes the Law"

Shareholder Activism and Firms' Voluntary Disclosure of Climate Change Risks

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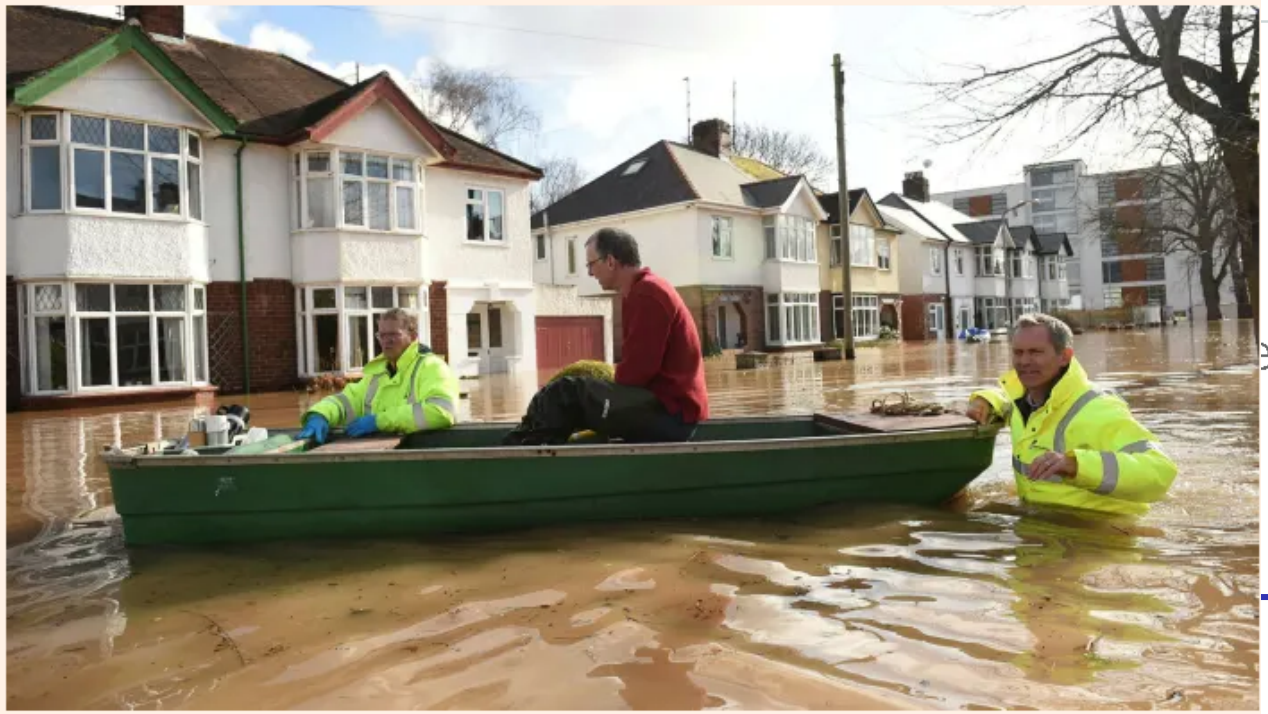
Increased Shareholder Pressure

UK companies face greater scrutiny on climate risks at upcoming AGMs

Investment Association warns it will flag inadequate reporting on global warming to asset managers



The IA said fund managers needed companies to report on climate-related risks 'in a consistent, clear and comparable manner' © Oli Scarff/AFP/Getty Images

Attracta Mooney FEBRUARY 22 2021

This Study: Research Question

- Environmental shareholder activism pressuring firms to disclose their exposure to climate change risks
  - Shareholder activism is on the rise
  - Little is known whether this tactic is indeed effective
    - Can **shareholder activism** elicit **greater voluntary climate risk disclosure** of portfolio companies?
    - If so,
      - What **type of shareholders** are most effective?
      - Does this improve **firm valuation**?

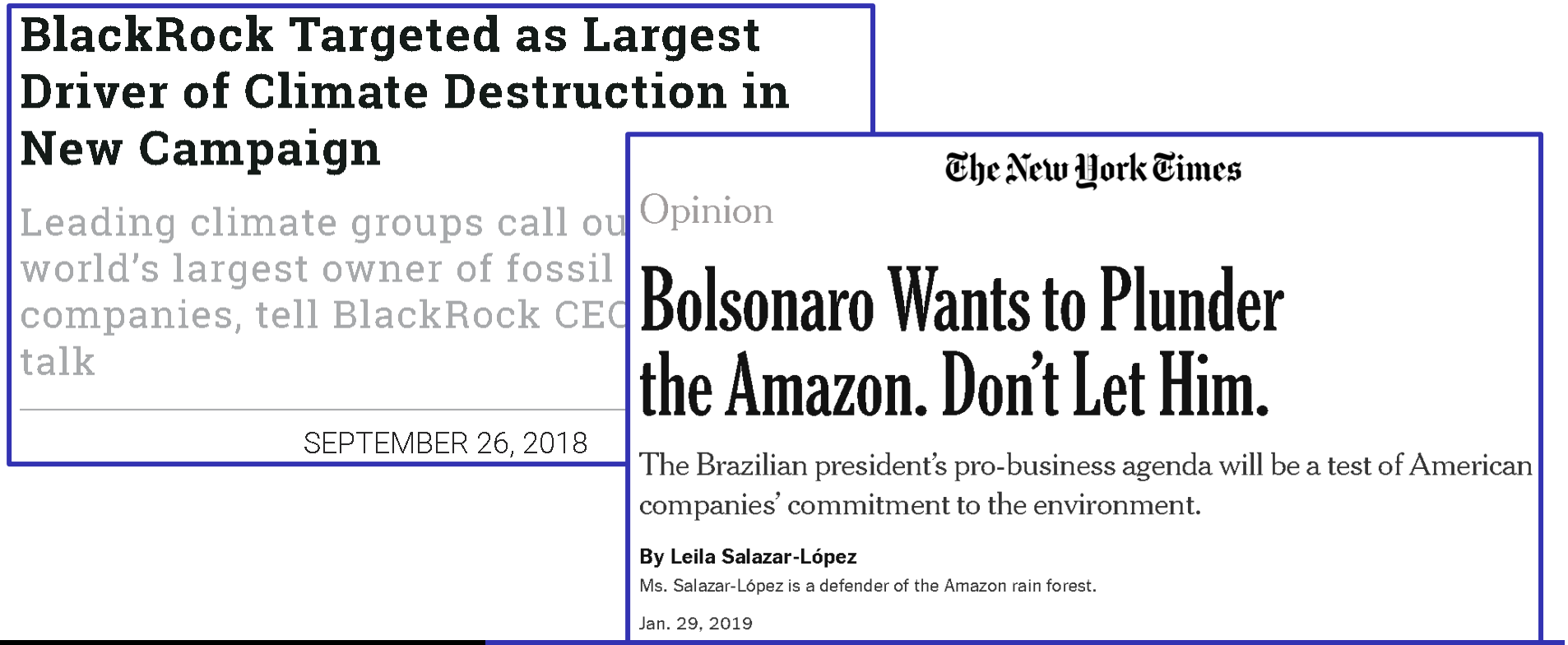
Broader Context: Recent Developments

- Surge in Climate-Related Shareholder Activism
  - **Physical Risks**: Increased risks and costs associated with climate change, regardless of own emission levels
    (e.g., New York Times, 2018, 2019; Risky Business, 2014)
    - Increased energy demand, damage of coastal property and infrastructure, disruptions in supply chains and operations, etc.

  - **Regulatory Risks**: Increased government actions to curb climate change
    - Example: In the 2015 Paris Agreement, 195 nations agreed to limit global warming to < 2°C (United Nations, 2016)
    - (Threat of) stricter environmental regulations can send a strong signal to investors of carbon-intensive companies (Maxwell, Lyon, & Hackett, 2000)

Broader Context: Recent Developments

- **Other climate-related risks**: Increased pressure from activist groups to address environmental issues (e.g., Baron & Diermeier, 2007; Den Hond & De Bakker, 2007; McDonnell, King, & Soule, 2015; Soule, 2009)
  - Social media facilitates dissemination of information and mobilization of social movements (Van Laer & Van Aelst, 2010)



BlackRock Targeted as Largest Driver of Climate Destruction in New Campaign

Leading climate groups call ou
world's largest owner of fossil
companies, tell BlackRock CEC
talk

SEPTEMBER 26, 2018

The New York Times

Opinion

Bolsonaro Wants to Plunder the Amazon. Don't Let Him.

The Brazilian president's pro-business agenda will be a test of American companies' commitment to the environment.

By Leila Salazar-López

Ms. Salazar-López is a defender of the Amazon rain forest.

Jan. 29, 2019

Broader Context: Lack of Public Governance

- Lack of mandatory disclosure requirements imposed by government
  - ➢ **No mandatory disclosure** of climate risk exposure (and non-financial information more generally) in most countries (including U.S.)
    - E.g., U.S. SEC merely **recommends** that companies disclose their climate change risks, does not mandate it nor offer any guidance how to disclose

➔ Companies often

- **Fail to disclose** their exposure to climate change risks, and non-financial information more generally (Ceres, 2018)

Investors' Interest in Climate Risk Disclosure

- Climate risk exposure of portfolio companies
  - Investors increasingly interested in companies' **disclosure of climate risks exposure** and strategies to address these risks (e.g., Ceres, 2018; Ilhan, Krueger, Sautner, and Starks, 2019; Kim and Lyon, 2011; Kolk, Levy, and Pinske, 2008; Krueger, Sautner, and Starks, 2020; Reid and Toffel, 2009)
    - Increase in **shareholder pressure** demanding improvements in corporate environmental responsible practices (Flammer, 2013; 2015)
  - Recent survey of 439 institutional investors (Krueger et al., 2020):
    - Majority of respondents believe that **climate risk reporting** is **as important as financial reporting**, and
    - **One-third** believe that **climate risk reporting** is **even more important**

Climate Risk Exposure vs. Environmental Footprint

- Climate Risk Exposure vs. Environmental Footprint
  - Firms' **contribution to** climate change (impact on environment)
    - E.g., Disclosure of greenhouse gas emissions
  - This study: firms' **exposure to** climate change risks
    - Threat of damage, injury, liability, loss, or any other harm to the company that could be caused by climate-related events
      - Physical risks: e.g., flooding, fierce storms, drought, extreme temperatures
      - Regulatory risks: e.g., current and expected governmental policies related to climate
      - Other climate-related risks: e.g., reputation, changing consumer behavior

- A firm's carbon footprint is very different from its exposure to climate change risks
- Firms across industries face exposure to climate change risks, regardless of their own emission levels

Climate Risk Disclosure — A Governance Issue

- Temporal separation of potential benefits and downsides

➢ **Benefits:**

Long-term

- May help firms to **manage and mitigate climate risks** in the long run
  - For example:
    1) Transparency can **increase** firms' **accountability** in public's eye
       >> strengthens firms' commitment to manage and mitigate these risks going forward
    2) Transparency allows investors, business partners, and other stakeholders to **engage** with disclosing firms in a **more informed fashion**
       >> more effective advice in how to manage and mitigate climate risk
    3) Transparency can **foster trust**
       >> strengthens firm's relationships with investors and other stakeholders

➔ Disclosure can improve the firm's governance and long-term value

Climate Risk Disclosure — A Governance Issue

➢ **Downsides:**

Short-term

1) May reveal **vulnerabilities** that firms would prefer to keep from investors, competitors, customers, etc.
   - For example:
     - Risks related to damage, injury, liability, loss, other climate-related harm to firm
     - Financial risks associated with "stranded assets"

2) Disclosing climate risk information entails **direct costs**
   - Cost of dedicating human capital to
     - Conduct thorough assessment of climate risk exposure
     - Incorporate assessment into risk management and business plans moving forward
     - Report of climate risk exposure and risk mitigation strategies

3) **Adverse reactions** may exacerbate firm's overall climate risk exposure
   - E.g., Investors might use information to inform their investment decisions and rebalance their portfolio, reallocating funds from the disclosing company (Barberis & Shleifer, 2003)
   - Suppliers and corporate clients might switch to more viable business partners with lower risk exposure

➔ Management has incentives not to disclose climate risks, unless mandatory

Climate Risk Disclosure — A Governance Issue

- Reluctance to disclose accentuated by **managerial myopia**
  - Large literature in psychology and economics
    (e.g., Ainslie, 1975; Thaler & Shefrin, 1981; Loewenstein & Prelec, 1992; Meier & Sprenger, 2010; O'Donoghue & Rabin, 1999; Frederick, Loewenstein, & O'Donoghue, 2002)
  - Common theme: individuals are **"hyperbolic discounters"**
    - Preference for short-term rewards over long-term rewards, even if the latter are substantially higher.
    - Reasons: Cognitive limitations, instant gratification, impatience, etc.
  - **For executives**, myopic behavior further **reinforced** by
    - Career concerns (e.g., Gibbons & Murphy, 1992)
    - Analyst pressure to meet or exceed analysts' earnings forecasts (e.g., DeGeorge, Patel, & Zeckhauser, 1999)
  - ➔ As a result, myopic managers tend to
    - Favor short-term investments that pay off in short run at expense of long-term investments (e.g., Flammer & Bansal, 2017; Graham et al., 2005; Holmstrom, 1999; Stein, 1988, 1989)
    - **"Time-based agency conflict"**: Managers have an excessive preference for the present, and hence need not act in shareholders' (long-term) best interest (Flammer & Bansal, 2017)

Climate Risk Disclosure — A Governance Issue

➔ Implications of "time-based agency conflict" for voluntary climate risk disclosure:

Managers may …

1) Put **more weight on potential short-term downsides** of disclosure vs. potential long-term upsides of managing and mitigating climate risks

2) Focus **attention on stakeholders that have short-term financial performance** implications (e.g., customers, employees) vs. stakeholders who may be financially material in long run, but not necessarily in short run (e.g., environment, communities)
   - As managers devote less attention to natural environment, they might just not be aware of the risks climate change poses to their operations

➡ In absence of public governance, firms often **fail to disclose** their exposure to climate change risks (Ceres, 2018)

Effectiveness of Private Governance?

- Role of **Private Governance**
  - In absence of public governance, can private governance—in the form of shareholder activism—elicit greater disclosure of firms' exposure to climate change risks and how they manage those risks?
    - If so,
      - What **type of shareholders** are most effective?
      - What are the **valuation implications**?

Agenda

1. Introduction
2. Data
3. Methodology
4. Results
5. Robustness
6. Conclusion

Climate Change Risk Disclosure

- Climate change risk disclosure
  - Source: Carbon Disclosure Project (CDP)
    - Non-profit organization based in London, UK
    - Scope: Each year, CDP surveys large public companies to disclose information about
      - Risks and opportunities posed by climate change
      - Which strategies they pursue to address them
      - Extent of greenhouse gas (GHG) emissions
    - In 2017, 63% of S&P500 companies responded and voluntarily disclosed at least some portion of requested information
    - Period: 2010—2016

Climate Change Risk Disclosure

- In this paper:
  - Focus on **climate change risk disclosure** (question CC5.1)
    - **Regulatory** climate change risks:
      - Current and expected (local, national, or global) governmental policy related to climate change.
      - E.g., imposition of emissions limits, energy efficiency standards, and carbon trading schemes.
    - **Physical** climate change risks:
      - Extreme weather events or subtle changes in weather patterns
    - **Other** climate change risks:
      - E.g., changing consumer behavior, induced changes in human and cultural environments, reputation, fluctuating socio-economic conditions, and increasing humanitarian demands
  - Dependent variable: ***disclosure of climate change risks***
    - Counts how many climate change risks firm discloses (ranges from 0 to 3)
    - In auxiliary analysis: examine each risk category separately

Shareholder Activism

- Environmental Shareholder Activism
  - Source: Institutional Shareholder Services (ISS) database
    - Scope: Compiles information about shareholder proposals submitted to S&P 1,500 companies
    - Information:
      - Firm identifiers
      - Date of annual meeting
      - Proposal description
      - Sponsor of proposal
      - Voting requirement
    - Period: 1997—2017
  - Independent variable: ***environmental shareholder activism***
    - Counts of environment-related proposals submitted to firm in given year (ranges from 0 to 5)

Final Sample

- Final sample
  - Merging ISS data and CDP data for each firm and year
  - Sample: **1,110 firm-year observations**
    - 26% environment-related shareholder proposals
    - 74% others
  - Period: **7 years** (January 1, 2010—December 31, 2016)

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2. Data
3. Methodology
   - Ordinary least squares (OLS) regression
   - Two-stage least squares (2SLS) regression
4. Results
5. Cross-Sectional Heterogeneity
6. Valuation Implications
7. Conclusion

Methodology

- Starting point: **OLS Regression**

$$disclosure\ of\ climate\ change\ risks_{it} = \alpha_i + \alpha_t + \beta \times environmental\ shareholder\ activism_{it\text{-}1} + \boldsymbol{\gamma}'\mathbf{X}_{\mathbf{it\text{-}1}} + \varepsilon_{it}$$

- $disclosure\ of\ climate\ change\ risks_{it}$: counts how many climate change risks firm discloses (ranges from 0 to 3)
- α_i : firm fixed effects
- α_t : year fixed effects
- $environmental\ shareholder\ activism_{it\text{-}1}$: counts of environmental proposals submitted to firm (ranges from 0 to 5)
- $\mathbf{X}$: vector of controls (size, ROA, market-to-book, leverage, cash holdings)
- ε_{it} : error term (standard errors clustered at SIC division-level)

Methodology

- Caveat of OLS Regression:
  - Environmental shareholder activism likely **endogenous** with respect to firm's decision to disclose climate change risks

$$disclosure\ of\ climate\ change\ risks_{it} = \alpha_i + \alpha_t + \beta \times environmental\ shareholder\ activism_{it\text{-}1} + \gamma' \mathbf{X}_{it\text{-}1} + \varepsilon_{it}$$

Unobservables?

Better governed firms may be more likely to report climate risks. At the same time, they encourage active shareholder engagement.

Reverse causality story: Because companies disclose climate risks, the more likely shareholders demand further improvements in climate risk management.

  - Ideally, need an **instrument** for environmental shareholder activism

Instrumental Variable

- Instrument: **"Wave" of shareholder activism**
  - Shareholder activism often comes in "waves"
    - A given shareholder (e.g., BlackRock, CalPERS) adopts an agenda and submits **same proposal to multiple portfolio companies** (e.g., Gillian & Starks, 2007; Yermack, 2010)
    - Targeting firms across industries, geographies, and motives orthogonal to firm-specific characteristics

    ➔ Shareholder proposals submitted as part of a "wave" **more likely** to be **exogenous** w.r.t. any specific firm characteristics
  - Instrumental variable: ***environmental activist wave*** = 1 if same proposal submitted to ≥ 5 companies by same shareholder in same proxy season
    - Results robust if using different thresholds (see Flammer & Bansal (2017) for similar instrument for submission of long-term compensation proposals)

Two-Stage Least Squares (2SLS) Methodology

- **1st Stage:**
  - Instrument environmental shareholder activism with "wave" of proposals

$$environmental\ shareholder\ activism_{it} = a_i + a_t + b \times environmental\ activism\ wave_{it} + \mathbf{c'X_{it-1}} + e_{it}$$

- **2nd Stage:**
  - Regress climate risk disclosure on instrumented environmental shareholder activism

$$disclosure\ of\ climate\ change\ risks_{it} = \alpha_i + \alpha_t + \beta_{2SLS} \times environmental\ shareholder\ activism\ (instrumented)_{it-1} + \boldsymbol{\gamma'}\mathbf{X_{it-1}} + \varepsilon_{it}$$

  - In spirit, 2nd stage regression is similar to the OLS regression, but using the **"exogenous component" of environmental shareholder activism** instead of environmental shareholder activism

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Disclosure of Climate Change Risks (OLS)

Dependent variable:	Disclosure of climate change risks$_t$		
Environmental shareholder activism$_{t-1}$	0.103**	0.101**	0.078*
	(0.045)	(0.043)	(0.040)
Size$_{t-1}$		-0.206	-0.316
		(0.280)	(0.265)
		0.471	-0.457
		(1.616)	(1.770)
		0.024	0.018
		(0.021)	(0.026)
		0.989	0.838
		(0.551)	(0.569)
Cash$_{t-1}$		1.443	1.449
		(0.989)	(0.939)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	–
Industry × year fixed effects	No	No	Yes
Adjusted R-squared	0.66	0.67	0.69
# Observations	1,110	1,110	1,110
# Firms	265	265	265

Climate risk disclosure improves by
0.101/2.2 = **4.6%** per proposal

Disclosure of Climate Change Risks (2SLS)

	First stage			Second stage		
Dependent variable:	Environmental shareholder activism$_{t-1}$			Disclosure of climate change risks$_t$		
Environmental shareholder activism (instr.)$_{t-1}$				0.337**	0.350***	0.392***
				(0.148)	(0.126)	(0.107)
Environmental activism wave$_{t-1}$	0.911***	0.913***	0.937***			
	(0.113)	(0.109)	(0.093)			
Size$_{t-1}$		-0.003	-0.034		-0.196	-0.295
		(0.083)	(0.085)		(0.227)	(0.221)
ROA$_{t-1}$		-0.234	-0.370		0.553	-0.355
		(0.506)	(0.390)		(1.389)	(1.506)
Market-to-book$_{t-1}$		0.016	0.009		0.020	0.015
		(0.016)	(0.013)		(0.018)	(0.024)
Leverage$_{t-1}$		-0.069	-0.209		1.020**	0.933*
		(0.545)	(0.539)		(0.464)	(0.483)
Cash$_{t-1}$		0.249	-0.027		1.435*	1.529*
		(0.717)	(0.762)		(0.834)	(0.814)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	–	Yes	Yes	–
Industry × year fixed effects	No	No	Yes	No	No	Yes
F-statistic (instrument)	85.55	91.90	136.07	–	–	–
Adjusted R-squared	0.47	0.46	0.49	0.66	0.67	0.69
# Observations	1,110	1,110	1,110	1,110	1,110	1,110
# Firms	265	265	265	265	265	265

Robustness Tests

Dependent variable:	Disclosure of climate change risks$_t$				
	Dynamics	Broader ISS sample	Poisson regression	2SLS – Activism wave based on 4+ proposals	2SLS – Activism wave based on 6+ proposals
Environmental shareholder activism$_{t+1}$	-0.002				
	(0.066)				
Environmental shareholder activism$_t$	0.060				
	(0.064)				
Environmental shareholder activism$_{t-1}$	0.114**	0.064*	0.043***		
	(0.044)	(0.032)	(0.015)		
Environmental shareholder activism$_{t-2}$	0.050				
	(0.038)				
Environmental shareholder activism (instr.)$_{t-1}$				0.235***	0.331*
				(0.053)	(0.195)
Size$_{t-1}$	-0.332	-0.058	-0.088	-0.201	-0.197
	(0.306)	(0.205)	(0.117)	(0.237)	(0.226)
ROA$_{t-1}$	-0.735	-0.402	0.345	0.515	0.547
	(2.032)	(1.572)	(0.621)	(1.413)	(1.372)
Market-to-book$_{t-1}$	0.033	0.012	0.012*	0.022	0.021
	(0.019)	(0.009)	(0.007)	(0.019)	(0.017)
Leverage$_{t-1}$	0.809	0.916	0.391*	1.006**	1.018**
	(0.534)	(0.526)	(0.216)	(0.465)	(0.467)
Cash$_{t-1}$	1.504	0.770	0.794*	1.439*	1.436*
	(0.918)	(0.917)	(0.450)	(0.841)	(0.837)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
R-squared	0.769	0.733	–	0.751	0.751
# Observations	997	1,631	1,110	1,110	1,110
# Firms	254	346	265	265	265

Types of Climate Change Risk Disclosure

Dependent variable:	Disclosure of regulatory climate change risks$_t$	Disclosure of physical climate change risks$_t$	Disclosure of other climate change risks$_t$
Environmental shareholder activism$_{t-1}$	0.028*	0.039**	0.035*
	(0.015)	(0.014)	(0.019)
Size$_{t-1}$	-0.038	-0.100	-0.068
	(0.102)	(0.113)	(0.101)
ROA$_{t-1}$	0.278	0.310	-0.117
	(0.541)	(0.387)	(0.759)
Market-to-book$_{t-1}$	0.011**	0.006	0.007
	(0.004)	(0.008)	(0.011)
Leverage$_{t-1}$	0.452*	0.262	0.275
	(0.217)	(0.205)	(0.231)
Cash$_{t-1}$	0.399*	0.447	0.597
	(0.215)	(0.345)	(0.576)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
R-squared	0.734	0.742	0.738
# Observations	1,110	1,110	1,110
# Firms	265	265	265

Shareholder Pressure by Shareholder Type (OLS)

Dependent variable:	Disclosure of climate change risks$_t$	
Environmental shareholder activism by…		
… non-institutional shareholders$_{t-1}$	0.062	0.063
	(0.075)	(0.075)
… institutional shareholders$_{t-1}$	0.118**	
	(0.047)	
… institutional shareholders with long-term horizon$_{t-1}$		0.151**
		(0.065)
… institutional shareholders with short-term horizon$_{t-1}$		-0.011
		(0.129)
… institutional shareholders with unknown temporal horizon$_{t-1}$		0.286
		(0.189)
Size$_{t-1}$	-0.201	-0.198
	(0.282)	(0.283)
ROA$_{t-1}$	0.502	0.590
	(1.626)	(1.662)
Market-to-book$_{t-1}$	0.024	0.024
	(0.021)	(0.022)
Leverage$_{t-1}$	1.011*	1.046*
	(0.559)	(0.560)
Cash$_{t-1}$	1.450	1.435
	(0.999)	(0.975)
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Adjusted R-squared	0.67	0.67
# Observations	1,110	1,110
# Firms	265	265

Shareholder Pressure by Shareholder Type (2SLS)

Dependent variable:	Disclosure of climate change risks$_t$	
Environmental shareholder activism by…		
… non-institutional shareholders (instr.)$_{t-1}$	0.115	0.125
	(0.120)	(0.131)
… institutional shareholders (instr.)$_{t-1}$	0.203**	
	(0.093)	
… institutional shareholders with long-term horizon (instr.)$_{t-1}$		0.329***
		(0.105)
… institutional shareholders with short-term horizon (instr.)$_{t-1}$		-0.290**
		(0.117)
… institutional shareholders with unknown temporal horizon (instr.)$_{t-1}$		-0.100
		(0.081)
Size$_{t-1}$	-0.194	-0.173
	(0.236)	(0.224)
ROA$_{t-1}$	0.545	0.817
	(1.375)	(1.399)
Market-to-book$_{t-1}$	0.022	0.021
	(0.018)	(0.020)
Leverage$_{t-1}$	1.032*	1.120**
	(0.495)	(0.495)
Cash$_{t-1}$	1.451	1.443*
	(0.850)	(0.795)
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
F-statistics (instruments)	32.37	15.47
Adjusted R-squared	0.67	0.67
# Observations	1,110	1,110
# Firms	265	265

Value Implications

	Market model (1-factor model)		Fama-French (3-factor model)		Fama-French-Momentum (4-factor model)	
	CAR	*p*-value	CAR	*p*-value	CAR	*p*-value
[-50, -11]	0.39%	0.500	-0.26%	0.619	-0.26%	0.531
[-10, 10]	1.21%	0.001***	0.92%	0.010**	1.02%	0.006***
[11, 50]	0.44%	0.399	0.41%	0.462	0.49%	0.507

Stock prices increase by **0.92%** to **1.21%** following shareholder-induced disclosure

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Key Findings & Implications

- Can shareholder activism induce management to voluntarily disclose climate change risks?
  - ➢ **Yes, it can**. Particularly effective if initiated by
    - o **Institutional** investors
    - o **Long-term** institutional investors
  - ➢ **Increase in valuation** for firms that voluntarily disclose climate change risks following environmental shareholder activism
  - ➔ Active shareholders **can** elicit **greater climate risk disclosure** and hereby **improve governance** of portfolio companies

Key Findings & Implications

- Implications for practice:
  - In absence of mandatory disclosure requirements, this **greater ability implies greater responsibility** of investors—particularly of long-term institutional investors—to be **active owners** and engage with management to elicit greater climate risk disclosure

  - **Caution**: While private governance is effective in eliciting greater climate risk disclosure, it is **unlikely a substitute for public governance** (see also Ho, 2018; Light & Orts, 2015; Vandenbergh, 2013)
    - Public governance likely more effective in:
      - Improving quantity and quality of disclosure
      - Fostering standardization of disclosure
      - Ultimately achieving progress in fight against climate change

    ➔ Long-term institutional investors may find it worthwhile to **pursue both shareholder activism** and **engage with government** to impose mandatory climate change risk disclosure

Conclusion

Thank You!

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