Real Effects of Shareholder Proposals:

Diversification in the Context of Climate Change

Greg Tindall, PhD candidate
gtindall@fau.edu

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ABSTRACT

Extant literature has struggled to identify real effects of shareholder proposals, finding them to depend on their context. Progressively, climate change has gathered interest at annual meetings where shareholders present proposals related to the subject. The literature explains circumstances in which diversification can serve as a defense. I find that firms in receipt of shareholder proposals related to climate change diversify more, mostly into related industries. I find mixed evidence on wealth enhancements of diversification spurred by these proposals. I address endogeneity concerns in a variety of ways. The robustness of my results suggest that shareholder proposals have a strong impact on diversification, at least in the context of climate change.

1.0 Introduction and Motivation

"[I am] not opining on whether the world's climate is changing, at what pace it might be changing, or due to what causes. Nothing that [follows] today should be construed as weighing in on those topics. Today's guidance will help [our understanding of shareholder proposals.]"

> *~ as adapted from SEC Chairman Shapiro's opening comments in SEC press release "SEC Issues Interpretive Guidance on Disclosure Related to Business or Legal Developments Regarding Climate Change," Jan. 27, 2010.*

My research demonstrates how corporate policies have been impacted by shareholder proposals. As a low-cost form of activism (Ferri, 2012), the literature on shareholder proposals suggests that their effectiveness hinges on the context in which they are made (Carleton, Nelson and Weisbach (1998), Bizjak and Marquette (1998), Thomas and Cotter (2007), Ertimur, Ferri and Stubbens (2010)). As a recurring topic of interest at annual meetings since the 1994 proxy season, shareholders have raised concerns about the adverse impacts that climate change may have on firm fortunes. These shareholder concerns have been expressed across hundreds of industries for decades. Given the time depth and industry breadth, the context of climate change provides an excellent framework for studying the dynamics of shareholder-initiated proposals in the US. The literature also suggests that firms turn to diversification for relief against poor prospects (Weston and Mansinghka 1971; Melicher and Rush, 1974; Mason and Goudzwaard, 1976; Hopkins, 1991; Matsusaka, 2001) or as a means to cope with adversity (Beneish et al., 2008; Gormley and Matsa, 2011; Gopalan and Xie, 2011).

The frequency and intensity of shareholder proposals has increased over time (see Figure 1), suggesting that firms may take defensive measures against proposals that address climate change. The literature explains how diversification can be an effective defense against poor

prospects or adversity. Recently, climate-related proposals have gained more traction and consensus among shareholders against management,[1] suggesting that firm behaviors may be defensive, seek alternative lines of business or somehow adapt their practices. I examine the extent to which diversification provides firms with a defense against the pressure that shareholder proposals apply for firms to address climate change, while considering the implications to performance.

My general findings are that firms in receipt of a shareholder proposals related to climate change do, in fact, diversify more and that this diversification takes place in related industries. Asset allocations shift but not into entirely new lines of business. This general finding withstands a full set of controls established by the literature also to influence diversification, as well as time and industry invariant factors. In addition, certain industries are expected to be impacted by climate change more than others. These industries with *a priori* expectations demonstrate more pronounced diversification into related industries. To address endogeneity concerns, I employ a matching estimator, an instrumental variable and a placebo test. When matched by size, industry and year, my results hold. When the Pope instruments for proposal influence, the impact on related diversification holds. When applied to a placebo, my results do not hold, i.e. the placebo is unaffected. Although designed to make causal claims, these endogeneity tests do not entirely disentangle the nature of the proposal process and the context under examination, climate change. While clean identification eludes, the impact of climate proposals strengthens.

With respect to performance, I find mixed evidence. In general, proposal-induced diversification has a positive impact on accounting performance, which becomes negative when

[1] Shareholders voted against management in 2017 for the following firms: ExxonMobil (62.3%), Occidental Petroleum Corp (67%), Dominion (48%), Duke Energy (46%) and Southern Company (46%). (McWilliams (2017))

decomposed into related diversification. Stock performance, for all specifications, has a negative association with diversification that is relieved by size. Risk also depends on the form of diversification: decreased risk for accounting returns with general diversification, while increased risk for accounting returns for related diversification. For robustness, I examine changes in diversification as well as lags and find my results to hold.

My contributions to the literature are threefold. First, while there are a few studies on shareholder proposals and climate change, I am unaware of any such research which discovers real effects such as diversification. While climate change has been addressed extensively in the economics literature contemplating the social cost of carbon (Kokoski and Smith (1987), Nordhaus (1990), Morgenstern (1991), Sohngen and Mendelsohn (1998), Stern (2006, 2008), Pindyck (2007, 2012), Daniel, Litterman and Wagner (2016)), most of the discussion in finance, with respect to climate change, involves information aggregation and disclosure and is largely relegated to a subset of indices which aggregate corporate social responsibility (CSR) or environmental, governance and sustainability (ESG).

Next, shareholder proposals assist our understanding of shareholder activism, and a more general notion of persuasion over coercion. Shareholder proposals are an explicit expression of activism, as opposed to selling shares or taking a firm private. Despite their explicit statement, proposals have been difficult characterize. With respect to the proxy process and the market for corporate control, Manne (1965) is among the first to struggle with the purpose of proposals. Likewise, Pound (1988) at first finds inefficiencies that he later (1991) balances against shareholder rights. Karpoff et al (1996) continue the search only to find it without effect. Gillan and Starks (2007) are careful to differentiate between initial excitement and long-term improvement. Levit and Malenko (2011) theorize why activists can improve information

aggregation when conflicts are exacerbated. Such conflict, Renneboog and Szilagyi (2011) explain, leads to shareholder proposals expressing "reputational pressure" on management. The current paper finds purpose in this form of shareholder activism to pressure corporate decision making.

Third, the diversification literature often paints this corporate behavior with distain, until circumstances become more pressing. Then, diversification can put up a good defense. Much of the diversification literature concerns its contribution to agency costs (Jensen and Murphy (1990), Jensen (1986), Shleifer and Vishny (1989), Amihud and Lev (1981)), resulting in an overall "discount." Lang and Stulz (1994) establish an inverse relationship between diversification and Tobin's Q. Scharfstein (1998) discovers a negative impact on value attributable to overinvestment and cross-subsidization that give rise to Scharfstein and Stein (2000) theorizing why "socialism" occurs within internal markets, which external markets would never tolerate, a misallocation that Rajan, Servaes and Zingales (2000) support. The diversification literate then calls into question the "discount" -- Graham, Lemmon and Wolf (2002) for non-diversified targets, Chevalier (2004) showing pre-merger patterns, Hyland and Diltz (2002) with economic significance, Campa and Kedia (2002) assigning self-selection problems that Villalonga (2004) shows to switch the discount to a premium, as an artifact of the Compustat Tapes which Hyland and Diltz (2002) point out.

However, a minority of the literature views diversification favorably, beginning with Penrose (1959) who discusses the ability of firms to leverage dynamic organizational skills across industries and continuing with Lucas (1978) attributing firm "bigness" to managerial talent. The favorable view of diversification comes into focus with Weston and Mansinghka (1971), observing a defense mechanism at work to assist industries with poor prospects.

Melicher and Rush (1974) agree with the defensive that diversification provides, which Hopkins (1991) develops as a hypothesis and also finds support. Later, Matsusaka (2001) derives a theoretical model to explain why diversification can provide net benefits in certain circumstances. Confirming net benefit are Beneish et al. (2008) with tobacco firms, Gormley and Matsa (2011) with firms exposed to previously unknown carcinogens, and Gopalan and Xie (2011) with industries that become distressed unexpectedly. Based on my observations of increased frequency shareholder proposals to address climate concerns and by reading the proposals, themselves, I examine diversification as a defensive response to this pressure and contribute to the literature, accordingly.

The following paper unfolds as follows. In order to appreciate the dynamics of this form of in-house governance, Section 2.1 reviews the shareholder proposal literature to see what other contexts have found merit for finance questions. A more in-depth discussion of the mechanics behind shareholder proposal follows, along with subsequent guidance by the SEC and other government entities. Equipped with context and an understanding of shareholder proposals, impacts on corporate behavior is suggested in the form of diversification, with the literature on it reviewed in section 2.2.

With expectations from the literature for increased diversification, a discussion of the data, the hand-collected sample of climate-related proposals and variable construction follows is section 3. General methodology is discussed next, before results are documented and interpreted, along with endogeneity concerns and robustness checks is section 4. Finally, I conclude is section 5 that shareholder proposals related to climate change spur increased diversification that, in turn, have mixed impacts on performance and risk. While clean causal

interpretations continue to elude, the preponderance of evidence suggests that shareholder proposals have real effects in the context of climate change.

2.0 Literature Review

As with all matters which come to a vote, shareholder proposals involve politics. However, corporate politics differ from democracy in that there is no majority rule. With shareholder proposals, "winning" 100% of the vote has no power to force the hand of management; it cannot tell the board what to do; there is no enforcement mechanism to enjoin the firm. Rather, proposing shareholders are left to persuade other shareholders, the directors and management that their initiatives are in the best interests of the firm. The vote outcome is more of a reflection of temperature taken on investor sentiment for how seriously the board and management should consider the initiative. This dynamic does not occur by chance or fluke. Proposal politics unfold not only by construction and original intent of Title 17, §240.14a-8 of the Code of Federal Regulations, but also each year by the Division of Corporate Finance, as it weighs the merits of proposals which may overstep their precatory purpose. In other words, shareholder proposals cannot put owners in the position of management or otherwise bridge Berle-Means separation. To appreciate the proposal process, it helps to review their mechanical innerworkings as set forth by 14a-8 "shareholder proposals."

2.1 The Mechanics: Regulations, Press Releases and Interpretations from the SEC

To appreciate how shareholders raise concerns through the proposal process at annual meetings, I summarize the Code of Federal Regulation Title 17, §240.14a-8 (14a-8) "Shareholder proposals", as well as public statements by the Commission and Staff Legal Bulletins (SLB) provided by the Division of Corporate Finance (the Division).

Annual meetings afford formal opportunities for shareholders to voice their concerns, within limits. First, a shareholder must own at least $2,000 of market value or 1% of equity for at least one year prior to the date that a proposal is submitted, with an intention to hold onto the interest through the date of the annual meeting. The proposal is limited to 500 words and must be submitted 120 days prior to the release of the proxy statement, or approximately a half year before the annual meeting. However, the spirit of 14a-8 is contained in the conditions which seek to prevent matters that are frivolous, conflict with law, negate board functions or which unduly inhibit management from conducting day-to-day business. The following 13 conditions guide shareholder proposals within limits and permit management to petition the Commission for exclusion when proposals attempt to exceed their advisory nature.

(1) improper under state law (i.e. binds if approved),
(2) violation of law,
(3) violation of proxy rules,
(4) personal grievance, special interest,
(5) relevance/significance (i.e. 5% materiality threshold),
(6) absence of power/authority (i.e. the company lacks the capacity to implement proposal),
(7) management functions ("If the proposal deals with a matter relating to the company's ordinary business operations."),
(8) Director elections (disqualifies, removes, or questions competence of existing directors, names an individual to be elected, effects outcome of upcoming director election),
(9) conflicts with company's proposal,
(10) substantially implemented,
(11) duplication (by another proposal),
(12) prior proposals filed within the past 5 years which fail to meet the following conditions:

i. Obtain at least 3% of the vote when previously submitted within the past 5 years
ii. Obtain at least 6% of the vote if previously submitted twice within the past 5 years
iii. Obtain at least 10% of the vote if previously submitted three times or more within the past 5 years

(13) Specific amount of dividends

Should management petition for exclusion, on a case-by-case basis, the Division responds to firm requests with No Action Letters;[2] Staff recommends to the Commission either that no action be taken against a firm for excluding a proposal, or that the Commission should seek to enforce the shareholder's right to propose the matter at an annual meeting. Consequently, the intent or spirit of 14a-8 was not simply set in motion in 1942 with well wishes that shareholder resolutions ensue as intended. Rather, each and every proxy season SEC Staff balances the rightful roles of shareholders, management and the board. Further, the Staff periodically releases Staff Legal Bulletins (SLBs) to provide general guidance of the Staff's current stance or method of reasoning on certain matters. Recent SLBs which apply to shareholder proposals, with particular relevance to climate change, are summarized next.

SLB 14E was released in 2009 with discussion of "significant policy issues" that the Staff considers important enough to supersede board functions. Ordinarily, the Staff defers to the board to evaluate risk matters. However, "a proposal that focuses on the board's role in the oversight of a company's management of risk may transcend the day-to-day business matters of a company and raise policy issues so significant that it would be appropriate for a shareholder vote."[3] While SLB 14E stops short of listing those issues, Staff had previously qualified environmental issues as "significant" in SLB No. 14C during 2005.

To further clarify when the Staff might supersede the board, SLB 14I in 2017 looks for a "well-reasoned" analysis from the board on (1) the proposal content and (2) the degree of micromanagement. In other words, if the board is not performing a careful analysis of a proposal, the Staff is inclined to deny requests to exclude the proposal. Thus, during the 2018 proxy season, Apple successfully excluded a proposal concerning greenhouse gas emissions on

[2] For more information, see https://www.sec.gov/fast-answers/answersnoactionhtm.html.
[3] https://www.sec.gov/interps/legal/cfslb14e.htm

"ordinary business" grounds, while TJX and GM could not exclude similar proposals, the difference being "how [the] board of directors has analyzed this matter." (Stein, 2018). The Division issued SLB 14J in 2018 and referenced climate change with respect to micromanagement as grounds for exclusion: "a proposal to generate a plan to reach net-zero greenhouse gas emissions by the year 2030, which sought to impose specific timeframes or methods for implementing complex policies, was excludable on the basis of micromanagement."[4] Proposals involving "intricate detail," "specific time-frames" and "complex policies," [5] had previously served as grounds for exclusion. These grounds resurface as micromanagement in SLB 14J issued in 2018.

Into 2019, the SEC Roundtable[6] discussions ponder the merits and abilities of proposals to serve shareholder interests. Some of these discussions suggest that proposals serve an integral role for minority interests, while other comments relegate proposals to an antiquated process that squanders firm resources. Senator Schatz of Hawaii is concerned that the expanded use of micromanagement exclusions target climate change related proposals.[7] The proposal process continues to evolve, often with specific reference to climate change.

From the original provisions of Rule 14a-8 in 1942 through Roundtable discussions in 2019, the SEC guides and seeks public comment on the use of shareholder proposals for governing ownership interests. While the subject matter of some proposals may be "so significant," the board continues to play a vital role in deciphering how significant the matter is to the firm. Shareholder proposals assist Berle-Means separation to find the appropriate distance between diffuse ownership and disciplined management.

[4] Apple Inc. (Dec. 5, 2016).
[5] Release No. 34-40018 (May 21, 1998).
[6] "Statement Announcing SEC Staff Roundtable on the Proxy Process," Chairman Jay Clayton: July 30, 2018.
[7] https://www.sec.gov/comments/4-725/4725-4635935-176320.pdf

2.2 Diversification Literature

Diversification can provide firms with an option on lines of business to pursue. Much of the diversification literature suggests that such an option is costly, that investors prefer firms to maintain their focus, to keep doing whatever it is they do best to maximize profits. However, in the face of adversity or, in extreme, a liquidation option, investors might favor diversification into alternative lines of business. As a defense against poor prospects or adversity, diversification can offer relief, according to a minority of the literature.

Since I am focused on the context of climate change as brought to management's attention by proposing shareholders, I am interested in diversification as a defense. While management may have been well-aware of the risks and opportunities that climate change presents prior to shareholder input, *that* these proposals make it onto the definitive proxy statement and the fact that management has opposed them provides a reasonable basis to suspect firms of taking defensive measures. My research question wonders whether firms diversify in response. More specifically, do firms respond to climate-related proposals (1) by diversifying their asset base when purchasing capital items in different industries, or (2) by targeting sales markets outside of those it had in the past? Do they diversify their assets or sales? While I have good reason to believe that firms in receipt of a climate-related proposals are defensive, I am keen on uncovering evidence to suggest that these proposals can compel firms to diversify.

I turn to the studies which find merit in diversification to determine if an adequate basis exists for the context that climate change presents. While testing the efficiency of conglomerates, Weston and Mansinghka (1971) notice instances of improved performance for certain industries experiencing difficulties. The authors term this defensive diversification, specifically citing technological obsolescence as motivation to diversify. (p. 928) While poor

prospects can burden during cyclical downturns, an outlook that is perpetually dismal might cause firms to pursue another line of business. Weston and Mansinghka (1971) notice that firms with below-average P/E ratios alter their asset base toward average P/E ratios in other industries. Although firms cannot attain superior performance by diversifying, they can preserve value by adapting their behavior, Weston and Mansinghka deduce. Melicher and Rush (1974) quickly confirm acquisition strategies that employ such a defense. Hopkins (1991) formalizes a "defensive diversification" hypothesis and finds support for it. Like any defense, the one in diversification that Weston and Mansinghka discover has its limits. A good defense is only a good defense; it cannot take offense and compel superior performance. These limits are confirmed by Mason and Goudzwaard (1976) who find no "new life" provided by diversification. The "discount" literature, that later evolves, does not reconcile well with observation, so Matsusaka (2001) offers a theoretical model to explain how organizational skills (as opposed to technical know-how) can transition away from poor prospects or adversity. Defensive diversification, in theory, is more of a search for a suitable match between management and favorable prospects, than it is a quest in and of itself. The defense must eventually rest and allow firms to refocus on growth opportunities, rather than remain in a constant flux of preservation.

Even though the following studies do not reference "defensive diversification," the adversity each examines suggests that their samples employ the defense. One of the more intuitive studies on the positive effects of diversification follows the tobacco industry's response to the 1990's wave of litigation over health concerns, which debunks a negative relationship between Tobin's q and diversification established by Lang and Stulz (1994). Beneish et al. (2008) demonstrate the value created for tobacco firms that diversify geographically by

transforming cash into less liquid, non-tobacco operating assets for agency concerns that Jensen (1986) also suspected of tobacco firms. Beneish et al. (2008) discover positive abnormal returns when diversifying acquisitions are announced, in order to avoid expropriation by impending liabilities. The length of time involved with the case of tobacco also lends itself to parallels with climate change: migratory transitions as opposed to opportunistic reactions. Gormley and Matsa (2011) examine diversifying acquisitions as response to the release of the Report on Carcinogens from the National Toxicology Program. Firms with increased exposure to carcinogen liabilities attempt to "grow" their way out of trouble by acquiring cash rich targets. An important insight from their conclusion suggests that agency concerns are side aside until firms can resume normal operations. Normal owner-agent conflict[8] becomes somewhat moot in the face of a more serious problem. Studying financial distress, Gopalan and Xie (2011) notice significant reductions in the diversification discount. By employing an unanticipated measure of industry distress,[9] the authors remark that conglomerates in trouble can grow in both expanding industries and those in decline, thus a bright side of internal capital markets. As shareholder proposals exert pressure to adapt firm practices to accommodate a societal shift to low carbon footprints, this strand of literature suggests that diversification can provide an effective defense.

From an input or resource-based view, certain firms possess organizational keys not easily replicated. These scare, internal resources prompt firms to leverage their dynamic skills across industries in order to grow (Penrose, 1959). One particularly valuable resource is the managerial talent that Lucas (1978) attributes to a firm's "bigness." Similarly, such a view not

[8] From the agency perspective, diversification enables the usual conflicts: from compensation (Jensen and Murphy, 1990) to empire-building (Jensen, 1986), from entrenchment and job security (Shleifer and Vishny, 1989) to management's non-diversifiable, human capital in the firm (Amihud and Lev, 1981).

[9] Developed by Opler and Titman (1994): Negative sales growth of the median firm in a single-segment industry with stock returns of -30%, where such a rapid drop is not anticipated by virtue of equity's forward-look.

only continues to enjoy support in the literature but also applies to firms on the decline. Matsusaka (2001) designs a model that contradicts much of the empirical literature on diversification, in that he explains how some firms maximize value by keeping an assembled organization and applying it to a new product or industry, rather than disbanding an otherwise highly capable team. Although Matsusaka makes no claim that diversification can maximize value, he explains how it can avoid the high costs of financial distress. In his specification, there is simply a mismatch between team and product. Here, diversification can be positive relative to the liquidation option.

To be convinced that diversification is spurred by shareholder proposals, it is critically important to understand the measures of diversifications that have been utilized by the literature. Although he developed a measure to capture industry concentration, Hirschman (1945) gauges each firm's relative weight in an industry according to sales and assets, a measure of concentration that Herfindahl (1950) adapts for his dissertation on the steel industry. While the Herfindahl-Hirschman index is most popularly known for its use by the antitrust division of the Department of Justice, it is also commonly used to measure firm diversification. Jacquemin and Berry (1979) consider predecessor metrics to quantify firm focus, then construct an entropy measure of diversification. The main advantage of entropy over other metrics is how it allows decomposition of related and unrelated diversification, which will be of interest when characterizing firm focus: total diversification, across industry classifications or within them. Further, prior literature has established that relatedness can lessen the negative impacts associated with diversification (Berger and Ofek, 1995).

To determine whether diversifying decisions in my context enhance performance, I follow Krueger (2016) and turn to accounting and stock returns. Similar to Beneish et al (2008)

in the case of tobacco, when shareholder proposals draw attention to climate risk, I expect diversifying firms to contradict the negative relationship established by Lang and Stulz (1994) between diversification and performance. Further, diversification can be accomplished in smaller, incremental shifts. As Brav et al. (2018) inform the debate on how shareholder activists influence firm policies, diversification can occur at the leading edge of firm practices, in their research and development divisions which expand or narrow firm boundaries (Coase, 1937). The authors find support for efficiency gains after activists intervene – R&D expenses are reduced and patent activity increases – with the strongest valuation improvements experienced by firms with more diversified innovation portfolios.

As mentioned, Weston and Mansinghka (1971) did not set out to establish diversification as a defense. It was only upon further inspection that the authors noticed this way "…to avoid adverse effects on profitability from developments taking place in the firm's traditional product market area." (p. 928) Over a ten year period, the profitability of conglomerates improves from inferior to average. From this observation, the authors consider the state of the specific industries involved. Mason and Goudzwaard (1976) test for signs of "new life" provided by conglomerates, but find that randomly chosen portfolios perform better, limiting the extent of improvement through diversification. If fear of increased legal liabilities belies concern over climate-related proposals, the case of tobacco (Beneish et al, 2008) indicates that owners and agents may set aside differences against more threatening expropriation. Consequently, industrial diversification may offer reprieve to firm fortunes, even if only temporary.

Overall, the diversification literature suggests that firms which lose focus do so at the expense of shareholders. However, there exist certain contexts in which diversification may provide a profitable option, particularly when faced with poor prospects or adversity.

3.0 Methodology

My general methodology to assess the relationship between shareholder diversification and shareholder proposals employs ordinary least squares (OLS) regressions. Since the literature offers little guidance on what type of diversification to expect, my initial regression simply explores different measures and bases. To establish a relationship, I run a univariate regression with various diversification proxies – assets or sales both for the Herfindahl measure at the 4-digit and 2-digit level, and for the Jacquemin and Berry (1979) measure of Total Entropy, Entropy Across or Entropy Within – against my main variable of interest, the Proposal indicator. If a relationship exists, the influence on firm policies should depends on receipt of a climate-related shareholder proposal.

$$Diversification_{i,t} = \alpha_t + \boldsymbol{\beta_t} Proposal_{i,t} + \varepsilon_t \quad (1)$$

It is important to note that even though the variables in the equation are specified concurrently at time t, there is a natural lag built into the proposal process, as management is in receipt of the proposal at least 140 days *before* the annual meeting. Thus, $Proposal_t$ is an indicator for the year in which a climate-related proposal appears on a DEF 14A at time t, but the proposal is known to management a half year before. Effectively, $Proposal_t \approx Proposal_{t-0.5}$. With proxy season generally running from March to May for most firms whose fiscal year ends at calendar year end, corporate planning decisions are made or can be adjust in the interim. In other words, a climate-related proposal that appears on the ballot in April has plenty of time to impact spending decisions and resource allocations if sent to management the previous October.

Assuming a general association between Diversification and Proposal, I add incrementally other control variables, an interaction with size, as well as year and industry indicators.

$$Diversification_{i,t} = \alpha_{i,t} + \beta_1 Proposal_{i,t} + \beta_2 Size_{i,t} + \boldsymbol{\beta_3}(Proposal * Size) + \beta_4 Tobin'sQ_{i,t} + \beta_5 Firm\ Age_{i,t} + \beta_5 Revenue\ Growth_{i,t} + \beta_6 Stock\ Return_{i,t-1} + \beta_7 Leverage_{i,t} + \beta_8 Cash\ Surplus_{i,t} + year_t + industry_j + \varepsilon_{i,t} \quad (2)$$

Where, Proposal is the indicator variable of interest of a firm receiving a shareholder proposal containing "climate change", Size is the natural log of revenues, Proposal*Size is an interaction term, Tobin's q is the difference between market and book equity plus assets scaled by assets, Firm Age is based on a firm's listing in Compustat, Revenue Growth is the percentage change in revenues over a year, Stock Return is a firm's change in stock price lagged one period, Leverage is the ratio of long-term and current portion of debt scaled by assets, and Cash Surplus is operating cash less depreciation plus R&D scaled by assets. In addition to these control variables, indicator variables are added to the regressions for the Fama-French 49 industry classifications and for year. Standard errors are clustered at the industry level.

3.1 Data Sources and Variable Construction

Fundamental accounting data and year end stock price information is taken from Compustat for both the North America Daily and Historical Segments. The data for shareholder proposals is obtained primarily from the SEC's Edgar database, assisted by SeekEdgar's Cloud Technology developed by Raj Srivastava, as well as from Institutional Shareholder Services (ISS). Patent data is provided by Noah Stoffman's website.[10]

The sample of climate-related shareholder proposals was gathered by conducting a search on SeekEdgar[11] using the term "climate change" and selecting DEF 14A as the form type. This search returned 1,558 shareholder proposals from the beginning of 1994 through 2018. As I am

[10] https://iu.app.box.com/v/patents

[11] Refer to https://www.seekedgar.co:8443/home.html for a complete description of the technology.

interested in the ability of shareholder proposals to capture owner-agent tensions and, in turn, affect corporate behavior, each proposal was reviewed to ensure that "climate change" appears directly in a proposal sponsored by a shareholder or in management's response to a proposal. I identify 689 such proposals which are contained in 591 DEF 14As, as some firms have several proposals in a given year. In addition, ISS has a brief description of the proposals that it collects, from which I am able to gain some reassurance about my hand-collected sample of climate-related proposals. ISS indicates that there are 709 such proposals. Since Niagara Mohawk Power Corporation received the first shareholder proposal addressing climate change in 1994, 242 different firms have received similar proposals in 114 different industries.

My variable of interest represents the shareholder proposals related to climate change. To set up a base line association between shareholder proposals and diversification, I create a variable to indicate if a firm has received at least one proposal in a year: PROPOSAL (dum). Of the 591 different DEF 14A filings in which "climate change" appears at least once, my sample contains 480 firm-year observations with sufficient information, after matching with Compustat and eliminating firms whose characteristics lie outside the 99% and 1% level.

In reading the proposals, it becomes apparent that they have varying focus on climate change as their main concern. Some proposals are particularly focused on how climate change might affect the firm, while other proposals include climate change as one of many sustainability concerns. To gauge the importance of "climate change" to shareholders, I create a proxy, PROPOSALS (per year), for the number of climate-related proposals which appear on a firm's DEF 14A in any given year. For example, Kinder Morgan received three separate PROPOSALS, each expressing climate concerns from different sponsors in 2018. As shown in

Table 2B "Descriptive Statistics," during the 480 firm-years, these firms have received up to 6 such proposals in a single year.

For diversification, I follow Jacquemin and Berry (1979) who adapt a Herfindahl measure when introducing an entropy measure, which holds up well empirically and is also sensitive to small firms. Entropy allows decomposition of related and unrelated diversification, which will be of interest when assessing how impactful shareholder proposals have been on firm decisions. Total Entropy is the entire dispersion of assets (sales) among 4-digit SIC codes. Additionally, entropy can take place across or within 2-digit SIC codes, which are considered to be unrelated and related forms of diversification, respectively. By log-transforming these measures, Jacquemin and Berry (1979) allow for decomposition of Total Entropy (4-digit) by subtracting Entropy Across (2-digit) from it to estimate Entropy Within the 2-digit level. If firms diversify when presented with a climate-related proposal, this decomposition should allow me to assess how drastic shifts in asset allocation or sales efforts are. Following Jacquemin and Berry (1979), Total Entropy is constructed as:

$$E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i} \tag{3}$$

Where P is the share of a firm's assets (sales) in each industry, *i*, at the 4-digit level. Similarly, Entropy Across each firm's assets (sales) occurs at the 2-digit level and the sum of the shares, P, in each segment, *s*, multiplied by the inverse log of that share:

$$E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s} \tag{4}$$

Entropy Within is the difference between the above two measures and represents an average of a firm's 4-digit diversification weighted by the relative importance of each segment within which the firm operates.[12]

$$E_W = E_T - E_A \quad (5)$$

Another way to proxy for diversification uses a Herfindahl (1950) measure of industry concentration adapted by Jacquemin and Berry (1979) for the firm, both at the 4-digit and 2-digit level, each using either assets or sales. As before, P_i is each firm's share in an industry and P_s is each firm's share in a segment.

$$H_{SIC4} = (1 - \sum_{i=1}^{n} P_i \, P_i) \quad \text{and} \quad H_{SIC2} = (1 - \sum_{i=1}^{n} P_s \, P_s) \quad (6)$$

I follow Faleye et al (2014) and Ferris, Javakhadze and Rajkovic (2017) for control variables with well-documented effects on diversification, in order to suggest the influence of shareholder proposals related to climate change. The controls for my main regressions and subsequent analyses include Size, Tobin's q, Firm Age, Revenue Growth, Stock Returns, Leverage and Cash Surplus.

As will be shown and as has been discovered in prior literature, Size has a powerful impact on diversification. Large firms tend to be more diversified. In fact, Lang and Stulz (1994) allow that "diversification [could] simply proxy for size." (p. 1254) I decide on the natural log of revenues as my proxy for size, to avoid any mechanical correlations which may result from other variables being scaled by assets. I follow Bhandari and Javakahadze (2017) for my measurement of Tobin's q: the difference between market value and book value of equity plus total assets all divided by total assets. Leverage is the ratio of long-term debt and its short-term portion to total assets. Cash Surplus is cash flow from operations less depreciation plus

[12] See Jacquemin and Berry (1979) p. 361-2 for the formal derivation.

R&D scaled by assets (Ferris et al, 2017). In order to reduce the influence of small startups with protracted, negative measures of Cash Surplus, I require that a firm have a positive cash surplus over its entire life, but do not exclude from my sample those firms which have negative cash surplus in some years. This procedure follows Brown et al (2009) to eliminate a small portion of outliers with a disproportionate influence.

The control variables for stock returns follow Bhandari and Javakhadze (2017). Here, size is constructed as the natural log of the market value of assets: the market value of equity plus the book value of total liabilities. Market-to-Book is the ratio of the market value of equity to the book value of equity. Leverage is the same as above: the ratio of long-term debt and its short-term portion to total assets. Momentum is the prior 24 months of compounded stock returns.

To assess the impact that climate-related proposals have on performance, I construct accounting and stock returns over a three-year period. Accounting performance includes returns on assets (ROA), return on investment (ROI) and total asset turnover (TAT). ROA is calculated as net income divided by beginning of period assets. ROI is calculated as earnings before interest, taxes, depreciation and amortization (EBITDA) divided by invested capital. TAT is calculated as total revenues divided by beginning total assets. Stock returns are compounded monthly beginning one year from the current fiscal year-end and ending three years hence for a three-year buy-and-hold return. To adjust for risk, the monthly factors on Ken French's website are employed to determine Jensen's alpha and the Carhart four-factor alpha. Risk is constructed as the standard deviations of accounting and stock returns.

3.2 Descriptive Statistics, Trends and Correlations

The descriptive statistics highlight the differences between the average firm in Compustat from 1994 to 2018 (Table 1A) and the average firm that received a shareholder proposal (Table 1B) during this timeframe. In comparison to firms that received a proposal related to climate change, the average firm is less diversified across all measures (Herfindahl and Entropy) than the average firm which receives a proposal related to climate change. Part of this difference may be attributable to the vast size differences between the two samples.

More nuanced changes in firm diversification policies according to size over time can be appreciated in Figure 3. Even before we consider the influence of proposals related to climate change, we see that the largest average Compustat firm is much more diversified than the smallest firm. Over time (left side of Figure 3), the average Compustat firm has diversified its asset base over more SIC codes at the 2-digit level, whereas the average firm in receipt of a climate-related proposals has diversified slightly less in view of the Herfindahl measure and dramatically less in view of the Entropy measure within the same 2-digit SIC code. These broad patterns of diversification policies will be important to consider when deciphering the unique impact that shareholder proposals related to climate change have.

Further, compared to the average firm, firms that receive a climate-proposals are more mature and have slower revenue growth, lower stock returns, and more leveraged (see table 1B). In terms of revenues, assets or market capitalization, the average treated firm is over 8 times larger than the control firms. The average firm and average firm in receipt of a proposals are similar in Tobin's q (1.806 and 1.710, respectively) and Cash Surplus (.070 and .067, respectively).

The pairwise correlations (Table 1C) show that proposals related to climate change have a positive correlation with all measures of diversification, as does size with diversification, a relationship previously established by the literature (Ferris, Javakhadze and Rajkovic, 2017). Importantly, between diversification measures, the Herfindahl for assets at the 2-digit level are negatively correlated with the Entropy measure Within the 2-digit level.

4.0 Results

4.1 Main Regressions

Tables 2A and 2B explore which diversification measures are associated with Proposal. As mentioned, the literature only builds expectations *that* shareholder proposals related to climate change can turn to diversification as a defense. The level (SIC at the 4-digit or 2-digit), measure (Herfindahl or Entropy) and base (Assets or Sales) are largely empirical questions that Tables 2A.1 and 2B.1 answer. Columns 1-4 of Table 2A.1 show that all Herfindahl levels and bases are significantly, positively related to Proposal in univariate. When Size (ln revenues) and Proposal interactions with Size enter the regressions in columns 5 to 8, only the Herfindahl measure at the 2-digit SIC level with Assets as the base retains significance (column 6). Here, the Proposal dummy has a significantly negative relationship with Herf2Assets, while both Size and the Size interaction with Proposal have a significantly positive relationship. As shown in Table 2A.2, this relationship holds as a full set of control variables, time and industry[13] invariant factors enter the regression. My interpretation of these results is that the asset base of smaller firms which receive climate-related proposals are less diversified, overall, than larger firms in receipt of these proposals. As an alternative way to control for size, I divide the sample along

[13] Since the SIC codes are used to determine the percentage of assets (sales) in each industry or segment, the Fama-French 49 industry classifications are used for industry dummies.

size quintiles. My interpretation finds corroboration in Table 2A.3. The coefficient on the Upper 5th quintile (0.149) is over twice the magnitude of the coefficient on the Bottom 5th quintile (0.064). Then, the question becomes: where is this diversification taking place, across or within the 2-digit level? Is it related or unrelated diversification? This is precisely the decomposition that Jacquemin and Berry (1979) allow with their Entropy measure.

Table 2B.1 entertains the same empirical exploration of all Entropy measures: levels and bases, as well as Across and Within. Controlling for Size, the only Entropy measure where Proposal has an impact indistinguishable from zero occurs Within the 2-digit level for Assets. The Proposal dummy is positively related and significant at the 10% level, but the Size interaction is marginally significant and negatively related. This impact becomes indistinguishable from zero as other controls, time and industry invariant factors enter the regression in Table 2B.2. As an alternative control for size, Table 2B.3 divides the sample into quintiles and reruns model 6 (full set of controls and time and industry invariant factors) from the prior table. Highly significant, positive impacts of Proposals on Assets Within SIC at the 2-digit level result across all quintiles, where the coefficient with the greatest magnitude occurs in the Middle 5th quintile (0.496). My interpretation of this result is that firms in receipt of a shareholder proposal related to climate change diversify their assets more within segments in which they already have assets in place. Thus far, these proposals appear to have a positive impact on related diversification.

Overall, I find some interesting associations for my main regressions. Receipt of at least one Proposal related to climate change has a positive impact on general diversification, as proxied by the Herfindahl measure for assets at the 2-digit SIC level, more so for larger firms. Decomposition of this increased diversification appears to occur Within the 2-digit classification

of assets, as proxied by the Entropy measure. These findings confirm the literature's suggestion that firms turn to diversification for a defense, with insight that it is related diversification. Given the broad range of industries which have experienced a proposal related to climate change, certain industries may exhibit more acute diversification.

4.2 Industry Intensity

As shown in table 2B.2 for the Entropy measure, industry invariant factors reduce the economic and statistical significance to indistinguishable from zero. To help understand the intensity of the industry impact, the Sustainability Accounting Standards Board (SASB) provides a map of industries and segments believed to have materially relevant exposure to climate change. This heat map (see Figure 5) provides an *a priori* basis for which industries are more exposed to climate concerns. Perhaps, industry is more relevant than size. Extant literature also builds theoretical expectations for which industries are likely to experience a pronounced impact from climate change. Lee and Lounsbury (2011) draw on social movement literature to suggest a "consumer distance" (p.23) measure that uses a petroleum indicator, as this industry is more visible to consumers. For these reasons, I design regressions to focus on the impact of industry and size with indicator variables for Petroleum (SIC 2911), Crude Oil (SIC 1311) and Electric Utilities (SIC 4911).[14] Similar to Krueger (2016), I aggregate Extractive Industries (SIC 12, 13 and 29 -- Oil, Gas, Petro, Coal, Natural Gas), also suggested by the SASB heat map to be a sector highly impacted by climate change.

Table 3A displays the results of introducing industry indicators with *Herf2Asset* as the dependent variable in the regressions, while holding size and proposal interactions constant, along with the aforementioned control variables. Notice that all other industries, as captured by

[14] I considered several other industries -- Automobile (SIC 3711) and Operative Builders (1531) – but they did not have a sufficient number of firm-year observations to make meaningful statements.

the Proposal (dum), are indistinguishable from zero, while the interactions between the petroleum (Petro*Proposal) and the electric utilities (Elect*Proposal) are negative and significant at the 1% level. Size continues to have a highly influential, positive impact on all industries, and the above-mentioned industry interactions with size (Petro*Size and Elect*Size) are also positive and significant at the 1% level. This suggests that the diversification indicated in tables 2A.1 and 2 may be confined to fewer than the 114 industries in the sample of firms that have received climate-related proposals.

Table 3B follows the same industry analysis, using the Entropy measure of diversification for Assets Within SIC 2-digit. Unlike the general measure of the Herfindahl, the related diversification of Within_SIC2_Assets is more pervasive: the Proposal (dum) is positive and significant across all specifications. Size, by itself, has a highly significant and positive impact on Within SIC2 Assets, while the size interactions with the petroleum (Petro*Size) and crude oil (Crude*Size) industries is highly significant and negative. However, the coefficients on the size-industry interactions are about half the magnitude of size coefficient, suggesting that ceteris paribus larger firms in the petroleum and oil industries have reduced related diversification. In other words, the increased diversification spurred by proposals that firms in the petroleum and crude oil industries experience is tempered by size. By both measures of diversification, I find that the impact of climate-related proposals is intensified in certain industries.

4.3 Endogeneity Concerns

In order to assist identification and a unique impact of shareholder proposals related to climate change on diversification, I employ a matching estimator, an instrumental variable and a

placebo. Following Krueger (2016), firms are matched based on size, industry and year. I employ the Coarsened Exact Matching (CEM) estimator, as introduced by Blackwell, Iacus, King and Porro (2009). As the authors discuss, the CEM estimator prunes the observations to avoid the "curse-of-dimensionality," where "adding one continuous variable to a dataset effectively kills exact matching because two observations are unlikely to have identical values on a continuous measure." (p.527) Once matched, I follow the suggestions of Rubin (2001, p. 174) to ensure (1) that the means are less than half a standard deviation apart, (2) the ratio of variance is close to one and (3) the variance ratio of residuals is within a relevant range. Table 4A.1 shows a good match on size, industry and year, where the ratio variance of the treated is 1.04 or well within a relevant range (0.83 to 1.21). Table 4A.2 confirms the negative relationship of proposals to Herfindahl Assets at the SIC 2-digit level of prior regressions. Once matched against firms of similar size in the same industry and during the same year, firms that receive climate-related proposals diversify less. The coefficients maintain significance at the 1% level and gain economic significance when controls are added.

Table 4A.3 shows a highly significant, positive relationship that being "treated" to a shareholder proposal has on related diversification, proxied by Entropy Assets Within SIC2, across all specifications from univariate to time and industry invariant. Unlike the previous regressions where I control for size, matching on size, industry and year produces a consistently positive and statistically meaningful impact that proposals have on the Entropy measure of related diversification. With the CEM estimator, I am able to disentangle some of the mixed indications from prior regressions. Overall, firms are diversifying less but within the 2-digit SIC code their assets base is becoming more diverse, when they receive a proposal related to climate change.

Another way to approach endogeneity employs a two-stage least squares regression with an instrumental variable. In hopes of locating an appropriate instrument that only affects diversification through the proposal channel, I consider the number of newswires and press releases in the United States by domestic publishers that reference the Pope and climate change. The natural log of the number of such articles serves as my instrumental variable. Although the Pope is an influential person and religious groups actively sponsor shareholder proposals, no known proposals are directly sponsored by the Pope. News articles on the Pope and climate change, therefore, cannot have the same direct link to diversification that shareholder proposals can have.

Referring to the correlations in table 1C, Proposal and Pope have a positive correlation. Even if the economic significance is marginal (0.058), the correlation is statistically significant at the 1% level. The intuition for the instrument is straight-forward: Pope might compel shareholders to sponsor proposals, yet the Pope is unlikely to directly affect the strategic allocation of assets or sales behavior of firms. The first climate-related proposals were sponsored in 1994 by the Benedictine Sisters of San Antonio, Texas, Immaculate Heart Missions of Arlington, Virginia, and The Sisters of St. Dominic of Caldwell, New Jersey: all Catholic sponsors. Further, the Institutional Shareholder Services (ISS) aggregates shareholder sponsors by type. Religious groups sponsor about 11 percent of all shareholder proposals, but religious groups are the most frequent sponsor (about 27 percent) of all climate-related shareholder proposals. Figure 6 displays the percentage of sponsorship for all proposals and those related to climate change, along with sponsorship frequency over time by the two most frequent sponsors: Religious groups and Socially Responsible Investing (SRI) funds. Given these dynamics, it is

reasonable to assume that the Pope addressing climate change exerts an influence on proposals without directly influencing firm decisions to diversify.

Formally, the first stage relationship between Proposals and Pope is significant and the F-test is greater than the critical value of 10 for all specifications, for both Herfindahl and Entropy measures (Tables 5A and 5B). As mentioned, the Pope intuitively satisfies the exclusion restriction. The test of endogeneity is also satisfied in all specifications. As shown in Table 5A for *Herf Assets SIC2* as the diversification measures, an ambiguous pattern emerges: mostly positive but indistinguishable from zero as other control enter the regression. With the *Entropy* measure of *Assets Within SIC2*, the Pope proves to be a valid instrument that also passes the Endogeneity test in all specifications of Table 5B. Proposal, as instrumented by the Pope, follows a similar pattern of sign and high levels of significance: negative for Proposal (dum) and positive for the Proposal-Size interaction. While strength of these results for Entropy is encouraging towards alleviating endogeneity concerns, it is still difficult to claim causation. The ubiquitous nature of climate change and the legal mechanics of shareholder proposals make true causal claims either impossible or illogical. The Division of Corporate Finance at the SEC actively ensures that shareholders do not infringe on day-to-day functions. However, there does appear to be something unique about the impact of climate-related proposals on diversification through instrumentation. To gain additional clarity on this uniqueness, I turn to placebos.

The 500 words or so shareholders are afforded to make their proposals can address several shareholder concerns at once. Monks, Miller and Cook (2004) and Hoepner et al (2018) find efficacy in combining governance with environmental proposals. By extending their sample period, I reconstruct Monks, Miller and Cook (2004) and make some observations about adding and removing "climate change" from proposals to separate the roles of chairman and CEO from

the same sponsor: increased support when "climate change" was included and a subsequent decrease in support when "climate change" was dropped. While this is only a casual observation, it does provide a reasonable basis with support from prior literature for testing whether the proposal process, in general, is responsible for the impact on diversification, with "climate change" only incidental to the process. In other words, there may be nothing special about these climate-related proposals. The impact is attributable to shareholder activism expressed by proposals, regardless of what is discussed in the 500 words.

The Institutional Shareholder Services (ISS) database characterizes shareholder proposals with a brief description of the Resolution and categorizes them with four-digit Item Codes. In an effort to address concerns about firms that experience shareholder proposals possessing certain characteristics that make them more likely to receive a proposal than firms that do not, I limit the sample to only those firms that have received at least one proposal from 1994 to 1998, i.e. an ISS sample, as opposed to the Compustat universe. This reduces the sample size considerably, from approximately 86,000 to 20,000.

Further, instead of my hand-collected sample of "climate change" firms, I use the ISS Item Codes that capture climate-related proposals indicated by the ISS Resolution description. I create the following dummy variable to reflect receipt of at least one proposal for a firm in a given year: Proposal (dum) for climate-related proposal firm-years and DeclassProp for firm-years than receive a proposal that is not related to climate change: the declassification of the board.

The same regression design for the Herfindahl measure in table 2A.2 is conducted in table 6A.1, using the ISS database and item codes. The pattern of results for diversification proxied by Herfindahl at the 2-digit level for assets are similar to my hand-collected sample:

same sign, similar magnitude, but with less significance. Firms that receive shareholder proposals related to declassifying their board, DeclassProp firms in table 6A.2, do not exhibit diversification according to the Herfindahl measure. Thus, diversifying behavior impacted by climate-related proposals is significantly different than proposals not related to climate change.

I consider the Entropy measure of diversification developed by Jacquemin and Berry (1979) in tables 6B.1, 2 and 3: related diversification that takes place *within* the 2-digit SIC level for assets (SIC2_Assets_Within). Unlike the hand-collected data and the Compustat sample in table 2B.2, the ISS-sample in table 6B.1 shows no impact on diversification of climate-related proposals distinguishable from zero beyond univariate. However, the marginal significance of the results in table 2B.2 becomes highly significant when the regression in column 6 is broken into quintiles in table 2B.3. Similarly, I reexamine the ISS sample of climate-related proposals by quintile in table 6B.2 to discover high levels of significance in the Top, Upper and Lower 5th quintiles: all positive with coefficients of 0.162, 0.107 and 0.197, respectively. Compared to the placebo proposals, DeclassProp, the proposals *unrelated* to climate change are only significant in the Lower 5th, unlike proposals related to climate change. As with the Herfindahl measure, the Entropy measure of related diversification is more pervasive across size quintiles for climate-related proposals than it is for a placebo proposal.

Climate-related proposals have a significantly greater impact on both proxies of diversification, Herfindahl and Entropy, than placebo proposals. These results, along with the matching estimator and instrumental variable, incline me to believe that the content of proposals can have an impact distinguishable from the proposal process, in general, and that I am not incorrectly attributing uniqueness to the impact that climate-related proposals have on diversification.

4.4 Performance

To determine the overall impact on firm performance of changes to firm behavior that proposals related to climate change have, I consider returns and risk both from accounting and stock perspectives. I take the fitted estimates of diversification from regression (2) (with controls and time and industry dummies) and use them in the following regression, where size interactions, controls and invariant factors are considered:

$$\overline{Accounting\ Performance}_{i,t+1,t+3} = \alpha_t + \boldsymbol{\beta_1} \widehat{Diversification}_{i,t} + \boldsymbol{\beta_2}\left(\widehat{Diversification} * Size\right) + \sum Accounting\ Controls_{i,t} + year \quad + industry \quad + \varepsilon_t \qquad (7)$$

As described above, accounting performance is proxied by return on assets (ROA), return on investment (ROI) and total asset turnover (TAT), each averaged over a three-year period starting at t+1 and continuing through t+3. Return on assets is calculated as net income divided by beginning of period assets. Return on investment is calculated as earnings before interest, taxes, depreciation and amortization (EBITDA) divided by invested capital. Asset turnover is calculated as total revenues divided by beginning total assets. The accounting controls are the same as those in the main regression. In addition to these control variables, indicator variables are added to the regressions for the Fama-French 49 industry classifications and for each year.

Similarly, stock performance is estimated based on $\widehat{diversification}$ predicted by equation (2) and utilized in the following regression:

$$\overline{Stock\ Performance}_{i,t+1,t+3} = \alpha_t + \boldsymbol{\beta_1} \widehat{Diversification}_{i,t} + \boldsymbol{\beta_2}\left(\widehat{Diversification} * Size\right) + \sum Stock\ Controls_{i,t} + year \quad + industry \quad + \varepsilon_t \qquad (8)$$

Where the measures of Stock Performance include buy-and-hold returns for three-year periods on unadjusted stock returns and risk adjusted returns, using Jensen's alpha and the Carhart four-factor alpha. Stock returns are compounded monthly beginning a year from current

year and ending three years hence for a three-year buy-and-hold return. To adjust for risk, the monthly factors on Ken French's website are employed to determine Jensen's alpha and the Carhart four-factor alpha. The control variables for stock returns follow Bhandari and Javakhadze (2017). Here, Size is the market value of assets. Market-to-Book is the ratio of the market value of equity to the book value of equity. Leverage is the same as above: the ratio of long-term debt and its short-term portion to total assets. Momentum is the prior 24 months of compounded stock returns. Indicator variables are added to the regressions for Fama-French 49 industry classifications and for each year.

Table 7A.1 displays the impact on accounting performance that diversification predicted by Proposal has. $\widehat{Herf2Assets}$ has a significant, positive impact on ROA and ROI, while $\widehat{Entropy2Within}$ has a significant, negative impact on ROA and ROI. For Entropy, this negative accounting performance becomes more negative for larger firms. The impact on stock performance can be seen in Table 7A.2. Both measures of predicted diversification, $\widehat{Herf2Assets}$ and $\widehat{Entropy2Within}$, experience significant declines in stock performance on both a raw and risk-adjusted basis. These results reflect the literature, which also finds mixed evidence, that diversification *per se* is not a profitable strategy (Chang and Thomas, 1989) but can lead to positive outcomes in some circumstances (Beneish et al, 2008; Gormley and Matsa, 2011).

Table 7A.3 shows the impact that fitted diversification has on the variability of accounting and stock returns. The standard deviations of ROA and ROI are reduced for $\widehat{Herf2Assets}$, while buy-and-hold returns are unaffected. Size tends to increase the dispersion of accounting returns. Table 7A.3 shows an increase in the standard deviation of ROA and ROI for $\widehat{Entropy2Within}$, while the risk of stock performance declines for larger firms.

To assist comparability by "pruning" the control sample for size, year and industry, I again employ the CEM estimator, then regress accounting and stock returns and risk measures, as above. Table 7B.1 displays a good match. The results in Table 7B.2 show a similar pattern of positive accounting returns for $\widehat{Herf2Assets}$, while $\widehat{Entropy2Within}$ is negatively associated with accounting returns, with size interactions magnifying these impacts. Stock returns become ambiguous as shown in Table 7B.3. Corporate risk-taking, shown in Table 7B.4, as influenced by fitted diversification and measured by the standard deviations of accounting and stock returns is largely ambiguous, when the matching estimator is applied.

4.5 Robustness

For robustness, I consider proposal intensity, changes in diversification from year to year and lagged proposals. As discussed above, some firms receive a single proposal over the entire period, while other firms have received up to 6 proposals in a single year. To gauge the impact that receiving multiple proposals in a single year has, I run Poisson regressions on the same Herfindahl and Entropy measures. The results are displayed in Tables 8A and 8B. Although significance is reduced as the models take on controls, a pattern emerges: the coefficients gain magnitude as firms experience more proposals in a single year. Proposals become more negative for the Herfindahl measures and more positive for the Entropy measure.

For *changes* in diversification, I take the first difference in three-year moving averages of the Herfindahl and Entropy measures in tables 9A and 9B and regress them with the same specifications in tables 2A.2 and 2B.2. I discover a similar pattern of sign as in the preceding regressions but with reduced significance in some specifications. Herfindahl diversification for assets classified at the 2-digit level decreases as firms increase in size. Entropy diversification for assets within the 2-digit classification increases as firms increase in size.

Although management becomes aware of proposals almost a half-year before they are voted upon, it may take more time for firm policies to respond. Although I find significant, concurrent relationships between diversification and climate-related proposals, I also employ lagged independent variables to allow for the possibility of a delayed response. Changes in Herfindahl diversification are regressed against the same specifications as above but with independent variables lagged one year in table 10A.1 and two years in table 10A.2. The one year lagged results indicate an impact on Herfindahl indistinguishable from zero, while the two year lagged results are similar to those above: negative for larger firms. Table 10B.1 repeats the regressions with the change in Entropy Within as the dependent, while independent variables are lagged one year. The impact on diversification is ambiguous for one-year lags. Table 10B.2 contains independent variables lagged two years against Entropy Within the 2-digit classification with similar results to prior regressions: larger firm diversifying more into related lines of business.

Shareholder proposals related to climate change are robust to alternative specifications. When considering the intensity or importance of climate change to shareholders by the number of such proposals in a single year, firms diversify less overall but more into related industries. When considering changes in diversification, the same pattern emerges: larger firms diversify less overall but more within existing lines of business. When giving changes in diversification more time to respond to proposals by lagging independent variables, results are robust: larger firms diversify less overall (Herfindahl) but more into related industries (Entropy).

5.0 Conclusion

The literature suggests that diversification in and of itself is not a profitable endeavor. Firms are better served by improving their existing line of business, not branching into other

ones. As a response to circumstance, however, diversification can provide relief against poor prospects or adversity. In the context of climate change, diversification offers an alternative to business as usual. Increasingly, with more frequency and across more industries, shareholders have expressed concern at annual meetings over firm practices staying the course. Diversification is a response to shareholder demands the literature suggests. If the response exists, the extent of diversification is largely empirical.

I find that firms are responsive to shareholder pressure exerted through their proposals and that diversification is one such response. Given that Rule 14a-8 was designed to provide shareholders with a low-cost means of expressing concerns to management, and given that the SEC ensures that these expressions maintain Berle-Means distance, any statement about shareholder proposals effecting change in corporate behavior would defy their very construction. Nonetheless, "causality" tests can strengthen claims that shareholder proposals exert an influence directly attributable to the resolutions sponsored. With this qualification in mind, I am reassured by the consistent direction of results from a matching estimator, a straight-forward instrumental variable and a placebo, even if imperfect. Further reassurance is gained through the intensity of proposals, the change in diversification and lagging this change. In response to shareholder proposals referencing climate change, firms diversify their assets less overall but more into related industries.

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Tables

Table 1A: Summary statistics Full Sample

Summary statistics

	N	Mean	Median	St.Dev	min	max	p25	p75	skewness	kurtosis
Diversification										
Herf Assets SIC4	86431.000	0.314	0.124	0.357	0.000	1.000	0.000	0.612	0.637	1.950
Herf Assets SIC2	86431.000	0.184	0.000	0.319	0.000	1.000	0.000	0.283	1.663	4.432
Herf Sales SIC4	86431.000	0.277	0.137	0.301	0.000	0.867	0.000	0.555	0.464	1.619
Herf Sales SIC2	86431.000	0.093	0.000	0.177	0.000	0.659	0.000	0.085	1.773	4.793
Entropy Asset SIC4	86431.000	0.394	0.000	0.548	0.000	2.003	0.000	0.712	1.168	3.220
Entropy Asset Across SIC2	86431.000	0.141	0.000	0.284	0.000	1.183	0.000	0.062	1.983	5.915
Entropy Asset Within SIC2	86431.000	0.251	0.000	0.434	-0.000	1.748	0.000	0.443	1.698	4.949
Entropy Sales SIC4	86431.000	0.507	0.270	0.591	0.000	2.131	0.000	0.942	0.871	2.664
Entropy Sales Across SIC2	86431.000	0.154	0.000	0.288	0.000	1.186	0.000	0.183	1.839	5.398
Entropy Sales Within SIC2	86431.000	0.351	0.000	0.503	-0.000	1.927	0.000	0.665	1.304	3.701
Size										
Assets - Total	86431.000	6386.563	573.475	20156.526	3.356	150590.369	115.312	2879.545	5.412	35.083
Revenue - Total	86431.000	3823.534	468.183	10686.800	2.041	75188.802	94.724	2139.289	4.830	28.664
MV Equity	86431.000	4892.520	514.469	14146.550	1.540	99453.813	85.002	2587.380	4.893	29.158
Controls										
Tobin's q	86431.000	1.806	1.378	1.305	0.542	8.410	1.051	2.030	2.729	11.911
Firm Age	86431.000	2.814	2.833	0.714	1.386	4.159	2.303	3.367	0.003	2.094
Revenue Growth	86431.000	0.114	0.069	0.314	-0.580	1.738	-0.029	0.193	2.148	11.598
Stock Return$_{(t-1)}$	86431.000	0.164	0.038	0.735	-0.835	4.297	-0.230	0.336	2.877	14.989
Cash Surplus	86431.000	0.070	0.058	0.109	-0.266	0.448	0.014	0.119	0.436	5.116
Leverage	86431.000	0.531	0.524	0.266	0.060	1.503	0.337	0.692	0.694	4.129
Market:Book	86429.000	2.580	1.775	3.485	-7.978	22.291	1.036	3.084	2.682	16.097
Leverage	86431.000	0.531	0.524	0.266	0.060	1.503	0.337	0.692	0.694	4.129
Momentum (24mos)	82232.000	0.363	0.150	1.044	-0.895	5.858	-0.246	0.624	2.629	12.583
Performance										
Avg ROA $_{t+1,+3}$	48662.000	0.023	0.037	0.109	-0.498	0.267	0.002	0.076	-2.004	10.030
Avg ROI $_{t+1,+3}$	48593.000	0.173	0.171	0.198	-0.685	0.936	0.102	0.252	-0.454	9.059
Avg TAT $_{t+1,+3}$	48662.000	1.042	0.880	0.745	0.056	3.916	0.511	1.373	1.414	5.416
BH Return $_{t+1,+3}$	48662.000	0.405	0.197	1.011	-0.869	5.683	-0.175	0.654	2.574	12.187
J Alpha $_{t+1,+3}$	48662.000	0.008	0.006	0.025	-0.050	0.104	-0.006	0.019	0.958	5.393
FF-Mom +1+3	48662.000	0.007	0.004	0.025	-0.050	0.107	-0.007	0.017	1.110	5.912

Table 1B: Summary statistics Shareholder Proposal Sample

	N	Mean	Median	St.Dev	min	max	p25	p75	skewness	kurtosis
Diversification										
Herf Assets SIC4	480.000	0.541	0.626	0.314	0.000	1.000	0.323	0.759	-0.522	2.150
Herf Assets SIC2	480.000	0.268	0.118	0.318	0.000	1.000	0.000	0.488	1.038	3.022
Herf Sales SIC4	480.000	0.505	0.594	0.290	0.000	0.867	0.331	0.734	-0.673	2.107
Herf Sales SIC2	480.000	0.155	0.019	0.206	0.000	0.659	0.000	0.281	1.093	2.838
Entropy Asset SIC4	480.000	0.868	0.957	0.653	0.000	2.003	0.074	1.405	-0.010	1.744
Entropy Asset Across SIC2	480.000	0.291	0.071	0.362	0.000	1.183	0.000	0.588	0.899	2.461
Entropy Asset Within SIC2	480.000	0.577	0.553	0.531	-0.000	1.748	0.000	0.951	0.488	2.166
Entropy Sales SIC4	480.000	0.996	1.065	0.644	0.000	2.131	0.558	1.462	-0.084	2.031
Entropy Sales Across SIC2	480.000	0.264	0.055	0.340	0.000	1.186	0.000	0.466	1.153	3.259
Entropy Sales Within SIC2	480.000	0.731	0.693	0.581	0.000	1.927	0.101	1.149	0.292	2.040
Shareholder Proposals										
Proposal (dum)	480.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	.	.
Proposals (per yr)	480.000	1.181	1.000	0.591	1.000	6.000	1.000	1.000	4.247	24.331
Size										
Assets - Total	480.000	52116.794	30876.500	53619.110	799.845	150590.369	9134.949	78116.000	0.953	2.350
Revenue - Total	480.000	28444.400	14721.500	28373.124	490.079	75188.802	5470.350	55485.000	0.774	1.921
MV Equity	480.000	37643.314	21294.454	36853.221	179.111	99453.813	7170.768	64634.908	0.760	1.967
Controls										
Tobin's q	480.000	1.710	1.394	0.981	0.643	8.410	1.147	1.894	3.197	17.111
Firm Age	480.000	3.632	3.892	0.621	1.386	4.159	3.296	4.111	-1.356	4.112
Revenue Growth	480.000	0.022	0.030	0.210	-0.580	1.513	-0.056	0.115	0.783	10.323
Stock Return(t-1)	480.000	0.069	0.053	0.390	-0.835	3.367	-0.125	0.213	2.180	16.793
Cash Surplus	480.000	0.067	0.053	0.074	-0.166	0.431	0.029	0.103	0.853	6.064
Leverage	480.000	0.634	0.634	0.198	0.085	1.503	0.493	0.760	0.202	4.308
Market:Book	480.000	2.920	2.105	3.725	-7.978	22.291	1.440	3.226	2.778	16.187
Leverage	480.000	0.634	0.634	0.198	0.085	1.503	0.493	0.760	0.202	4.308
Momentum (24mos)	467.000	0.237	0.199	0.537	-0.895	3.475	-0.062	0.438	1.609	8.874
Performance										
Avg ROA +1+3	206.000	0.046	0.040	0.062	-0.260	0.182	0.020	0.087	-1.066	6.740
Avg ROI +1+3	206.000	0.206	0.188	0.132	-0.264	0.776	0.134	0.301	0.153	5.001
Avg TAT +1+3	206.000	0.798	0.633	0.596	0.056	3.711	0.358	1.042	1.872	8.361
BH Return +1+3	206.000	0.260	0.235	0.581	-0.802	4.097	-0.073	0.492	2.142	13.660
J Alpha +1+3	206.000	0.000	0.002	0.016	-0.050	0.057	-0.008	0.008	0.008	5.200
FF-Mom +1+3	206.000	0.000	0.002	0.014	-0.050	0.040	-0.007	0.007	-0.529	4.483

Table 1C: Pairwise Correlations: All Firms

This table shows a pairwise correlation among variables and their significance.

Variables	Herf Assets SIC4	Herf Assets SIC2	Entropy Asset SIC4	Entropy Asset Across SIC2	Entropy Asset Within SIC2	Proposal (dum)	Size	Tobin's q	Firm Age	Revenue Growth	Stock Return	Cash Surplus	Leverage	Pope
Herf Assets SIC4	1.000													
Herf Assets SIC2	0.782*	1.000												
Entropy Asset SIC4	0.594*	0.111*	1.000											
Entropy Asset Across SIC2	0.362*	0.397*	0.612*	1.000										
Entropy Asset Within SIC2	0.509*	-0.120*	0.854*	0.115*	1.000									
Proposal (dum)	0.047*	0.020*	0.065*	0.039*	0.056*	1.000								
Size (ln revenues)	0.382*	0.222*	0.381*	0.231*	0.328*	0.114*	1.000							
Tobin's q	-0.098*	-0.038*	-0.138*	-0.107*	-0.104*	-0.005	-0.078*	1.000						
Firm Age	0.188*	0.103*	0.257*	0.235*	0.170*	0.086*	0.274*	-0.090*	1.000					
Revenue Growth	-0.056*	-0.035*	-0.047*	-0.032*	-0.039*	-0.022*	-0.018*	0.187*	-0.156*	1.000				
Stock Return$_{(t-1)}$	-0.037*	-0.020*	-0.039*	-0.023*	-0.033*	-0.010*	-0.050*	0.129*	-0.033*	0.183*	1.000			
Cash Surplus	-0.037*	-0.000	-0.087*	-0.077*	-0.059*	-0.002	0.044*	0.394*	-0.008	0.074*	0.053*	1.000		
Leverage	0.120*	0.047*	0.154*	0.096*	0.131*	0.029*	0.280*	-0.086*	0.105*	-0.054*	-0.044*	-0.241*	1.000	
Pope (ln US)	0.062*	0.046*	0.010	-0.029*	0.029*	0.058*	0.174*	-0.003	0.163*	-0.073*	-0.022*	0.030*	0.030*	1.000

* shows significance at the .01 level

Table 2A.1: Herfindahl Measures

This table uses ordinary least square regressions with Herfindahl measures of diversification defined as $H_{SIC4(2)} = (1 - \sum_{i(s)=1}^{n} P_{i(s)}\ P_{i(s)})$, where P is the percent of total assets or sales for each industry, *i*, or segment, *s*. *Herf4* and *Herf2* designate Herfindahl at the SIC 4-digit and 2-digit levels, respectively. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Herf4Asset	Herf2Asset	Herf4Sales	Herf2Sales	Herf4Asset	Herf2Asset	Herf4Sales	Herf2Sales
Proposal (dum)	0.228***	0.085**	0.229***	0.062**	0.083	-0.300**	0.132	-0.073
	(6.998)	(2.123)	(7.939)	(2.489)	(0.507)	(-2.384)	(0.747)	(-0.608)
Size (ln revenues)					0.061***	0.032***	0.056***	0.016***
					(13.493)	(10.080)	(12.795)	(7.371)
Proposal*Size					-0.007	0.029**	-0.010	0.008
					(-0.402)	(2.335)	(-0.571)	(0.694)
_cons	0.313***	0.183***	0.275***	0.093***	-0.057***	-0.009	-0.067***	-0.004
	(21.973)	(22.847)	(17.761)	(11.421)	(-2.982)	(-0.553)	(-3.993)	(-0.355)
Obs.	86431	86431	86431	86431	86431	86431	86431	86431
R-squared	0.002	0.000	0.003	0.001	0.146	0.049	0.176	0.041
Industry Dummy	No	No	No	No	No	No	No	No
Year Dummy	No	No	No	No	No	No	No	No

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 2A.2: Herfindahl Measure: SIC2 Assets

This table uses ordinary least square regressions with the Herfindahl measure of diversification defined as $H_{SIC2} = (1 - \sum_{s=1}^{n} P_s P_s)$. *Herf2Assets* is the Herfindahl measures at the SIC 2-digit levels for the percent of assets. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) Herf2Asset	(2) Herf2Asset	(3) Herf2Asset	(4) Herf2Asset	(5) Herf2Asset	(6) Herf2Asset
Proposal (dum)	0.085**	-0.300**	-0.317**	-0.338***	-0.255**	-0.279***
	(2.123)	(-2.384)	(-2.527)	(-2.690)	(-2.486)	(-2.719)
Size (ln revenues)		0.032***	0.031***	0.029***	0.035***	0.034***
		(10.080)	(9.383)	(8.523)	(11.900)	(10.922)
Proposal*Size		0.029**	0.029**	0.031**	0.024**	0.026**
		(2.335)	(2.388)	(2.511)	(2.276)	(2.472)
_cons	0.183***	-0.009	-0.034	-0.093***	0.082***	0.026
	(22.847)	(-0.553)	(-1.491)	(-4.347)	(3.347)	(0.971)
Obs.	86431	86431	86431	86431	86431	86431
R-squared	0.000	0.049	0.052	0.060	0.078	0.084
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 2A.3: Herfindahl Measures: SIC2 Assets: by Quintile

This table uses ordinary least square regressions with Herfindahl measures of diversification defined as $H_{SIC2} = (1 - \sum_{s=1}^{n} P_s P_s)$. *Herf2Assets* is the Herfindahl measures at the SIC 2-digit levels for the percent of assets. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) Top_5th	(2) Upper_5th	(3) Middle_5th	(4) Lower_5th	(5) Bottom_5th
Proposal (dum)	0.000	0.149***	0.034	0.091**	0.064*
	(0.005)	(3.261)	(0.546)	(2.072)	(1.807)
_cons	0.449***	0.228***	0.046*	0.217***	0.126***
	(7.731)	(8.561)	(1.870)	(8.191)	(5.538)
Obs.	17237	17323	17290	17288	17293
R-squared	0.093	0.055	0.062	0.055	0.042
Industry Dummy	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 2B.1: Entropy Measures

This table uses ordinary least square regressions with Jacquemin and Berry (1979) Entropy measures of diversification defined in the following ways: Total Entropy takes place at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i}$, Entropy Across SIC2 is $E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s}$, and Entropy Within is the difference between them, $E_W = E_T - E_A$. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues.

	(1)	(2)	(3)	(4)	(5)	(6)
	SIC4_Asset	SIC4_Sales	SIC2_Asset Across	SIC2_Sales Across	SIC2_Asset Within	SIC2_Sales Within
Proposal (dum)	0.263	0.088	-0.280	-0.148	0.507*	0.225
	(0.528)	(0.221)	(-1.063)	(-0.742)	(1.709)	(0.683)
Size (ln revenues)	0.093***	0.116***	0.029***	0.028***	0.063***	0.087***
	(12.710)	(12.711)	(8.751)	(7.882)	(11.021)	(11.186)
Proposal*Size	-0.011	0.001	0.035	0.017	-0.042	-0.015
	(-0.199)	(0.017)	(1.196)	(0.820)	(-1.292)	(-0.453)
_cons	-0.173***	-0.201***	-0.036**	-0.020	-0.134***	-0.179***
	(-6.211)	(-5.781)	(-2.233)	(-1.067)	(-6.115)	(-5.959)
Obs.	86431	86431	86431	86431	86431	86431
R-squared	0.146	0.194	0.054	0.050	0.108	0.150
Industry Dummy	No	No	No	No	No	No
Year Dummy	No	No	No	No	No	No

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 2B.2: Entropy Measures: Assets Within SIC2

This table uses ordinary least square regressions with Jacquemin and Berry (1979) Entropy measures of diversification defined in the following ways: *Entropy Within* is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s}$. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) SIC2_Assets Within	(2) SIC2_Assets Within	(3) SIC2_Assets Within	(4) SIC2_Assets Within	(5) SIC2_Assets Within	(6) SIC2_Assets Within
Proposal (dum)	0.327***	0.507*	0.456	0.448	0.282	0.266
	(8.557)	(1.709)	(1.526)	(1.581)	(1.058)	(1.059)
Size (ln revenues)		0.063***	0.057***	0.056***	0.059***	0.058***
		(11.021)	(9.821)	(9.659)	(12.073)	(12.722)
Proposal*Size		-0.042	-0.039	-0.037	-0.021	-0.019
		(-1.292)	(-1.206)	(-1.215)	(-0.730)	(-0.685)
_cons	0.250***	-0.134***	-0.209***	-0.330***	-0.224***	-0.346***
	(12.016)	(-6.115)	(-7.986)	(-10.745)	(-7.581)	(-9.931)
Obs.	86431	86431	86431	86431	86431	86431
R-squared	0.003	0.108	0.122	0.136	0.161	0.175
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 2B.3: Entropy Measures: Assets Within SIC2: by Quintile

This table uses ordinary least square regressions with Jacquemin and Berry (1979) Entropy measures of diversification defined in the following ways: *Entropy Within* is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s}$. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) Top_5th	(2) Upper_5th	(3) Middle_5th	(4) Lower_5th	(5) Bottom_5th
Proposal (dum)	0.261***	0.117*	0.496***	0.434***	0.355***
	(2.822)	(1.963)	(7.007)	(6.990)	(5.396)
_cons	-0.182**	-0.221***	-0.132***	0.046	0.141***
	(-2.650)	(-5.360)	(-4.204)	(1.628)	(7.919)
Obs.	17237	17323	17290	17288	17293
R-squared	0.136	0.123	0.094	0.079	0.053
Industry Dummy	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 3A: Shareholder Proposal Impact on Herfindahl SIC2 Assets by Industry

This table uses ordinary least square regressions with Herfindahl measures of diversification defined as $H_{SIC2} = (1 - \sum_{s=1}^{n} P_s\ P_s)$. *Herf2Assets* is the Herfindahl measures at the SIC 2-digit levels for the percent of assets. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Indicator variable for Petroleum (SIC 2911) and Crude Oil (SIC 1311), the Electric Utilities (SIC 4911) and the Extractive Industries (SIC 12, 13 and 29 -- Oil, Gas, Petro, Coal, Natural Gas) are used. Other control variables enter the regression in models 4-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Herf2Assets	Herf2Assets	Herf2Assets	Herf2Assets	Herf2Assets	Herf2Assets	Herf2Assets	Herf2Assets
Proposal (dum)	-0.031	-0.018	-0.024	-0.001	-0.050	-0.035	-0.042	-0.019
	(-0.964)	(-0.489)	(-0.605)	(-0.040)	(-1.589)	(-0.990)	(-1.078)	(-0.846)
Size (ln revenues)	0.030***	0.032***	0.031***	0.032***	0.028***	0.029***	0.028***	0.030***
	(10.315)	(9.792)	(9.844)	(9.982)	(8.903)	(8.345)	(8.469)	(8.375)
Petroleum	-0.299***				-0.288***			
	(-26.288)				(-25.162)			
Petro*Proposal	-0.182***				-0.187***			
	(-5.575)				(-5.496)			
Petro*Size	0.054***				0.054***			
	(22.288)				(19.965)			
Crude Oil		-0.027				-0.030		
		(-1.358)				(-1.515)		
Crude*Proposal		0.031				0.023		
		(0.863)				(0.608)		
Crude*Size		-0.006*				-0.006*		
		(-1.920)				(-1.789)		
Extractive			-0.140***				-0.139***	
			(-7.411)				(-7.149)	
Extract*Proposal			-0.030				-0.032	
			(-0.711)				(-0.754)	
Extract*Size			0.017***				0.017***	
			(5.422)				(5.138)	
Electric				-0.190***				-0.194***
				(-9.918)				(-9.236)
Elect*Proposal				-0.133***				-0.134***
				(-5.801)				(-5.674)
Elect*Size				0.010***				0.010***
				(3.222)				(3.165)
_cons	-0.004	-0.007	-0.003	-0.011	-0.091***	-0.091***	-0.088***	-0.097***
	(-0.253)	(-0.447)	(-0.192)	(-0.638)	(-4.339)	(-4.273)	(-4.150)	(-4.693)
Obs.	86431	86431	86431	86431	86431	86431	86431	86431
R-squared	0.053	0.050	0.050	0.051	0.063	0.061	0.061	0.061
Industry Dummy	No	No	No	No	No	No	No	No
Year Dummy	No	No	No	No	Yes	Yes	Yes	Yes
Other Controls	No	No	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 3B: Shareholder Proposal Impact on Entropy Within SIC2 Assets by Industry

This table uses ordinary least square regressions with Jacquemin and Berry (1979) Entropy measures of diversification defined in the following ways: *Entropy Within* is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s}$. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Indicator variable for Petroleum (SIC 2911) and Crude Oil (SIC 1311), the Electric Utilities (SIC 4911) and the Extractive Industries (SIC 12, 13 and 29 -- Oil, Gas, Petro, Coal, Natural Gas) are used. Other control variables enter the regression in models 4-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	WithinSIC2_Assets	Within_SIC2_Assets	Within_SIC2_Assets	Within_SIC2_Assets	Within_SIC2_Assets	Within_SIC2_Assets	Within_SIC2_Assets	Within_SIC2_Assets
Proposal (dum)	0.109**	0.097**	0.102**	0.090**	0.090**	0.080**	0.083*	0.075*
	(2.638)	(2.270)	(2.045)	(2.110)	(2.334)	(2.021)	(1.818)	(1.854)
Size (ln revenues)	0.064***	0.063***	0.064***	0.062***	0.057***	0.056***	0.057***	0.055***
	(10.975)	(10.983)	(10.619)	(11.168)	(9.448)	(9.498)	(9.158)	(9.650)
Petroleum	0.056***				0.034*			
	(4.282)				(1.905)			
Petro*Proposal	0.235***				0.223***			
	(5.672)				(5.813)			
Petro*Size	-0.028***				-0.024***			
	(-5.849)				(-4.748)			
Crude Oil		0.114***				0.078***		
		(4.110)				(2.791)		
Crude*Proposal		0.248***				0.237***		
		(5.778)				(6.051)		
Crude*Size		-0.027***				-0.024***		
		(-4.767)				(-4.233)		
Extractive			0.150***				0.120***	
			(5.324)				(4.075)	
Extract*Proposal			0.096				0.091	
			(1.616)				(1.655)	
Extract*Size			-0.021***				-0.018***	
			(-3.265)				(-2.782)	
Electric				-0.500***				-0.581***
				(-20.463)				(-20.213)
Elect*Proposal				0.040				0.028
				(0.939)				(0.708)
Elect*Size				0.066***				0.071***
				(12.357)				(12.865)
_cons	-0.139***	-0.136***	-0.141***	-0.130***	-0.331***	-0.329***	-0.334***	-0.326***
	(-6.335)	(-6.136)	(-6.212)	(-6.234)	(-10.797)	(-10.647)	(-10.734)	(-10.826)
Obs.	86431	86431	86431	86431	86431	86431	86431	86431
R-squared	0.109	0.109	0.108	0.109	0.138	0.137	0.137	0.137
Industry Dummy	No	No	No	No	No	No	No	No
Year Dummy	No	No	No	No	Yes	Yes	Yes	Yes
Other Controls	No	No	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

The Coarse Exact Matching (CEM) estimator developed by Blackwell, Iacus, King and Porro (2009), which "temporarily coarsen each variable into substantively meaningful groups, exact match on these coarsened data, and then retain only the original (uncoarsened) values of the matched data." (p.527).

Table 4A.1: CEM Test of Match on Size, Industry and Year

	Mean		t-test			
Variable	Treated	Control	%bias	t	p>t	V(T)/V(C)
Size (ln revenues)	9.5211	9.4895	2.3	0.47	0.638	1.04

* if variance ratio outside [0.83; 1.21]

Table 4A.2: CEM: Herfindahl Assets at SIC2

This table is an ordinary least square regression with the Herfindahl measure of diversification, defined as $H_{SIC2} = (1 - \sum_{s=1}^{n} P_s\ P_s)$ for the dependent variable. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-5, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) Herf	(2) Herf	(3) Herf	(4) Herf	(5) Herf
Proposal (dum)	-0.062***	-0.052***	-0.051***	-0.068***	-0.068***
	(-3.553)	(-2.938)	(-2.926)	(-3.965)	(-3.994)
_cons	0.329***	0.419***	0.327***	0.601***	0.547***
	(71.961)	(15.555)	(3.155)	(4.355)	(3.248)
Obs.	6974	6974	6974	6974	6974
R-squared	0.002	0.012	0.026	0.097	0.104
Industry Dummy	No	No	No	Yes	Yes
Year Dummy	No	No	Yes	No	Yes
Other Controls	No	Yes	Yes	Yes	Yes

*** p<0.01, ** p<0.05, * p<0.1 T-values are in parenthesis

Table 4A.3: CEM: Entropy Assets Within SIC2

This table is an ordinary least square regression with the Jacquemin and Berry (1979) Entropy measures of diversification defined in the following ways: *Entropy Within* is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\ ln\ {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\ ln\ {}^{1}/_{P_s}$ as the dependent variable in 21B. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal in which the term "climate change" is used. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-5, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) Entropy	(2) Entropy	(3) Entropy	(4) Entropy	(5) Entropy
Proposal (dum)	0.084***	0.070***	0.059**	0.087***	0.077***
	(3.231)	(2.681)	(2.303)	(3.454)	(3.082)
_cons	0.490***	0.306***	-0.079	-0.034	-0.433*
	(71.879)	(7.655)	(-0.519)	(-0.165)	(-1.756)
Obs.	6974	6974	6974	6974	6974
R-squared	0.001	0.021	0.057	0.112	0.136
Industry Dummy	No	No	No	Yes	Yes
Year Dummy	No	No	Yes	No	Yes
Other Controls	No	Yes	Yes	Yes	Yes

T-values are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

The following table employ a two-stage least squares regression with an instrumental variable. In the first stage, Herfindahl measure for assets at SIC2, defined as $H_{SIC2} = (1 - \sum_{s=1}^{n} P_s P_s)$, is regressed against the number of times that a Business Wire or Press Release in the US by a US publisher contained the "Pope" and "climate change" in a Nexis-Uni search, along with other controls as indicated. In the second stage, the results from the first stage instrument for the number of shareholder proposals. There are five models that incrementally add controls: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

Table 5A: 2SLS: The Pope and Climate Change in Press: Herfindahl Assets at SIC2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	Stage1_1 Proposal (dum)	Stage2_1 Herf Assets SIC2	Stage1_2 Proposal (dum)	Stage2_2 Herf Assets SIC2	Stage1_3 Proposal (dum)	Stage2_3 Herf Assets SIC2	Stage1_4 Proposal (dum)	Stage2_4 Herf Assets SIC2	Stage1_5 Proposal (dum)	Stage2_5 Herf Assets SIC2
Proposal (dum)		3.347***		2.708		0.690		0.136		-2.502
		(9.25)		(0.71)		(0.19)		(0.03)		(-0.68)
Size (ln revenues)			-0.000	0.026***	-0.000***	0.031***	-0.000	0.027***	-0.000**	0.031***
			(-1.47)	(26.01)	(-3.17)	(27.47)	(-1.38)	(27.27)	(-2.56)	(29.26)
Proposal*Size			0.103***	-0.172	0.103***	0.018	0.103***	0.083	0.103***	0.333
			(158.81)	(-0.45)	(160.24)	(0.05)	(158.89)	(0.21)	(160.34)	(0.90)
Pope	0.002***		0.000***		0.000***		0.000***		0.000***	
	(13.90)		(5.68)		(5.72)		(5.74)		(5.87)	
Pope*Size			-0.000***		-0.000***		-0.000***		-0.000***	
			(-3.50)		(-3.41)		(-3.55)		(-3.46)	
Constant	-0.000	0.177***	0.000	0.027***	0.000		0.000	0.034***	0.001***	
	(-1.21)	(77.61)	(0.83)	(4.67)	(1.01)		(0.96)	(3.58)	(2.74)	
Observations	70,709	70,709	70,709	70,709	70,709	70,709	70,709	70,709	70,709	70,709
F-Test (SW)	193.29		114.84		119.61		116.76		123.48	
p-value	(0.000)		(0.000)		(0.000)		(0.000)		(0.000)	
Endogeneity Test		144.099		18.906		12.941		11.284		6.692
p-value		(0.000)		(0.000)		(0.000)		(0.000)		(0.0097)
Industry Dummy		No		No		Yes		No		Yes
Year Dummy		No		No		Yes		No		Yes
Other Controls		No		No		No		Yes		Yes

Robust t-statistics in parentheses, unless otherwise indicated

*** p<0.01, ** p<0.05, * p<0.1

The following table employ a two-stage least squares regression with an instrumental variable. In the first stage, the Jacquemin and Berry (1979) Entropy measures of diversification defined as *Entropy Within* (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s}$) is regressed against the number of times that a Business Wire or Press Release in the US by a US publisher contained the "Pope" and "climate change" in a Nexis-Uni search, along with other controls. In the second stage, the results from the first stage instrument for the number of shareholder proposals. There are five models that incrementally add controls: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

Table 5B: 2SLS: The Pope and Climate Change in Press: Entropy Assets Within SIC2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	Stage1_1 Proposal (dum)	Stage2_1 Entropy Asset Within SIC2	Stage1_2 Proposal (dum)	Stage2_2 Entropy Asset Within SIC2	Stage1_3 Proposal (dum)	Stage2_3 Entropy Asset Within SIC2	Stage1_4 Proposal (dum)	Stage2_4 Entropy Asset Within SIC2	Stage1_5 Proposal (dum)	Stage2_5 Entropy Asset Within SIC2
Proposal (dum)		3.042***		-44.695***		-47.386***		-57.130***		-57.473***
		(7.14)		(-7.29)		(-7.71)		(-7.63)		(-8.02)
Size (ln revenues)			-0.000	0.063***	-0.000***	0.058***	-0.000	0.057***	-0.000**	0.056***
			(-1.47)	(30.09)	(-3.17)	(25.59)	(-1.38)	(25.84)	(-2.56)	(24.06)
Proposal*Size			0.103***	4.521***	0.103***	4.799***	0.103***	5.751***	0.103***	5.790***
			(158.81)	(7.42)	(160.24)	(7.85)	(158.89)	(7.84)	(160.34)	(8.26)
Pope	0.002***		0.000***		0.000***		0.000***		0.000***	
	(13.90)		(5.68)		(5.72)		(5.74)		(5.87)	
Pope*Size			-0.000***		-0.000***		-0.000***		-0.000***	
			(-3.50)		(-3.41)		(-3.55)		(-3.46)	
Constant	-0.000	0.263***	0.000	-0.101***	0.000		0.000	-0.192***	0.001***	
	(-1.21)	(89.21)	(0.83)	(-9.78)	(1.01)		(0.96)	(-7.94)	(2.74)	
Observations	70,709	70,709	70,709	70,709	70,709	70,709	70,709	70,709	70,709	70,709
F-Test (SW)	193.29		114.84		119.61		116.76		123.48	
p-value	(0.000)		(0.000)		(0.000)		(0.000)		(0.000)	
Endogeneity Test		39.328		20.324		18.320		26.503		22.284
p-value		(0.000)		(0.000)		(0.000)		(0.000)		(0.000)
Industry Dummy		No		No		Yes		No		Yes
Year Dummy		No		No		Yes		No		Yes
Other Controls		No		No		No		Yes		Yes

Robust t-statistics in parentheses, unless otherwise indicated. *** p<0.01, ** p<0.05, * p<0.1

The following tables replicate table 2A.2, using data from the Institutional Shareholder Services (ISS) as a basis for various types of proposals: ordinary least square regressions with a Herfindahl measure of diversification defined as $H_{SIC2} = (1 - \sum_{s=1}^{n} P_s\ P_s)$. The dependent variable is *Herf2Assets* is the Herfindahl measure of diversification at the SIC 2-digit level for the percent of assets (P_i). The sample includes only those firms which appear in the ISS database from 1994 to 2018. The variable of interest (a dummy for proposal type) is described above each of the following 8 tables. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

Table 6A.1: Placebo: Climate Proposal: HERFINDAHL: ISS data

Proposal (dum) is a dummy variable equal to one if a firm receives at least one shareholder proposal related to climate change according the ISS item codes.

	(1) Herf2Asset	(2) Herf2Asset	(3) Herf2Asset	(4) Herf2Asset	(5) Herf2Asset	(6) Herf2Asset
Proposal (dum)	0.015	-0.376***	-0.382***	-0.389***	-0.366***	-0.372***
	(0.338)	(-2.890)	(-3.182)	(-3.260)	(-3.089)	(-3.259)
Size (ln revenues)		0.027***	0.022**	0.021**	0.026***	0.026***
		(3.387)	(2.375)	(2.264)	(3.737)	(3.648)
Proposal*Size		0.033**	0.033**	0.033**	0.033**	0.033**
		(2.307)	(2.471)	(2.473)	(2.446)	(2.522)
_cons	0.223***	0.016	-0.037	-0.101*	-0.054	-0.118*
	(13.767)	(0.299)	(-0.699)	(-1.963)	(-0.935)	(-1.946)
Obs.	20337	20337	20337	20337	20337	20337
R-squared	0.000	0.020	0.028	0.032	0.095	0.098
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 6A.2: Placebo: Declassified Boards Proposal: HERFINDAHL: ISS data

DeclassProp is a dummy variable equal to one if a firm receives at least one shareholder proposal related to declassifying the board.

	(1) Herf2Asset	(2) Herf2Asset	(3) Herf2Asset	(4) Herf2Asset	(5) Herf2Asset	(6) Herf2Asset
Non-CCProp	0.018	-0.002	-0.005	-0.001	-0.004	0.000
	(0.887)	(-0.082)	(-0.239)	(-0.037)	(-0.185)	(0.023)
Size (ln revenues)		0.028***	0.022**	0.021**	0.027***	0.026***
		(3.390)	(2.387)	(2.274)	(3.755)	(3.659)
Proposal*Size		-0.005	-0.005	-0.005	-0.003	-0.003
		(-1.282)	(-1.401)	(-1.452)	(-0.868)	(-0.890)
_cons	0.222***	0.014	-0.040	-0.103*	-0.057	-0.120*
	(13.811)	(0.259)	(-0.738)	(-1.992)	(-0.975)	(-1.979)
Obs.	20337	20337	20337	20337	20337	20337
R-squared	0.000	0.020	0.027	0.031	0.095	0.098
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

The following tables replicate tables 2B.2 and 2B.3 (quintiles), using data from the Institutional Shareholder Services (ISS) as a basis for various types of proposals. The regressions are ordinary least squares with Jacquemin and Berry (1979) Entropy measures of diversification defined in the

following ways: *Entropy Within* is the difference between *Total Entropy* at the SIC 4-digit level, $E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i}$, and *Entropy Across* SIC2, $E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s}$. The dependent variable is *SIC2_Assets_Within*, the Entropy measure for diversification within the SIC 2-digit level of assets. The sample includes only those firms which appear in the ISS database from 1994 to 2018. The variable of interest (a dummy for proposal type) is described above each of the following 8 tables. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

Table 6B.1: Placebo: Climate Proposal: ENTROPY: ISS data

Proposal (dum) is a dummy variable equal to one if a firm receives at least one shareholder proposal related to climate change according the ISS item codes.

	(1) SIC2_Assets _Within	(2) SIC2_Assets _Within	(3) SIC2_Assets _Within	(4) SIC2_Assets _Within	(5) SIC2_Assets _Within	(6) SIC2_Assets _Within
Proposal (dum)	0.264***	0.603	0.397	0.365	0.150	0.112
	(6.573)	(1.136)	(0.796)	(0.763)	(0.394)	(0.313)
Size (ln revenues)		0.073***	0.053***	0.051***	0.071***	0.069***
		(5.770)	(3.595)	(3.481)	(5.755)	(5.741)
Proposal*Size		-0.052	-0.032	-0.028	-0.007	-0.003
		(-0.993)	(-0.654)	(-0.602)	(-0.185)	(-0.081)
_cons	0.364***	-0.188**	-0.256***	-0.437***	-0.455***	-0.645***
	(11.347)	(-2.625)	(-3.740)	(-5.832)	(-5.619)	(-7.327)
Obs.	20337	20337	20337	20337	20337	20337
R-squared	0.004	0.059	0.086	0.096	0.166	0.177
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 6B.2: Placebo: Climate Proposal: ENTROPY: ISS data: Quintiles

Proposal (dum) is a dummy variable equal to one if a firm receives at least one shareholder proposal related to climate change according the ISS item codes.

	(1) Top_5th	(2) Upper_5th	(3) Middle_5th	(4) Lower_5th	(5) Bottom_5th
Proposal (dum)	0.162***	0.107**	0.125	0.197**	0.073
	(4.051)	(2.060)	(0.989)	(2.153)	(0.669)
_cons	-0.641***	-0.183	-0.321***	-0.244**	-0.219***
	(-4.378)	(-1.301)	(-3.881)	(-2.432)	(-3.531)
Obs.	3913	4030	4092	4116	4186
R-squared	0.211	0.215	0.183	0.156	0.109
Industry Dummy	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 6B.3: Placebo: Declassified Boards Proposal: ENTROPY: ISS data: Quintiles

DeclassProp is a dummy variable equal to one if a firm receives at least one shareholder proposal related to declassifying the board.

	(1) Top_5th	(2) Upper_5th	(3) Middle_5th	(4) Lower_5th	(5) Bottom_5th
Non-CCProp	0.024	0.078	0.104	0.179***	0.037
	(0.391)	(0.909)	(1.396)	(3.431)	(1.055)
_cons	-0.664***	-0.185	-0.316***	-0.231**	-0.218***
	(-4.653)	(-1.301)	(-3.803)	(-2.327)	(-3.528)
Obs.	3913	4030	4092	4116	4186
R-squared	0.208	0.214	0.183	0.159	0.109
Industry Dummy	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 7A.1: Proposals, Accounting Performance and Fitted Diversification

Diversification is fitted by regressing Herfindahl measure for assets at SIC2, defined as $\widehat{Herf2Assets} = (1 - \sum_{s=1}^{n} P_s\, P_s)$, or $\widehat{Entropy2Within}$ (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\, ln\, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\, ln\, {}^{1}/_{P_s}$) on the proposal dummy and a set of control variables. Accounting Performance is the dependent variable proxied with: return on assets (ROA) calculated as net income divided by beginning of period assets, return on investment (ROI) calculated as earnings before interest, taxes, depreciation and amortization (EBITDA) divided by invested capital, and total asset turnover (TAT) calculated as total revenues divided by beginning total assets. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in all models, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) $\overline{ROA}_{t+1,+3}$	(2) $\overline{ROI}_{t+1,+3}$	(3) $\overline{TAT}_{t+1,+3}$	(4) $\overline{ROA}_{t+1,+3}$	(5) $\overline{ROI}_{t+1,+3}$	(6) $\overline{TAT}_{t+1,+3}$
$\widehat{Herf2Assets}$	0.624**	1.387**	3.586			
	(2.316)	(2.491)	(1.069)			
$\widehat{Herf2Assets}$*Size	-0.001	-0.001	-0.006			
	(-1.168)	(-1.264)	(-1.070)			
$\widehat{Entropy2Within}$				-0.247**	-0.555**	-1.375
				(-2.292)	(-2.427)	(-0.972)
$\widehat{Entropy2Within}$*Size				-0.001**	-0.001***	-0.006*
				(-2.242)	(-2.868)	(-1.941)
Size (ln revenues)	-0.010*	-0.026*	-0.125	0.023**	0.049***	0.065
	(-1.744)	(-1.736)	(-1.156)	(2.624)	(3.050)	(0.849)
_cons	-0.024***	-0.026	0.753***	-0.099***	-0.194***	0.325
	(-2.887)	(-1.372)	(4.966)	(-3.038)	(-3.512)	(1.207)
Obs.	48662	48593	48662	48662	48593	48662
R-squared	0.224	0.241	0.366	0.224	0.242	0.366
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes

Table 7A.2: Proposals, Stock Performance and Fitted Diversification

Diversification is fitted by regressing Herfindahl measure for assets at SIC2, defined as $\widehat{Herf2Assets} = (1 - \sum_{s=1}^{n} P_s\, P_s)$, or $\widehat{Entropy2Within}$ (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\, ln\, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\, ln\, {}^{1}/_{P_s}$) on the proposal dummy and a set of control variables. Stock Performance is the dependent variable proxied with buy-and-hold returns (BH_Return), Jensen's Alpha (Jensens) and Fama-French plus Momentum. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in all models, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) BH_Return	(2) Jensens	(3) FF-Mom	(4) BH_Return	(5) Jensens	(6) FF-Mom
$\widehat{Herf2Assets}$	-0.268	-0.057***	-0.070***			
	(-0.931)	(-4.892)	(-5.610)			
$\widehat{Herf2Assets}$*Size	0.001	0.000***	0.000***			
	(0.272)	(2.847)	(2.694)			
$\widehat{Entropy2Within}$				-0.369**	-0.032***	-0.037***
				(-2.643)	(-6.245)	(-6.533)
$\widehat{Entropy2Within}$*Size				-0.003***	0.000	0.000
				(-2.825)	(0.449)	(1.018)
Size (ln market assets)	-0.041***	-0.001***	-0.000	-0.027***	-0.001***	-0.000
	(-4.133)	(-2.769)	(-1.078)	(-3.085)	(-3.004)	(-1.332)
_cons	0.457***	0.001	0.008***	0.394***	-0.003	0.003**
	(9.762)	(1.124)	(7.446)	(8.172)	(-1.622)	(2.552)
Obs.	48549	48549	48549	48549	48549	48549
R-squared	0.108	0.186	0.097	0.108	0.189	0.100
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

Table 7A.3: Proposals, Risk-taking and Diversification

Diversification is fitted by regressing Herfindahl measure for assets at SIC2, defined as $\widehat{Herf2Assets} = (1 - \sum_{s=1}^{n} P_s\, P_s)$, or $\widehat{Entropy2Within}$ (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\, ln\, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\, ln\, {}^{1}/_{P_s}$) on the proposal dummy and a set of control variables. *Risk* is proxied by the standard deviation over the period t+1 to t+3 for return on assets (ROA), return on investments (ROI) and buy-and-hold returns (BH_Return). *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in all models, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) SD_ROA	(2) SD_ROI	(3) SD_BH_Return	(4) SD_ROA	(5) SD_ROI	(6) SD_BH_Return
$\widehat{Herf2Assets}$	-0.499***	-0.862**	0.784			
	(-3.441)	(-2.285)	(0.737)			
$\widehat{Herf2Assets}$*Size	0.001***	0.001	0.001			
	(2.760)	(0.845)	(0.624)			
$\widehat{Entropy2Within}$				0.198***	0.348**	-0.259
				(3.370)	(2.223)	(-0.572)
$\widehat{Entropy2Within}$*Size				0.001*	0.001	-0.004***
				(1.972)	(1.189)	(-3.006)
Size (ln revenues)	0.003	0.000	-0.072**	-0.023***	-0.046***	-0.030
	(0.873)	(0.022)	(-2.193)	(-5.193)	(-4.083)	(-1.122)
_cons	0.067***	0.032**	0.501***	0.127***	0.136***	0.404***
	(11.325)	(2.603)	(7.212)	(6.814)	(3.355)	(3.711)
Obs.	48662	48509	48662	48662	48509	48662
R-squared	0.197	0.182	0.108	0.197	0.182	0.109
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Coarse Exact Matching (CEM) estimator as developed by Blackwell, Iacus, King and Porro (2009) and explained as "temporarily coarsen each variable into substantively meaningful groups, exact match on these coarsened data, and then retain only the original (uncoarsened) values of the matched data." (p.527).

Table 7B.1: CEM Test of Match on Size, Industry and Year

	Mean		t-test		V(T)/	
Variable	Treated	Control	%bias	t	p>t	V(C)
Size (ln revenues)	9.5213	9.4908	2.2	0.47	0.638	1.04

* if variance ratio outside [0.84; 1.20]

Table 7B.2: CEM: Accounting Performance and Fitted Diversification

This table is an ordinary least square regression with Accounting Performance as the dependent variable. Accounting Performance is proxied by: return on assets (ROA) calculated as net income divided by beginning of period assets, return on investment (ROI) calculated as earnings before interest, taxes, depreciation and amortization (EBITDA) divided by invested capital, and total asset turnover (TAT) calculated as total revenues divided by beginning total assets. Diversification is fitted by regressing Herfindahl measure for assets at SIC2, defined as $\widehat{Herf2Assets} = (1 - \sum_{s=1}^{n} P_s\, P_s)$, or $\widehat{Entropy2Within}$ (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\, ln\, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\, ln\, {}^{1}/_{P_s}$) on the proposal dummy and a set of control variables. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in all models, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) ROA_avg	(2) ROI_avg	(3) TAT_avg	(4) ROA_avg	(5) ROI_avg	(6) TAT_avg
$\widehat{Herf2Assets}$	0.028	0.501**	3.312***			
	(0.304)	(2.537)	(3.256)			
$\widehat{Herf2Assets}$*Size	0.001***	0.002***	-0.002			
	(3.725)	(4.329)	(-0.748)			
$\widehat{Entropy2Within}$				-0.020	-0.233***	-1.340***
				(-0.520)	(-2.778)	(-3.118)
$\widehat{Entropy2Within}$*Size				-0.000	-0.001**	-0.004**
				(-1.643)	(-2.151)	(-2.370)
Size (ln revenues)	0.002	-0.007	-0.071**	0.005**	0.024***	0.110***
	(0.616)	(-1.159)	(-2.214)	(2.085)	(4.771)	(4.179)
_cons	-0.040	-0.088	1.276***	-0.047	-0.161**	0.827**
	(-1.335)	(-1.355)	(3.817)	(-1.522)	(-2.371)	(2.370)
Obs.	3034	3034	3034	3034	3034	3034
R-squared	0.445	0.481	0.527	0.443	0.479	0.528
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 7B.3: CEM Matched by Size, Industry and Year: Stock Performance and Fitted Diversification

This table is an ordinary least square regression with Accounting Performance as the dependent variable. Stock Performance is proxied with buy-and-hold returns (BH_Return), Jensen's Alpha (Jensens) and Fama-French plus Momentum. Diversification is fitted by regressing Herfindahl measure for assets at SIC2, defined as $\widehat{Herf2Assets} = (1 - \sum_{s=1}^{n} P_s\, P_s)$, or $\widehat{Entropy2Within}$ (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\, ln\, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\, ln\, {}^{1}/_{P_s}$) on the proposal dummy and a set of control variables. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in all models, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) BH_Return	(2) Jensens	(3) FF-Mom	(4) BH_Return	(5) Jensens	(6) FF-Mom
$\widehat{Herf2Assets}$	0.063	0.002	-0.011			
	(0.150)	(0.196)	(-0.976)			
$\widehat{Herf2Assets}$*Size	-0.003	-0.000**	-0.000**			
	(-0.975)	(-1.993)	(-2.425)			
$\widehat{Entropy2Within}$				-0.044	-0.005	-0.006
				(-0.247)	(-1.090)	(-1.401)
$\widehat{Entropy2Within}$*Size				-0.001	-0.000	-0.000
				(-0.801)	(-1.187)	(-0.885)
Size (ln market assets)	-0.059***	-0.001***	-0.001	-0.056***	-0.001***	-0.001*
	(-4.361)	(-4.139)	(-1.447)	(-4.606)	(-3.855)	(-1.775)
_cons	0.847**	0.022**	0.017*	0.828**	0.021**	0.015
	(2.386)	(2.389)	(1.812)	(2.337)	(2.295)	(1.633)
Obs.	3026	3026	3026	3026	3026	3026
R-squared	0.210	0.179	0.101	0.210	0.179	0.099
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

Table 7B.4: CEM: Risk and Fitted Diversification

This table contains ordinary least square regressions with Risk as the dependent variable. Risk is proxied with the standard deviations of return-on-assets (ROA) and return-on-investments (ROI) and buy-and-hold returns (BH_Return). Diversification is fitted by regressing the Herfindahl measure for assets at SIC2, defined as $\widehat{Herf2Assets} = (1 - \sum_{s=1}^{n} P_s\, P_s)$, or $\widehat{Entropy2Within}$ (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\, ln\, {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\, ln\, {}^{1}/_{P_s}$) on the proposal dummy and a set of control variables. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in all models, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

	(1) SD_ROA	(2) SD_ROI	(3) SD_BH_Return	(4) SD_ROA	(5) SD_ROI	(6) SD_BH_Return
$\widehat{Herf2Assets}$	-0.103	-0.030	0.179			
	(-1.194)	(-0.158)	(0.161)			
$\widehat{Herf2Assets}$*Size	-0.001**	-0.001	-0.001			
	(-2.054)	(-1.581)	(-0.439)			
$\widehat{Entropy2Within}$				0.047	0.018	-0.038
				(1.290)	(0.229)	(-0.082)
$\widehat{Entropy2Within}$*Size				0.000	0.000	-0.002
				(1.566)	(1.254)	(-1.212)
Size (ln revenues)	-0.002	-0.007	-0.069*	-0.009***	-0.010**	-0.059**
	(-0.748)	(-1.225)	(-1.956)	(-3.860)	(-2.152)	(-2.080)
_cons	0.084***	0.058	0.863**	0.100***	0.068	0.817**
	(2.947)	(0.940)	(2.370)	(3.362)	(1.047)	(2.149)
Obs.	3034	3030	3034	3034	3030	3034
R-squared	0.131	0.237	0.207	0.131	0.237	0.207
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes

T-values are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

The following tables contain Poisson regressions that use the number of proposals that a firm receives in a single year, with $Herf2Assets = (1 - \sum_{s=1}^{n} P_s\ P_s)$, or *Entropy2Within* (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\ ln\ {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\ ln\ {}^{1}/_{P_s}$) as the dependent variables. *Proposals* is a variable which counts the number of shareholder proposals in which the term "climate change" is used in a given year. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

Table 8A: Poisson on PROPOSALS (per year): HERFINDAHL SIC2 ASSETS

	(1) Herf2Assets	(2) Herf2Assets	(3) Herf2Assets	(4) Herf2Assets	(5) Herf2Assets	(6) Herf2Assets
1.proposals	0.392***	-0.147	-0.197**	-0.225**	-0.169*	-0.192**
	(2.658)	(-1.444)	(-2.019)	(-2.375)	(-1.877)	(-2.190)
2.proposals	0.309	-0.360**	-0.443***	-0.474***	-0.412***	-0.438***
	(1.531)	(-2.157)	(-2.732)	(-2.899)	(-2.957)	(-3.084)
3.proposals	-0.051	-0.678**	-0.776***	-0.806***	-0.696**	-0.722***
	(-0.130)	(-2.210)	(-2.640)	(-2.704)	(-2.534)	(-2.578)
4.proposals	0.655**	-0.114	-0.196	-0.188	-0.113	-0.103
	(2.249)	(-0.542)	(-0.954)	(-0.855)	(-0.623)	(-0.525)
5.proposals	0.288	-0.387	-0.463	-0.455	-0.308	-0.302
	(0.401)	(-0.666)	(-0.793)	(-0.702)	(-0.554)	(-0.486)
6.proposals	0.787***	-0.039	-0.198*	-0.250**	-0.165**	-0.206***
	(18.035)	(-0.437)	(-1.808)	(-2.349)	(-2.482)	(-3.138)
Size (ln revenues)		0.176***	0.172***	0.163***	0.194***	0.185***
		(10.308)	(9.622)	(8.484)	(11.963)	(10.587)
_cons	-1.698***	-2.845***	-2.898***	-3.456***	-2.425***	-2.968***
	(-38.791)	(-21.649)	(-22.312)	(-30.829)	(-21.970)	(-23.007)
Obs.	86431	86431	86431	86431	86431	86431
Controls	No	No	Yes	Yes	Yes	Yes
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes

Table 8B: Poisson on PROPOSALS (per year): Entropy Within SIC2 Assets

	(1) Entropy Win2Assets	(2) Entropy Win2Assets	(3) Entropy Win2Assets	(4) Entropy Win2Assets	(5) Entropy Win2Assets	(6) Entropy Win2Assets
1.proposals	0.776***	0.016	-0.057	-0.047	-0.044	-0.039
	(9.803)	(0.191)	(-0.742)	(-0.664)	(-0.685)	(-0.664)
2.proposals	1.100***	0.158	0.060	0.095	0.095	0.129
	(7.673)	(1.169)	(0.413)	(0.678)	(0.641)	(0.931)
3.proposals	1.170***	0.282	0.130	0.189	0.200*	0.258*
	(11.527)	(1.570)	(0.785)	(1.035)	(1.682)	(1.766)
4.proposals	1.310***	0.226	0.149	0.132	0.217	0.193
	(6.895)	(0.864)	(0.611)	(0.527)	(1.061)	(0.906)
5.proposals	1.305***	0.356	0.326**	0.324*	0.304***	0.295**
	(11.212)	(1.413)	(2.114)	(1.687)	(3.292)	(2.145)
6.proposals	1.664***	0.504***	0.344***	0.457***	0.461***	0.574***
	(19.842)	(5.110)	(3.094)	(4.260)	(9.535)	(12.200)
Size (ln revenues)		0.258***	0.234***	0.226***	0.247***	0.238***
		(16.794)	(14.853)	(13.296)	(18.251)	(17.722)
_cons	-1.377***	-3.117***	-3.254***	-4.261***	-3.374***	-4.385***
	(-16.417)	(-25.765)	(-25.689)	(-27.784)	(-39.229)	(-36.597)
Obs.	85437	85437	85437	85437	85437	85437
Controls	No	No	Yes	Yes	Yes	Yes
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes

T-values are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

The following tables replicate tables 2A.2 (Herfindahl) and 2B.2 (Entropy) but using a three-year moving average of each proxy for diversification. The regressions are ordinary least square regression with either (table 9A) the Herfindahl measure for assets diversification at SIC2, defined as $Herf2Assets = (1 - \sum_{s=1}^{n} P_s\ P_s)$, or (table 9B) *Entropy2Within* (which is the difference between *Total Entropy* at the SIC 4-digit level as $E_T = \sum_{i=1}^{n} P_i\ ln\ {}^{1}/_{P_i}$, and *Entropy Across* SIC2 is $E_A = \sum_{i=1}^{n} P_s\ ln\ {}^{1}/_{P_s}$) as the dependent variables. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal related to climate change. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables. Standard errors are clustered according to the Fama-French 49 classifications.

Table 9A: Change in Herfindahl SIC2 Assets: 3-year Moving Average

	(1) 3MA_Chg_ Herf2Asset	(2) 3MA_Chg_ Herf2Asset	(3) 3MA_Chg_ Herf2Asset	(4) 3MA_Chg_ Herf2Asset	(5) 3MA_Chg_ Herf2Asset	(6) 3MA_Chg_ Herf2Asset
Proposal (dum)	-0.006	0.016*	0.021*	0.021*	0.019*	0.022*
	(-1.073)	(1.678)	(1.897)	(1.852)	(1.718)	(1.864)
Size (ln revenues)		0.000	0.001**	0.001***	0.001*	0.001***
		(0.212)	(2.358)	(3.466)	(1.878)	(2.988)
Proposal*Size		-0.002**	-0.003**	-0.003**	-0.002*	-0.003*
		(-2.248)	(-2.077)	(-2.026)	(-1.861)	(-2.005)
_cons	0.007***	0.006***	0.017***	0.040***	0.012***	0.035***
	(9.986)	(3.422)	(7.860)	(11.164)	(5.920)	(10.855)
Obs.	63910	63910	63910	63910	63910	63910
R-squared	0.000	0.000	0.003	0.018	0.005	0.020
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 9B: Change in Entropy Within SIC2 Assets: 3-year Moving Average

	(1) 3MA_Chg_ Entropy2 Within	(2) 3MA_Chg_ Entropy2 Within	(3) 3MA_Chg_ Entropy2 Within	(4) 3MA_Chg_ Entropy2 Within	(5) 3MA_Chg_ Entropy2 Within	(6) 3MA_Chg_ Entropy2 Within
Proposal (dum)	-0.017**	-0.109**	-0.105**	-0.072*	-0.125***	-0.085**
	(-2.432)	(-2.463)	(-2.329)	(-1.754)	(-2.930)	(-2.189)
Size (ln revenues)		-0.000	0.000*	0.002***	-0.000	0.002***
		(-0.845)	(1.929)	(7.231)	(-0.091)	(5.592)
Proposal*Size		0.010**	0.010**	0.007	0.012**	0.008**
		(2.151)	(2.079)	(1.588)	(2.677)	(2.027)
_cons	0.008***	0.009***	0.017***	0.045***	0.011***	0.039***
	(8.546)	(4.945)	(5.139)	(11.914)	(4.140)	(10.861)
Obs.	63910	63910	63910	63910	63910	63910
R-squared	0.000	0.000	0.002	0.027	0.005	0.029
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

The following tables replicate table 2A.2 using Herfindahl at the SIC 2-digit level asset classification as the dependent variable in an ordinary least square regression. The Herfindahl measure for assets at SIC2 is defined as $Herf2Assets = (1 - \sum_{s=1}^{n} P_s P_s)$. All independent variables are lagged by the number of years indicated. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal related to climate change. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

Table 10A.1: Change in Herfindahl SIC2 Assets: Lag 1 Year

	(1) Change Herf2Asset	(2) Change Herf2Asset	(3) Change Herf2Asset	(4) Change Herf2Asset	(5) Change Herf2Asset	(6) Change Herf2Asset
Proposal (dum) $_{t-1}$	-0.002	0.010	0.015	0.019	0.017	0.023
	(-0.207)	(0.346)	(0.563)	(0.683)	(0.603)	(0.848)
Size (ln revenues) $_{t-1}$		0.000	0.001***	0.001***	0.001***	0.002***
		(0.471)	(2.878)	(4.517)	(2.823)	(4.382)
Proposal*Size $_{t-1}$		-0.001	-0.001	-0.002	-0.001	-0.002
		(-0.481)	(-0.565)	(-0.696)	(-0.590)	(-0.870)
_cons	0.012***	0.011***	0.028***	0.013***	0.014***	-0.002
	(12.009)	(5.040)	(10.155)	(4.556)	(6.373)	(-0.657)
Obs.	77275	77275	77275	77275	77275	77275
R-squared	0.000	0.000	0.002	0.011	0.003	0.012
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 10A.2: Change in Herfindahl SIC2 Assets: Lag 2 Years

	(1) Change Herf2Asset	(2) Change Herf2Asset	(3) Change Herf2Asset	(4) Change Herf2Asset	(5) Change Herf2Asset	(6) Change Herf2Asset
Proposal (dum) $_{t-2}$	-0.008*	0.040	0.045*	0.047*	0.046*	0.052**
	(-1.866)	(1.613)	(1.853)	(1.897)	(1.904)	(2.128)
Size (ln revenues) $_{t-2}$		0.000	0.001**	0.001***	0.001**	0.002***
		(0.291)	(2.424)	(3.887)	(2.238)	(3.790)
Proposal*Size $_{t-2}$		-0.005*	-0.005*	-0.005*	-0.005*	-0.006**
		(-1.845)	(-1.906)	(-1.939)	(-1.930)	(-2.131)
_cons	0.012***	0.011***	0.025***	0.065***	0.017***	0.057***
	(12.685)	(4.807)	(9.226)	(9.276)	(6.975)	(8.729)
Obs.	69200	69200	69070	69070	69070	69070
R-squared	0.000	0.000	0.002	0.010	0.002	0.011
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

The following tables replicate table 2B.2 using the Entropy Within the SIC 2-digit level asset classification as the dependent variable in an ordinary least square regression. *Entropy2Within* is the difference between *Total Entropy* at the SIC 4-digit level ($E_T = \sum_{i=1}^{n} P_i \, ln \, {}^{1}/_{P_i}$) and *Entropy Across* SIC2 is ($E_A = \sum_{i=1}^{n} P_s \, ln \, {}^{1}/_{P_s}$). All independent variables are lagged by the number of years indicated. *Proposal (dum)* is a dummy variable equal to one if a firm receives at least one shareholder proposal related to climate change. *Size (ln revenues)* is the natural log of total firm revenues. Other control variables enter the regression in models 3-6, which include: Tobin's q, Firm Age, Revenue Growth, lagged Stock Returns, Cash Surplus and Leverage, as defined above in the Description of Variables.

Table 10B.1: Change in Entropy Within SIC2 Assets: Lag 1 Year

	(1) Change Entropy2 Within	(2) Change Entropy2 Within	(3) Change Entropy2 Within	(4) Change Entropy2 Within	(5) Change Entropy2 Within	(6) Change Entropy2 Within
Proposal (dum) $_{t-1}$	-0.020*	-0.011	-0.005	0.021	-0.022	0.012
	(-1.989)	(-0.130)	(-0.061)	(0.277)	(-0.274)	(0.155)
Size (ln revenues) $_{t-1}$		-0.000	0.000	0.002***	-0.000	0.002***
		(-1.062)	(1.427)	(7.022)	(-0.447)	(6.063)
Proposal*Size $_{t-1}$		-0.001	-0.001	-0.003	0.001	-0.002
		(-0.097)	(-0.133)	(-0.382)	(0.083)	(-0.253)
_cons	0.007***	0.008***	0.015***	0.001	0.007**	-0.006**
	(9.027)	(4.742)	(3.820)	(0.368)	(2.431)	(-2.120)
Obs.	77275	77275	77275	77275	77275	77275
R-squared	0.000	0.000	0.001	0.010	0.002	0.011
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Table 10B.2: Change in Entropy Within SIC2 Assets: Lag 2 Years

	(1) Change Entropy2 Within	(2) Change Entropy2 Within	(3) Change Entropy2 Within	(4) Change Entropy2 Within	(5) Change Entropy2 Within	(6) Change Entropy2 Within
Proposal (dum) $_{t-2}$	-0.037***	-0.182**	-0.179**	-0.149*	-0.200**	-0.162**
	(-3.770)	(-2.307)	(-2.230)	(-1.966)	(-2.595)	(-2.206)
Size (ln revenues) $_{t-2}$		-0.001**	0.000	0.002***	-0.000	0.002***
		(-2.396)	(0.300)	(5.650)	(-1.455)	(4.578)
Proposal*Size $_{t-2}$		0.015*	0.015*	0.013*	0.018**	0.014*
		(2.000)	(1.959)	(1.764)	(2.332)	(2.007)
_cons	0.006***	0.009***	0.019***	0.073***	0.015***	0.068***
	(7.372)	(5.288)	(5.554)	(9.850)	(5.707)	(9.185)
Obs.	69200	69200	69070	69070	69070	69070
R-squared	0.000	0.000	0.001	0.011	0.001	0.011
Industry Dummy	No	No	No	No	Yes	Yes
Year Dummy	No	No	No	Yes	No	Yes
Other Controls	No	No	Yes	Yes	Yes	Yes

T-values are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

Figures

Figure 1: Frequency of Climate Change Proposals by Year

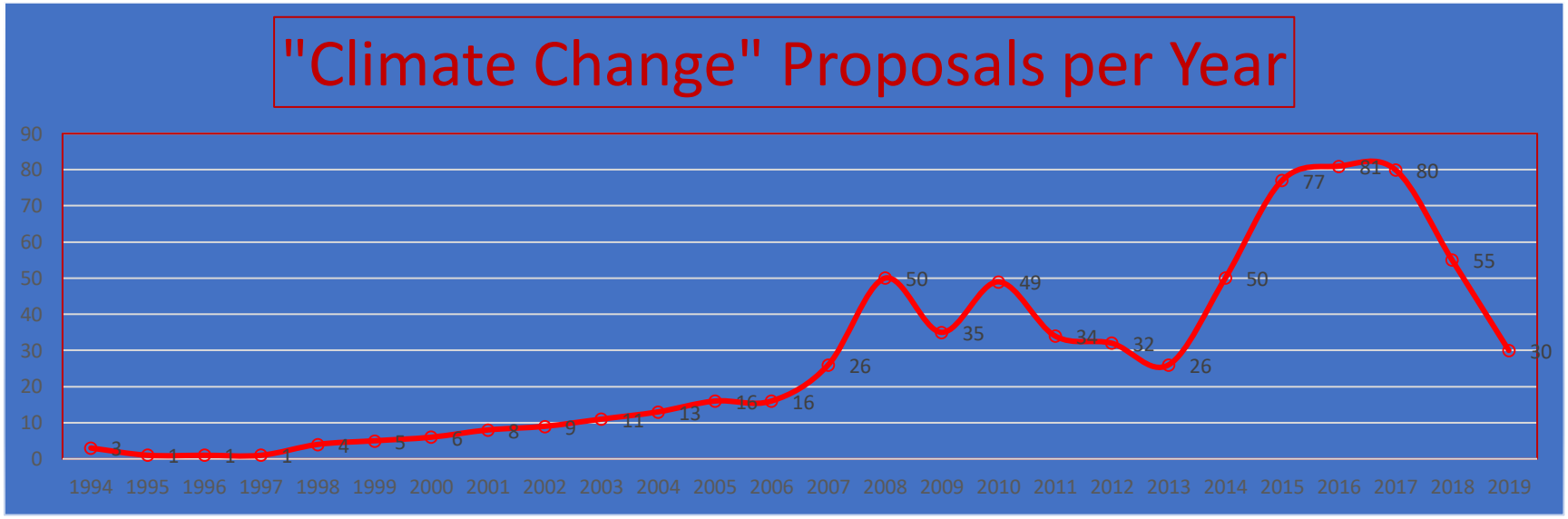


Figure 2: Shareholder Proposal Feedback Loop

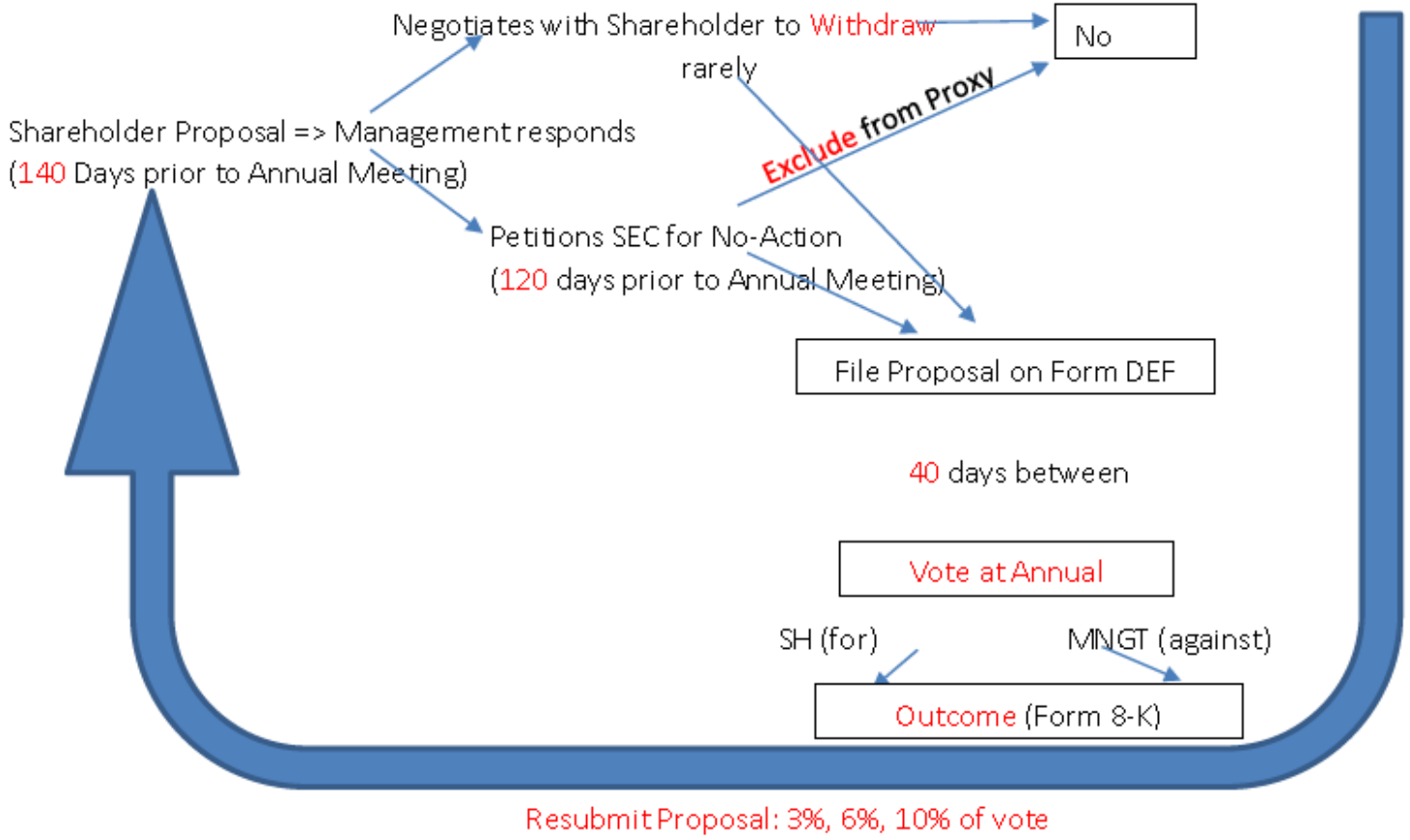
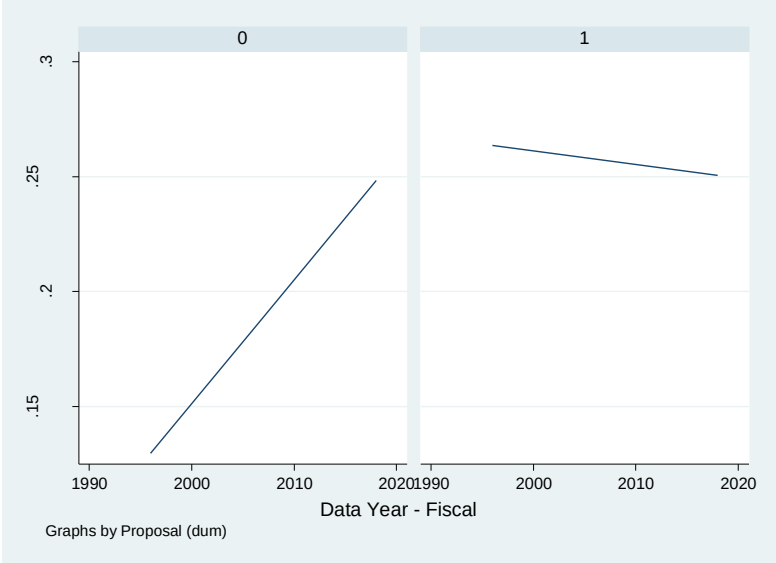
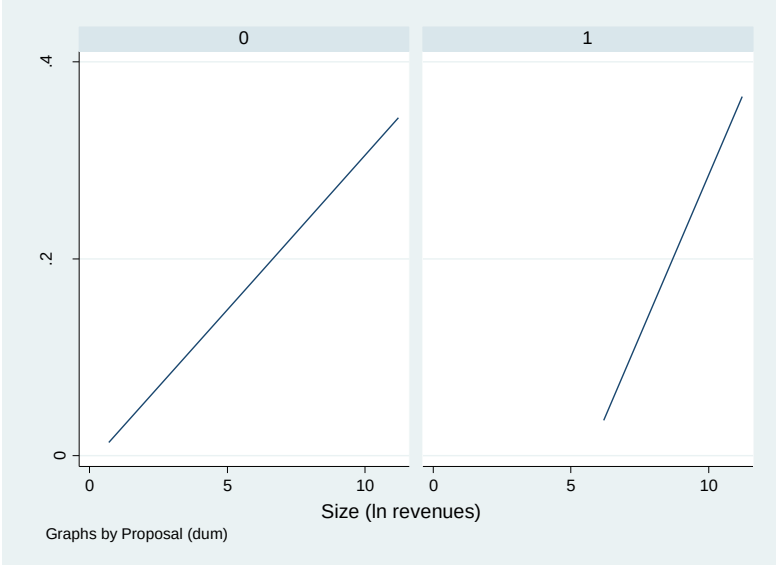
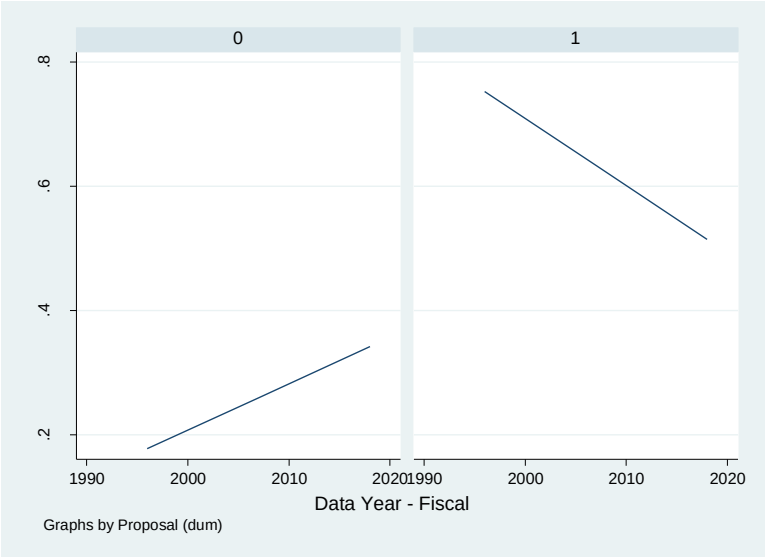


Figure 3: Size Relationship to Diversification and Proposals







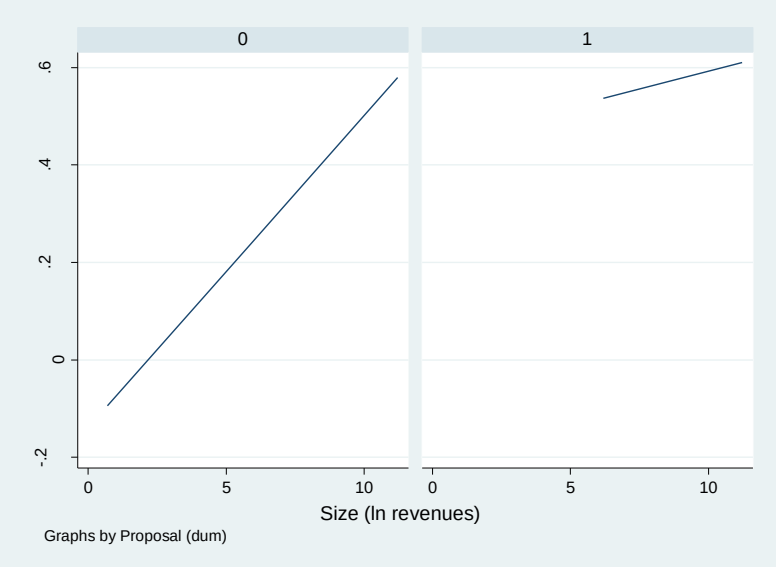
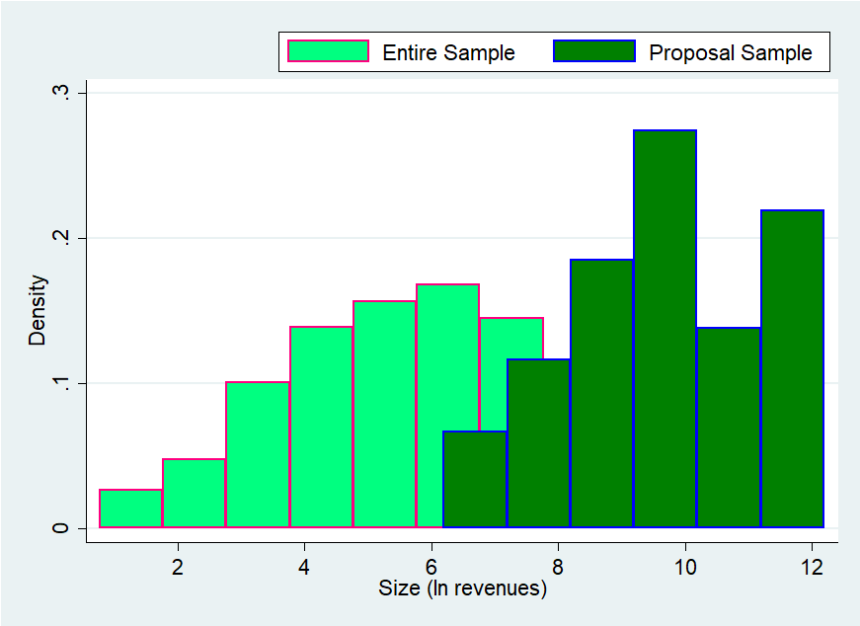


Figure 4: Size Differences



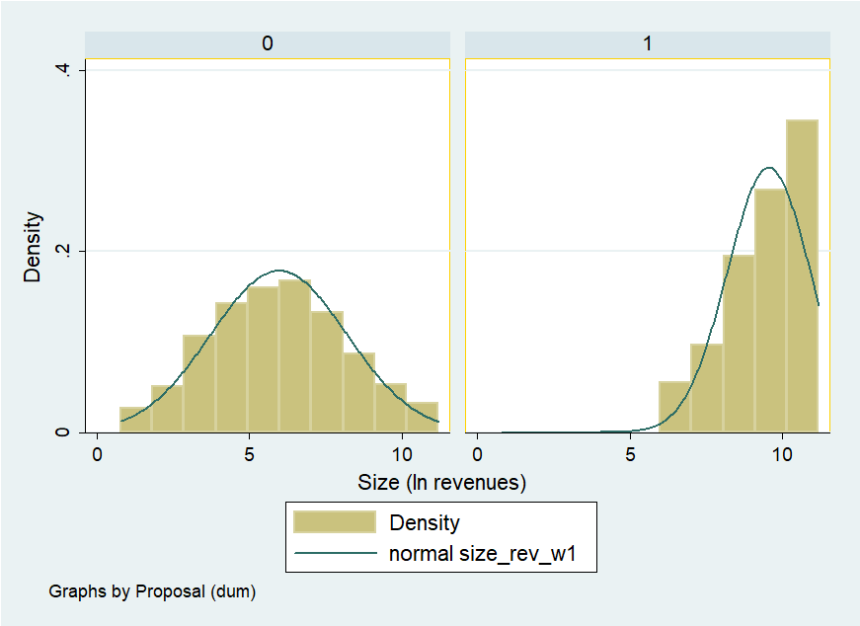


Figure 5: SASB Heat Map

Figure 6: Frequency by Sponsor Type