Shareholder Activism on Climate Change: Evolution, Determinants and Consequences.

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Abstract: Based on a comprehensive dataset of climate-related shareholder proposals, this paper examines the evolution, determinants, and value relevance of shareholder activism on climate change. We first describe the evolution of these proposals, differentiating between disclosure resolutions and those more focused on climate risk or strategy. Our results show that companies compromise more in responding to disclosure-based proposals than those relating to climate risk or strategy. We then examine the value relevance of climate-related shareholder proposals using an event study. This analysis shows a positive stock price reaction on the proxy filing date. Lastly, we find that shareholders use climate risk proposals in a repetitive manner to pressure firms to include them in proxy statements for voting at the shareholders' meeting. As its contribution, this study deepens our knowledge of climate-related proxy proposals, important because of increased use by investors and advocacy groups to elicit greater disclosure and to induce firms to manage better the challenges and opportunities of climate change.

Keywords: climate change, shareholder activism, climate finance, event study.

JEL classification: G14, G15, G23, G34, Q54

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1   Introduction

Climate change has emerged as a global problem by imposing substantial risks on people, governments, and organizations. Many locations will become uninhabitable from sea level rise and extreme heat, causing ill effects such as hunger, conflict, and disease. Climate change can also hurt firm value though a repricing of climate-related financial risk. Firms are particularly vulnerable to two forms of climate risk: from the physical effects of sea level rise and extreme heat (physical climate risk) and the unintended outcomes associated with the regulations and legislation required for efficient transition to a low-carbon economy (transition climate risk) (Carney, 2015). Financial markets, however, tend to under-price climate risk, which introduces a second element of risk into asset pricing, namely, the threat to investors' portfolios of a sudden repricing of climate risk (Solomon et al., 2011). In response, investors and regulators (UK Financial Conduct Authority, 2020) call for a more orderly repricing of climate risk by promoting increased firm-level disclosure of climate impacts and investment plans to meet national goals for carbon neutrality. Some firms, notably those in the United States, however, do not consider climate change as a material financial risk requiring disclosure and question the need for direct disclosure regulation (KPMG, 2017).

Investors and shareholders encourage firms to cooperate on climate-related disclosure in several ways. Individual shareholders and advocacy groups such as Ceres have long demanded more disclosure on environmental and social issues in the belief that climate change materially affects firms' operations (Deegan & Rankin, 1997). In addition, non-governmental standard setters such as the Climate Disclosure Standards Board (CDSB) and the Sustainability Accounting Standards Board (SASB) have recommended comprehensive frameworks for climate disclosure (e.g., the Task Force on Climate-related Financial Disclosures (TCFD)). Some institutional investors also encourage proprietary disclosure channels and have established rating service organizations to

measure corporate environmental and social performance (Solomon & Solomon, 2006), for instance, information on carbon emissions through the CDP (Solomon et al., 2011).

Another mechanism to increase disclosure on climate change impacts and policies is through shareholder proposals (Denes et al., 2017). These proposals, which are usually submitted by a small group of shareholders, make official demands on firm managers to encourage or require them to act in a determined way. In the United States, if a proposal meets the requirements of the Securities and Exchange Commission (SEC), it can be eligible for a vote by all shareholders at the annual meeting, thereby presenting the issue of concern to a wide range of shareholders.

This paper investigates evolution, determinants and consequences of shareholder activism on climate change. As we discuss below, this is a growing and important topic of interest (Byrd & Cooperman, 2017; Dimson, Karakaş, & Li, 2015; Michelon & Rodrigue, 2015). Yet, as our review of the literature (Section 2) indicates, many key issues remain unsettled. First, the previous studies focus more on general environmental and social resolutions or corporate governance proposals (Dimson et al., 2015; Flammer, 2015) rather than climate concerns. Second, they may not have controlled adequately for confounding events, which could affect the results. For instance, Wei et al. (2020) consider the AGM date as the event date to study the impact of ESG resolutions on stock prices. However, other filings can influence share prices around the AGM date, such as a 10-Q (quarterly financial statements) or an 8-K (disclosure of major corporate event) filing. Third, the prior work does not consider the evolution of climate-related shareholder proposals including voted, withdrawn, and omitted proposals, important because climate change proposals often succeed only after repeated attempts, often with modifications, to achieve a vote at the annual general meeting. Understanding the determinants and evolution of shareholder climate proposals may also help understand which kinds of

proposals have the greatest chance of a positive vote by shareholders. Fourth, we analyze the impact on climate change proposals of the Paris Agreement of 2015 and explore whether there has been a change since Paris in the type of shareholder proposal, which may help explain their success or failure. The prior work based on samples prior to 2015 (Byrd & Cooperman, 2014; Dimson et al., 2015; Ertimur, Ferri, & Stubben, 2010; Flammer, 2015) does not address this issue.

To investigate these issues, we accessed a large sample of voted, withdrawn, and omitted proposals from the CERES directory. From this dataset, we extracted 717 climate change-related shareholder proposals submitted to 274 different U.S. companies over 2009–2018. The CERES dataset also provided additional data on each shareholder proposal, such as the companies targeted, proposal sponsors, issues addressed, and the voting outcome. More specifically, our analysis covers all climate change resolutions filed in 2009–2018 and has four components: it (1) codifies the evolving nature of climate change-related proposals, (2) analyzes the characteristics of target companies, (3) identifies the determinants of the outcome of a proposal (defined in two ways: whether the proposal received a vote and for those that did go to a vote what factors determined parentage vote outcome), and (4) assesses the value relevance of the proposals after properly accounting for confounding events.

These analyses document six findings of interest. We first find that risk-related proposals are more likely to receive a shareholder vote, whereas disclosure-related proposals, which are higher in number, are more likely to be withdrawn. This suggests that firms view disclosure-based proposals as costlier than risk-based proposals. Second, consistent with prior studies on environmental and social shareholder activism in general, firms targeted by a climate change proposal are larger and grow more slowly than matched firms not targeted, potentially because larger firms attract more attention. Larger

firms are also more likely to accept a proposal for voting at the annual meeting. Third, proposals repeated in consecutive years are more likely to succeed regardless of type, arguably reflecting increased pressure by shareholders. For example, an additional repeated proposal increases by 17 percentage points the probability of a vote at the annual meeting. Fourth, the Paris Agreement makes a difference. After the announcement of the US withdrawal from the Paris Agreement (June 1, 2017), we find that a shareholder proposal is less likely to be included in the proxy materials and, thus, receive a vote at the annual meeting. In contrast, however, of those fewer proposals eligible for voting at the annual meeting, the Paris Accord actually increases the percentage of votes in favor. This is evidence that the Global agreement had positive effects on voting once eligibility of a proposal for voting was established. Fifth, we find that the market reacts positively to climate change-related proposals in the proxy statement on the proxy statement filing date, with the average stock price increasing by 16.6 basis points on the filing date. This result is consistent with Wei (2020) for a sample of proposals relating to environmental and social issues, suggesting that eventual recognition by the firm of eligibility for voting on a climate change proposal is good news to shareholders despite the adverse views of some firm managers.

Taken together, these results advance our understanding of the conditions and consequences of shareholder proposals on climate change. While they mirror some of the earlier results relating to social and environmental shareholder proposals, they also offer new insights regarding the progress made by shareholders in achieving proxy statement recognition and voting rights at the annual meeting. Our finding that shareholder persistency pays off and that investors reward that persistency as an increase in stock price is especially encouraging. The remainder of the paper proceeds as follows. Section

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2 discusses the prior literature and states the testable hypotheses. Section 3 summarizes the data and sample. Section 4 presents the results, Section 5 concludes.

2   Related research and hypotheses

Shareholder proposals on environmental and social topics have grown rapidly in importance in recent years (Byrd & Cooperman, 2017; Dimson et al., 2015; Michelon & Rodrigue, 2015). In 2014 the number of shareholder proposals filed was at an 'all-time high' according to a recent report (Ernst and Young). That report highlighted that environmental and social resolutions made up the largest group (accounting for more than 40 percent of the total submissions). It also stated that emissions reporting was among the most common topic raised by shareholders. Similarly, Michelon & Rodrigue (2015) reported that proposals demanding detailed reporting on how companies mitigate climate change risks have become the most prominent in the last decade. Moreover, the success rate of these proposals has risen over the last decade (Dimson et al., 2015; Flammer, 2015; Glac, 2014).

This trend in shareholder proposals has also led to a proliferation of studies that analyze firms likely to be targeted by shareholders and the impact of the resolutions on firm financial performance (Brochet, Ferri, & Miller, 2018; Byrd & Cooperman, 2017; Dimson et al., 2015; Flammer, 2015). Other studies have focused on the determinants of shareholder activism and whether shareholder activism addresses financially material issues (Schopohl, 2017; Sikavica, Perrault, & Rehbein, 2018). These studies find that larger firms, poor performers, and those with lower levels of environmental and social concerns are more likely to be targeted by a shareholder proposal. However, previous studies show mixed evidence regarding the impact of resolutions. While some authors find a positive market response once the firm has been targeted by a shareholder proposal

(Cuñat, Gine, & Guadalupe, 2012; Thomas & Cotter, 2007), whereas others report a negative response (Byrd & Cooperman, 2014).

In the latter case, we postulate that the nature of the resolutions have evolved over time, starting with a focus on disclosure (in particular scope 1 and 2 emissions) and in more recent years have moved to be more substantive resolutions that call on corporates to respond strategically to the physical, transition and liability risks, as well as opportunities posed by climate change. We propose that this shift in the nature of resolutions are likely to be from a myriad of related initiatives that have raised awareness of the profound and pervasive impacts climate change and climate change mitigation and adaptation are going to have on the corporate and investment performance. The most prominent of these initiatives include the Paris agreement, the growing number of institutional investors aligning with United Nations Principles for Responsible Investment (UNPRI), the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, the One Planet Sovereign Wealth Funds alliance and the Climate Action 100+ coalition.

Research on shareholder activism has principally focused on the impact of shareholder resolutions on firms' financial performance. Most previous studies use an event study methodology to analyze shareholder activism's effects on stock returns around different dates (Denes et al., 2017). Prior studies investigating the impact of shareholder activism on companies' financial performance have demonstrated mixed results. Using a wide sample of resolutions on governance issues during the period between 1996 and 2005, Renneboog and Szilagyi (2009) find a positive impact of these proposals on stock prices, suggesting that proposal announcements contain additional information that is valued by shareholders. In the same vein, Thomas and Cotter (2007)

report a positive, but not statistically significant, market reaction around the proxy mailing date and the AGM date for 1,454 diverse shareholder proposals made from 2002-2004. Cuñat et al., (2012) find a positive and significant relationship between successful shareholder proposals and abnormal stock returns, using a sample of 3,984 governance-related proposals for all S&P 1500 companies.

By contrast, other authors find that shareholder activism has a negative impact on financial markets, as it can distort companies' resource allocation. For instance, Byrd and Cooperman (2014) examine the market reaction to environmental health shareholder resolutions around the date of the AGM, concluding a negative stock market reaction to those resolutions. In a later study, these investigators find negative stock returns associated with news announcements about stranded assets and climate change risks (Byrd & Cooperman, 2017). Relatedly, Griffin et al., (2015) find a negative market response by the 63 largest oil and gas companies in United States to the seminal publication of Meinshausen et al. (2009), which documented that only a portion of oil, gas and coal reserves could be burnable to avoid increased temperatures by 2050.

Karpoff et al., (1996) examined the wealth effects of shareholder proposals using three different dates: The Wall Street Journal first publication, the proxy filing date and the AGM date. They reported that there is no market reaction around these dates. Similarly, Schopohl (2017) reports an insignificant market reaction around three different dates (the proxy mailing, the proxy filing and the shareholders meeting) for 3,360 environmental and social proposals made from 1997 through 2013. She also analyzes the difference between financially material and immaterial environmental and social proposals, but she does not find statistically significantly different abnormal stock returns, thus suggesting information leakages prior to those dates, or that as well as the proposals do not influence stock price.

Recent evidence suggest that shareholder activism on environmental and social matters has increased over the last decade (Flammer, 2015; Glac, 2014; Wei, 2020). Thus, socially responsible investing (hereinafter SRI) has gained popularity in the proxy season in the last 10 years. SRI investors started to file shareholder proposals as a formal way to encourage firms to address social and environmental issues (Wei, 2020). Using a wide sample of US companies, Flammer (2015) analyzes whether corporate social responsibility (CSR) proposals influence on firms' financial performance. Flammer (2015) finds that the market reacts positively after the passage of shareholder proposals, suggesting that CSR proposals improve firms' value. However, she does not find significant cumulative abnormal returns for a subsample of environmental and social proposals. Dimson et al. (2015) extends and corroborates the study of Flammer (2015), although using a smaller sample of shareholder proposals. They state that successful ESG shareholder proposals relate to positive abnormal stock returns and enhancements in firms' operating performance, profitability, efficiency, shareholding and governance. Moreover, Dimson et al. (2015) point out that there are no abnormal stock returns with unsuccessful shareholder proposals on environmental and social issues.

The previous studies analyzing market reactions of shareholder proposals face an identification problem, that is, to determine exactly when investors know a firm has been targeted by a proposal. There are many critical dates to consider, namely, the date of initial letters to the firm, the proxy filing date, the AGM date, and/or other announcements related to the proposals (Gillan and Starks, 2007). Although some studies take into account the date of new announcements (Byrd & Cooperman, 2017; Griffin et al., 2015), most empirical studies (Karpoff et al., 1996; Schopohl, 2017; Thomas & Cotter, 2007; Wei, 2020) consider the proxy filing date, the AGM date, or both as the event date and analyze changes in firms' valuation around these dates. However, this approach has the

drawback of not controlling for the effect of other information made public around these dates. For instance, the proxy mailings contain information on executive compensation that may be affecting the evolution of the stock price (Tehranian & Waegelein, 1985). Moreover, some companies announce dividends at the shareholders meeting (Thomas & Cotter, 2007), so that the market response could be affected by dividend announcements (Bajaj & Vijh, 1990).

Many of these studies are subject to methodological criticism. First, some suffer from sample selection bias and lack of randomness since they are based on private datasets provided by particular investors (e.g. Dimson et al., 2015; Wei, 2020) or consider an inconsistent sample which mixes shareholder resolutions and news announcements (Byrd & Cooperman, 2017). Second, these studies tend to focus on reports based on one event at the point in time and do not take into account the problem of non-stationarity (Wei, 2020). Thus, studies are needed that consider how markets react to the same event date at different points in time (Sharfman, 2016). Lastly, there may be endogeneity problems and possible omitted variable bias.

In sum, it seems that the market response to shareholder proposals depends on the issue addressed, as well as the number of proposals considered. Thus previous studies have analyzed various topics with different samples of companies, obtaining contrasting results. Although there are many studies that review the state of shareholder activism and provide some descriptive work, there is little empirical evidence on the economic value of environmental shareholder proposals, especially for those related to climate change. The evidence that does exist in the context of climate change, though informative (Byrd & Cooperman, 2017; Michelon & Rodrigue, 2015; Monks et al., 2004), is also subject to a number of limitations, namely (i) it provides analysis up to 2015 and, therefore, does not cover the post-Paris Agreement period. (2) it does not properly address different

proposals' outcomes such as omitted, voted and withdrawn proposals, and (3) it does not distinguish between risk-related and disclosure-related proposals. This study addresses these gaps building upon a wide sample of US shareholder resolutions and conducting a series of event studies based on various event dates over almost a decade. This study also focuses on climate change shareholder proposals since, to date, there is still uncertainty about their evolution, as well as whether this particular type of shareholder proposals influences firm's value. After control for confounding events, it is expected that climate activist shareholder resolutions affect negatively firms' financial performance (Byrd & Cooperman, 2017).

2.1   Determinants of shareholder activism

The type of firms that attract shareholder activism has received considerable attention in the activism literature (Denes et al., 2017). The motivation of social and environmental activists is different from traditional activists, such as hedge funds and mutual funds activism. While environmental and social activism addresses issues that are of interest to a broader range of stakeholders (e.g. investors, customers, employees, civil society and NGO organizations etc..), traditional activism tend to focus on matters related to shareholders' interest only (Dimson et al., 2015). Apart from addressing different issues, those types of activism tend to target different companies. In this sense, hedge fund activism tends to target companies with high operating performance and opportunities for value creation (Brav et al., 2008; Clifford, 2008). By way of contrast, activism carried out by environmental activists are more likely to target large and poorly performing firms as measured by prior stock returns, sales growth, return on assets and market to book ratio (Dimson et al., 2015; Ertimur et al., 2010; Wei, 2020). In other words, it seems that proposals submitted by environmental activists are directed towards lifting the performance of lower performing firms.

The relationship between firms' characteristics and being targeted by a proposal has been studied in several previous studies (Dimson et al., 2015; Ertimur et al., 2010; Wei, 2020). Contrary to the studies that focus on the market response, empirical evidence regarding environmental and social shareholder proposals and firms' characteristics is consistent and robust across previous studies. These studies suggest that companies targeted by shareholder proposals are larger, have poor environmental and social performance, as well as lower levels of operational performance (Dimson et al., 2015; Ertimur et al., 2010; Michelon & Rodrigue, 2015; Wei, 2020).

Dimson et al. (2015) reported that target firms are larger, older and with poor performance that is significant at the 10% level for more than two thousand ESG engagements made by a large institutional investor between 1999 through 2009. Additionally, they analyzed firms' characteristics using a subsample of environmental and social issues, suggesting that large firms with more advertising expenditures are more likely to be targeted. Thus, investors tend to require environmental and social information from firms with high levels of reputational capital (Baloria et al., 2017; Dimson et al., 2015). Similarly, Wei (2020) found that larger firms, more mature firms, those with reputational risks and lower capital expenditures are more likely to be targeted by activist investors. Wei (2020) agrees with Dimson et al. (2015) in that higher shareholdings by SRI investors increases significantly the probability of being targeted. Thus, showing the potential of these investors to target companies on environmental and social issues, as well as the possible cooperation with other SRI investors. In this sense, initiatives such as UNPRI promote institutional investors to integrate environmental, social and governance issues into their investment decisions (Diaz-Rainey et al., 2012), is also influencing investors' strategy when submitting or voting on shareholder proposals. In addition, companies targeted tend to present lower levels of environmental performance.

Reasonably, firms with lower environmental and social ratings attract SRI investors as they have more headroom for improvement (Dimson et al., 2015; Wei, 2020). Dimson et al. (2015) using a subsample of investor engagements on climate issues found that the number of lawsuits prior to the engagement influences positively and significantly the targeting strategy of investors.

Although CSR shareholder proposals tend to focus on carbon intensive companies such as oil and gas companies (Byrd & Cooperman, 2017), there are several CSR resolutions targeting companies belonging to less environmental sensitive sectors e.g. insurance and business services (Michelon & Rodrigue, 2015). In this sense, CSR activists extend their demands to a wide range of companies regardless of their industry. Most of previous studies consider shareholder proposals on climate change as a subsample of a broader range of resolutions on corporate governance and environmental and social issues. Therefore, it is difficult to disaggregate the effect of climate change activist investors and study how their demands are changing over time, particularly after the Paris Agreement. This study fills this gap by considering a large sample of climate-related proposals made by different investors between 2009 and 2018. This allows to analyze in-depth climate-related resolutions, as well as to examine the influence of the Paris Agreement on this type of proposals.

2.2   *The SEC filing process*

Proposals are resolutions presented to be potentially voted at the AGM. These proposals cover several topics such as executive compensations, the election of members of the Board of Directors, social and environmental issues, as well as other corporate matters. There are two main types of proposals: management and shareholder proposals. While management proposals are those resolutions proposed by the company's management e.g. company's CEO, CFO or COO, shareholder proposals are those put forward by

companies' stockholders. The Securities and Exchange Commission (SEC) Rule 14a-8 requires companies include in their proxy materials shareholder resolutions to be voted on at the AGM unless the shareowner has not complied with its procedural requirements or the proposal meets the criteria for exclusion highlighted by the SEC (Byrd & Cooperman, 2014).

Per SEC Rule 14a-8, for shareholders to be eligible to make a proposal for a firm's proxy statement, they must have continuously held 1 % of the company's outstanding stock or $2,000 in market value for at least one calendar year, as well as they must continue to hold those shares through the date of the AGM (Ertimur et al., 2010). Proponents must submit to the company a written statement from the record holder of their securities as a proof of their eligibility. Although the SEC Rule 14a-8 does not consider shareholders' ability to submit resolutions through a representative, shareholders often do so. This practice is commonly known as "proposal by proxy". The SEC considers proposals by proxy are consistent with the SEC Rule 14a-8. However, shareholders who make a proposal by proxy should provide evidence of the delegation of authority to the proxy (SEC, 2017).

Shareholder proposals must comply with the procedural requirements to be considered for the proxy materials. In this sense, proposals must be submitted to the management at least 120 days before the proxy materials would be mailed (based on the prior-year proxy mailing) to the shareholders (Ertimur et al., 2010). In addition, they cannot exceed 500 words length and each shareholder can only submit one resolution per meeting (Byrd & Cooperman, 2014).

The SEC Rule 14a-8 specifies the conditions for omitting a shareholder proposal. In this sense, companies can rely on several reasons when appealing with the SEC for the exclusion of a proposal (Schopohl, 2017). The most common reasons used for rejecting

shareholder proposals are: false or misleading statements; the proposal's relevance i.e. the resolution is based on issues that account for less than 5 per cent of companies' total assets; related to the company's ordinary business operations; duplication i.e. another shareholder has filed a similar resolution; and the company targeted has already addressed the resolution (SEC, 2017).

After a shareholder proposal is submitted to the company, there are three possible outcomes at the end of the process (Bauer et al., 2015; Ertimur et al., 2010). Appendix 3 provides an example of the timeline for the proposal submission. First, company disagrees with shareholder proposal, and asks the SEC to exclude it from its proxy materials (as described above). In this case, company submits a letter to the SEC explaining the reasons why it believes the proposal should be excluded. The SEC then evaluates both the shareholder proposal and the reasons for the exclusion presented by the company, if it does not meet the regulatory requirements to be included in company's proxy statement, it will be omitted. As mentioned above, companies can rely on several reasons to exclude a shareholder proposal from their proxy materials. Second, if the SEC does not omit the proposal or if the company agrees to include the proposal in its proxy materials, it will go directly to a vote during the AGM. That is, the shareholder proposal will be placed on proxy materials for vote. Typically, the board of directors attaches a report in the proxy materials expressing its support or opposition to shareholder proposals (Bauer et al., 2015; Clark & Crawford, 2012; Ertimur et al., 2010). It is necessary to highlight that the company is legally entitled to decide not to implement the shareholder proposal, even if it receives more than 50 % votes at the shareholders meeting (Ertimur et al., 2010; Flammer, 2015; Michelon & Rodrigue, 2015). In this sense, Ertimur et al. (2010) demonstrated that only 31.1 per cent of successful shareholder proposals are implemented. The third possible outcome may be that the firm negotiates with the

proponent toward a mutually agreeable solution. If the negotiation is successful, the shareholder will withdraw the proposal. Therefore, the proposal will not be included in the company's proxy materials. It is worth to note that if negotiations are successful after the proposal is included the proxy statement, then the company must file the DEFA14a (definitive proxy statement amended) noticing that the proposal has been withdrawn by the shareholder. However, if negotiations are successful before the proxy card, then the company has not obliged to communicate the withdrawal, thus this process is private, and it is difficult to know the dates. On the contrary, if the negotiation is unsuccessful and the proposal meets all regulatory requirements to be placed on proxy materials, it will go to a vote during the AGM (Bauer et al., 2015; Clark & Crawford, 2012).

3   Data

3.1   Shareholder proposal data

This paper considers climate change-related shareholder proposals that were submitted to US companies in the period between 2009 and 2018. Shareholder proposals data, companies targeted, proposal sponsors, issues addressed and voting outcome were collected from the CERES directory, which is publicly available on its website (https://www.ceres.org/resources/tools/climate-and-sustainability-shareholder-resolutions-database). CERES is a non-profit organization that works with the most influential investors and firms to tackle issues such as climate change, water scarcity and pollution, as well as inequitable workplaces. Apart from providing research tools on several sustainability issues, this organization tracks shareholder resolutions on climate-related issues filed since 2009. For the years 2009 to 2018, 717 shareholder proposals on climate change are tracked on the CERES database, targeting 274 different firms.

As mentioned by Dimson et al. (2015), considering US-based firms to examine shareholder proposals has two main advantages: availability and reliability of corporate accounting information, ownership and governance, as well as it facilitates comparison with previous studies that usually focus on US firms. The proxy statements, the proxy filing date, the shareholders meeting date and the dates of others relevant events were gathered from the SEC's directEDGAR database (see Section 3). Regarding the dates of no-action letters of omitted proposals, we downloaded a list of all no-action letters from SEC website. Data from these different sources were merged by using company identifiers, such as, CIK and company name.

The event dates were collected from different sources. The proxy filing date and the shareholders meeting date were gathered from directEDGAR database. This paper also uses directEDGAR to search the content of these shareholder proposals, which is useful to identify those proposals related to climate change issues, as well as to classify between risk or disclosure-related proposals. Specifically, this paper included in its search protocol a comprehensive set of terms in order to classify these shareholder proposals (see Appendix 4). We collected 1,704 proxy statements filed between 2009 and 2018 that match with our search terms. Then, we matched directEDGAR data with CERES data by using company CIK code and year. Then, 332 voted proposals on CERES database were matched with their respective proxy statement from directEDGAR. Therefore, for these proposals that went to a vote at the AGM we know their content, their dates as well as whether they are related to climate risk or not.

However, it is important to note that there are some problems with the dates from the directEDGAR database. In particular, it seems that when companies send documents to the SEC, they sometimes submit the value in the period filed incorrectly, for example, the conformed date (hereinafter CDATE). In the directEDGAR database, the conformed

date refers to the date the event that is subject of the document takes place, for instance, the CDATE for both the 8-K filing item 5.07 (Submission of Matters to a Vote of Security Holders, which is filed after the annual general meeting) and the DEF14A (the proxy statement) is the date of the shareholders meeting. In some cases, the CDATE for both documents is not correct on the directEDGAR database. This is because certain companies submitted this date incorrectly. For instance, MGI energy Inc. reported the CDATE for their 2018 proxy statement as 26th March 2018 subsequent to that they filed an 8-K item 5.07 and CDATE equal to 18th May 2018. However, the shareholders meeting of this company was held on 15th May 2018, as showed by its 2018 proxy statement. By way of contrast, Apple submitted the CDATE for their 2018 DEF 14A as 13th February 2018 subsequent to that they filed an 8-K with a reason code 5.07 and CDATE as 13th February 2018. The shareholders meeting was effectively held on 13 February 2018. Thus, Apple seems to be compliant with the SEC requirements.

This paper identifies incorrect dates by checking whether the CDATE of the proxy statement differs from the CDATE for a later 8-K filing for item 5.07, since if they differ between each other, it means that the company reported the date incorrectly. Thus, to control this issue, differences between these dates have been investigated. The date the company filed for the omission and the date when the SEC decided to omit the proposal were manually collected from the SEC website, available at: https://www.sec.gov/divisions/corpfin/cf-noaction/14a-8.shtml. When gathering these dates, we checked that the company, the meeting year, the lead organization, as well as the proposals' objective were the same as those shown in the CERES database.

3.2   Firm-level data

Financial data required to determine firms' characteristics were gathered from the following sources: corporate accounting data from the Compustat/CRSP merged

Fundamentals Annual database and stock market returns from CRSP. Environmental performance data were collected from the Thomson Reuters database. Lobbying data were downloaded from the Center for Responsible Politics (CRP) website, available at: http://www.opensecrets.org/lobby/. The CRP maintains a publicly available database for all lobbying and political contributions from 1998 to the present. Data from these sources were merged together by using company identifiers, such as Permno, CIK, ISIN and company name. Definitions and descriptions of each variable as well as the data sources and references for its measurement are reported in Appendix 1.

4   Methodology

To study what type of firms are targeted by climate change-related shareholder proposals this paper compares the characteristics of target firms in the year before the engagement with a matched sample of firms (Dimson et al., 2015). Table 2 shows main statistics of our sample companies in the year before of being targeted by a shareholder proposal. These statistics are analyzed with respect to a matched sample. With this purpose, we use a similar methodology as the one described in Brav et al. (2008), but with some differences in order to get portfolios with an enough size. Specifically, this study creates a matched pool of firms using all companies from Compustat North America but extracting target companies previously. Then, the matched companies were reassigned in portfolios considering the same year, industry (2-digits GICS) and 10x10 size percentiles. In total, we managed 1.092 groups by year, sector and size percentiles. Considering only portfolios with a targeted firm, we get 212 clusters with a mean of 46.7 firms and 3.8 sample firms by cluster.

Thus, each company of our sample has its firm characteristics and the characteristics of a matched firm equal to the mean characteristics of its matched portfolio

(without targeted firms). Table 2 presents the main statistics of target firms and their matched companies.

In order to analyze the firm's characteristics of being targeted by a climate change-related proposal, this paper performs the following equation (1):

$$Target\ companies = \beta_0 + \beta_1 Size + \beta_2 BM + \beta_3 Sales\ growth + \beta_4 Cash + \beta_5 Dividend\ Yield + \beta_6 OCF + \beta_7 Capex + \beta_8 R\&D + \beta_9 TobinQ + \beta_{10} Leverage + \beta_{11} ROA + \Sigma \beta \cdot Industry + \Sigma \beta \cdot Year + \varepsilon \quad (1)$$

Equation 1 is based on a probit analysis where the dependent variable is an indicator variable equal to one if the company was targeted by a climate-related shareholder proposal, and zero otherwise. This equation was also tested for subsamples of risk-related and disclosure related proposals.

In addition, this study performs a probit analysis in order to examine the characteristics of voting proposals in the year before the initial engagement. Specifically, this study uses the following equation (2):

$$Voted\ proposals = \beta_0 + \beta_1 Size + \beta_2 BM + \beta_3 Sales\ growth + \beta_4 Cash + \beta_5 Dividend\ Yield + \beta_6 OCF + \beta_7 Capex + \beta_8 R\&D + \beta_9 TobinQ + \beta_{10} Leverage + \beta_{11} ROA + \beta_{12} PostParis + \beta_{13} USA = wthdw + \beta_{14} UNPRI + \beta_{15} Repeated + \beta_{16} Lobby + \beta_{17} ESG\ score + \Sigma \beta \cdot Industry + \Sigma \beta \cdot Year + \varepsilon \quad (2)$$

The dependent variable is a dummy variable that takes the value of 1 if a climate change-related proposal went to a vote at the shareholders meeting and 0 if did not i.e. if it was omitted or withdrawn. Year fixed effects and industry fixed effects are included. Equation 2 is conducted for the whole sample, as well as for subsamples of risk-related and disclosure related proposals. This study also examines what factors influence the voting outcome of climate change-related shareholder proposals. Specifically, this paper tests the following equation (3):

$$\% \ of \ votes = \beta_0 + \beta_1 Size + \beta_2 BM + \beta_3 Sales \ growth + \beta_4 Cash + \beta_5 Dividend \ Yield + \beta_6 OCF + \beta_7 Capex + \beta_8 R\&D + \beta_9 TobinQ + \beta_{10} Leverage + \beta_{11} ROA + \beta_{12} PostParis + \beta_{13} USA = wthdw + \beta_{14} UNPRI + \beta_{15} Repeated + \beta_{16} Lobby + \beta_{17} ESG \ score + \Sigma\beta \cdot Industry + \Sigma\beta \cdot Year + \varepsilon \quad (3)$$

In Equation 3, the dependent variable is the percentage of votes in favor that a climate-related shareholder proposal obtained at the shareholders meeting. Given that the dependent variable is scaled 0 to 1, a fractional probit regression is performed in order to examine factors that influence the voting outcome of climate-related shareholder resolutions. To have a consistent sample of firms, we keep the same set of target firms as those used in the previous models. Definitions for all independent variables included in the models presented above are provided in the Appendix 1.

In order to establish the value relevance of climate change-related resolutions, this paper uses event study methodologies. The analysis is undertaken using "Event by WRDS" (a program provided by Wharton Research Data Services) and uses state of the art even study approaches (e.g. Griffin et al., 2017; Tulloch et al., 2017; Zamora-Ramírez et al., 2016). More specifically, an event study portfolio analysis similar to Tulloch et al. (2017) was implemented, thereby controlling for established risk factors as identified in the finance literature (Carhart, 1997; Fama & French, 1993, 2015). Cumulative abnormal returns are calculated using the equation (4).

$$CAR_{t,\tau} = \sum_{t}^{\tau}(R_t - E(R_t)) \qquad (4)$$

$CA\square_{\square,\square}$ refers to the cumulative abnormal returns from day t to day τ. R_t is the return for the target firm for day t and $E(R_t)$ is the expected return calculated from the CAPM model for day t. The CAPM beta is estimated using returns from 150 days to 50 days prior to the filing. This study considers three event dates: the proxy filing date, the date of the shareholders meeting and the date when the SEC decides to omit a proposal.

Different window lengths are also analyzed ranging from 10 days prior to the filing to 10 days after, which will give insight as to when the filing news negatively affects the firm. Specifically, this paper examines three event windows: (-1, 1), (-10, 0) and (0, 10). From these returns, the significance of the differences between targeting and non-targeting firms can then be obtained by running a t-test for the difference in the means and a sign rank test for the difference in the medians.

5   Results

5.1   *Evolution of climate change-related proposals*

This section provides a detailed description of the evolution and outcome of climate change-related proposals. Table 1 shows the frequency of climate-related shareholder resolutions over time, as well as their average voting outcome, especially by differentiating between those related to disclosure and more substantive resolutions focused on the strategic implication of climate risk. Additionally, Table 1 displays the word count of risk-related words over time. In panel A, resolutions are classified by year and in panel B by outcome.

As mentioned above, the CERES database contains a total of 717 proposals related to climate change until 2018 meeting year. Specifically, 332 of these were classified as voted because they were voted at the AGM, 316 were classified as withdrawn as they were withdrawn by the proponent or were not voted (but not omitted), and 69 were coded as omitted because the SEC decided to omit the shareholder proposal under SEC Rule 14a-8 (see Section 3). Therefore, unlike previous studies that have only focused on a particular outcome e.g. withdrawn proposals (Bauer et al., 2015) or voted (Dimson et al., 2015), this study considers the three possible outcomes that can occur when a

shareholder proposal is submitted to a company, that is, it may be voted, omitted or withdrawn (Ertimur et al., 2010).

[Insert here Table 1]

It can be seen from the data in Panel A (Table 1) that shareholder resolutions on climate change issues are generally on an upward trend. Similarly, the average voting outcome of climate-related proposals follows an uptrend, especially in the last three years of the study period. However, the average percentage of votes in favor is lower than 50 per cent for climate change-related shareholder proposals, which means that climate-related issues are not attracting the attention of other investors and shareholders at the annual meeting.

This paper codes climate-related proposals as risk-related whether they include terms related to climate change risks e.g. litigation risk, physical risk, carbon risk, stranded asset risk etc. (Appendix 2 provides examples of these proposals). As shown in Panel B of Table 1, there are big differences between risk and disclosure proposals in terms of outcome, especially for voted and withdrawn resolutions, with a significant difference in mean test scores between these type of proposals (p-value < .05). Thus, it seems that risk-related proposals are more likely to be voted on while disclosure-related resolutions are more likely to be withdrawn. This suggest that companies are more willing to compromise on disclosure-based proposals but are less likely to compromise with risk-based ones. This hints at green wash or disclosure-based resolutions being easier for companies to deal with. However, there is not much difference in the voting outcome for disclosure and risk-related proposals.

Additionally, this paper analyses the count of risk-related terms. In this sense, it can be seen in the nineth column of Panel A (Table 1) that there is a continuous increase in the number of risk-related words included in climate-related proposals, except for the

year 2012. It is worth to noting that the average percentage of votes in favor of climate-related proposals increased significantly in the post-Paris Agreement period, which indicates that investors are paying more attention to these type of shareholder proposals in that period.

Table 1 also includes an analysis of repeated proposals, which are those proposals that were submitted to the same company the previous year. It can be observed from the data in Table 1 that there is a continuous increase in the number of repeated proposals in the period of observation. It seems that shareholders are trying to catch the attention of other shareholders at the annual meeting through filing similar resolutions in the following years.

5.2   *Characteristics of target companies*

To study what type of firms are targeted by climate change-related shareholder proposals this paper compares the characteristics of target firms in the year before the engagement with a matched sample of firms (Dimson et al., 2015). Table 2 shows summary statistics of our sample companies in the year before being targeted by a climate-related shareholder proposal. These characteristics are analyzed with respect to a matched sample. All financial variables were winsorized at the first and 99th percentiles to mitigate the influence of extreme values.

Table 2 contains four panels. Panel A shows the characteristics of target companies for the whole sample, as well as comparisons with a group of matched firms. Panels B and C present the same statistics for subsamples of risk-related and disclosure-related proposals, respectively. Panel D compares summary statistics of these subsamples.

[Insert here Table 2]

Consistent with Dimson et al. (2015) and Wei (2020), this study finds that larger firms are more likely to be targeted by climate change activism, despite more voting power being needed to pass resolutions for these companies. As Dimson et al. (2015), companies targeted by a climate-related proposal present lower levels of sales growth, indicating that climate-related activism seeks a reputational effect in their actions. Size was a significant characteristic in both disclosure-related proposals and risk-related proposals. Firms targeted by a risk-related proposal present larger size and lower sales growth than companies targeted by disclosure-related proposals. Target firms shows a lower mean of BM ratio than mean of their cluster, statistically significant at 99%. Companies targeted by a risk-related proposal shows a larger BM ratio than firms targeted by disclosure-related proposals.

The mean of capex and R&D expenditures is quite similar in both subsamples (no significant mean in R&D expenditures). Companies targeted by climate-related proposals present a higher TobinQ than the matched sample of firms, which indicates that this type of proposals tend to target firms with higher future growth expectations.

Regarding capital structure, targeted companies present lower levels of leverage than the matched firms, but smaller in firms targeted by risk-related proposals. In addition, companies targeted by a climate-related shareholder resolution have lower levels of dividend yield, which is comparable to the findings of Brav et al. (2008). However, in the study of Dimson et al. (2015) this ratio is higher. In firms targeted by risk-related proposals, dividend yield was lower than firms targeted by disclosure-related proposals.

Table 3 reports a probit regression model of being targeted by climate-related shareholder proposals. Dependent variable is a dummy variable equal to one if the firm is targeted by a climate change-related proposal, and zero for a control firm-year.

Definitions for all independent variables included in the model are provided in the Appendix 1. Model 1 of Table 3 presents the marginal effects of being targeted for the whole sample.

The results presented in Table 3 are largely consistent with the results reported in Table 2. In Models presented in Table 3 we control for year and sector fixed effects. We find that target firms are larger and present higher levels of operating cashflow, capex, TobinQ, relative to the matched firms. Moreover, target companies have lower BM ratio, sales growth, dividend yield and leverage. Companies targeted by climate-related shareholder proposals tend to spend less on R&D expenditure. This result is consistent for disclosure-related proposals. However, for a subsample of risk-related proposals, R&D expenditure is also negative, but not significant.

Additionally, this paper splits the sample into two subsamples: risk-related and disclosure-related resolutions. Then, it conducts probit models separately for these two subsamples (Models 2 and 3 of Table 3, respectively). Generally, the sign and the significance of the coefficients are similar for both subsamples, except for OCF, capex, R&D expenditures, leverage and ROA. In order to robust our analysis, we run a bootstrap for Equation 1 (500 times) taking random samples of non-targeted firms. For each portfolio, a number of non-target firms was taken equal to the number of sample firms included in that cluster.

5.3   Determinants of voting proposals

Table 4 reports the results of the probit model on voted proposals. This table reports the marginal effects of characteristics of being voted at the shareholders meeting. The dependent variable is a dummy variable equal to one if the proposal is voted at the annual meeting, and zero otherwise.

[Insert here Table 4]

As shown in Table 4, the coefficient for size and BM is positive and significant (see Model 1 and 2), suggesting that climate-related shareholder resolutions filed with firms characterized by having a high size and BM ratio are more likely to be voted at the annual meeting. Model 3 and 4 of Table 4 report the results of the probit model on voted proposals for subsamples of risk-related and disclosure-related resolutions, respectively. As shown in Model 3 (Table 4), the positive and significant coefficient on cash holdings indicates that improvements in relation to climate change-issues are potentially costly. Additionally, the dividend yield variable presents a negative and significant coefficient, which suggest that risk-related proposals that target companies that pay lower dividends are more likely to be voted at the annual meeting. In addition, the results of the Model 4 (Table 4), suggest that disclosure-related proposals filed to companies with high BM ratio are more likely to be voted at the shareholders meeting.

Regarding the characteristics of climate-related proposals, we observed that repeated proposals are more likely to be voted at the AGM. This result is consistent for the four models presented in Table 4. An additional repeated proposal increases the probability of being voted at the shareholders meeting by 17 percent points (see Model 1 of Table 4). The negative and significant coefficient on USA=wthdw suggest that climate-related shareholder proposals filed after the announcement of the USA's withdrawal from the Paris Agreement (June 1, 2017) are less likely to be included in the proxy materials, and thus being voted at the annual meeting. The coefficient of this variable is also negative and significant for a subsample of risk-related proposals; however, it is not significant for a subsample of disclosure-related proposals.

The coefficients on the sales growth, cash, dividend yield, OCF, capex, R&D expenditure, TobinQ, leverage, and ROA are all insignificant for the whole sample of climate change-related resolutions. This suggests that neither the heavy spending nor does

the reputational concerns of targeted companies determines climate-related proposals go to a vote at the shareholders meeting. Likewise, firms' lobbying expenses do not have a significant impact on the likelihood that a climate-related resolution to be voted at the annual general meeting.

In addition, this study performs a fractional probit analysis to examine factors that influence the voting outcome of climate-related shareholder proposals. In this model, the dependent variable is the percentage of votes in favor that a climate-related proposal received at the annual meeting. This study estimates this model for the whole sample (see Model 1 and 2 in Table 5) and for subsamples of risk-related and disclosure-related proposals (Models 3 and 4 of Table 5, respectively).

Regarding firm characteristics, for the whole sample, sales growth and capex have a positive and significant impact on the voting percentage. This means that shareholder resolutions that are filed with companies characterized by high sales growth and capex rates are more likely to obtain higher percentage of votes in favor at the annual meeting. This study also finds that companies' profitability negative and significantly influences proposals' voting outcome, which is consistent with prior literature on environmental resolutions (Wei, 2020). For a subsample of disclosure-related proposals, company size and BM presents a negative and significant relationship with the voting outcome, which suggest that disclosure-related proposals filed to larger companies are more likely to receive lower percentage of votes in favor at the AGM.

The Paris Agreement has also effect on the voting outcome as shareholder resolutions made in the post-Paris Agreement period are prone to receive higher percentage of favorable votes than those filed before the Agreement. This result is consistent for risk-related resolutions, but not for a subsample of disclosure-related proposals. Contrary to risk-related resolutions, disclosure-related proposals filed after the

announcement of the USA's withdrawal from the Paris Agreement are more likely to receive higher percentage of votes in favor.

[Insert here Table 5]

For the whole sample and for a subsample of disclosure-related proposals. This study does not find evidence that shareholder proposals lead by an UNPRI signatory are associated with increased percentage of votes at the shareholders meeting. However, for a subsample of risk-related resolutions we find that UNPRI investors exert a positive and significant influence on the voting outcome. In addition, repeated proposals are not significantly related to a higher voting outcome.

5.4 *Stock market reaction*

A direct measure of how investors evaluate the success of shareholder activism is the market response (Wei, 2020). Following Gillan and Starks (2000), this paper considers the proxy statement filing date as the event date, as this is when the market knows a firm has been targeted by a shareholder proposal. However, it also takes into account the meeting date since this is another critical date to consider when analyzing the market reaction to shareholder proposals (Gillan & Starks, 2007). This study uses the market model event study methodology to examine the market response around these dates. An estimation period of 100 days is used, ending 50 days before the event date. Cumulative Average Abnormal Returns (hereinafter CAAR) over the event window on the different events, (-1,1), (0,10) and (-10,0) are determined. For the proxy filing date, calculating the event window (-10,0) is helpful to consider possible information leakages before the filing date on the content of shareholder proposals (Wei, 2020). The results of this analysis are reported in Table 6. As in previous models, this paper differentiates between risk-related (Panel B Table 6) and disclosure-related proposals (Panel C Table 6). Table

6 contains different number of observations compared to previous tables due to the lack of financial data on WRDS and/or missing dates for no-action letters/DEF14a/AGM.

[Insert here Table 6]

As shown in Table 6, on the proxy filing date, the market reacts positively measured by a positive and significant alpha for the whole sample of voted climate change-related proposals. The CAAR on the proxy filing date for these proposals is 0.166 % significant at the 1 %. This result is consistent with that reported by Wei (2020) for a sample of proposals related to environmental and social issues. The CAAR from event window (-10,0) is 1.057 %, significant at the 5 % level, which is larger than 0.166 %, suggesting possible information leakages before the filing of the proxy statement.

Before the annual meeting, several proposals draw the attention of the management and they engage into negotiations with the filers. In this case, the management could be proactive in solving the proposed issue, or they aware on the negative impact on firm's operations if the resolution goes to a vote at the annual meeting. Thus, there is a possibility that the investor and the management reach agreement on a solution to the request issue, then the investor will withdraw the resolution, and therefore the proposal will not be voted at the AGM. Therefore, all shareholder proposals that have not been withdrawn will go to voting and the market will learn about the voting percentage (Gillan & Starks, 2007; Wei, 2020). The results show that climate-related shareholder proposals receive insignificant market response on the meeting date. The CAAR on the event date is only 0.077 %, and not statistically significant. However, the management may ask to the SEC for the omission of a shareholder proposal thus this paper also examines the market response on the date when the SEC publishes the no-action letter. Similarly, no-action letters concerning climate-related proposals do not receive a significant market reaction on the date of the letter.

In sum, it seems that on the proxy filing date, climate-related shareholder resolutions produce significant positive abnormal return on average. Before that date, abnormal returns appear to be larger, suggesting that there may be possible information leakages. The market reaction was also studied by using the market-adjusted model event study methodology, similar results were reported.

6 Conclusions

This paper examines the evolution, determinants and consequences of shareholder activism on climate change issues. Prior literature has established that shareholder activism is value relevant. However, it there is limited research on climate change-related activism, and this study addresses this issue. First, this paper documents all climate-related shareholder proposals including voted, withdrawn and omitted proposals which prior studies often do not consider. Second, it conducts a descriptive analysis of the evolution of these resolutions over time, especially distinguishing between those related to climate risk and disclosure. Finally, it provides evidence on the impacts of the Paris Agreement on climate change-related shareholder proposals.

The results show that risk-related proposals tend to receive a shareholder vote, whereas disclosure-related proposals, which are higher in number, are more likely to be withdrawn. This indicates that firms view disclosure-based proposals as costlier than risk-based proposals. Consistent with prior studies on environmental and social shareholder activism in general, firms targeted by a climate change shareholder proposal are larger and grow more slowly than matched firms not targeted, possibly because larger firms attract more attention. Larger firms are also more likely to accept a proposal for voting at the annual meeting.

Regarding climate-related proposals' characteristics, this paper finds that proposals repeated in consecutive years are more likely to succeed regardless of type,

arguably reflecting increased pressure by shareholders. The Paris Agreement also impacts on the likelihood that a climate-related resolution to be voted at the annual meeting. After the announcement of the US withdrawal from the Paris Agreement, we find that a climate-related shareholder proposal is less likely to be included in the proxy materials and, thus, receive a vote at the annual meeting. In contrast, however, of those fewer proposals eligible for voting at the annual meeting, the Paris Accord actually increases the percentage of votes in favor. This is evidence that the Global agreement had positive effects on voting once eligibility of a proposal for voting was established.

The results also show that the market reacts positively to climate change-related shareholder proposals on the proxy filing date. However, a CAAR of only 0.166 % is received on that day. The results provide evidence that there may be information leakages before the proxy filing since the sample earns a significant CAAR of 1.057 % at (-10, 0) window. This study has not found a significant market reaction on the meeting date, as well as on the date of the no-action letters submitted by the SEC.

This study has some limitations that should be borne in mind in interpreting the findings. First, the data in this study were drawn from a single research context that was bounded by country (the United States of America). Second, this paper only focuses on one type of shareholder proposals i.e. those related to climate change issues. Thus, caution should be exercised when generalizing the findings to proposals related to other matters such as corporate governance. Finally, the sample of this paper is based on shareholder resolutions tracked by CERES.

This study provides the first detailed evidence on the evolution and the impact of climate change-related shareholder proposals, as well as on the determinants that influence a proposal goes to a vote and its voting outcome. Future research may consider to examine whether the models developed here for the United States have validity in other

markets around the world such as the European. Furthermore, future research may focus

on the implementation of shareholder proposals related to climate change issues.

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Appendix 1. Variables used in the test

Variables	Description	Source	Reference
Dependent variables			
Timing of target	Date.	SEC	
Timing of denial	Date.	SEC	
%Voting	Percentage of votes in favor of the climate-related proposal.	CERES	
Targeted	1 if the company is targeted by a climate-related shareholder proposal and zero otherwise.	CERES	
Voted	1 if the climate-related proposal went to a vote at the AGM and 0 if did not i.e. if it was omitted or withdrawn.	CERES	
Fundamental data (Source: Compustat North America)			
Size	Natural logarithm of the firm's total assets (AT).	Compustat	(Schopohl, 2017)
BM	Book-to-market ratio is the book value of equity (CEQ) divided by market value of equity (PRCC_F * CSHO).	Compustat	(Ertimur *et al*., 2010)
Sales growth	Net sales (SALE) divided by the previous fiscal year's net sales.	Compustat	(Dimson et al., 2015; Flammer, 2015)
Cash	Ratio of the firm's cash and short-term investments (CHE) to total assets (AT).	Compustat	(Dimson et al., 2015; Flammer, 2015)
Dividend Yield	Dividends per share – Payable Date/ Stock Price Fiscal Year Close (DVPSP_F / PRCC_F).	Compustat	(Brown & Caylor, 2004)
OCF	Operating CF is operating cash flows divided by total assets, calculated as the difference between operating activities-net cash flow and extraordinary items and discontinued operations (OANCF – XIDOC), divided by total assets (AT).	Compustat	(Collins, Hribar, & Tian, 2014)
Capex	Capital expenditures. It is calculated as the ratio of capital expenditures to total assets (CAPX / AT).	Compustat	(Dimson *et al*., 2015)
R&D	Research and development expenditures. It is calculated as the ratio of research and development expenditures to total assets (XRD / AT).	Compustat	(Wei, 2020)
TobinQ	Tobin's Q is computed as the market value of assets divided by the book value of assets (AT). The market value of assets is calculated as the book value of assets (AT) plus the market value of common stock (CSHO * PRCC_F), less the sum of the book value of common stock (CEQ) and balance sheet deferred taxes (TXDB).	Compustat	(Flammer, 2015)
Leverage	(Debt in current liabilities (DLC) + Long-term debt DLTT) / Book value of total assets (AT).	Compustat	(Flammer, 2015; McCarten, Diaz-Rainey, Roberts, & Tan, 2015)
ROA	Return on assets. Calculated by operating income before depreciation (OIBDP) divided by book value of total assets (AT).	Compustat	(Flammer, 2015; Michelon & Rodrigue, 2015)
Shareholding data			
Post-Paris	Dummy variable that takes a value of 1 if the period is after the signature of the Paris Agreement and 0 otherwise.	UNFCCC	(UNFCCC, 2019)
USA=wthdw	Dummy variable that takes a value of 1 if the period is after the withdrawal of USA from the Paris Agreement (June 1, 2017) and 0 otherwise.	UNFCCC	(Trump, 2017; UNFCCC, 2017)
UNPRI	Institutional ownership UNPRI signatories.	UNPRI	(UNPRI, 2019)
Environmental and social performance			
ESG score	Thomson Reuters ESG Score is an overall company score based on the self-reported information in the environmental, social and corporate-governance pillars.	Thomson Reuters	(Shackleton, Tang, Yan, & Yao, 2019)
Lobbying variables (Source: CRP, Centre for Responsive Politics)			
Lobby	Natural logarithm of firm's total lobbying expenses. CRP (Centre for Responsible Politics).	CRP	(McCarten *et al*., 2015)
Control variables			
Year	Dummy variable equal to 1 for a particular year and 0 otherwise		
Industry	Dummy variables for each industry (NAICS).		

All variables are measured at the end of fiscal year-end prior to the year of the shareholder proposal. All continuous variables are winsorized at the first and 99th percentiles.

Appendix 2. Examples of climate-related shareholder proposals

Panel A: Example of disclosure-related shareholder proposal	
Company:	PNM Resources
Filer:	Walden Asset Management
Resolution:	"Shareholders request Public Service Company of New Mexico (PNM) adopt time-bound, quantitative, company-wide goals for reducing total greenhouse gas (GHG) emissions, taking into consideration the recommendations of the most recent Intergovernmental Panel on Climate Change (IPCC), and issue a report by September 1, 2016, updated annually, at reasonable cost and omitting proprietary information, on its plans to achieve these goals".
Meeting date:	May 17, 2016
Outcome:	Voted, 33.4 % votes in favor (not passed)
Panel B: Example of risk-related shareholder proposal	
Company:	Occidental Petroleum Corporation
Filer:	Wespath Benefits and Investments
Resolution:	"Shareholders request that Occidental Petroleum Corporation (Occidental), with board oversight, produce an assessment of long-term portfolio impacts of plausible scenarios that address climate change, at reasonable cost and omitting proprietary information. The assessment, produced annually with the initial report issued prior to the 2018 Annual Meeting of Stockholders, should explain how capital planning and business strategies incorporate analyses of the short- and long-term financial risks of a lower carbon economy. Specifically, the report should outline the impacts of multiple, fluctuating demand and price scenarios on the company's existing reserves and resource portfolio — including the International Energy Agency's "450 Scenario," which sets out an energy pathway consistent with the internationally recognized goal of limiting the global increase in temperature to 2 degrees Celsius".
Meeting date:	May 12, 2017
Outcome:	Voted, 67.3 % votes in favor (passed)

Source: CERES.

Appendix 3. Timeline for proposal filing

The following timeline presents the timing of the events for the 2017 annual general meeting of Exxon Mobil Corporation. It is important to noting that the timetable for submitting shareholder proposals will largely depend on the meeting date, which is affected by different factors, thus this timetable should not be generalized to other companies.

December, 2016	Deadline to submit a shareholder proposal (under SEC Rule 14a-8, 120 calendar days before the date of the company's proxy statement mailed to stockholders in connection the previous year's annual meeting). In the case of Exxon Mobil Corporation (hereinafter "the company"), shareholder proposals deadline is on December 15, 2016, given that the proxy materials for the previous year's annual meeting were released on April 14.
January, 2017	The company files its reasons with the SEC to omit a shareholder proposal from its proxy materials. Per SEC Rule 14-a8, the company must notify the SEC 80 calendar days before it files its definitive proxy materials. For example, on January 23, 2017, the company mailed a letter to the SEC requesting the omission of a proposal submitted by As You Sow on December 13, 2016.
April, 2017	The company files its definitive proxy statement on April 13, 2017 (generally, 30 to 50 calendar days before annual meeting of shareholders). Up to the day before the annual shareholders' meeting, the company can file additional definitive proxy soliciting materials.
May, 2017	Annual meeting of shareholders (May 31, 2017). Within four business days after the annual shareholders' meeting, the company must file an item 5.07 Form 8-K to report the voting outcome of the shareholder resolutions.

Source: SEC.

Appendix 4. Search protocol

This paper uses the following search terms to determine whether the proposal on the company's proxy statement were related to climate change: ("shareholder proposa*" OR "shareholder resolutio*" OR "shareholder activis*" OR "investor proposa*" OR "investor resolution*" OR "investor activis*" OR "shareowner proposa*" OR "shareowner resolution*" OR "shareowner activis" OR "stockholder proposa*" OR "non-binding proposa*" OR "non-binding proposa*") and ("climate change" OR "global warming" OR "greenhouse gas*" OR "carbon emission*" OR "ghg emission*" OR "ghg" OR "ghg-emission*" OR "CO2 emission*" OR "2 degree*" OR "2-degree*" OR "two degree*" OR "two-degree*" OR "renewable energy goa*" OR "renewable energy target*" OR "low carbon" OR "Ghg w/5 reduction" OR "low carbon econom*" OR "Paris agreement" OR "Paris accord" OR ("climate change" w/20 risk*) OR "climate risk*" OR ("climate change" w/20 "transition* risk*") OR ("climate change" w/20 "litigation risk") OR ("climate change" w/20 "physical risk*") OR "carbon risk*" OR "coal risk*" OR (COAL w/20 risk) OR ("COAL ASH" w/20 risk) OR ("COAL combustion" w/5 waste) OR ("fossil fuel w/5 risk*") OR "coal ash risk*" OR ("shale energy" w/5 "risk*") OR "hydraulic fractur*" OR ("stranded asset*" w/5 risk*) OR "carbon asset risk*" OR "stranded asset risk*").

Table 1

Summary statistics of climate change-related shareholder proposals. In panel A, shareholder resolutions are classified by year and in panel B by outcome. * = The average percentage of favorable votes, which is calculated using the total voting percentage of voted proposals divided by the total number of voted proposals in a given year. The sample consists of all climate change-related shareholder resolutions in the CERES database from 2009 to 2018.

Panel A: Breakdown of climate change-related shareholder proposals by year

Year	Number of proposals	Disclosure-related proposals	% Disclosure-related proposals	Risk-related proposals	% Risk-related proposals	Difference	P-value for difference in mean	Risk-related (word count)	Repeated proposals	Average voting*	Average voting* disclosure-related	Average voting* risk-related
2009	32	22	68.75%	10	31.25%	37.50%	-	96	0	23.53%	22.81%	24.34%
2010	59	41	69.49%	18	30.51%	38.98%	-	459	11	20.57%	23.95%	17.43%
2011	70	45	64.29%	25	35.71%	28.57%	-	807	17	20.67%	19.84%	21.55%
2012	55	38	69.09%	17	30.91%	38.18%	-	198	21	18.63%	18.34%	18.90%
2013	55	32	58.18%	23	41.82%	16.36%	-	471	16	20.69%	27.60%	18.22%
2014	82	45	54.88%	37	45.12%	9.76%	-	609	18	23.87%	26.15%	23.11%
2015	89	47	52.81%	42	47.19%	5.62%	-	978	27	20.80%	22.63%	20.04%
2016	98	59	60.20%	39	39.80%	20.41%	-	1,200	29	26.42%	27.65%	25.66%
2017	92	47	51.09%	45	48.91%	2.17%	-	939	32	31.22%	17.79%	35.32%
2018	85	48	56.47%	37	43.53%	12.94%	-	606	35	34.72%	39.19%	31.82%
Average	**71.7**	**42.4**	**60.52%**	**29.3**	**39.48%**	**21.05%**	**0.000**	**636**	**20.6**	**24.11%**	**24.59%**	**23.64%**
Total	**717**	**424**	**59.14%**	**293**	**40.86%**	**18.27%**	**-**	**6,363**	**206**	**24.63%**	**24.38%**	**24.77%**
Panel B: Breakdown of climate change-related shareholder proposals by outcome												
Omitted	69	44	10.38%	25	8.53%	1.84%	0.067	615	21	-	-	-
Voted	332	121	28.54%	211	72.01%	-43.48%	0.015	4,992	132	24.63%	24.38%	24.77%
Withdrawn	316	259	61.08%	57	19.45%	41.63%	0.000	756	53	-	-	-
Total	**717**	**424**	**100.00%**	**293**	**100.00%**	**-**	**0.000**	**6,363**	**206**	**24.63%**	**24.38%**	**24.77%**

Table 2

Summary statistics. Panel A shows the characteristics of target companies for the whole sample, as well as comparisons with a group of matched firms. Panels B and C present the same statistics for subsamples of risk-related and disclosure-related proposals, respectively. Panel D compares summary statistics for a subsample of risk-related with those of a subsample of disclosure-related proposals. Firm characteristics are measured at the year before the climate-related shareholder resolution. *, **, *** coefficients are significant at the 0.1, 0.05 and 0.01 levels, respectively. All variables are described in Appendix 1.

Panel A: Whole sample

Variable		Target companies						Matched firms					
	N	Mean	SD	p25	p50	p75	N	Mean	SD	p25	p50	p75	t-test
Size	717	10.20	1.53	9.08	10.22	11.17	717	9.86	1.10	9.08	10.53	10.69	4.88***
BM	717	0.51	0.87	0.30	0.47	0.70	717	0.67	0.25	0.48	0.67	0.85	-4.78***
Sales growth	717	0.01	0.23	-0.08	0.01	0.10	717	0.06	0.13	0.01	0.07	0.11	-5.53***
Cash	717	0.07	0.09	0.01	0.04	0.10	717	0.07	0.04	0.04	0.06	0.09	0.32
Dividend Yield	717	0.02	0.02	0.01	0.02	0.04	717	0.03	0.02	0.02	0.03	0.04	-8.25***
OCF	717	0.10	0.06	0.06	0.09	0.14	717	0.09	0.03	0.07	0.09	0.10	6.60***
Capex	717	0.08	0.07	0.04	0.07	0.10	717	0.07	0.04	0.04	0.06	0.10	3.95***
R&D	717	0.02	0.12	-0.01	0.02	0.06	717	0.02	0.03	0.00	0.01	0.04	0.50
TobinQ	717	1.60	0.95	1.07	1.30	1.70	717	1.41	0.41	1.09	1.27	1.63	4.81***
Leverage	717	0.31	0.17	0.19	0.31	0.41	717	0.33	0.06	0.30	0.35	0.37	-3.17***
ROA	717	0.12	0.11	0.08	0.10	0.16	717	0.11	0.04	0.08	0.11	0.13	2.34**

Panel B: Subsamples of disclosure-related

Variable		Target companies						Matched firms					
	N	Mean	SD	p25	p50	p75	N	Mean	SD	p25	p50	p75	t-test
Size	424	9.72	1.45	8.70	9.53	10.64	424	9.53	1.14	9.04	9.18	10.56	2.09***
BM	424	0.47	1.09	0.24	0.43	0.64	424	0.63	0.28	0.40	0.60	0.80	-2.99***
Sales growth	424	0.03	0.24	-0.05	0.03	0.12	424	0.07	0.12	0.02	0.06	0.11	-2.88***
Cash	424	0.09	0.10	0.01	0.05	0.14	424	0.08	0.05	0.05	0.07	0.10	0.92
Dividend Yield	424	0.02	0.02	0.00	0.02	0.03	424	0.03	0.02	0.02	0.03	0.04	-6.47***
OCF	424	0.11	0.07	0.07	0.10	0.14	424	0.09	0.03	0.07	0.09	0.11	5.99***
Capex	424	0.08	0.08	0.03	0.06	0.10	424	0.06	0.04	0.04	0.05	0.08	4.19***
R&D	424	0.03	0.16	-0.01	0.03	0.08	424	0.03	0.04	0.00	0.02	0.06	-0.13
TobinQ	424	1.76	1.13	1.10	1.35	2.06	424	1.52	0.45	1.12	1.40	1.83	4.10***
Leverage	424	0.33	0.18	0.23	0.33	0.42	424	0.33	0.06	0.30	0.35	0.37	-0.08
ROA	424	0.12	0.13	0.08	0.11	0.17	424	0.11	0.04	0.09	0.12	0.14	1.42

Table 2 (Continued)

Panel C: Subsamples of risk-related

Variable	N	Mean	SD	p25	p50	p75	N	Mean	SD	p25	p50	p75	t-test
			Target companies							**Matched firms**			
Size	293	10.91	1.37	10.08	10.82	11.96	293	10.34	0.82	10.45	10.62	10.75	6.13***
BM	293	0.56	0.33	0.35	0.51	0.72	293	0.72	0.19	0.62	0.74	0.87	-7.00***
Sales growth	293	-0.02	0.20	-0.09	-0.01	0.07	293	0.05	0.14	0.00	0.07	0.10	-5.45***
Cash	293	0.05	0.07	0.01	0.03	0.07	293	0.06	0.02	0.04	0.05	0.07	-0.97
Dividend Yield	293	0.03	0.02	0.02	0.03	0.04	293	0.04	0.01	0.03	0.04	0.04	-5.46***
OCF	293	0.09	0.05	0.06	0.08	0.12	293	0.09	0.02	0.07	0.08	0.10	2.92***
Capex	293	0.08	0.05	0.05	0.08	0.10	293	0.08	0.03	0.06	0.06	0.11	0.55
R&D	293	0.02	0.05	-0.01	0.01	0.03	293	0.01	0.02	-0.01	0.01	0.02	2.31**
TobinQ	293	1.36	0.53	1.04	1.25	1.52	293	1.26	0.29	1.05	1.16	1.40	2.99***
Leverage	293	0.28	0.16	0.15	0.29	0.39	293	0.34	0.06	0.31	0.35	0.37	-5.20***
ROA	293	0.11	0.07	0.08	0.09	0.15	293	0.10	0.04	0.08	0.10	0.13	2.43**

Panel D: Subsamples of disclosure vs. risk -related

Variable	N	Mean	SD	p25	p50	p75	N	Mean	SD	p25	p50	p75	t-test
			Disclosure-related proposals							**Risk-related proposals**			
Size	424	9.72	1.45	8.70	9.53	10.64	293	10.91	1.37	10.08	10.82	11.96	-14.98***
BM	424	0.47	1.09	0.24	0.43	0.64	293	0.56	0.33	0.35	0.51	0.72	-2.75***
Sales growth	424	0.03	0.24	-0.05	0.03	0.12	293	-0.02	0.20	-0.09	-0.01	0.07	3.81***
Cash	424	0.09	0.10	0.01	0.05	0.14	293	0.05	0.07	0.01	0.03	0.07	7.88***
Dividend Yield	424	0.02	0.02	0.00	0.02	0.03	293	0.03	0.02	0.02	0.03	0.04	-8.27***
OCF	424	0.11	0.07	0.07	0.10	0.14	293	0.09	0.05	0.06	0.08	0.12	3.94***
Capex	424	0.08	0.08	0.03	0.06	0.10	293	0.08	0.05	0.05	0.08	0.10	-2.27**
R&D	424	0.03	0.16	-0.01	0.03	0.08	293	0.02	0.05	-0.01	0.01	0.03	2.89***
TobinQ	424	1.76	1.13	1.10	1.35	2.06	293	1.36	0.53	1.04	1.25	1.52	8.46***
Leverage	424	0.33	0.18	0.23	0.33	0.42	293	0.28	0.16	0.15	0.29	0.39	3.54***
ROA	424	0.12	0.13	0.08	0.11	0.17	293	0.11	0.07	0.08	0.09	0.15	1.73*

Table 3

This table presents the marginal effects of characteristics of being targeted by climate-related proposals. The dependent variable is a dummy variable equal to one if the company is targeted by a climate-related proposal, and zero for a control firm-year. Model 1 was run by 500 bootstrap samples, obtaining similar coefficients and significance (no-tabulated). For the subsample of risk-related resolutions (Model 2), the dependent variable takes a value of one if the company is targeted by a risk-related proposal and zero for a control firm-year. For the subsample of disclosure-related proposals (Model 3), the dependent variable is equal to one if the company is targeted by a disclosure-related proposal and zero for a control group of non-targeted firms. Firm characteristics are measured at the year before the shareholder resolution. *, **, *** coefficients are significant at the 0.1, 0.05 and 0.01 levels, respectively. All variables are defined in Appendix 1.

| | (1) | | (2) | | (3) | |
| | **Whole sample** | | **Risk-related** | | **Disclosure-related** | |
Variable	**Marg. Effects**	**z-stat**	**Marg. Effects**	**z-stat**	**Marg. Effects**	**z-stat**
Size	0.0760***	6.76	0.111***	5.25	0.0648***	4.58
BM	-0.173***	-4.1	-0.400***	-4.60	-0.110***	-2.91
Sales Growth	-0.512***	-7.44	-0.810***	-6.83	-0.348***	-4.02
Cash	0.139	0.55	-0.280	-0.52	0.407	1.39
Dividend Yield	-8.089***	-10.43	-7.257***	-6.00	-8.162***	-8.21
OCF	1.488***	3.17	-0.176	-0.17	2.097***	3.84
Capex	1.063***	2.68	-0.254	-0.33	1.682***	3.06
R&D	-2.602**	-2.33	-2.879	-0.84	-2.238*	-1.84
TobinQ	0.0657**	2.04	0.0201	0.24	0.0529	1.46
Leverage	-0.225*	-1.85	-0.625***	-2.74	-0.0321	-0.21
ROA	-0.427	-1.29	0.362	0.78	-0.759*	-1.81
Year FE	yes		yes		yes	
Industry FE	yes		yes		yes	
Number of obs	1434		586		848	
Pseudo R^2	0.1507		0.2289		0.1438	

Table 4

This table reports the marginal effects of characteristics of being voted at the shareholders meeting. The dependent variable is a dummy variable equal to one if the proposal is voted at the annual meeting, and zero otherwise. Firm characteristics are measured at the year before the shareholder resolution. In Model 1 both variables ESG score and lobby are excluded, while in Model 2 these variables are considered to reflect the significant loss of observations due to the data availability for these variables. *, **, *** coefficients are significant at the 0.1, 0.05 and 0.01 levels, respectively. All variables are defined in Appendix 1.

	(1)		(2)		(3)		(4)	
	Whole sample				Risk-related		Disclosure-related	
Variable	Marg. Effects	z-stat	Marg. Effects	z-stat	Marg. Effects	z-stat	Marg. Effects	z-stat
Size	0.06***	4.05	0.08***	2.91	-0.01	-0.18	0.03	0.89
BM	0.13***	2.74	0.14**	2.19	0.17	0.95	0.13**	2.02
Sales Growth	-0.09	-0.95	0.01	0.11	0.40**	1.93	0.08	0.56
Cash	0.36	1.47	0.19	0.60	1.28**	1.83	-0.07	-0.21
Dividend Yield	-1.33	-1.18	-0.31	-0.22	-3.34*	-1.72	1.46	0.77
OCF	-0.37	-0.89	-0.59	-0.95	1.03	0.64	-0.87	-1.23
Capex	0.01	0.02	0.35	0.71	1.30	1.19	0.45	0.84
R&D	-1.88	-1.37	-2.48	-1.60	11.09	1.32	-1.32	-0.73
TobinQ	0.02	0.65	0.06	1.55	-0.02	-0.19	0.07	1.57
Leverage	0.15	1.51	-0.02	-0.16	-0.13	-0.34	-0.01	-0.09
ROA	0.24	1.11	0.21	0.64	-0.82	-0.73	0.45	0.88
Post-Paris	-0.09	-1.27	-0.06	-0.73	0.06	0.55	-0.16	-1.58
USA=wthdw	-0.15**	-2.16	-0.25***	-3.15	-0.39***	-4.26	-0.08	-0.66
UNPRI-Investor	-0.03	-0.74	0.01	0.11	-0.07	-0.95	0.09	1.52
Repeated	0.17***	4.39	0.21***	4.73	0.16***	2.86	0.14**	2.10
Lobby			0.00	0.75	0.00	-0.11	0.00	-0.65
ESG score			-0.01***	-2.99	0.00	-0.67	0.00	-1.03
Year FE	yes		yes		yes		yes	
Industry FE	yes		yes		yes		yes	
Number of obs	717		534		256		278	
Pseudo R^2	0.117		0.142		0.188		0.153	

Table 5

This table reports the marginal effects on the voting outcome. The dependent variable is the voting percentage that a climate-related shareholder proposal obtained at the shareholders meeting. Firm characteristics are measured at the year before the shareholder resolution. In Model 1 both variables ESG score and lobby are excluded, while in Model 2 these variables are considered to reflect the significant loss of observations due to the data availability for these variables. *, **, *** coefficients are significant at the 0.1, 0.05 and 0.01 levels, respectively. All variables are defined in Appendix 1.

	(1)		(2)		(3)		(4)	
	Whole sample				Risk-related		Disclosure-related	
Variable	Marg. Effects	z-stat	Marg. Effects	z-stat	Marg. Effects	z-stat	Marg. Effects	z-stat
Size	0.01	0.08	-0.01	-0.42	0.01	0.39	-0.05**	-2.64
BM	0.00	-0.01	-0.03*	-1.74	-0.03	-1.50	-0.06**	-1.87
Sales Growth	0.09***	2.81	0.04	1.26	0.07	1.53	0.01	0.28
Cash	-0.04	-0.35	-0.07	-0.48	0.01	0.06	-0.25	-1.39
Dividend Yield	0.04	0.09	-0.02	-0.03	0.36	0.78	-0.52	-0.49
OCF	0.14	0.84	0.07	0.31	0.24	0.66	0.05	0.14
Capex	0.22*	1.75	0.06	0.34	-0.47**	-1.78	0.26	1.01
R&D	-1.29	-1.38	-1.27	-1.24	-1.73**	-1.69	-0.57	-0.28
TobinQ	-0.01	-0.40	0.00	-0.09	0.00	0.05	-0.04	-1.51
Leverage	0.00	-0.10	-0.05	-0.85	-0.26**	-3.00	0.12	1.47
Return on assets	-0.15**	-1.79	-0.14	-1.44	-0.23**	-2.82	-0.20	-0.70
Post-Paris	0.12***	4.95	0.11***	4.17	0.14***	4.18	0.03	0.63
USA=wthdw	0.01	0.34	0.03	0.99	-0.01	-0.20	0.17***	2.46
UNPRI-Investor	0.02	0.90	0.02	0.90	0.05**	2.05	-0.02	-0.70
Repeated	0.01	0.44	0.00	0.27	0.01	0.81	-0.03	-1.18
Lobby			0.00	0.15	0.00	-0.14	0.00	0.72
ESG score			0.00	-0.54	0.00**	-1.76	0.00	0.60
Year FE	yes		yes		yes		yes	
Industry FE	yes		yes		yes		yes	
Number of obs	332		263		186		77	
Pseudo R^2	0.027		0.027		0.033		0.052	

Table 6

Cumulative Average Abnormal Returns (CAAR) around the proxy statement date, meeting date and no-action letter date. On each event date, event window of (-1, 1), (-10, 0) and (0, 10) are tested. Panel A presents the results for the whole sample while Panel B and C presents the results for subsamples of risk-related and disclosure-related proposals, respectively. ***, ** and * indicate significance of the coefficient at the 1%, 5% and 10% levels, respectively.

Panel A: Whole sample				
	Event date	*Extend window (-1,1)*	*Extend window (-10,0)*	*Extend window (0,10)*
Proxy statement filing				
CAAR	0.166%*	0.550%**	1.057%**	1.568%***
t	-1.7134	2.5143	1.9898	3.5572
N	252	252	252	252
Annual Shareholder Meeting Date				
CAAR	0.077%	-0.281%	0.561%	-0.440%
t	-0.784	-1.366	1.494	-1.2363
N	252	252	252	252
No-action letter: SEC decision				
CAAR	-0.183%	0.327%	0.496%	0.782%
t	1.0394	1.098	0.796	1.291
N	65	65	65	65
Panel B: Subsample of risk-related proposals				
Proxy statement filing				
CAAR	0.040%	0.533%**	1.820%**	1.228%**
t	-0.305	-1.982	-2.345	-2.083
N	148	148	148	148
Annual Shareholder Meeting Date				
CAAR	0.062%	-0.346%	-0.125%	-0.586%
t	-0.518	1.333	0.294	1.540
N	148	148	148	148
No-action letter: SEC decision				
CAAR	-0.150%	-0.246%	-0.898%	0.341%
t	0.959	0.824	1.214	-0.645
N	23	23	23	23
Panel C: Subsample of disclosure-related proposals				
Proxy statement filing				
CAAR	0.344%**	0.575%	-0.027%	2.052%***
t	-2.502	-1.560	0.042	-3.103
N	104	104	104	104
Annual Shareholder Meeting Date				
CAAR	0.099%	-0.188%	1.537%**	-0.231%
t	-0.590	0.560	-2.294	0.344
N	104	104	104	104
No-action letter: SEC decision				
CAAR	-0.201%	0.641%	1.258%	1.022%
t	0.773	-1.506	-1.466	-1.144
N	42	42	42	42