Turning Shareholder Pressure into Actions: The Impact of Environmental Shareholder Activism on Corporate Environmental Disclosure

Samiyar Saviz

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By: Samiyar Saviz

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_____	Chair
Dr. Asma Fattoum Guedri	
_____	Examiner
Dr. Asma Fattoum Guedri	
_____	Examiner
Dr. Jisun Yu	
_____	Supervisor
Dr. Young-Chul Jeong	

Approved by

Dr. Linda Dyer, Graduate Program Director

March 21, 2025

Dr. Anne-Marie Croteau, Dean of Faculty

ABSTRACT

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Samiyar Saviz

Environmental shareholder activism has increasingly gained attention as an influential mechanism shaping firms' environmental reporting practices, yet prior research yields mixed findings on its impact. Whereas some argue that activism fosters substantive transparency, others maintain its influence as largely symbolic. To address these mixed findings, I examined whether environmental shareholder activism—particularly when initiated by institutional investors—influences the extent of firms' environmental disclosures. Drawing on signaling theory, I proposed that environmental shareholder activists can pressure firms to issue stronger "signals" of environmental responsibility by enhancing their environmental reporting practices and that such pressure is more pronounced when driven by institutional investors. In this view, activism reduces information asymmetry and pressures firms to mitigate reputational risk, prompting more detailed or transparent reporting. I examined these arguments by testing hypotheses in the context of S&P 500 companies listed in 2023 over the period 2016–2023. The findings indicate that environmental shareholder activism does not significantly influence corporate environmental disclosure, suggesting that firms may respond to activist pressure through symbolic compliance or private engagements rather than public transparency. However, industry pressures remain a key determinant, with firms in high-pollution sectors engaging in significantly greater environmental disclosure independent of activist influence.

Key words: Environmental Shareholder Activism, Environmental Information Disclosure, Signaling Theory, Socially Responsible Investing, Reputational Damage

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Chapter 1

INTRODUCTION

The escalating concerns over climate change have increasingly influenced the corporate sector, prompting a rise in environmental shareholder activism. Notably, the non-profit organization *As You Sow*, a leader in shareholder advocacy focused on promoting environmental and social corporate responsibility, reported a significant rise in climate-related shareholder proposals, increasing from 49 in 2020 to 81 in 2021—a 65% growth. The total value of shares supporting these environmental initiatives also grew substantially, from $793 billion in 2020 to $1.67 trillion in 2021, reaching $2 trillion by 2023 (As You Sow, 2023). This trend aligns with broader evidence of growing interest in environmental, social, and governance (ESG) issues. For instance, ESG-related shareholder proposals submitted to Russell 3000 companies grew by over 60% between 2003 and 2013, accounting for nearly 40% of all shareholder proposals by 2013 (Tonello & Aguilar, 2014).

International agreements like the Paris Agreement, which aims to keep global warming below 2 degrees Celsius, have further intensified this trend by setting ambitious targets for reducing greenhouse gas emissions. Regulatory bodies such as the U.S. Securities and Exchange Commission have responded with tighter standards. High-profile cases like ExxonMobil's attempt to exclude environmental-related shareholder proposals exemplify the increasing pressure that companies face to align with international agreements (Valle & Raymond, 2024). Similarly, the Mizuho Financial Group's decision to halt coal financing due to pressure from investors managing over $35 trillion in assets illustrates the tangible impact of environmental shareholder activism on corporate policies (Reuters, 2021). Adding to this momentum, leaders like Larry Fink of BlackRock advocate for 'stakeholder capitalism,' emphasizing the balance between economic

objectives and environmental responsibilities (Mufson & MacMillan, 2022). Together, these developments underscore the rising importance and growing influence of environmental shareholder activism in shaping corporate behaviors and decisions.

In this study, I examined the impact of environmental shareholder activism on corporate environmental information disclosure primarily through the lens of signaling theory (Connelly et al., 2011, 2025). Signaling theory highlights how activist scrutiny can induce firms to send observable signals to external audiences, demonstrating credibility and intent. When firms face demands for enhanced transparency on environmental initiatives, they may respond by providing more detailed environmental information, aiming to mitigate reputational risks and show their commitment to responsible environmental conduct (Flammer et al., 2021; Mahmood et al., 2018; Vural-Yavaş, 2021) and to avoid reputational damage (Delmas & Toffel, 2004). However, not all firms engage in substantive changes in response to environmental shareholder activism. Some may instead adopt superficial, symbolic disclosures, seeking to protect their reputation while avoiding the costs of meaningful environmental improvements (Clark et al., 2008; David et al., 2007). From a signaling theory perspective, the credibility of disclosure depends on the costs associated with it—firms that genuinely commit to environmental responsibility incur higher costs, making their signals more trustworthy, while firms that merely engage in greenwashing face lower costs and provide weaker signals (Connelly et al., 2011). Given this, environmental shareholder activism can act as an external pressure that pushes firms to issue stronger and more transparent environmental disclosures. However, whether firms respond with meaningful improvements or merely symbolic measures depends on how they weigh reputational risks against the actual costs of environmental commitments.

In this thesis, I develop and test hypotheses on the relationship between environmental shareholder activism and corporate environmental disclosure practices in the context of listed S&P 500 companies in 2023 from 2016 to 2023. This empirical setting offers three major advantages. First, the selected time interval captures the post-Paris Agreement era, a period that heightened awareness of and pressures around environmental issues, thereby providing a suitable context for observing evolving disclosure behaviors (Valle & Raymond, 2024). Second, drawing on a relatively homogeneous and extensive panel of large, public firms over multiple years improves the credibility of the results. Third, the use of new environmental reporting frameworks and publicly available ratings helps make more consistent assessments of corporate environmental information, facilitating a robust evaluation of how shareholder activism influences disclosure strategies. Collectively, these advantages enable a comprehensive examination of whether environmental shareholder activism affects the nature and quality of corporate environmental reporting.

This study offers both theoretical and practical contributions. Theoretically, it seeks to clarify the ongoing debate between two opposing arguments: those who believe environmental shareholder activism significantly influences corporate environmental disclosure (Flammer et al., 2021; Mahmood et al., 2018) and those who argue the impact is minimal and largely symbolic (Clark et al., 2008; David et al., 2007). The practical implications of this study might offer guidance for corporate managers to avoid being targeted by environmental shareholder activists.

Chapter 2

LITERATURE REVIEW

Shareholder Activism

Shareholder activism can be defined as actions taken by shareholder investors with the goal of influencing a corporation's policies, practices, and strategic directions (Chowdhury & Wang, 2009; David et al., 2001; Goranova & Ryan, 2014; Ryan & Schneider, 2002). In this context, a shareholder activist is defined as an investor who seeks to influence a company's management and operations due to dissatisfaction with certain aspects of the company's governance or performance (David et al., 2001; Goranova & Ryan, 2014). In management scholarship, various terms are used interchangeably to describe shareholder activism. Table 1 presents the alternative terms of shareholder activism.

Table 1. Summary of Shareholder Activism Definitions

Author(s)	Journal	Definition
David et al. (2001)	Academy of Management	"Shareholder activism" are actions taken by shareholders with the explicit intention of influencing corporations' policies and practices, rather than as latent intentions implicit in ownership stakes or trading behavior.
Ryan & Schneider (2002)	Academy of Management Review	"Investor activism as the use of power by an investor either to influence the processes or outcomes of a given portfolio firm or to evoke large-scale change in processes or outcomes across multiple firms through the symbolic targeting of one or more portfolio firms."
Neubaum & Zahra (2006)	Journal of Management	"Activism as proactive actions and tactics taken by institutional owners to influence managers' decision-making priorities and processes."
Chowdhury & Wang (2009)	Journal of Management	"Institutional activism as the sum of actions and tactics institutions take to shape corporate decisions that affect their interests."
Reid & Toffel (2009)	Strategic Management Journal	Shareholder activism as the "use of ownership position to actively influence company policy and practice".
Goranova & Ryan (2014)	Journal of Management	"Shareholder activism" refers to actions taken by shareholders with the explicit intention of influencing corporate policies and practices, without aiming to assume control or managerial responsibilities.

While the terms used to describe shareholder activism may differ, the definitions remain consistent across prior studies. Shareholder activism involves institutional or individual

shareholders who leverage their ownership stakes to advocate for changes they believe will enhance shareholder value (Chuah et al., 2023; DesJardine & Durand, 2020). Many shareholder activists closely monitor companies to ensure that management acts in their best interests, pursuing performance improvements measured by traditional corporate finance metrics, such as return on equity (Chaganti & Damanpour, 1991), operating and net income (Wahal, 1996), and stock valuation (Prevost & Rao, 2000; Smith, 1996; Wahal, 1996). The fundamental goal of activist shareholders is to maximize shareholder value (Friedman, 1970; Friedman et al., 2020). Therefore, they advocate for actions that mitigate risks and capitalize on opportunities, ensuring that management decisions align with the long-term interests of shareholders.

Shareholder activists employ a range of direct and indirect engagement approaches and tactics (Chowdhury & Wang, 2009; Goranova & Ryan, 2014). Direct engagement involves proactive and private interactions with management, such as one-on-one negotiations, meetings, confidential letters, and private phone calls, often referred to as "quiet diplomacy" (Goranova & Ryan, 2014; Hendry et al., 2006; Reid & Toffel, 2009). These methods are aimed at fostering collaboration between shareholder activists and corporate leaders, and often prove effective in avoiding public disputes that could harm company reputation (David et al., 2007). In contrast, indirect engagement tends to involve public and more visible actions, designed to pressure companies through external means. Such methods include launching media campaigns to raise public awareness, submitting proxy votes, and mobilizing support from other stakeholders to amplify the impact of activist shareholders' demands (Clarkson et al., 2008; Monks et al., 2004). Because managers and activists possess different levels of information about corporate practices, activists may rely on third-party data platforms or ratings agencies to highlight perceived gaps in performance or disclosures. These efforts bolster their position and draw attention from regulators

and other stakeholders, amplifying their influence (Clark et al., 2008). Additionally, by submitting resolutions during annual meetings or utilizing coalition-building strategies with advocacy groups, activists seek to align corporate practices with shareholder interests (Ward et al., 2009; Flammer et al., 2021). Table 2 provides a comprehensive overview of activists' direct and indirect engagement strategies, as highlighted in prior literature, to influence corporate behavior and align management decisions with shareholder interests.

Table 2. Review of Tactics by Shareholder Activists

Author(s)	Key tactics of engagement	Reactors to activists engagement
Monks et al. (2004)	• Filing Proposals (I) • Getting Institutional Investors support (I) • Executive Compensation Reform (D) • Raising Awareness (I)	• Public pension funds • Religious Groups and Advocacy Organizations • Trade unions and Governments workers Pension funds
Clark et al. (2008)	• Shareholder Proposals and Resolutions (I) • Public Campaigns (I) • Direct Engagement with Management (D) • Coalitions and Alliances (I) • Usage of Third-party data bases for awareness (Rating) (I) • Legal and Regulatory Channels Engagement (I) • Targeting High-profile Companies (I) • Strategic voting in meetings (I)	• Board of Directors • Institutional Investors • Rating Agencies • General Public and Media • Regulatory Bodies
Clarkson et al. (2008)	• Through Media and Public Exposure (I) • Shareholder Resolutions (I) • Specific Disclosure Standards – Applying frameworks such as Global Reporting Imitative (GRI) (I)	• Corporate Management • Investors and Corporate Stakeholders • Regulatory Bodies and Standard Setters
Lee & Lounsbury (2011)	• Disruption of Routines (Pushing Management) (I) • Reframing of Issues (I) • Mobilization of Relevant Third Parties (I)	• Corporate Management • Institutional Investors • Investors (Shareholders and the Stock Market) • General Public and Media • Corporate Stakeholders • Regulatory Bodies • NGOs
Clark et al. (2015)	• Shareholder Proposals (I) • Media Campaigns (I) • Dialogue (D)	• Corporate Management • Board of Directors • Institutional investor • General Public
Perrault & Clark (2015)	• High Status and Visibility (Media Campaigns) (I) • Coalitions and Alliances (I) • Reputation for Threat (I)	• Corporate Management • Corporate Stakeholders • General Public and Media
Walls & Berrone (2015)	• Shareholder Proposals and Resolutions (I) • Strategic voting (Proxy Voting) (I) • Collective Action (I)	• Informal environmental Experts CEOs • CEOs with Formal Power Over TMT • CEOs with Formal Power Over BOD
Cundill et al. (2017)	• Divestment (Selling off shares or threatening) (D) • Dialogue (Direct private engagement with managers) (D) • Shareholder Proposals and Resolutions (I) • Coalitions and Alliances (I) • NGO Collaboration (I) • Usage of Third-party data bases for awareness (Rating) (I) • Media Campaigns (I) • Legal and Regulatory Channels Engagement (I)	• Corporate Management • Board of Directors • Other Shareholders (Institutional Investors, Pension funds, etc.) • Regulatory Bodies • General Public and Media • NGOs • Employees

Schopohl (2017)	• Shareholder Proposals and Resolutions (I) • Dialogue (Direct private engagement with managers) (D) • Strategic voting in meetings (I) • Public Campaigns (Media Campaigns) (I) • Getting Institutional Investors support (I) • Persistent Resolution Filing (I)	• Corporate Management • Other Stakeholders and Shareholders • Institutional Investors • Investors (The Stock Market)
Flammer et al. (2021)	• Shareholder Proposals and Resolutions (I) • Direct Engagement with Management (I) • Public Campaigns (Media Campaigns) (I) • Getting Institutional Investors support (I) • Coalitions and Alliances (Mobilizing Support) (I) • Persistent Resolution Filing (Activism Waves) (I) • Usage of Third-party data bases for awareness (Rating) (I) • Legal and Regulatory Channels Engagement (I)	• Corporate Management • Institutional Investors • Investors (The Stock Market)
Bhimavarapu et al. (2022)	• Pressure for Transparency (I) • Promotion of ESG Practices (I) • Engagement with Firms (Direct and Indirect) (D)	• Corporate Management and Board of Directors • Potential investors • Regulatory Bodies
Lee et al. (2022)	• Shareholder Proposals and Resolutions (I) • Getting Institutional Investors support (I) • Public Campaigns (Media Campaigns) (I) • Direct Engagement with Management (D) • Coalitions and Alliances (I)	• Board of Directors • CEOs and Top Executives • Institutional Investors • Proxy Advisory Firms • General Shareholders • General Public and Media
Sun et al. (2024)	• Raising Questions in earnings conferences (D) • Increasing Monitoring (I) • Increasing Attention via “Ripple Effect” (I) • Improving Managerial Learning (from Investor concern) (I)	• Corporate Management • Minority Shareholders • News and Media • Analysts • Potential Investors • General Public

Notes: “I” refer to indirect engagement with no contact with managers or board of directors and “D” refers to direct engagement with them.

Then, naturally, the following question arises: If shareholder activists employ such direct and indirect activism tactics (as shown in Table 2), why do they remain invested instead of simply divesting? What is the rationale behind shareholder engagement and the persistence of activism? While some opt to divest—known as "voting with their feet" or taking the "walk free walk[1]"—exiting involves hidden direct and indirect costs, such as transaction fees and the need to invest in research and development to find suitable substitute investments (Brown, 1996). Furthermore, Ingley and Van Der Walt (2004) elaborated that equity (stock) positions are costly to unwind and there are some fiduciary duties attached as well. While staying invested, shareholder activism allows activists to voice their perspectives on corporate governance and long-term strategy. It persists even when faced with the free-rider dilemma where passive shareholders benefit from activists' efforts without contributing. Ultimately, activists believe the long-term financial and non-financial gains of direct or indirect engagement outweigh the costs of remaining involved.

Activism tactics such as private engagement or public campaigns enable shareholder activists to monitor, influence, and redirect corporate priorities toward achieving their desired outcomes. Their ultimate aim is to enhance value, mitigate risks, or address governance issues, ensuring that managerial actions align with shareholder expectations and long-term objectives (Clark et al., 2008; Friedman, 1970; Perrault & Clark, 2015). As shareholder activism continues to evolve, it increasingly extends beyond traditional financial governance concerns. In particular, a growing number of investors and financial institutions view environmental performance and climate risks as a relevant factor, thereby introducing a distinct strand of activism: environmental

[1] The phrase "Walk Free Walk" refers to a strategy where shareholders, instead of engaging in activism to influence management, sell their shares when dissatisfied with the company's performance (Ryan & Schneider, 2002). This is seen as "voting with their feet" —leaving the firm rather than trying to change its direction. While some might view this as avoiding responsibility in corporate governance, the thread of a major shareholder exiting can still pressure management to make changes, as sell-off could hurt the stock price and, consequently, management's performance incentives (Brown, 1996).

shareholder activism. By demanding enhanced environmental practices and disclosures, these investors seek to ensure the firm's long-term competitiveness and protect their investments.

Environmental Shareholder Activism

Environmental shareholder activism has emerged as a force, influencing both corporate disclosure and broader investment trends. This rise is intertwined with the expansion of socially responsible investing (SRI). SRIs consider ESG factors alongside financial returns. SRIs prioritize sustainability and ethical considerations, advocating for sustainable practices and responsible business conduct (Herda et al., 2014; Kölbel et al., 2020). SRIs have transitioned from a marginal practice to a significant force in global financial markets, reflecting growing awareness that ESG factors influence long-term firm value. For example, SRIs account for roughly 10% of funds under professional management in the US (Monks et al., 2004), and institutional investors—including pension funds in the US, UK, and Canada—have increasingly adopted ESG-oriented policies to better align portfolios with corporate social responsibility (Sparkes & Cowton, 2004). Yan et al. (2019) highlighted that since the mid-1980s, SRIs have experienced substantial global growth, increasing from 4 founding events in the 1970s to 634 events between 2000 and 2010, with notable expansions in countries like France, Norway, and the US. This surge reflects the growing financial commitment to socially responsible investment practices and the rising influence of ESG considerations on global markets.

Environmental shareholder activism stems from the recognition that environmental issues—such as climate change, resource depletion, and regulatory uncertainty—pose material risks to long-term financial performance. Institutional investors and other activists advocate for enhanced environmental disclosures to mitigate regulatory penalties, reputational damage, and operational disruptions that could erode firm profitability (Clarkson et al., 2008; Perrault & Clark,

2015). Beyond financial concerns, activists are also driven by ethical, reputational, and societal considerations, pushing firms to align with evolving environmental expectations and adapt to changing market conditions (Flammer, 2013; Flammer et al., 2021). By promoting transparency and sustainable practices, they seek to protect both their investments and corporate accountability in an increasingly ESG-conscious landscape (Rubach & Sebora, 2009)

Activist proposals are not typically supported in shareholder meetings. The primary aim of such activism, however, is not necessarily to secure approval of these resolutions but to draw public and media attention to the issues raised. This increased visibility exerts reputational pressures on companies to respond to the concerns outlined in the proposals. Several factors contribute to the low level of support. Many institutional investors either abstain or vote with management on social and environmental issues due to established policies or the complexity of the issues involved (Black, 1998). ESG issues can also be diverse and highly company-specific, making it challenging for shareholders to acquire sufficient information to make an informed decision (Clark et al., 2008). Additionally, some mutual funds have policies to automatically vote against ESG proposals or to abstain, further limiting support (Monks et al., 2004). Voting in favor of a shareholder proposal may also signal opposition to current management, risking reputational repercussions for both the firm and shareholders. As a result, the primary objective of activist proposals is often not to secure immediate approval but rather to draw public and media attention to under-addressed issues, thereby exerting reputational pressures. A growing body of literature has examined the consequences of environmental shareholder activism, highlighting its multifaceted impacts on managerial accountability, environmental practices, and transparency. Table 3 summarizes key studies, their findings, and the mechanisms through which shareholder activism influences corporate behavior.

Table 3. Literature Review on the Consequences of Environmental Shareholder Activism

Author(s)	Journal	Research Topic	Sample	Consequences of Environmental Shareholder Activism	Key underlying mechanisms
Monks et al. (2004)	Natural Resource Forum	How prominent and effective is CSR shareholder activism in addressing environmental issues?	2000-2003 for 81 Large US public corporations	Activism promotes transparency and accountability in corporate decision-making, equitable executive compensation, and board oversight.	Linking Environmental risk to Shareholder Value
Clark et al. (2008)	Environment and Planning A	How do social and environmental shareholder activists influence corporate environmental performance through shareholder resolutions?	Includes 671 shareholder resolutions filed with a focus on environmental and CSR-related proposals	Activism enhances managerial accountability and environmental practices, with mixed financial impacts—potential long-term gains but short-term challenges, varying by firm performance.	Reputational damage (Protecting Corporate reputation and brand image)
Perrault & Clark (2015)	Organization and Environment	How do firms respond to environmental activists' status and reputation?	417 shareholder resolutions concerning environmental issues from 2004 to 2008	Firms engage more with high-status activists and coalitions to gain legitimacy and prestige, while also addressing environmental concerns when facing confrontational activists.	Maintaining legitimacy and Avoiding Reputational threats
Walls & Berrone (2015)	Journal of Business Ethics	How do CEO power and shareholder activism influence firms' environmental strategies and performance?	267 U.S. listed firms in 5 industries from 2001 to 2007	Environmental shareholder activism pressures firms, particularly those with powerful CEOs, to adopt greener practices and reduce environmental impact, resulting in substantive improvements.	shareholder pressure (reputational enhancement via “Green Halo’s”)
Schopohl (2017)	SSRN Electronic Journal	Is environmental and social shareholder activism driven by value maximization or ulterior motives?	3,360 environmental and social shareholder proposals submitted to 663 companies from 1997 to 2013.	Shareholder activism minimally impacts stock prices and effectiveness, often diverting resources to defense rather than change, with firms risking greenwashing.	Past ESG Violation (Prudent and Legitimacy Management)
Flammer et al. (2021)	Strategic Management Journal	Can shareholder activism increase voluntary disclosure of climate change risks without mandated requirements?	1,110 firm-year observations from 265 U.S. public firms in the S&P 500 during the period of 2010–2016	Environmental shareholder activism results in greater voluntary disclosure of climate change risks and can lead to higher company valuations following such disclosures.	Alignment with Long-term institutional investors for Value creation
Lee et al. (2022)	Academy of Management Journal	How do wealth-oriented and CSR-oriented shareholder unrest affect CEO career outcomes, including pay, dismissal, and voluntary departure?	U.S. public corporations from the Standard and Poor’s 1500 index	Shareholder activism, particularly CSR-oriented unrest, significantly impacts CEO career outcomes. It leads to adjustments in CEO pay, increased likelihood of dismissal, and voluntary departure.	Respond to “shareholder unrest” due to hold CEOs accountable
Sun et al. (2024)	International Review of Financial Analysis	Can environmental shareholder activism boost green innovation?	10,499 firm-year observations from 2,134 firms listed on China's Shenzhen and Shanghai stock exchanges from 2011 to 2020	Environmental shareholder activism boosts green innovation, curbs managerial myopia, attracts stakeholder attention, and enhances market valuation and governance.	Reduce Managerial Myopia or Short termism (reputational concern and external pressure) – Reduce Agency conflict

Signaling Theory and Environmental Shareholder Activism

Signaling theory offers a valuable framework for understanding how environmental shareholder activism shapes corporate disclosures and influences stakeholders' perceptions of a firm's environmental performance (Spence, 1973; Connelly et al., 2011). Activists and the broader investing public lack full information about the firm's environmental performance or commitment, creating information asymmetry. Activists, in turn, serve as catalysts for revealing—or "eliciting"—credible signals from the firm. A company may respond by publishing more detailed environmental disclosures, which act as observable signals that reduce information asymmetry. Importantly, signaling theory emphasizes that truly substantive disclosures are costlier for the firm—either financially (through audits or certifications) or reputationally—making them more credible to observers. Conversely, superficial or symbolic disclosures often entail lower costs and thus may be less trustworthy. Hence, environmental activists effectively push firms to provide costlier, more transparent signals, allowing external audiences (investors, regulators, the public) to distinguish high-commitment firms from those merely greenwashing. This logic aligns with prior research indicating that signals and signal costs are central to how firms demonstrate authenticity in their sustainability efforts (Connelly et al., 2024).

The role of information availability cannot be overstated, particularly in addressing complex issues like environmental sustainability. Transparent disclosure practices enable stakeholders to evaluate a firm's environmental performance with quantifiable metrics, reducing information asymmetry and holding management accountable (Chuah et al., 2023; Flammer et al., 2021). By demanding clearer reporting and disclosure of environmental risks, shareholder activists play a noteworthy role in bridging the gap between firms' actual environmental performance and stakeholder expectations. Transparency can align management decisions with stakeholder

expectations and potentially mitigate external pressures. However, there remains uncertainty about whether such transparency consistently fosters trust and long-term value creation. While some studies (DesJardine et al., 2022; Flammer, 2013; Flammer et al., 2021)suggest that shareholder activism drives accountability, green innovation, and valuation boosts, others (G. L. Clark et al., 2008; David et al., 2007) highlight minimal financial impact and superficial compliance—indicating a need for further empirical examination of environmental activism's effectiveness.

Hypotheses Development

Environmental Shareholder Activism and Corporate Disclosure

Signaling theory (Spence, 1973; Connelly et al., 2011) posits that a party with private or hidden information (the signaler) can convey its underlying quality or intentions through observable, credible signals to an external audience (the receiver). In the context of environmental shareholder activism, the firm serves as the signaler, possessing inside knowledge about its environmental practices and risks. Environmental shareholder activists act as receivers, scrutinizing the firm's disclosures to gauge whether it prioritizes environmental performance or merely engages in symbolic gestures.

When firms fail to meet evolving social and regulatory expectations on sustainability, this shortfall can trigger negative media attention, heighten activist pressure, and threaten the firm's reputation (Fombrun & Shanley, 1990; Ioannou & Serafeim, 2014). Such reputational damage has tangible economic consequences, including reduced consumer demand, weakened competitive standing, and declining equity values. For investors who are acutely sensitive to the long-term value of their assets, these reputational risks translate into potential financial risks (Raithel & Schwaiger, 2014; Roberts & Dowling, 2002). Recognizing these risks, environmental activists (as receivers) pressure managers to issue more transparent, detailed disclosures—signals—about

environmental practices (Delmas & Toffel, 2004; Mitchell et al., 2016). When confronted with such pressures, managers may find it strategic to issue signals that are "costly" (e.g., undergoing third-party environmental audits or adopting rigorous disclosure frameworks). These costly signals can help separate high-commitment firms from those that only pretend to be environmentally responsible, thereby reducing suspicion of "greenwashing" (Flammer et al., 2021). Moreover, robust signals of environmental stewardship can mitigate reputational damage and reinforce the firm's public image (Godfrey et al., 2008; Ioannou & Serafeim, 2014; Roberts & Dowling, 2002). By investing resources into comprehensive reporting, managers reassure activists and other stakeholders that the firm's environmental stance is genuine. By contrast, low-cost or symbolic signals (e.g., sparse sustainability narratives lacking verifiable data) are less credible.

As discussed, environmental shareholder activism may bring public scrutiny to a company's environmental practices, posing reputational risks and questioning the firm's responsiveness (Delmas & Toffel, 2004; Reid & Toffel, 2009). When a company faces negative media attention and public campaigns, it signals to various stakeholders—customers, investors, and regulators—that management's actions may be misaligned with societal expectations, thereby putting both the firm's market valuation and stakeholder relationships at risk (Bebbington et al., 2008).

I expect that firms are more likely to respond to such pressures with disclosure of environmental information, because doing so can signal accountability on environmental issues, thereby addressing activist demands and mitigating reputational risks (DesJardine et al., 2022; Flammer, 2013; Flammer et al., 2021). Conversely, companies that opt not to disclose face distinct challenges. Even if their environmental practices are robust, the lack of transparency may create a "black box" effect, fostering skepticism—what Spence (1973) describes as "missing signals." The

public and activists may question why a company withholds information, which can undermine trust. I predicted that, to mitigate reputational damage, companies may respond by increasing transparency through the disclosure of environmental activities and accomplishments. This disclosure can demonstrate accountability, address stakeholder concerns, and enhance the company's public image (Chen & Roberts, 2010). Based on the reasoning above, I propose:

Hypothesis 1. Companies targeted by environmental shareholder activism are more likely to disseminate information regarding their environmental performance.

Impact of Institutional Investors

I was expecting institutional investors to have a stronger influence than other shareholders in driving corporate environmental disclosure. Institutional investors, given their long-term focus and substantial ownership stakes, wield significant power in engaging with corporate management (Bushee, 2001). Managers recognize that failing to address their demands can result in public scrutiny, proxy battles, or reputational fallout, making them more likely to respond constructively to institutional pressures. From a signaling theory perspective, institutional investor pressure is more likely to elicit credible and costly signals from firms. As institutional investors are seen as sophisticated and long-term actors, their demands may push firms to respond with substantive disclosures—such as verified emissions reports or detailed sustainability metrics—that reduce information asymmetry and signal authentic environmental commitment (Spence, 1973).

Moreover, institutional investors often have fiduciary duties that require them to integrate ESG considerations into their investment strategies (Eccles & Klimenko, 2019). Their ability to form coalitions further amplifies their influence, enabling them to sway director elections and push for stronger environmental disclosures (Cundill et al., 2017; Perrault & Clark, 2015). Unlike individual activists who may divest in response to poor ESG performance, institutional investors

are more likely to remain engaged, pressing for long-term environmental improvements rather than temporary symbolic responses (Ryan & Schneider, 2002). Given their sustained influence and capacity to shape corporate governance, I propose:

> *Hypothesis 2. The positive effect of environmental shareholder activism on a firm's environment information disclosure is stronger when environmental shareholder activism is initiated by institutional investors.*

The Moderating Role of Dirty vs. Green Industries

With oil spills and carbon emissions under the spotlight, it's the so-called 'dirty' industries that bear the brunt of environmental shareholder activist pressure. Industries characterized by high pollution, carbon-intensive or intensive resource usage typically face amplified scrutiny and reputational risk due to their significant environmental impact (Ding et al., 2023; Liu et., 2023). In such sectors, negative publicity arising from environmental shareholder activism can translate into extensive media attention, heightened regulatory audits, and public backlash (Diaz-Rainey et al., 2024). Consequently, managers in dirty industries may have stronger incentives to respond proactively when confronted by environmental shareholder activists by increasing the transparency of their environmental reporting in order to maintain their reputation and assure shareholders that they manage risks responsibly. This aligns with signaling theory, as firms in dirty industries face greater scrutiny and must use more credible, costly disclosures to signal genuine environmental commitment and reduce stakeholder skepticism.

In contrast, firms in "green" (low-polluting) industries—such as software or certain service-based sectors—are less likely to be directly associated with severe environmental risks (e.g., emissions, toxic waste). Although these firms may still face reputational consequences if they ignore environmental issues, the magnitude and immediacy of those consequences are not

substantial compared to their counterparts in dirty industries. As a result, their responsiveness to activist pressure may be less pronounced, since the perceived costs of inadequate disclosure and the potential threat of regulatory or reputational sanctions are relatively lower. In contrast, dirty industries operate under tighter public and regulatory oversight, making them especially sensitive to shareholder activism (Diaz-Rainey et al., 2024). Building on the above discussion, I propose the following hypothesis to examine whether industry types moderate the relationship between environmental shareholder activism and corporate environmental disclosure:

> *Hypothesis 3. The positive effect of environmental shareholder activism on corporate environmental disclosure is stronger for firms operating in "dirty" (high-polluting) industries compared to firms in "green" (low-polluting) industries.*

Chapter 3

DATA AND METHODS

Data and Sample

To test the hypotheses, I gathered the financial and ESG data from Bloomberg's BDH (Bloomberg Historical Data) function for the S&P 500 firms listed in 2023 from 2016 to 2023. For each firm, I obtained key financial metrics, including ROA, market-to-book ratio, leverage, cash holdings, and firm size from Bloomberg. I also collected institutional ownership data from Thomson Reuters Refinitiv, which provides detailed information on the percentage of shares held by institutional investors. Further, I gathered the environmental shareholder activism data from the ISS database (https://www.issgovernance.com/), which contains records on shareholder proposals and their characteristics. After excluding observations with missing values, the final sample consisted of 3,251 firm-year observations.

Measures

Dependent variable. The dependent variable, a firm's environmental disclosure score, was obtained from Bloomberg's ESG Disclosure Score dataset. Specifically, I used the Environmental Disclosure Score (E-Disclosure Score), which measures the extent of a company's publicly disclosed environmental information.

Bloomberg calculates this score based on the breadth and depth of environmental data reported by firms, covering areas such as greenhouse gas (GHG) emissions, energy consumption, water usage, waste management, sustainability reporting, and climate-related risks. The score ranges from 0.1 to 100 (Continuous), where higher values indicate greater transparency and disclosure of environmental information, while lower values suggest minimal reporting.

Importantly, this score does not measure a firm's actual environmental performance but rather the extent of its public disclosures.

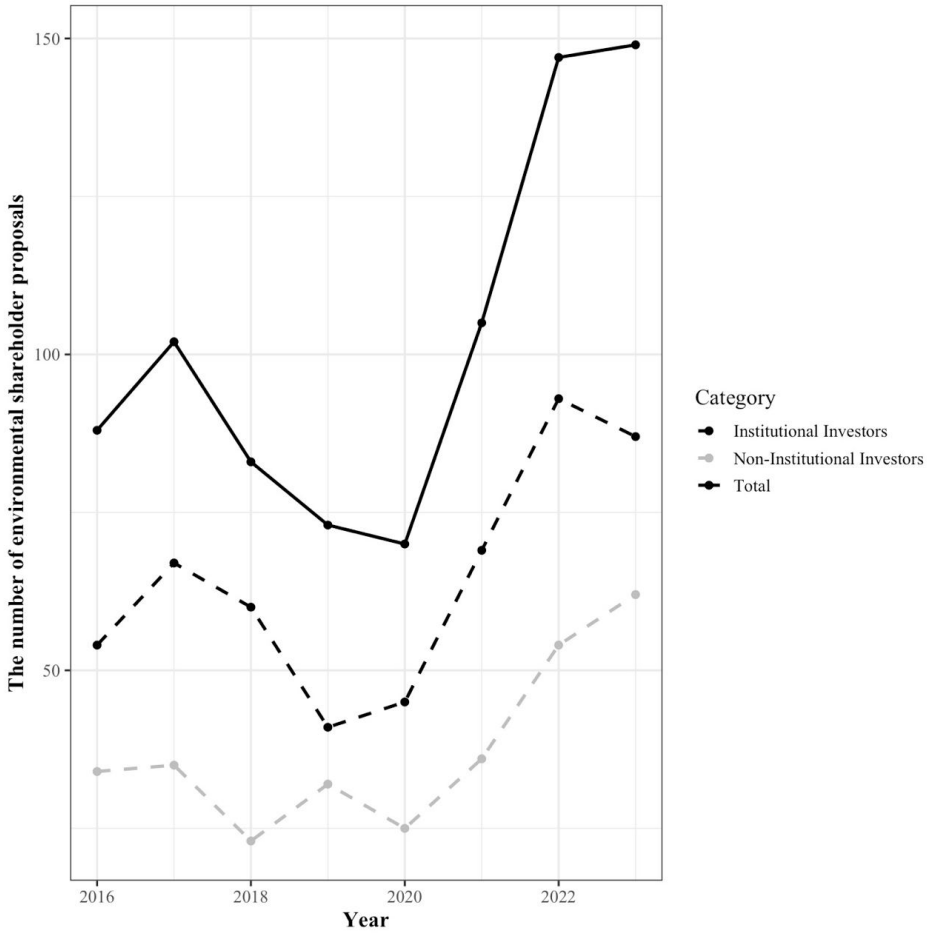
Bloomberg sources this data from publicly available reports, including sustainability reports, annual filings, regulatory disclosures, corporate websites, and direct company statements. Additionally, to control for broader ESG disclosure practices, I include Bloomberg's *social* and *governance scores* as control variables.

Independent variables. I constructed a measure of environmental shareholder activism using the Institutional Shareholder Services (ISS) database, which provides detailed records of shareholder proposals. The database contains several key columns, two of which I relied on to identify environmental proposals. First, the "Resolution Type" column classifies each proposal as either "Governance (GOV)" or "Socially Responsible Investing (SRI)." I included only those proposals classified as SRI. Second, I reviewed the "Proposal Title" column—a detailed description of the proposal's main topic—to determine whether it pertained to environmental issues (e.g., climate change, pollution control, renewable energy, resource management). For each firm, I then counted *the number of environmental proposals* in a given year to test Hypothesis 1. To ensure to capture the impact of environmental shareholder activism accurately, I applied a one-year lag to the environmental activism measure. This accounts for the likelihood that the influence of shareholder proposals on corporate environmental disclosure is more likely to be reflected in the following year's reporting cycle.

Figure 1 presents an overall trend of environmental shareholder activism during the study period. The data reveals that the majority of environmental proposals were submitted by institutional investors. On average, 63.39% of all environmental shareholder proposals were initiated by institutional investors, whereas only 36.61% were submitted by non-institutional

investors. This underscores the dominant role that institutional investors play in advocating for environmental transparency and corporate sustainability initiatives.

Figure 1. Trend of environmental shareholder proposals, 2016 – 2023



To test Hypothesis 2, I distinguished between environmental shareholder activism initiated by institutional versus by non-institutional investors, based on the "sponsor type" field in the ISS dataset (Flammer et al., 2021). To classify proposals, I categorized sponsor types labeled as "individual," "union," "religious," or "other" as non-institutional investors. All other sponsor types, including public pension funds, socially responsible investment (SRI) funds, special interest investors, and asset management funds, were classified as institutional investors. For each firm-year observation, I counted the total number of shareholder proposals submitted by institutional

and non-institutional investors. As shown in Figure 1, institutional investors were responsible for the majority of environmental shareholder proposals (63.39% of all proposals), while non-institutional activists accounted for 36.61%.

To test Hypothesis 3, I considered three distinct industry groups, following prior research in management and finance (Abdelhadi et al., 2020; Bowen et al., 2013; Cui & Qian, 2017; Davis, 2013): dirty, green, and neutral, based on Standard Industrial Classification (SIC) codes. Industries with substantial environmental footprints were classified as dirty industries; specifically, mining and extraction (SIC codes 10–14), manufacturing (SIC codes 20–39), energy production (SIC code 49), and construction (SIC code 15) (Abdelhadi et al., 2020; Cui & Qian, 2017). These industries are widely recognized for their high levels of carbon emissions, waste generation, and resource consumption. Conversely, low-polluting industries that emphasize energy efficiency, waste reduction, and sustainable business practices were classified as green industries. This category included renewable energy firms (a subset of SIC 49), green manufacturing processes (e.g., SIC 34), sustainable construction firms (a subset of SIC 15), and responsible agriculture (SIC codes 01, 09) (Bowen et al., 2013; Davis, 2013). Finally, industries that do not exhibit strong indicators of either high or low environmental impact were classified as neutral (industries not included in the dirty or green categories). These industries represented a middle ground in terms of environmental impact. In my data, only 40 firms were in the green industries, while 2,064 and 1,920 were in dirty and neutral industries, respectively. Thus, I created a *dirty dummy* variable that takes the value of 1 if a firm belongs to a dirty industry and 0 otherwise (combining neutral and green industries).

Control Variables

Following prior literature, I included several control variables to account for firm-specific characteristics that may influence corporate environmental disclosure. First, I controlled for *firm size*, measured as the natural logarithm of total assets, as larger firms tend to have more resources for disclosure and are often subject to greater scrutiny. I added *firm performance* as *return on assets*, as financially successful firms may have different incentives regarding disclosure practices. I included *financial leverage* measured as the ratio of debt-to-equity, as more leveraged firms may face different pressures regarding transparency and environmental initiatives. Additionally, given the relevance of institutional ownership to my study, I controlled for the percentage of *institutional ownership*, using the Thomson Reuters Refinitiv database, which derives institutional ownership data from 13F filings. This variable accounts for the potential influence of institutional investors on a firm's ESG-related disclosures. To isolate the impact of environmental disclosure score, I also controlled for *social score* and *governance score*. Since corporate ESG strategies often encompass multiple dimensions beyond environmental concerns, these controls ensure that any observed effect is not driven by a firm's broader social or governance policies. I controlled for *board diversity* and *CEO power*, as these factors may influence corporate disclosure strategies. The former was measured by the percentage of women on the board, while the latter was measured by whether the CEO also served as the board chair. Finally, I also included year dummies to control for any year-specific macro factors.

Analysis

To examine the impact of environmental shareholder activism on corporate environmental disclosure, I employed random-effects regression models, which account for variation across firms while allowing for time-invariant characteristics. A fixed-effects model is not appropriate for my

study because of two reasons. First, no variation in my IV for some firms – in other words, zero-proposal firms would be dropped. Second, fixed-effects models do not allow me to test Hypothesis 3, because industry dummies were dropped in the fixed-effects models. Table 4 presents the descriptive statistics and correlation matrix of all key variables. Notably, the lagged environmental shareholder activism (Hypothesis 1 variable) is positively correlated with environmental disclosure scores, suggesting a potential influence of environmental shareholder activism on firms' environmental disclosure practices.

Table 4. Descriptive statistics and correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Environmental disclosure score	1												
(2) Social score	0.5	1											
(3) Governance score	0.32	0.22	1										
(4) Number of environmental proposals (lagged)	0.09	0.02	0.1	1									
(5) Lagged ins E proposals	0.07	0.01	0.09	0.84	1								
(6) Lagged non-ins E proposals	0.07	0.02	0.06	0.74	0.27	1							
(7) Return on asset	-0.02	-0.08	0.03	-0.03	-0.02	-0.02	1						
(8) Firm Size	0.31	0.11	0.22	0.24	0.21	0.18	-0.29	1					
(9) Financial leverage	0.01	0	0.01	-0.01	-0.01	-0.01	0	0.01	1				
(10) Institutional owner	-0.17	-0.03	0.02	-0.17	-0.14	-0.12	0.01	-0.3	-0.01	1			
(11) Percentage of women on board	0.3	0.22	0.41	0.07	0.07	0.05	0.03	0.2	0.01	-0.01	1		
(12) CEO duality	0.05	0.05	-0.02	0.1	0.08	0.07	-0.05	0.18	0.01	-0.07	0.03	1	
(13) Dirty industry dummy	0.37	0.21	0.07	0.04	0.03	0.04	0.04	-0.11	-0.02	-0.08	-0.03	0.03	1
Mean	37.58	3.2	7.18	0.19	0.12	0.07	7	10.08	5.75	0.81	27.27	0.44	0.50
S.D.	21.21	2	0.77	0.58	0.4	0.32	8.01	1.39	10.26	0.13	10.08	0.5	0.50
Min	0	0	1.1	0	0	0	-48.77	5.1	1.09	0.00	0	0	0.00
Max	89.22	10	9.06	7	4	5	76.25	15.17	83.54	1.00	83.33	1	1.00

Note: N = 3251.

Chapter 4
RESULTS

Table 5 presents the results of the random-effects OLS regressions assessing the impact of environmental shareholder activism on corporate environmental disclosure. Model 1 serves as a baseline model, including only control variables.

Table 5. Random-effects OLS regression results

	Models			
	(1)	(2)	(3)	(4)
DV = Environmental disclosure score	Control Only	H1	H2	H3
Return on asset	0.062 *	0.060 *	0.061 *	0.061 *
	0.028	0.028	0.028	0.028
Firm size	4.796 ***	4.813 ***	4.813 ***	4.813 ***
	0.529	0.531	0.532	0.532
Financial leverage	0.005 **	0.005 **	0.004 **	0.005 **
	0.002	0.001	0.001	0.001
Social score	1.816 ***	1.814 ***	1.815 ***	1.814 ***
	0.219	0.219	0.219	0.219
Governance score	0.467	0.468	0.459	0.464
	0.562	0.561	0.561	0.560
Institutional ownership	-1.666	-1.828	-1.807	-1.842
	2.298	2.307	2.308	2.306
Percentage of women on board	0.112 **	0.113 **	0.113 **	0.113 ***
	0.034	0.034	0.034	0.034
CEO duality	-0.871	-0.854	-0.842	-0.856
	0.631	0.632	0.632	0.632
Dirty industry dummy	15.327 ***	15.355 ***	15.351 ***	15.324 ***
	1.345	1.346	1.347	1.359
Lagged Environmental proposals		-0.448		-0.546
		0.382		0.511
Lagged institutional environmental proposals			-0.695	
			0.541	
Lagged non-institutional environmental proposals			-0.029	
			0.451	
Dirty industry dummy * number of environmental shareholder proposal (lagged)				0.172
				0.751
(Constant)	-33.148 ***	-33.173 ***	-33.180 ***	-33.107 ***
	6.701	6.699	6.701	6.713
Year dummies	Included	Included	Included	Included
R-squared	0.375	0.376	0.376	0.398
Observations	3251	3251	3251	3251

Note: Robust standard errors are in parentheses. *** p<0.001, ** p<0.01, * p<0.05 (two-tailed tests).
The R-squared values are obtained from random effects model. For models Equations see Appendix 4.

The findings in Table 5 indicate that firm size is positively and significantly associated with environmental disclosure ($\beta = 4.436$, $p < 0.001$), suggesting that larger firms tend to provide more environmental information. Similarly, *return on asset* is positively related to environmental disclosure ($\beta = 0.063$, $p < 0.05$), implying that financially stronger firms are more transparent in their environmental reporting. Social score also exhibits a strong positive association ($\beta = 1.894$, $p < 0.001$), reinforcing that firms with greater social responsibility efforts tend to disclose more environmental information. Financial leverage is positively significant ($\beta = 0.004$, $p < 0.01$), though its effect size remains small. In contrast, institutional ownership percentage and governance score do not show statistically significant effects on environmental disclosure. The percentage of women on the board is significantly associated with increased environmental disclosure ($\beta = 0.104$, $p < 0.01$), while CEO duality does not exhibit a significant impact.

Model 2 introduces the *number of environmental shareholder proposals (lagged)* to test Hypothesis 1, which predicts that environmental shareholder activism positively influences environmental information disclosure. The coefficient of the variable is negative and not statistically significant ($\beta = -0.400$, $p = 0.383$), suggesting that shareholder activism does not have a positive effect on environmental disclosure. The inclusion of this variable does not substantially alter the effects of the control variables, as *firm size*, *ROA*, and *social score* remain significant. Thus, Hypothesis 1 is not supported.

Model 3 tests Hypothesis 2 by adding both the number of institutional environmental shareholder proposals and the number of non-institutional environmental shareholder proposals. The results indicate that institutional environmental proposals have a negative but non-significant relationship with environmental disclosure ($\beta = -0.653$, $p = 0.539$), whereas non-institutional proposals have a near-zero effect ($\beta = 0.029$, $p = 0.452$). These findings suggest that neither type

of activist investor is significantly associated with increased environmental disclosure. Thus, I do not find evidence for Hypothesis 2.

Model 4 assesses Hypothesis 3, examining whether the impact of environmental shareholder activism on environmental information disclosure is more pronounced in dirty industries. The coefficient for the *dirty industry dummy* is positive and highly significant ($\beta = 15.324$, $p < 0.001$), indicating that firms operating in high-pollution industries generally disclose more environmental information than those in neutral or green industries. However, the interaction between *dirty industry dummy* and *lagged environmental proposals* is not statistically significant ($\beta = 0.172$, $p = 0.751$), suggesting that environmental shareholder activism does not have a stronger effect on disclosure for firms in high-pollution sectors compared to others. The R-squared value in Model 4 increases from 0.376 in Models 2 and 3 to 0.398, indicating that the industry classification enhances model fit and explains additional variance in environmental disclosure. Thus, Hypothesis 3 is not supported.

Overall, these findings demonstrate that firm characteristics such as size, profitability, and social responsibility are strong predictors of environmental disclosure, while environmental shareholder activism does not appear to have a significant direct effect on disclosure practices. The results further suggest that dirty industries exhibit systematically higher levels of environmental disclosure, though this is not necessarily driven by activist pressures.

Supplementary analysis

I conducted a few supplementary analyses to find evidence regarding the impact of environmental shareholder activism on corporate environmental disclosure. I replaced the Hypothesis 1 variable with *cumulative two-year* and *three-year lagged* variables. The results remain largely consistent with the main findings of Table 5 (see Appendix Tables 1 and 2),

reinforcing the conclusion that the presence of environmental shareholder proposals does not translate into substantial changes in firms' environmental disclosure scores.

Beyond firm-level dynamics, an additional key finding relates to the political context of environmental shareholder activism. As illustrated in Appendix Figure 1, the number of environmental proposals submitted exhibits a clear downward trend under the Republican presidency (President Donald Trump), while it begins to increase under the Democratic administration. This pattern suggests that activists are strategic in their engagement, adjusting their efforts based on the political and regulatory environment. Under Democratic administrations, where environmental policies tend to be more stringent, activists may perceive greater opportunities to push for environmental reforms. Conversely, under Republican administrations, where regulatory rollbacks are more common, the likelihood of successful activism may decline, leading to a lower volume of proposals.

Finally, as robustness check, I conducted an additional random effect and OLS regression using a logit-transformed dependent variable ($y = \log\left(\frac{Y}{1-y}\right)$) to account for the bounded nature of environmental disclosure scores. The results of this transformation-based model remain consistent with previous findings and reveal no significant relationship between environmental shareholder activism and corporate environmental disclosure.

Chapter 5

DISCUSSION AND CONCLUSION

This study aimed to examine the impact of environmental shareholder activism on corporate environmental disclosure drawing on signaling theory. Given the mixed findings in prior literature regarding the effectiveness of shareholder activism in influencing corporate transparency (Clark et al., 2008; David et al., 2007; Flammer et al., 2021; Mahmood et al., 2018), this study sought to provide empirical evidence on whether firms respond to activist pressures by increasing the depth and breadth of their environmental disclosures. Contrary to my expectations, the results indicate that environmental shareholder activism does not have a significant effect on corporate environmental disclosure. Across multiple regression models and supplementary analyses, the presence of environmental shareholder proposals did not lead to meaningful improvements in environmental disclosure scores.

One potential explanation for this finding might be greenwashing, where firms employ sustainability-related language in public discourse without implementing substantive changes in their environmental practices (Delmas & Burbano, 2011). Given that firms are often adept at managing external pressures to maintain legitimacy, it is possible that they engage in symbolic compliance—publicly acknowledging activist demands while making minimal substantive changes to their disclosure policies. In this case, firms may issue general and ambiguous statements on sustainability or minor voluntary disclosures to satisfy external stakeholders without incurring the costs associated with disclosure transparency and accountability. This aligns with prior research suggesting that corporate environmental communication is often decoupled from actual performance (Boiral, 2013; Marquis et al., 2016).

Another plausible explanation is that firms may respond to environmental shareholder activism through private concessions rather than public disclosures. Activist pressure may lead to behind-the-scenes commitments, negotiations, or internal shifts in corporate governance that are not immediately reflected in formal disclosure scores. Prior research suggests that private engagements between activist shareholders and corporate executives can be more effective than public shareholder proposals in influencing firm behavior (Brav et al., 2016; McCahery et al., 2016). Firms may opt to negotiate directly with activists rather than making public commitments that could attract further scrutiny or regulatory repercussions.

One consistent finding of this study is the significant impact of industry type on corporate environmental disclosure. The results show that firms operating in dirty industries—such as energy production, manufacturing, and mining—are far more likely to disclose environmental information compared to firms in neutral or green industries. While this heightened disclosure is not necessarily driven by shareholder activism, it indicates that industry pressures, regulatory oversight, and public scrutiny play a crucial role in shaping corporate transparency. Firms in high-pollution sectors face greater regulatory and reputational risks, incentivizing them to be more forthcoming about their environmental information. This finding aligns with prior studies that suggest that disclosure intensity is often dictated more by industry-specific pressures than by activist interventions (Darnall et al., 2010; Reid & Toffel, 2009).

Another finding of this study relates to governmental and political influences on environmental activism. The supplementary analysis uncovered an intriguing pattern: the number of environmental shareholder proposals declines significantly under Republican administrations but rises under Democratic administrations. This finding suggests that environmental activism is highly responsive to the broader political climate. Given that Republican administrations have

historically been less favorable toward corporate social responsibility (CSR) and environmental regulation (Kim & Lyon, 2015), activists may perceive lower chances of success during these periods, leading to a strategic reduction in proposal submissions. Conversely, under Democratic administrations—where environmental regulations and ESG policies are more actively promoted—activists may see greater opportunities for engagement and increased willingness from firms to comply with their demands. This finding underscores the importance of macro-level political dynamics in shaping activist strategies and corporate responses.

Taken together, these findings contribute to the ongoing debate on the effectiveness of environmental shareholder activism. While activism plays an important role in raising awareness of environmental issues, its ability to drive substantive improvements in corporate transparency remains limited. Instead, industry-level pressures and political contexts appear to exert a greater influence over firms' disclosure behaviors.

Theoretical and Practical Implications

From a theoretical standpoint, this study challenges the notion that shareholder activism serves as an effective signaling mechanism for improving corporate environmental disclosure. Signaling theory suggests that firms seeking to maintain credibility in the face of activist scrutiny should engage in costly, verifiable disclosures (Connelly et al., 2011). However, the lack of a significant relationship between activism and disclosure suggests that firms may not perceive shareholder proposals as a strong enough signal to warrant substantial changes in their transparency practices. This raises important questions about the conditions under which activism can function as an effective signal and whether alternative mechanisms, such as regulatory mandates or financial incentives, may be more effective in promoting disclosure.

From a practical perspective, these findings provide important insights for investors, and corporate managers. For investors, the findings highlight the need for more sophisticated engagement strategies, including private dialogues and coalition-building efforts, to achieve meaningful corporate change. For corporate managers, the results suggest that industry positioning and regulatory compliance are stronger drivers of disclosure than activist pressure, indicating that firms may be better served by proactively aligning their reporting practices with industry standards and regulatory expectations rather than solely reacting to shareholder proposals.

Limitation and future research

This study has several limitations. First, a key concern is the potential presence of endogeneity in the relationship between environmental shareholder activism and corporate environmental disclosure. Since activists do not randomly target firms, it's possible that certain firms—such as those with poor environmental practices or low baseline disclosure—are systematically more likely to be targeted. This introduces the possibility of reverse causality or omitted variable bias, which could change the observed relationship. While the study uses lagged variables to partially address this issue, future research should consider applying instrumental variable (IV) techniques or quasi-experimental designs to more rigorously assess the causal impact of environmental shareholder activism on corporate environmental information disclosure.

Second, the study focused exclusively on U.S. firms, which limits the generalizability of the findings to other regulatory and corporate governance environments. Countries with stronger sustainability regulations and ESG practices—such as those in Europe and Japan—may exhibit different patterns of corporate response to environmental shareholder activism. Future studies could explore cross-country differences to determine whether activism has a stronger effect in

regions where environmental disclosure regulations are stricter or where institutional investors play a more direct role in shaping corporate sustainability policies.

Third, another important limitation is the relatively short timeframe of the study, covering only eight years of data. Given that shareholder activism may have long-term, cumulative effects on corporate disclosure, extending the dataset over a longer period could provide more conclusive evidence. While the study employed lagged models to account for delayed responses, a longer observation window could enhance the robustness of the findings and better capture trends in activism-driven disclosure.

Fourth, the influence of political regimes on environmental activism remains an area for further investigation. The study observed that environmental shareholder activism tends to decline under Republican administrations and increase under Democratic administrations. However, this finding is based on a single transition between political parties. Future research could collect data over multiple electoral cycles to assess whether activists systematically adjust their engagement strategies in response to political changes. A deeper understanding of how government policies shape shareholder activism would help clarify whether the observed patterns are persistent or context dependent.

Finally, the sample was limited to S&P 500 firms listed in 2023, during the period from 2016 to 2023. While this sample has a relatively stable and well-documented dataset, it excludes firms that have entered or exited the S&P 500 during the study period. Future research could extend this approach by considering all firms that were part of the index at any point during the observation window. This would allow for a more dynamic analysis that accounts for firms moving in and out of the index and potentially experiencing different levels of activist pressure and disclosure behavior.

Conclusion

The empirical evidence of this study showed that environmental shareholder activism does not have a significant impact on corporate environmental disclosure, suggesting that firms may respond in more symbolic or private ways rather than through public transparency. However, industry pressures play a substantial role, with firms in high-pollution sectors engaging in significantly greater environmental disclosure, independent of activist intervention. Furthermore, political factors shape activist behavior, with notable shifts in proposal volume corresponding to changes in U.S. presidential administrations. While shareholder activism remains an important tool for corporate accountability, its effectiveness in driving disclosure improvements appears limited.

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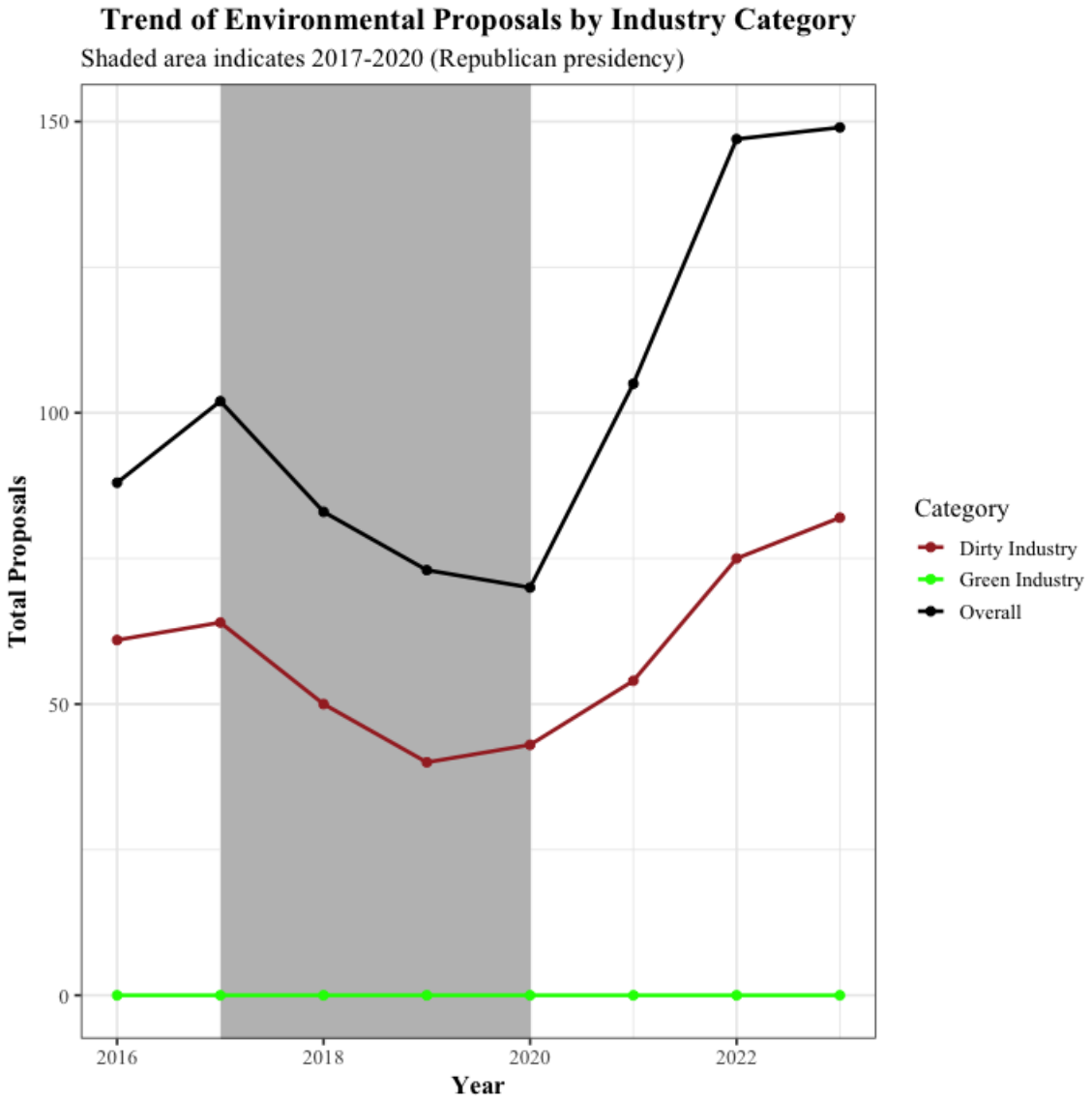
APPENDICES

Appendix Figure 1. Trend of environmental shareholder proposals by industry category



Appendix Table 1. Random-effects OLS regression results (Cumulative 2-Year Lagged)

	Models							
	(1)		(2)		(3)		(4)	
DV = Environmental disclosure score	Control Only		H1		H2		H3	
Return on asset	0.053	*	0.053	*	0.053	+	0.054	+
	0.028		0.028		0.028		0.028	
Firm size	4.265	***	4.291	***	4.291	***	4.289	***
	0.579		0.583		0.583		0.585	
Financial leverage	0.004	***	0.005	***	0.005	***	0.005	***
	0.001		0.001		0.001		0.001	
Social score	1.707	***	1.707	***	1.708	***	1.706	***
	0.229		0.229		0.229		0.229	
Governance score	0.534		0.535		0.534		0.523	
	0.573		0.573		0.573		0.572	
Institutional ownership	-6.702	*	-6.845	*	-6.833	+	-6.861	+
	3.877		3.879		3.877		3.885	
Percentage of women on board	0.123	***	0.124	***	0.124	***	0.125	***
	0.033		0.034		0.034		0.033	
CEO duality	-0.698		-0.685		-0.682		-0.689	
	0.619		0.619		0.620		0.619	
Dirty industry dummy	15.209	***	15.244	***	15.242	***	15.174	***
	1.359		1.360		1.360		1.379	
Lagged environmental proposals			-0.307				-0.423	
			0.291				0.432	
Lagged institutional environmental proposals					-0.366			
					0.438			
Lagged non-institutional environmental proposals					-0.198			
					0.361			
Dirty industry dummy * number of environmental shareholder proposal (lagged)							0.201	
							0.577	
(Constant)	-22.526	**	-22.610	**	-22.617	**	-22.480	**
	8.010		8.010		8.012		8.059	
Year dummies	Included		Included		Included		Included	
R-squared	0.305		0.306		0.306		0.335	
Observations	2812		2812		2812		2812	

Note: Robust standard errors are in parentheses. *** p<0.001, ** p<0.01, * p<0.05 (two-tailed tests).
The R-squared values are obtained from random effects model.

Appendix Table 2. Random-effects OLS regression results (Cumulative 3-Year Lagged)

	Models			
	(1)	(2)	(3)	(4)
DV = Environmental disclosure score	Control Only	H1	H2	H3
Return on asset	0.039	0.039	0.039	0.039
	0.026	0.027	0.026	0.026
Firm size	3.838 ***	3.896 ***	3.897 ***	3.894 ***
	0.586	0.590	0.590	0.589
Financial leverage	0.005 ***	0.005 ***	0.005 ***	0.005 ***
	0.001	0.001	0.001	0.001
Social score	1.450 ***	1.450 ***	1.449 ***	1.447 ***
	0.243	0.244	0.244	0.244
Governance score	0.405	0.413	0.414	0.396
	0.606	0.605	0.606	0.609
Institutional ownership	-5.999	-6.118	-6.113	-6.125
	4.015	4.017	4.017	4.016
Percentage of women on board	0.112 **	0.112 **	0.112 **	0.114 ***
	0.033	0.033	0.033	0.033
CEO duality	-0.513	-0.498	-0.498	-0.506
	0.640	0.639	0.640	0.641
Dirty industry dummy	15.276 ***	15.338 ***	15.339 ***	15.199 ***
	1.376	1.378	1.379	1.396
Lagged environmental proposals		-0.32		-0.484
		0.227		0.363
Lagged institutional environmental proposals			-0.307	
			0.345	
Lagged non-institutional environmental proposals			-0.345	
			0.338	
Dirty industry dummy * number of environmental shareholder proposal (lagged)				0.278
				0.466
(Constant)	-14.388 +	-14.380 +	-14.803 +	-14.614 +
	8.599	8.600	8.606	8.623
Year dummies	Included	Included	Included	Included
R-squared	0.20919	0.20981	0.20982	0.25159
Observations	2367	2367	2367	2367

Note: Robust standard errors are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, (two-tailed tests).
The R-squared values are obtained from random effects model.

Appendix 4. Equations of models

Model 1 (Random effects – control only)

$$ENVIRON\_DISCLOSURE\_SCORE_{i,t} = \beta_0 + \sum_y \beta_y . 1_{year=y} + \boldsymbol{\epsilon}_{i,t}$$

Model 2 (Random effects - 1 year lagged environmental proposals)

$$ENVIRON\_DISCLOSURE\_SCORE_{i,t}$$

$$= \beta_0 + \sum_y \beta_y . 1_{year=y} + \beta 1 \cdot ENVIRONMENTAL\_PROPOSALS_{\mathrm{i,t-1}} + + \boldsymbol{\epsilon}_{i,t}$$

Model 3 (Random effects - 1 year lagged institutional environmental proposals and non-institutional environmental proposals)

$$ENVIRON\_DISCLOSURE\_SCORE_{i,t}$$

$$= \beta_0 + \beta 1 \cdot \mathrm{INS\_E\_PROPOSALS_{i,t-1}} + \beta 2 \cdot \mathrm{NON\_INS\_E\_PROPOSALS_{i,t-1}}$$

$$+ \sum_y \beta_y . 1_{year=y} + \boldsymbol{\epsilon}_{i,t}$$

Model 4 (Random effects - 1 year lagged environmental proposals and dirty industry interaction)

$$ENVIRON\_DISCLOSURE\_SCORE_{i,t}$$

$$= \beta_0 + \beta 1 \cdot ENVIRONMENTAL\_PROPOSALS_{\mathrm{i,t-1}} + \beta 2 \cdot \mathrm{Dirty\_Dummy\_induustry_{i,t}} + \beta 3$$

$$\cdot (ENVIRONMENTAL\_PROPOSALS_{i,t-1} \times \mathrm{Dirty\_Dummy\_induustry_{i,t}})$$

$$+ \sum_y \beta_y . 1_{year=y} + \boldsymbol{\epsilon}_{i,t}$$

Note: For 2-year cumulative and 3-year cumulative proposals the same models have been used with substitution of 1 year lagged proposals with 2-year and 3-year cumulative proposals respectively, and same logic have been used for institutional and non-institutional environmental proposals.