Passive Aggressive:
How Index Funds Vote on Corporate Governance Proposals*

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Abstract

I study how index funds affect corporate governance through their votes in proxy meetings. The data includes all mutual fund votes on 159,262 proposals at 6,260 firms over the period 2005–2016. I measure the value created by a proposal using a Regression Discontinuity Design on the market reaction to a narrow vote outcome, and I derive four main results. First, the market reaction to a proposal's passage (resp. failure) is stronger if a larger proportion of index funds vote to support (resp. oppose) it. Second index funds optimally allocate limited monitoring resources to votes for which they are pivotal. Third, index fund ownership of a company's stock (as instrumented using the Russell 1000/2000 cutoff) promotes the adoption of value-creating proposals. Fourth, managers of firms with higher index fund ownership present fewer value-reducing proposals. Overall, my results imply that index fund ownership improves corporate governance of portfolio firms by making value-creating proposals, and their passage, more likely.

Keywords: index funds, passive investing, mutual funds, proxy meetings, corporate governance, proxy votes, limited attention.

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1. Introduction

Index funds are now major shareholders of most of the largest publicly traded corporations in the United States. Over the period 2004–2018, their holdings in the Russell 3000 have grown from 1% to 16%. This has raised concerns about how they influence (or not) corporate governance at portfolio companies. In principle, index funds have a fiduciary duty to engage with portfolio firms, and their large stakes could allow them to internalize the benefits of doing so (Lewellen and Lewellen, 2019).[1] Yet given that the primary objective of index fund managers is to track an index, they have only indirect incentives to monitor portfolio companies. Index fund managers benefit from such engagement only if it increases their assets under management, through inflows or through appreciation of the index—unlike active fund managers, who typically are also paid fees tied to portfolio performance (Bebchuk and Hirst, 2019). Moreover, antagonizing a portfolio firm's management could be costly (e.g., when index funds are removed from a firm's 401(k) plan; Ashraf, Jayaraman and Ryan, 2012). The limited resources that index funds dedicate to engaging with firms has been cited by critics as evidence that the costs of monitoring exceed its benefits.[2]

Given the large and growing position of index funds as shareholders of listed corporations, it is important to assess their direct role on corporate governance and hence on firm value. In order to address this question, I analyze one important dimension of their effect on corporate governance, namely how index funds vote in proxy meetings and the consequences for those votes. I derive four main results. First, the market's reaction to the passage (resp. failure) of a proposal is more positive if a larger share of index fund votes support (resp. oppose) it. Second, index funds optimally allocate limited monitoring resources to votes for which they are pivotal. Third, index fund ownership of a firm's stock promotes the adoption in that firm of value-creating proposals. Finally, managers of firms with higher index fund ownership present fewer value-reducing proposals. Together these results strongly suggest that index fund ownership influences corporate governance by making both the initiation and passage of value-creating proposals more likely.

Let me elaborate on how I derive these results, and the basis of my identification strategy: I use index funds' votes to measure their engagement with portfolio firms.[3] At proxy meetings, investors vote on management- or shareholder-sponsored proposals covering a wide range of governance-

[1] For example, the top three index fund families in 2016 held (on average) 4.5% of Russell 3000 firms—versus 2.5% for the top three *active* fund families.

[2] For instance, Blackrock's stewardship team employs only 43 people while participating in nearly 169,000 proposals between June 2018 and July 2019 (*Financial Times*, (2019), and Blackrock (2019))

[3] Votes are the most public form of index fund participation in corporate governance, since such funds rarely comment openly on the management of other firms. For example, Blackrock does not disclose its vote prior to the meeting date.

related issues; examples include employee compensation, anti-takeover provisions, and asset liquidations. Only management-sponsored proposals are binding. I use the Institutional Shareholder Services (ISS) data set, which contains all fund votes submitted to the US Security and Exchange Commission (SEC) over the 2005–2016 period. The sample includes more than 5.2 million votes cast by 1,217 index funds from 102 fund families. The votes cover 159,262 management and shareholder proposals at all Russell 3000 firms.

I measure the value that a proposal creates by way of a *regression discontinuity design* (RDD) setup similar to that proposed by Cuñat, Gine, and Guadalupe (2012).[4] The RDD uses "close call" votes—that is, votes on proposals that either narrowly pass or narrowly fail. In the data, there are 10,464 proposals for which the vote outcome is within 20% of passing.[5] I use CAPM-adjusted abnormal returns, after the proxy meeting, to estimate the difference between a proposal that passes and a similar one that fails. (Since the vote outcome for either type of close call is not known ex ante, it follows that the RDD neutralizes any expectation the market has associated with the proposal.) Therefore, this difference captures the value generation associated with a proposal's passage.

I start by using all close-call votes to examine the value impact of proposals. I find that the close passage of a shareholder-sponsored proposal is associated with a 2.04% *higher* one-day abnormal return as compared with the rejection of a similar one. In contrast, that of a management-sponsored proposal is associated with a 1.98% *lower* one-day abnormal return relative to a failed one. Thus, the adoption of proposals in close-call votes tends to generate value when sponsored by shareholders but to destroy value when sponsored by management. These results are driven chiefly by proposals related to such governance decisions as compensation, anti-takeover provisions, and equity (share issuance). Proposals of these types also represent the bulk of close-call votes.

The first of my four principal results is that, for passed proposals, index fund support is greater for proposals that create more value. I measure the ratio of the number of index fund votes in favor of a proposal to the total number of index fund votes cast (multiplied by the proportion of index fund ownership) and then regress the abnormal stock return following the vote on that variable interacted with an indicator for whether the proposal passes. The coefficient estimate measures

[4] Previous studies on passive investor votes have used deviations from management or from advisors' recommendations as a proxy for active engagement (Heath, Macciochi, Michaely and Ringgenberg, 2019; Iliev and Lowry, 2015). One downside of this approach is that voting with management might create value in some instances. The RDD relies instead on stock market reactions—but at the cost of being applicable only to close votes.

[5] I use mean squared errors to determine the bandwidth around the passing requirement for which a vote is classified as being close. However, all results are robust to the use of alternative methods for selecting the bandwidth.

any association between index fund support and the proposal's value. The one-day abnormal return following adoption of a proposal with full index fund support (i.e., when all index fund votes are in favor) is, on average, 2.15% higher than if the proposal has no index fund support. This effect is greater for governance-related proposals. For example, the one-day abnormal return associated with passage of a proposal changing anti-takeover provisions is (on average) 5.30% higher if the proposal has full rather than no index fund support. Moreover, that effect increases with the size of index funds' collective stake in the firm. For every additional percentage of firm equity held by index funds in aggregate, the difference in abnormal stock returns between a proposal passed with full versus no index fund support increases by 13.42 basis points.[6] This is consistent with index funds directing their monitoring resources toward votes where they have more influence on the outcome.

For comparison, I perform a similar regression for non-index mutual funds. I find that non-index mutual fund support is unrelated to value creation. One reason for this sharp contrast with index funds might be that the votes of non-index mutual funds are less correlated with each other than are those of index funds: average correlation across the index funds over proposals is 50%; across the non-index funds, 70%.

I then study the mechanism driving the positive association between index fund votes and value-enhancing proposals. I examine the extent to which the relation stems from relying on third parties. First, index funds might be following the recommendation of proxy advisors. I find no support for this explanation: controlling for whether the ISS recommendation is in favor of a passed proposal does not alter the effect of index fund support in my baseline regression.[7][8] In fact, for close-call votes I find that ISS recommendations are not significantly associated with value creation.

Next, I explore whether index funds might be lending their shares to borrowers (e.g., hedge funds) who vote in favor of value-creating proposals. In fact, the ISS data set reports only the votes made by index funds, not the number of shares they vote on. Aggarwal, Saffi, and Sturgess (2015) document that, prior to proxy meetings, institutional investors recall loaned-out shares—and especially before votes on corporate control decisions. Around the time of these votes, then, lending fees increase because of higher demand and lower supply. If index funds lend more shares

[6] Consistent with the positive influence of ownership size, I find that index funds belonging to the three largest passive fund families (Vanguard, State Street, and Blackrock, which together account for 75% of all Russell 3000 index fund ownership) cast more value-enhancing votes than do index funds from other families.

[7] ISS is the largest proxy advisor in the US with over 60% market share: it provides voting recommendations on shareholder and management proposals to its clients (mutual funds, hedge funds, and other institutional investors).

[8] In a robustness test, I find that index funds support value-enhancing proposals whether or not active funds from the same family do. This result provides further evidence that index funds are active voters.

when the lending fee is higher, then their votes should be *less* tightly associated with value-creating proposals. To assess this hypothesis, I add to the regressions lending fees as a control.[9] Contrary to this hypothesis, I find that, for passed proposals, a 1% increase in lending fees *increases* by 2% the one-day abnormal return otherwise associated with index fund support. This is consistent with index funds recalling their shares to vote in favor of value-creating proposals.

My second set of findings pertains to how index funds allocate their limited monitoring resources across votes—more specifically, I determine whether (or not) they prioritize votes whose outcomes they are more likely to affect. I start by evaluating if it is possible to predict which votes will be close calls. Using public information available prior to the proxy meeting date (e.g., type of proposal, ISS recommendation, firm's excess return in the previous year), I predict close-call votes with 72% accuracy. It is thus plausible that index fund managers can identify close-call votes with at least as much precision. I then use an index fund's likelihood of voting against management as a proxy for the attention it allocates to a vote. Because voting against management is costly to index fund managers, their default behavior is to vote with management.

For each fund-vote pair, I measure the limits to a fund's attention with the number of shareholder meetings a fund manager must attend in the month of the vote, the number of proposals in the same meeting as the vote, and whether the vote is held at an annual (rather than a special) meeting. Across all votes, I find that all three variables have a *negative* effect on the likelihood of a fund voting against management. That probability is 3.22% lower for annual meetings, 1.79% lower for every 100 more meetings the fund must attend, and 0.52% lower for every 10 other proposals presented at the meeting. However, I find that the same variables do not affect a fund's likelihood to disagree with management on close-call votes. This is consistent with index funds allocating more monitoring resources to votes where they are more pivotal.

In addition, I study whether index fund attention to a firm is persistent. Toward that end I identify firm–year pairs for which more than 80% of all index fund votes opposed a proposal. I find that, for these firms, an index fund is 3.1% more likely to vote against a management-sponsored proposal in the following year. This result is consistent with index funds having—as predicted by models of limited attention[10]—a "watch list" of firms to monitor.

[9] I obtain data on 2005–2010 lending fees from Markit Securities Finance.

[10] In marketing, the *choice set* is a group of alternatives on which the agent's attention is focused because they are the only options of which she is aware of (Goeree, 2008). The economics literature refers to this watch list as "sequentially rationalizable choices"; the agent starts with a (rational) choice about what options to consider and then focuses on a subset of those options (Manzini and Mariotti, 2007).

I then investigate how index fund stakes affect their attention to votes. I find that, for close-call votes, index funds with larger holdings in a firm are more likely to oppose its management. This outcome accords with a larger stake (i) enabling a fund to internalize more of the value created through monitoring and/or (ii) increasing the likelihood that the fund is pivotal in the vote. I further examine this effect in the context of Blackrock's December 2009 acquisition of Barclays Global Investors (BGI). The acquisition generated an exogenous increase in Blackrock's stock holdings in firms previously held by BGI. I use a difference-in-differences (DiD) setup, where the treated firms are those held by both BGI and Blackrock pre-merger and the control firms are those held by Blackrock but *not* by BGI pre-merger. Consistently with the incentive effect of a larger stake, I find that Blackrock's propensity to oppose management increases by 8.61% for the treated firms.

Taken together, these findings support the notion that index funds have limited monitoring resources, which they channel optimally toward proposals on which their votes are expected to be more pivotal: either because they hold larger stakes or because they anticipate a close-call vote.

So far, I have established a positive relation between the value created by a proposal and index fund support for that proposal. Yet, this does not prove that index funds *cause* value-enhancing proposals to pass—that is, they may have passed regardless. Hence my third main contribution is to explore causality. I compare the value of close-call vote outcomes across otherwise similar firms with high versus low levels of index fund ownership. If index funds are merely selecting proposals associated with higher returns without actually causing these higher returns, then the value of passed proposals should be identical across the two groups of firms.

To assess whether the effect of index funds on value-enhancing proposals is causal, I compare firms on each side of the Russell 1000/2000 cutoff. The smallest Russell 1000 firms are similar to the largest Russell 2000 firms but are held by a smaller proportion of index funds.[11] This difference reflects the firms' inclusion in each index, since an index's largest firms are the most relevant for tracking it.[12] I find that the one-day return difference between passed and failed close-call proposals is 4.28% higher for the 250 largest Russell 2000 firms than for the 250 smallest Russell 1000 firms. This finding accords with the notion that index fund voting causes the passage of proposals that create higher value.

[11] The difference does not stem from any preference index fund investors might have for the Russell 1000 as index fund ownership is similar across the two indices (e.g., index funds owned in 2016 13.7% and 14.1% of the Russell 1000 and 2000, respectively).

[12] Several papers use this approach to measure a causal effect of index ownership. See, among others, Appel, Gormley, and Keim (2016), Boone and White (2015), and Chang, Hong, and Liskovich (2015).

In order to ensure that these findings extend to firms far from the index cutoff, I conduct a matching analysis of all Russell 3000 companies. Specifically, for each firm in the index, I compare the firm's index fund ownership to the yearly median of index fund ownership of all Russell 3000 firms. A firm is assigned to the "high" ownership group if its index fund ownership is above the median or to the "low" ownership group otherwise. I then match firms using both propensity score matching and coarsened exact matching (CEM) on firm characteristics—size (as measured by market capitalization), book/market ratio, leverage, and industry—as well as on proposal year and type (e.g., compensation, anti-takeover) to control for any differences between passed and failed proposals within each group. Again, I find that firms with higher index fund ownership adopt proposals that generate more value. The one-day abnormal return difference between the passage and failure of similar proposals is 1.74% greater for firms with higher index fund ownership. This result confirms that a larger base of index fund investors leads to better corporate governance decisions in proxy meetings.

The latter result—that firms with higher index fund ownership are more likely to adopt value-creating proposals—is consistent with index funds approving (resp. opposing) value-creating (resp. value-reducing) proposals as well as with the managers of those firms sponsoring more proposals of those respective types. My final test aims to assess this second effect, or "management catering". I find that, in firms with higher index fund ownership, management is more likely to present certain types of proposals (e.g., those that would reduce supermajority voting or ratify officer compensation). The close-call passage of a proposal related to any of these types is followed, on average, by a *positive* abnormal return. In contrast, the managers of firms with lower index fund ownership are more likely to present proposals aimed at eliminating the right to act by written consent or at approving omnibus stock plans. The close-call passage of a proposal of any of these types tends to be followed by a *negative* abnormal return. Overall, firm managers are more likely to sponsor proposals that are value generating when the firm has more index fund ownership. Such proposals account for 32% of all close-call votes.[13]

In sum, the paper contributes to the ongoing debate of whether the fast growth of index funds is worrisome for firms' corporate governance. It provides evidence that resolves the lack of consensus in existing papers. Index funds may not appear to allocate sufficient monitoring resources for all the proposals they participate in. However, these resources are sufficient for deciding on value-enhancing votes when index funds matter the most (i.e. when they are pivotal).

[13] However, management could be catering proposals even within a specific subclass. The difficulties encountered when seeking additional data on proposal values preclude my distinguishing further between the effects of management catering and those of index fund votes.

Moreover, this work is the first to link index fund votes to the value of the corresponding proposals (see Section 2 for a detailed discussion of the literature). My results imply that index funds positively impact corporate governance through their votes at proxy meetings.

The paper proceeds as follows. I discuss the literature in Section 2, and Section 3 presents the data and empirical setup. Section 4 reports the results of the RDD around the time of close-call votes resolution. In Section 5, I report on how index funds vote and allocate their attention across votes. Section 6 addresses the role of index fund ownership, and Section 7 is devoted to robustness tests. I conclude in Section 8 with a brief summary and suggestions for future research.

2. Related Literature

This paper is related to four streams of research. First and foremost, it contributes to the literature on the monitoring role of index funds. That literature has not yet reached a consensus. On the one hand, Appel, Gormley, and Keim (2016) and Iliev and Lowry (2015) document that passive mutual funds are not passive investors. Lewellen and Lewellen (2019) further estimate sizable benefits to institutional investors in general, and index funds in particular, from actively participating in firm governance. On the other hand, Heath, Macciochi, Michaely, and Ringgenberg (2019) and Bebchuk and Hirst (2019) argue that index funds do not allocate nearly enough resources to perform proper due diligence on each proposal and that index funds side more with management. My findings—that index funds facilitate the close-call adoption of value-creating proposals—help reconcile these conflicting views. In particular, the results reported here suggest that index funds make the most of their limited monitoring resources by prioritizing proposals on which their voting can make a difference.

More broadly, I contribute to the growing literature studying the consequences of the rise of index funds. One stream of papers focuses on how they affect financial markets—in particular, market fragility (Bhattacharya and O'hara, 2018), volatility (Ben-David, Franzoni and Moussawi, 2018), and liquidity (Ben-David, Franzoni and Moussawi, 2017). Another stream investigates real-world outcomes, such as their influence on firms' competitive behavior in product markets (Azar, Schmalz and Tecu, 2018). I focus instead on how index funds affect corporate governance through their votes in proxy meetings.

My research also contributes to the literature on shareholder voting. Studies have flourished since the SEC began requiring (in 2003) that funds publicly report their votes. Davis and Kim (2007), Ashraf, Jayaraman, and Ryan (2012), and Butler and Gurun (2012) all document how the

relation between mutual or pension funds' managers and firms' managers affect institutional votes. Agrawal (2012) studies the motives of labor union pension fund managers when participating in proxy votes. More recent studies (e.g., Bolton, Li, Ravina and Rosenthal, 2019; Brav, Jiang, Li and Pinnington, 2019; Bubb and Catan, 2019) illustrate how institutional ideologies affect the type of proposals they support. My paper focuses on the voting of index funds and shows how they create value—as measured by stock market reaction—through close-call proposals.

Finally, my paper adds to the literature studying how alternative governance mechanisms, namely "voice" (intervening directly, for example by voting) and "exit" (selling out), interact with one another (Hirschman, 1970). Theory predicts that voice and exit can work both as complements—i.e., the power of voice is reinforced by exit as in Admati and Pfleiderer (2009) and Levit (2019))—and as substitutes—i.e., voice is less effective if investors can exit more easily (e.g., Edmans, Levit, and Reilly (2019)). Empirical evaluations of how voice and exit interact are lacking. My findings suggest that votes are more value-generating when investors (here, index funds) are unable to exit, or in other words, that voice and exit are substitutes.

3. Data Description and Setup

3.1. Data Description

I use data sets from four different providers: ISS Voting Analytics for mutual fund votes and voting outcomes, the Center for Research in Security Prices (CRSP) for stock prices and mutual fund holdings, Compustat for companies' fundamentals, and Markit Securities Finance for lending fees. I run my analysis on data for the 2005–2016 time period. ISS Voting Analytics compiles all mutual funds' proxy voting records as reported on EDGAR in N-PX filings; it also reports the results of votes as well as the management and ISS recommendation issued for each proposal. I begin by matching fund IDs from ISS Voting Analytics to CRSP fund numbers. I match the funds by name, institution, and year. Starting with 76,345 different annual observations of fund names/management from the ISS voting database, I am able to match 85% of the observations; the remaining 15% are unmatched either because the funds do not appear in the CRSP database or because the match is ambiguous (same fund name with no institution/manager or family name available either from CRSP or ISS). I classify a fund as an index fund if either (a) it is flagged by the CRSP index indicator or (b), following Iliev and Lowry (2015), its fund name contains a word that commonly refers to a stock market index (Russell, S&P, etc.).

The final data set comprises 5,263,676 (resp., 7,020,312) votes cast by 1,217 index funds (resp., 5,106 non-index mutual funds)—from 102 (resp., 351) families—on management and

shareholder-sponsored proposals at all Russell 3000 firms. Table I classifies the votes for index funds (Panel A) and non-index mutual funds (Panel B). For close-call votes, there are fewer funds (both index and non-index) voting with management or with ISS. The implication is that funds make their own decisions (thus straying from recommendations) when their vote is pivotal for the outcome: i.e. when the outcome is closer to the passing requirement. This holds in particular for proposals concerning compensation. Interestingly, non-index mutual funds are more likely (than index funds) to follow ISS recommendations on close-call votes.

[[INSERT **Table I** about Here]]

In the regressions, I restrict the sample to votes for which the passing requirement exceeds 50%. Votes below this threshold are all related to plurality-based elections about directors for which all is needed is one investor to vote in favor and the passage (or failure) is seldom by a close margin. I identify "classes" of votes using the item descriptions employed by ISS, which categorizes management proposals into the six classes. Most votes are associated with directors' elections, followed by routine votes (e.g., ratifying auditors), and then employee compensation (e.g., approving retirement or stock option plans); see Table II. Next come anti-takeover votes, organization proposals (including decisions on mergers, spin-offs, and liquidation, and equity votes (predominantly about issuing more shares, stock splits, or buyouts). I find that anti-takeover votes are, on average, least likely to pass (90% passage rate) and that compensation proposals feature most close votes (defined as votes within 10% or 20% of the vote requirement threshold). Shareholder-sponsored proposals are strikingly different management proposals: most of them are subject to close-call votes; that is, they tend to pass or fail by only a small margin.

[[INSERT **Table II** about Here]]

I obtain funds' characteristics and holdings from CRSP Mutual Funds quarterly updates. Table III summarizes the characteristics for the sample of index funds and comparisons with the mean values for non-index funds (Panel A) and firms' characteristics (Panel B). The sample retains only funds whose total net assets (TNA) amount to no less than $1 million (US). The average size of index (resp., non-index) funds in the data set is $3.2 billion (resp., $1.4 billion). Index funds tend to be younger than non-index mutual funds (10 vs. 14 years). Index funds also are more diversified, are more concentrated in the hands of the largest fund families, have more of their TNA invested in common stocks (95%), exhibit much less turnover (33%), and charge significantly lower fees (0.37%) as compared with non-index funds (for which the respective percentages are 86%, 82%, and 1.04%).

[[INSERT **Table III** about Here]]

Finally, I compute firms' financial ratios and market value using the Compustat Fundamentals Quarterly updated database. I calculate firms' CAPM-adjusted abnormal returns for the year prior to the meeting day, thereby controlling for any vote outcome that could be associated with management's past performance (Morgan, Poulsen, Wolf and Yang, 2011). I compute the total shares held by index and non-index mutual funds as reported in the CRSP mutual fund database. I also report summary statistics for the lending fee obtained from Markit Securities Finance (the required data are available only for the first half of my sample, up until 2010). The annualized lending fee in my sample is 67 basis points, which is of the same order of magnitude as the fee documented in Aggarwal, Saffi, and Sturgess (2015).

3.2. Identification Strategy

3.2.1. Regression Discontinuity Design (RDD)

Several studies on shareholder-sponsored proposals have used a regression discontinuity design near the passing requirement threshold (as in Cuñat, Giné and Guadalupe, 2012). I follow the same setup to test for whether management-sponsored proposals also witness a discrete jump in the firm's abnormal returns after votes v_{st}, by firm s at time t, passing or failing by a small margin. The treatment group consists of votes that narrowly pass ($\text{Pass}_{st} = 1$) while the control group includes all votes that narrowly fail ($\text{Pass}_{st} = 0$).

[[INSERT **Figure 1** about Here]]

The graphs in Figure 1 show that, for all management-sponsored proposals, near-threshold votes that pass are accompanied by a lower one-day abnormal return than those failing around the threshold. Splitting the sample by class of proposal reveals that this discrete jump is evident in each group. On the other hand, shareholder-sponsored proposals are followed by a positive jump in abnormal returns. I employ a local polynomial model so that the left (P_l) and right (P_r) cutoff functions can be nonlinear (Lee and Lemieux, 2010) on the CAPM-adjusted abnormal return (Ret_{st}) for the one- and seven-days window after the proxy meeting:

$$\text{Ret}_{st} = \alpha + \tau \text{Pass}_{st} + P_r(v_{st})\mathbf{1}(v_{st} \geq 0) + P_l(v_{st})\mathbf{1}(v_{st} < 0) + \alpha_y + X_{st} + \varepsilon_{st},$$

where α_y captures year and month fixed effects and X_{st} represents firms' financials (market value and liabilities). Because passed and failed proposals are each close to the passing requirement, they are ex ante indistinguishable from the market's perspective. Around the

threshold is precisely where the uncertainty about the vote is largest. So the difference in returns following passed versus failed votes confirms that we can rule out any expectation of the market anticipating a proposal's passage or rejection. In that way, this setup enables one to quantify the market-implied gain or loss experienced by a firm following its vote on a proposal.

3.2.2. Around the Index Cutoff

There are two main determinants of firms' fraction of index fund ownership levels: the specific index fund flows from investors and the firm's inclusion in one (several) index(es). The first factor is endogenous to funds' investors and can be attributed to, inter alia, firm characteristics (as when investors expect a particular index to outperform because of its composition), fund fees, and/or alternative investment channels. The second factor is exogenous to both funds and investors; for Russell 1000/2000 inclusions for instance, it depends on the firm's performance, or (more precisely) its market value. I use index cutoffs as an exogenous separation between two groups of similar firms that are owned by different index funds. This is a more robust identification strategy than randomly selecting firms on index fund ownership basis, in part because it is independent of investor preferences. Appel, Gormley, and Keim (2016) use the Russell 1000–Russell 2000 cutoff to identify firms that are similar but that exhibit different passive investors' ownership because of their "weight" in the applicable index. These authors report that the smallest Russell 1000 firms are less important in tracking this index and thus have less passive ownership. In contrast, the largest firms in the Russell 2000 index are heavily weighted in the index so they have a larger base of index fund ownership. I find similar results: the 250 largest firms of the Russell 2000 have, on average, 2.5% more index investment than do the smallest 250 smallest firms of the Russell 1000. Importantly, while these firms differ in their index fund ownership, they do not significantly differ in terms of non-index ownership or other characteristics—for example, size, sector, and return on assets (ROA). The index construction is done annually using end of May *float-adjusted* market capitalization and adopted at the end of June. After 2007, Russell has been using a "banding" system to switch firms from one index to another. Not only does the 1001st firm of the Russell 3000 be larger than the 999th firm in May, but the jump in market capitalization should be larger than 2.5% of the total Russell 3000 capitalization. I rank Russell firms using CRSP market capitalization from end of May. As suggested by Appel, Gormley, and Keim (2016) methodology, starting 2007, I control for two indicator variables and their interaction that capture any additional norms Russell has added in its index reconstitution policy. First, I include an indicator of whether the difference between end of May market capitalization and the index cutoff is smaller than 2.5% of total Russell 3000 capitalization (this is a banded dummy for top Russell 2000 firms that did not grow enough to switch index). Second, I include an indicator for whether the firm was in the

Russell 2000 in the previous year. Third, I add the interaction between the two indicators. This way, in the group of "high" index fund ownership firms (top Russell 2000), I control for firms' characteristics that may be responsible for the rise in passive ownership other than index fund inclusion.

I also use another index cutoff: the one around the S&P 500. Much as in the case of the Russell cutoff, the S&P 500 index's smallest 100 firms are quite similar to the largest 100 firms included in the S&P 1500 index. And because S&P 500 firms are present in both the S&P 500 and the S&P 1500 indexes, the shares of those firms are held by more index fund investors than are shares of the next largest100 firms in the S&P 1500. Indeed, the ratio of index fund investment is 10.49% for the smallest S&P 500 firms as compared with 8.1% for the next largest100 firms in the S&P 1500—a difference that is statistically significant. One difference with the Russell 3000 is that the S&P 500 is rebalanced quarterly while the former is rebalanced annually. Moreover, for the S&P 500 rebalancing is more subjective to a set of proprietary rules than simply using float-adjusted market capitalization (as with the Russell). However, this would only be an issue if the other variables used for index inclusion can affect the value of likelihood of the passage of a proposal.

3.2.3. Matching of Firms

When running an RDD within a group of firms, I match the proposals that narrowly pass to those that fail and use the matching weights for the regression. This approach allows me to control for the characteristics of firms and votes, ensuring that they are as similar as possible to each other. For this purpose, I first use propensity score matching. Thus I match firms and votes along different dimensions—market size, liabilities, industry, book/market, class of vote, and year of meeting—but with one proposal passing and the other failing. For robustness, I also use a second matching approach, reported in Section 7, which is based on a coarsened exact matching method. This second matching corrects for imbalances in covariates between passed and failed proposals.

4. Regression Discontinuity Design on Close-Call Management Proposals

Here I review the methodology used to assess the value generation following passage of a proposal. Throughout the paper, I use the stock market responses to a proxy meeting as a means of evaluating the effect of a particular vote outcome. Given the scant prior work on stock market reactions to close-call management proposals, I start by introducing a general framework to explain why stock prices around a vote resolution, when the outcome is close to the passing requirement, can measure

value creation. I am aware of no other published research that uses management—rather than shareholder—proposals for this purpose. Shareholder proposals have been extensively used in a variety of fields; examples include finance (Cuñat, Giné and Guadalupe, 2016) and management (Cao, Liang and Shan, 2019) as a form of shareholders' activism.

My own motivation for studying management-sponsored proposals is threefold. First, they occur more frequently than do shareholder-sponsored proposals. Few shareholder proposals are offered unless there is substantial disagreement between shareholders and managers. The limited attention from which index funds suffer is thus arguably less relevant for shareholder proposals, as they are rare. Second, management proposals involve more *types* of decisions than do those advanced by shareholders. Management can propose equity, organization, anti-takeover, or compensation-related items, to name just a few. Third, management proposals are binding whereas shareholder proposals are not. Although this assumption is not required for the RDD setup, it does render more direct the effect of management-sponsored proposals. That said, I run all of the paper's tests on shareholder proposals as well.

In my RDD analysis, the bandwidth around the passing requirement is based on the use of mean squared errors (MSE). In a robustness test, I use different bandwidth selection techniques (and even randomly fixed bandwidths, provided they do not violate RDD assumptions), which have no effect on the results. I use a uniform kernel throughout. A meaningful analysis of RDD valuations requires that all considered proposals carry the same implications for the firm. For instance, the class of anti-takeover initiatives, 82% of proposals imply changes to extend anti-takeover policies such as poison pills, "golden parachutes", and so forth. The remaining 18% of proposals aim at removing existing policies. Combining all such votes does not, in itself, allow one to draw conclusions about how a firm's value is affected by the passage of a new anti-takeover measure. Therefore, to enable using all proposals from this category in the same analysis, I reverse the sign of the vote outcome for the 18% of votes in favor of *removing* an anti-takeover measure.

In this analysis, passing an anti-takeover proposal is equivalent to adding an anti-takeover provision. However, neither the RDD assumptions nor the results change if I restrict my analysis on the 82% of votes aiming at increasing anti-takeover measures. In robustness tests, I shall separate votes into subclasses whereby aggregation does not require flipping any signs; the results remain valid. In unreported analysis, the regressions are restricted to proposals aimed at adding a new anti-takeover measure; again, my findings continue to hold.

I follow the same procedure for the two other classes of proposals. Compensation votes entail an increase in compensation for the firm's executives and/or regular employees (e.g., via 401(k) plans, employee share ownership trusts, omnibus stock plans). Most proposals (78%) are associated with an increase in compensation and so, as before, I change the sign of the remaining votes for a decrease. Passage of an equity vote amounts either to issuing additional equity (through more stocks and perhaps new classes or, in effect, by discontinuing a share repurchase program) or to increasing current stock liquidity (e.g., authorizing stock splits). Few proposals (10%) are of the opposite intention (e.g., reversing a previous stock split). I use the same technique—namely, flipping the voting outcome for proposals that would *reduce* stock liquidity—in order to ensure similar effects on firms' corporate governance. In short: my experimental procedure yields classes of proposals with coherent outcomes for firms' strategies.

[[INSERT **Figure 2** about Here]]

Next, I validate the main assumptions of an RDD: the randomness of votes passing. I report results only for management proposals—although I check, in unreported analysis, that the assumption holds also for my sample's shareholder proposals (cf. Cuñat, Giné and Guadalupe, 2012). I start with the randomness in the passing of proposals. Histograms (Figure 2) show no signs of manipulation around the passing requirement as the number of votes that narrowly pass is not statistically different from the number of votes that narrowly fail. I thus reject the possibility of manipulation being employed to pass anti-takeover provisions, increase compensation, or make the firm's equity more liquid. Hence the RDD assumptions for this set of altered votes' outcomes are validated given that histograms of votes around the passing requirement do not reflect any manipulation at the threshold. This is different from Listokin (2008) for several potential reasons. First, the data Listokin uses stops in 2004 (prior to the SEC implementation of publicly recording mutual funds' votes) and management-sponsored proposals have increased in frequency since then. Second, as discussed in Bach and Metzger (2019), using the wrong voting metric could change the results. I used the voting rule provided by ISS that is public *prior* to the vote. Third, I do not use all management-sponsored proposals. I remove organization and routine where almost no vote fails by a small margin. I also either only consider proposals aiming at increasing compensation, anti-takeover provisions or liquidity or reverse the sign for the remaining proposals. Restricting my sample to these specific votes can also explain the difference in results. Therefore, regardless of whether I aggregate or treat separately the different classes of votes when analyzing compensation, anti-takeover, and equity proposals, the histograms are decidedly uniform around the passing requirement. More discussion on RDD assumptions is provided in Appendix I.

[[INSERT **Table IV** about Here]]

Before discussing the RDD results, it is worth examining what this framework quantifies. Because management-sponsored proposals are binding, the value of the passage of a proposal (Intent To Treat; ITT) is equivalent to the adoption of said-proposal (Treatment on the Treated). However, shareholders-sponsored proposals are not binding. The RDD effects these proposals therefore quantify the ITT. The ITT would need to be rescaled by the change in the probability of implementation to obtain the treatment on the treated effect for shareholders proposals. In this paper I only provide the ITT for shareholders proposals.

Finally, I run an RDD on management proposals between 2005 and 2016 for all votes—except for directors' votes—and then separate regressions for each class of proposal (see Panel B of Table IV). Votes on directors are excluded because many of them require only a plurality of votes to pass and because this class of proposals does not satisfy the density distribution condition (i.e., few such votes fail). Also excluded from the analysis are "organization" and "routine" proposals. Hardly any of them qualify as close-call votes and, when they do, they almost always pass.

The conclusion is the same whether all proposals are combined or separated by category: the passage of a close-call proposal is always value destroying for the firm. Across all votes, the passage of a close-call proposal reduces one-day (resp. seven-day) abnormal returns by 1.98% (resp. 2.69%) as compared with the failure of an otherwise similar proposal. With respect to proposals about increasing employee compensation, adding anti-takeover measures, and increasing stock liquidity, their rejection leads to a decline in one-day abnormal returns by (respectively) 1.05%, 1.16%, and 3.77% and in their seven-day return by 4.12%, 1.76%, and 5.02%. One can only conclude that—among the universe of these sample firms—the narrow passage of any management-sponsored proposal will leave the firm worse-off than if that proposal had failed. This result runs counter to the outcomes of shareholder-sponsored proposals (see Cuñat, Gine and Guadalupe, 2012): narrowly passed shareholder proposals are associated with generating value for the firm.

5. Index Fund Votes and Attention

This section assesses the value of proposals for which the outcome is supported by index funds. I evaluate the subsequent excess returns to the passage (failure) of a narrow proposal over different horizons on the support (opposition) of index funds. Then I compare the effect of index and non-index funds' votes on returns. I also analyze the channels through which index funds decide on

their votes by examining potential evidence of delegating to a third party (ISS or borrowers) or index funds redirecting more of their attention to close-call proposals.

5.1. Index Fund Votes and Value Generation

For each fund f investing in a firm s at the time of the vote v, I define a variable (*Weighted For*) as the product of the percentage of the firm held by the fund and an indicator for whether the fund voted in favor of the proposal. The reason for weighting *For* is that, the higher the stake, the more significant the vote would be for the firm. In the first place, larger investors are better able to sway a vote's outcome; second, they are more likely to spend on monitoring because their size allows them to internalize the benefits from the resulting votes. I then aggregate all these variables at the firm level into one: IF^{For}, or the fraction of the firm's equity held by index funds (IF) that voted in favor of (*For*) the proposal:

$$\text{IF}_{sv}^{For} = \left(\frac{\#\ Shares\ of\ s\ held\ by\ \text{IF}}{Total\ \#\ shares\ of\ s}\right)\left(\frac{\#\ Shares\ of\ s\ \text{IF}\ voted\ For}{\#\ Shares\ of\ s\ held\ by\ \text{IF}}\right) = \frac{\#\ Shares\ of\ s\ \text{IF}\ voted\ For}{Total\ \#\ shares\ of\ s}$$

[[INSERT **Table V** about Here]]

For the most part, index fund votes are fairly uniform: on average, across all proposals, 70% of all of the index fund votes cast are the same. The main specification I run is at the vote level (see Table V). I use all votes that are within 10% of the passing requirement. The dependent variable is the CAPM-adjusted abnormal return after the proxy meeting date:

$$\text{Ret}_{sv} = \alpha_{sv} + \alpha_1 \text{Pass}_{sv} + \alpha_2 \text{IF}_{sv}^{For} + \alpha_3 \text{Pass}_{sv}\ \text{IF}_{sv}^{For} + X_{sv} + \alpha_t + \varepsilon_{sv}\,;$$

here X_{sv} represents firms' characteristics at the time of the vote (viz., past performance, size, book/market, industry, liabilities, ROA) and α_t captures year and month fixed effects, polynomials on each side of the passing requirements are included; errors are clustered at the company level. Suppose, for simplicity, that the firm experiences zero abnormal returns after a failed vote in which index funds voted against the proposal. The following matrix summarizes how the regression identifies voting-induced abnormal returns:

	Vote result	
Index fund vote	**Pass**	**Fail**
For	$\alpha_1 + (\alpha_2 + \alpha_3)\ \text{IF}_{sv}^{For}$	$\alpha_2 \text{IF}_{sv}^{For}$
Against	α_1	0

Over all classes of votes, the passage of a close-call vote (α_1) is associated with 0.82% (resp. 2.14%) lower one-day (resp. seven-day) abnormal returns than is the failure of a similar vote. The effects of voting with management on passed proposal is quantified by $(\alpha_2 + \alpha_3)$. Voting with management (α_2) is associated with a negative yet not always significant decrease in abnormal returns. However, voting for a proposal that passes (α_3) is associated with higher abnormal returns. For each additional percentage of the firm that is owned by index funds and for which all the votes support a passed proposal, the one-day (resp. seven-day) abnormal returns are 12.66 (resp. 25.71) basis points higher. If all index funds of an average Russell 3000 firm—at which index investment is about 17%—vote in favor of a proposal that ultimately passes, then the one-day (resp. seven-day) abnormal returns associated with that proposal would be 2.15% (resp. 4.37%) higher than if the proposal had passed with no index fund support. Furthermore, I find that failed proposals opposed by all index funds are associated with 3.35% higher abnormal seven-day returns than are failed proposals with no such opposition. It follows that abnormal returns are higher whenever the vote outcome is aligned with index fund votes.

I then run the same analysis on each class of proposals separately. The results remain unchanged across all subsets. For compensation (resp., anti-takeover, equity) proposals, the average increase in one-day abnormal returns following a passed proposal supported by all index funds is 2.82% (resp., 4.29%, 3.22%) higher than the corresponding returns after a proposal is passed with no index fund support.

One concern shared by lawmakers and academics is whether index funds are too prone to follow the recommendations of proxy advisors (e.g. ISS).[14] If so, then the results presented here might just as well reflect the ability of ISS to recommend more value-enhancing proposals. Hence I modify the regression just described in order to control for ISS supporting a proposal and also for that support interacted with proposal passage:

$$\mathrm{Ret}_{sv} = \alpha_{sv} + \alpha_1 \,\mathrm{Pass}_{sv} + \alpha_2 \,\mathrm{IF}_{sv}^{For} + \alpha_3 \,\mathrm{Pass}_{sv}\,\mathrm{IF}_{sv}^{For}$$

$$+ \alpha_4 \,\mathrm{ISS}_{sv}^{For} + \alpha_5 \,\mathrm{Pass}_{sv}\,\mathrm{ISS}_{sv}^{For} + X_{sv} + \alpha_t + \varepsilon_{sv}.$$

[14] See Malenko and Shen (2016) on how ISS recommendations affect vote outcomes, and see Lund (forthcoming) on how the votes of index funds are influenced by proxy advisors.

When all votes are considered, I find that—after the meeting date—abnormal returns are affected neither by an ISS recommendation nor by its interaction with the passage of a proposal. For anti-takeover proposals, the passage of a proposal recommended by ISS is associated with a 0.58% decrease in abnormal returns. In sum: the more index funds that supported a passed proposal, the higher are abnormal returns after the proxy meeting date. This outcome does not result from index funds blindly following ISS recommendations.

5.2. Votes of Index versus Non-Index Funds

The next analysis compares the effect of index and non-index funds' votes on abnormal returns after the vote's resolution. For each firm s and at the time of a vote v, I aggregate votes by non-index funds (non-IF) at the vote level:

$$\text{non-IF}_{sv}^{For} = \frac{\#\ Shares\ of\ \text{non-IF}\ voted\ For}{Total\ \#\ shares\ of\ s}.$$

Non-index fund votes are less uniform than those cast by index funds. On average across all proposals, only about half of non-index funds vote in the same direction. This means that non-index funds are typically in strong disagreement on close-call votes. I then run the same analysis as in the previous section, but now I control for ISS recommendation and for the support of non-index funds:

$$\text{Ret}_{sv} = \alpha_{sv} + \alpha_1\ \text{Pass}_{sv} + \cdots + \alpha_5\ \text{Pass}_{\text{sv}}\ \text{ISS}_{\text{sv}}^{\text{For}}$$

$$+ \alpha_6\ \text{non-IF}_{sv}^{For} + \alpha_7\ \text{Pass}_{sv}\ \text{non-IF}_{sv}^{For} + X_{sv} + \alpha_t + \varepsilon_{sv}.$$

The results of this specification are reported in Table VI. First, including the votes of non-index funds alters neither the significance nor the magnitude of index fund votes on abnormal returns after the meeting's date. Second, the effect of non-index funds is either statistically insignificant or economically modest. On all close-call issues, for instance, seven-day abnormal returns would increase by 0.53% (on average) if all non-index funds supported a proposal and it passed—that is, rather than passing with no such support. However, an increase in active mutual funds' voting in favor of a proposal's passage in all other setups is *not* associated with significantly higher abnormal returns.

[[INSERT **Table VI** about Here]]

5.3. Index Fund Votes and Lending

Index fund managers generate some portion of their revenue through lending. Ringe (2013) argues that index funds could additionally benefit from lending their shares to delegate their voting. In that case, funds would collect lending fees but would not be required to cast votes; hence the borrowers would be responsible for voting. My previous set of regressions presupposed that the number of votes cast is equivalent to the number of shares held by index funds (i.e., since I cannot observe the exact number of shares on which funds voted). Yet it could be that index funds vote on a smaller number of shares in cases of proposals regarding more "important" topics. I use lending fees to control for this effect. Aggarwal, Saffi, and Sturgess (2015) report that, prior to proxy meetings, the demand for borrowing stocks rises—while the supply from institutional investors falls as they recall their shares. This effect is stronger for proposals that are more crucial to corporate control, are associated with more disagreement, or are initiated by poorly managed firms; hence lending fees are higher before proxy meetings under these circumstances. I control for lending fees in the original regression as follows:

$$\begin{aligned}\text{Ret}_{sv} = {} & \alpha_{sv} + \alpha_1 \,\text{Pass}_{sv} + \alpha_2 \,\text{IF}_{sv}^{For} + \alpha_3 \,\text{Pass}_{sv}\,\text{IF}_{sv}^{For} + \alpha_4 \,\text{ISS}_{sv}^{For} \\ & + \alpha_5 \,\text{Pass}_{sv}\,\text{ISS}_{sv}^{For} + \alpha_6 \,\text{Lending\_fee}_{sv} + \alpha_7 \,\text{Lending\_fee}_{sv}\,\text{Pass}_{sv} \\ & + \alpha_8 \,\text{Lending\_fee}_{sv}\,\text{Pass}_{sv}\,\text{IF}_{sv}^{For} + X_{sv} + \alpha_t + \varepsilon_{sv}\,.\end{aligned}$$

The main coefficient of interest here is α_8. If this term is negative then the implication would be that, when lending fees are higher (i.e., when the proposal is more important to the firm governance), index funds support proposals that are *less* value creating. Yet as described previously, there is actually a positive correlation between monitoring and the number of voted shares. Hence a negative coefficient would entail that index funds would rather lend their shares (to benefit from the fees) than expend their resources on due diligence. However, a positive α_8 amounts to evidence that, when a proposal will figure more prominently in the firm's corporate decisions, index funds would rather keep (or recall) their shares so as to exercise their due diligence before voting.

[[INSERT **Table VII** about Here]]

I report the regression results in Table VII. Because I have data on lending fees only through 2010, I start by re-running the baseline regression on that sample period. The results presented previously still hold. The more index funds vote in favor of a passed proposal, the higher is the

abnormal return associated with it. Next, I run the setup with the lending fee and its interactions. First, the effect of index funds' vote (α_3) on proposal passage remains positive and significant. Second, I find that α_8 is significantly positive. On average, if all index funds of a Russell 3000 firm vote in favor of a proposal that passes, then a 1% increase in lending fees would increase the effect of index fund support by 2% (resp. 3.69%) on the one-day (resp. seven-day) abnormal returns after the meeting. Adding non-index funds' votes to the regression do not change this effect. So the more paramount that proposals are to the company, the more value-enhancing are index fund votes to the company. Given that most index funds would re-allocate their resources when holding a larger stake in a firm, this result suggests that index funds prefer to vote on more sensitive proposals than to lend their shares.

5.4. Index Funds Attention to Votes

The evidence presented so far is indicative of how index funds cast value-enhancing votes on close-call proposals. Because only limited resources are allocated to firms' monitoring activities, I surmise that close-call votes are treated differently—by the fund—from other proposals. Because vote outcomes are observable only after the proxy meeting date, I begin by analyzing whether index funds can identify close-call votes ex ante. I use a probit regression to determine whether the vote's likely outcome will be within 20% of the passing requirement. In this, I rely only on public information available prior to the meeting: ISS recommendation against a management proposal, company, year, month, "vote standard description" (e.g.: adding poison pill or removing golden parachute), fixed effect, past performance, and if there was a close-call vote in the preceding year. Even without controlling for more disagreement proxies, the predictive power of this regression exceeds 72%. Hence index fund managers' predictions for close-call votes must be even more accurate. In fact, 88% of all management-sponsored proposals pass with more than four fifths of all votes in favor. These proposals are not contested either because they are of clearly observable positive value or because they are of no great concern to shareholders. Therefore, identifying close-call votes should not be problematic for fund managers.

Next, I use voting against management as a proxy for funds' attention. The literature on shareholder votes has relied on this variable as evidence of active voting (Davis and Kim, 2007; Iliev and Lowry, 2015). Voting against management is costly for mutual funds in that they may, for instance, be losing on pension investments; therefore, funds would disagree with management only if they saw some benefit in doing so. However, anti-management voting does not capture all aspects of funds' attention because a pro-management vote need not be passive. The results reported here are downward biased because I do not account for all instances where index fund

managers display attention and vote in favor of a proposal. I first run a regression on the likelihood of voting with management as a function of fund, firm, and vote characteristics. As before, I use all management-sponsored vote classes except for directors' appointments. Table VIII presents the results of a probit regression on the probability that a fund's (f) vote will follow the recommendation of a firm's (s) management on a specific vote (v):

$$Probability\ of\ voting\ with\ management_{fsv} = \alpha + X_{st} + X_{ft} + X_{vt} + \alpha_t + \varepsilon_{fsv}\ .$$

[[INSERT **Table VIII** about Here]]

I use all of Iliev and Lowry's (2015) explanatory variables along with some proxies I construct for "attention limitation" variables. In particular, X_{st} are firm characteristics (i.e., market value, leverage, ROA, book/market, and past 12 months' performance) and X_{ft} are fund characteristics: total net assets, firm shares as a percentage of the fund's TNA, percentage of the firm held by the fund, a dummy for being in a top five fund family, a Metropolitan Statistical Area indicator set equal to 1 only if the fund is located in area with a high concentration of such funds (e.g. Chicago or New York City),turnover ratio, an indicator for exchange-traded fund, *"number of meetings attended by the fund during the same month"*, and *"number of close-call proposals on which the fund must vote in the same month*". Finally, X_{vt} are vote characteristics: an indicator for ISS recommendation to favor management's proposal, an *"indicator for whether the meeting is annual or special, fixed effects for the class of vote"*, and *"the number of other proposals presented at that meeting"*. The term α_t is used to denote year fixed effects. These attention proxies (in italic) capture the high cost of fund managers attending to specific proposals.

I run the regressions for all votes as well as separately for votes within 20% or 10% of the passing requirement. The first noteworthy value is that associated with the size of a company's stake held by index funds. Across the three regressions, the larger a fund's stake, the less likely it is to agree with management. As funds become more pivotal in a decision or as their returns from a successful vote increase, they pay closer attention. The second set of attention costs are all significant when one considers the full sample of votes. The likelihood of disagreeing with management is 3.22% lower when the proxy meeting is annual, 1.79% lower for every 100 more meetings the fund must attend, 0.52% higher for every 10 *other* proposals presented at the meeting, and 1.55% lower for every 10 more close-call votes in which the fund participate in in the same month.

However, examination of the regressions on close-call votes only (i.e., those within 10% or 20% of the passing requirement) reveals that attention limitations do not determine the probability of voting against management. Fund managers pay attention to close votes regardless of the number of meetings they must attend, whether the meeting is annual or special, or the number of proposals presented at such meetings. The only attention constraint that plays a role in this specification is the number of close-call proposals on which to vote in a particular month. At some point, when index fund managers simply have too many close votes to consider, they run out of the resources needed to give all proposals their due diligence. The reason behind this shift in attention allocation from all votes to close-call ones is that, as votes outcomes approach the required threshold for passage, it becomes more likely that index fund votes will be pivotal. Thus an index fund pays more attention to votes as they become more pivotal.

I further illustrate the strong effect of a fund's stake size on its attention by exploiting an exogenous increase of Blackrock's ownership in a certain subset of stocks following its acquisition of Barclay's Global Investment in December 2009. As Blackrock's position increased in certain firms after the acquisition, there was a concomitant rise in its likelihood of being a pivotal voter. I run a DiD analysis in which the treated (resp., control) group of firms were those that were held by both Blackrock and BGI (resp., not held by BGI) prior to the acquisition. Table IX reports the results derived from the following specification:

$$\text{Prob}(Voting\ with\ Mgmt)_{fsv} = \alpha + \alpha_1\, Post_{fst} + \alpha_2\, Post_{fst}\ \ Treated_{st} + \alpha_3\, Treated_{st} + X_{st} + X_{ft} + X_{vt} + \alpha_t + \varepsilon_{fsv}\,.$$

[[INSERT **Table IX** about Here]]

Here *Post* is an indicator variable set equal to 0 if the vote happened between end of November 2008 and the end of November 2009 (or set to 1 if the vote occurred in the subsequent 12 months); *Treated* is a dummy set equal to 1 if the firm is held by both BGI and Blackrock prior to the merger or to 0 if it is included only in Blackrock's portfolios. The rest of the explanatory variables include the respective characteristics of firms, funds, and votes. The main variable of interest is α_2 , which captures the change in attention paid to the treated group of firms after the acquisition. In accord with results from the previous analysis, this coefficient is negative. I find that Blackrock's propensity to oppose management increases by 8.61% for the treated firms. Thus firms for which the fund's post-acquisition stake increases receive more attention.

Finally, I examine the persistence of index funds' attention. Once a large share of index funds identifies a firm's management with which they disagree, does that company remain on their radar in future years? I define a *highly disagreed upon* proposal as one for which management's view is opposed by more than 80% of all index fund votes (the results do not change materially if I instead use a ratio of 85% or 90%). I first include an indicator variable for whether the firm had a highly disagreed upon proposal in the previous year. I find that, for these firms, an index fund is 3.1% more likely to vote against a management-sponsored proposal in the following year.

[[INSERT **Table X** about Here]]

I also assess the probability that the firm's management is strongly opposed to on proposals presented in the next year as well as in the subsequent five years. Table X gives the results of this specification:

$$\text{Prob}(Large\ Disagreement\ with\ Mgmt\ )_{sv} = \alpha + \alpha_1\ Disagree_{s,t-1} + X_{st} + X_{vt} + \alpha_t + \varepsilon_{fsv}\ .$$

In this expression, $Disagree_{s,t-1}$ is a dummy set to 1 if the vote happens after the sample's *first highly disagreed upon* proposal between index funds and firm management (and is otherwise set to 0); see columns [1]–[3] of the table; thereafter (i.e., in the rest of Table X), $Disagree_{s,t-1} = 1$ if the vote occurs in a year subsequent to a *highly disagreed upon* proposal. For both definitions of previous disagreement, the probability that over 80% of index funds disagree with a firm's management is higher during the year after a disagreement than in other years. This effect is evident not only for close-call votes but also for non–close-call votes. Thus the evidence suggests that index funds maintain a watch list of firms with which they previously disagreed and to which they subsequently pay more attention when it comes to proxy votes.

This section's results support the view that the limited resources of index fund managers prevent them from performing due diligence with regard to *every* proposal on which they must vote. However, their attention increases with the likelihood of their vote being pivotal to the final outcome. Moreover, an index fund will continue to monitor firm managers with whom it has previously had any substantial disagreement.

6. Value Creation Via Index Fund Ownership

Observing stock price reactions to index fund votes reveals an increase in returns whenever the latter vote in the same direction as the outcome. Index funds direct most of their attention to close-call votes and support proposals associated with higher abnormal returns. However, these findings

do not provide evidence of causality. Suppose that index funds have a good record of voting for proposals generating higher firm value but that they do not necessarily affect the vote's outcome. Do index fund votes lead to the passage of more value-enhancing proposals? I develop tests that establish a causal relationship in this direction. More specifically, I compare the value generation of firms characterized by high versus low levels of index fund ownership. If index funds do *not* affect the passage or failure of proposals, then firms with different levels of index ownership that are otherwise similar should observe similar returns around the time when proposals are passed. I confirm that my findings can be attributed to the presence of index funds and not to any differences among the companies or proposals across the two groups.

6.1. Russell 1000-Russell 2000 Cutoff

In order to single out the effect of index fund ownership from confounding firm attributes that could explain potential results, I exploit an exogenous increase to passive ownership previously used in the literature: the inclusion to the Russell 2000 from the Russell 1000 described in Section 1 (Appel, Gormley, and Keim (2016), Boone and White (2015), and Chang, Hong, and Liskovich (2015)). After running an RDD within each group of companies to quantify the effects of narrowly passing a new measure, I compare the effects across the two groups in terms of their RDD coefficients while controlling for observable characteristics. If the relationship between index fund votes and value creation is not causal, then there should be no appreciable difference between the two coefficients; and if index funds are simply more adept at supporting votes that enhance firm value but do not actually cause them to pass, then higher or lower index ownership should not affect the value of passed proposals.

[[INSERT **Table XI** about Here]]

The results (Table XI) confirm that the passage of close-call votes in firms with higher index fund ownership (top 250 firms of the Russell 2000) generates more value than such votes in firms with lower index fund ownership (bottom 250 firms of the Russell 1000). After any management-sponsored (resp., compensation, anti-takeover) proposal that passes, the one-day abnormal returns are 4.28% (resp, 4.97%, 3.26%) higher for those top 250 Russell 2000 firms than the bottom 250 Russell 1000 firms. And after shareholders-sponsored passed proposals, one-day abnormal returns are 7.82% higher for the top 250 Russell 2000 firms than for the bottom Russell 1000 firms. Overall, these results for firms near the Russell 1000–Russell 2000 cutoff confirm that more index fund ownership is associated with the passage of proposals that are more value-enhancing. These results confirm that index funds are not simply good at selecting proposals with higher return that

could have passed with or without their presence. Rather, they establish a relationship beyond observable variables: the presence of more index funds improves the firm's corporate governance by increasing the value of proposals passed during proxy meetings.

The findings from this section add to Appel, Gormley, and Keim's (2016) evidence that firms with more passive ownership have better governance structure. While they look at established measures, my results target changes in governance structure brought in by new proposals. I use stock price reactions to the adoption of a proposal to quantify its value while they look at independent directors or amount of cash (amongst others) to determine the soundness of companies' governance structure.

6.2. High Versus Low Levels of Index Fund Ownership

In this section, I test if the results from the cutoff are local to the subsample of firms or if they can be extended to the rest of the Russell 3000 firms. Here, I determine high- and low-index ownership groups by comparing index funds' investment ratio to the median of index fund investment across all the firms in my sample for a given year. This identification allows for the use of all firms in the data set. Despite this separation being rudimentary, the two sets of firms' characteristics are similar. In Table XII, Panel A reports the main firms' variables for the two groups. The equity market value of firms whose equity include a high ownership of index funds is $7.7 billion, whereas the value of low-ownership firms is $7.3 billion—a difference that is not statistically significant. Differences across the two groups vis-à-vis the ratios of passed votes, ROA, book/market, and firm leverage are likewise not significant. Firms with low (resp. high) levels of index fund ownership are held by an average of 4.06% (resp. 10.57%) of index funds. It is however not proof to the concern of omitted variables driving the results.

[[INSERT **Table XII** about Here]]
[[INSERT **Figure 3** about Here]]

I then compare the value generation of passed proposals across the two groups of firms; see Figure 3. Panel B of Table XII reports that, for firms with a high ownership of index funds and on the overall sample of votes, the one-day (resp. seven-day) abnormal returns after the meeting day on which a new governance proposal narrowly passes is 0.5% (resp. 3.4%) lower than their counterparts after a narrow rejection of a similar proposal. For firms featuring less index concentration, returns are significantly lower: 1.3% (resp. 5.4%) around the same time windows. Thus, the value of passing a close proposal is 1.74% (resp. 2%) higher for firms with higher index

concentration than for a comparable group of firms characterized by a lower concentration of index funds.

. These results are stronger for compensation and anti-takeover proposals, for which having more index fund investment in the firm is associated with the passage of value-enhancing proposal. In the case of firms with higher index ownership, if a proposal aimed at increasing employee compensation passes then the one-day (resp. seven-day) abnormal returns are 1.3% (resp. 4.3%) higher than if it would have failed. So unlike the results based on my overall sample, the passage of measures that increase employee compensation is value creating for those firms with a relatively large base of index fund investors.

In comparison, the passage of such proposals by firms with less index investment is associated with a *decline* in one- and seven-day abnormal returns of (respectively) 1.7% and 3.6%. A greater extent of index fund ownership is associated to the passage of compensation proposals that are associated with 3% more value creation. Passing a proposal to adopt an additional anti-takeover measure similarly leads to higher one-day (resp. seven-day) abnormal returns of 3.7% (resp. 7.5%) among firms in which more index funds invest. Finally, the passage of proposals that increase liquidity results in 1.2% (resp. 2.3%) higher one-day (resp. seven-day) abnormal returns for firms with higher—than for those with lower—levels of index fund ownership.

Panel C of Table XII presents the results of an RDD comparison involving shareholder-sponsored proposals; results are reported for several bandwidth values. Except for the first setup, passed proposals create value in the high- and low-index fund ownership groups both. However, firms with more index funds still observe a significantly greater increase in abnormal returns than do firms with fewer index funds. On close-vote passed proposals that are within 3% of the passing requirement, the one- and seven-day abnormal returns increase by (respectively) 1.19% and 1.60% more for firms with high versus low levels of index fund ownership. All in all, running an RDD on the two groups of firms establishes that firms with more index fund ownership pass more value-generating decisions than do firms with less index fund ownership.

These results document the relation link between index fund ownership and the passage of more value-enhancing proposals on a larger sample further from the Russell 1000-2000 cutoff presented earlier. They are of the same order of magnitude as the previous results and provide evidence that the causality established at the cutoff is not local to the subsample of firms used.

6.3. Comparison of Proposal Types

I now explore an alternative explanation for the preceding results—namely, that the proposals presented to firms with high versus low index ownership are themselves different in nature. There is a vast literature on management catering to their shareholders' short- versus long-term investment horizons. Thus firm managers are likely to offer dividends (Baker and Wurgler, 2004), investor-favored corporate policies (Derrien, Kerckés and Thesmar, 2014), and/or share repurchases (Jiang, Kim, Lie and Yang, 2013). It follows that firm managers may offer different types of proposals when more index funds, in the role of longer-term shareholders, invest in their companies. One way to investigate the presence of such management catering is by testing for whether a specific subclass of proposals is presented more often in one group of firms than in another.

[[INSERT **Table XIII** about Here]]

As can be seen in Table XIII, there is indeed a prevalence (or scarceness) of certain proposals in the group of firms characterized by high levels of index fund ownership. On the one hand, managers of such firms are more likely to offer proposals that would reduce supermajority voting, ratify executive officer compensation, or set up a golden parachute. The passage of a close vote related to any of these proposal types is typically followed by *positive* abnormal returns (see column [3] in Table XIII). On the other hand, managers of firms with relatively less index fund ownership are more likely to offer proposals that would eliminate the right to act by written consent, approve an omnibus stock plan, increase the supply of authorized common stock, approve a reverse stock split, approve issuance of equity without pre-emptive rights, approve merger agreements, or change the state in which the firm is incorporated. Passage of a close-vote concerning any of these types of proposals tends to be followed by *negative* abnormal returns.

Overall, then, firm managers are more likely to present proposals that are more value generating if the firm has more index fund ownership. However, this result fails to account for all the observed variation in the value created by passing different types of management-sponsored proposals. Yet a robustness test shows that, even within subclasses of proposals via which firm managers are evidently not "catering" to investors, passed proposals for firms with higher index fund ownership are more value enhancing. That said, data limitations make it challenging to discern whether such management catering extends beyond certain subclasses of proposals.

7. Robustness Tests

This section addresses some concerns raised by the previous tests and extends some of my findings. I report results from: separating index funds into those within the top three passive families and the rest; re-running the RDD analyses with different bandwidths; using an alternative matching method to correct for differences in characteristics among grouped firms; restricting regressions to various subclasses of proposals; and using a different index cutoff.

7.1. Separating the Top Three Passive Families

Most index fund investment is concentrated in the hands of the three largest passive fund families: Blackrock, Vanguard, and State Street. For each family, Panel A of Table XIV reports the ratio of passive investments to all assets under management. The three families are heavily invested in index funds: in their respective portfolios, index funds account for 89.9% of the shares held by Blackrock, 87.3% by Vanguard, and 97.5% by State Street. As for investment in Russell 3000 firms, Blackrock owns 4.55% of the entire Russell 3000 market capitalization—followed by Vanguard (4.33%) and State Street (1.88%).

[[INSERT **Table XIV** about Here]]

Panel B of Table XIV presents results from the following specification:

$$\text{Ret}_{sv} = \alpha_{sv} + \alpha_1 \text{ Pass}_{sv} + \alpha_2 \text{ IF3}_{sv}^{For} + \alpha_3 \text{ Pass}_{sv} \text{ IF3}_{sv}^{For}$$

$$+ \alpha_4 \text{ IFnot3}_{sv}^{For} + \alpha_5 \text{ Pass}_{sv} \text{ IFnot3}_{sv}^{For} + X_{sv} + \alpha_t + \varepsilon_{sv} ;$$

here I distinguish between the top three index funds (IF3) and all other passive funds (IFnot3). In line with the account whereby a firm's greater holdings of index funds increases its incentive to monitor (and to cast value-enhancing votes), I find that if a passed proposal is supported by all index funds from the top three families then that passage is followed by abnormal returns that are higher, on average, by 1.35%. The index fund votes held by smaller (or less passive) institutions have no statistically significant effect on abnormal returns. Hence I conclude that the results reported here are driven mostly by index funds from larger passive families.

One alternative explanation for the results from this test is whether index funds within the top three families monitor or whether their votes are mandated by the family's active funds. I explore

this hypothesis by restricting the sample to firms where no active fund within a family holds any share. The average stake of firms from these index funds is 2.8%. I find that index fund full support for passed proposals in this subsample leads to a 0.65% (1.13%) higher one-day (seven-days) abnormal return. Although the average effect is smaller in this subsample, the size of the effect as a fraction of ownership is the same as previous results. Therefore, index funds within the top three passive fund families do not only cast votes in favour of value-enhancing proposals when active funds instruct them to.

7.2. Varying the Bandwidth

For each RDD regression and selected subsample, I use MSE to determine the bandwidth around which votes are considered to be a close call. I test three fixed bandwidths that differ from the MSE bandwidths baseline values: 3%, 5%, and 10%. The results (reported in Appendix Table AI.I) are qualitatively the same, across all values, as those presented in previous sections. Throughout the paper, then, my RDD findings are *not* a consequence of selecting a particular bandwidth.

7.3. Coarsened Exact Matching

The CEM approach consists of determining how best to weight each firm within the RDD per index funds' ownership group (see Table AI.II). Toward that end, I use characteristics similar to those employed previously for the propensity score matching: firm size, industry, book-to-market ratio, liabilities, aim of the voted-on proposal, and year. Thus I use the same technique as before to match passed and failed close votes within each of the two groups defined by their index fund ownership. The results align with those obtained when I use propensity score matching.

7.4. Analysis of Subclasses

Here I describe running the RDD within subclasses of proposals; see Table AI.III for the results. My aim is to control for the "nature" of proposals in a way that renders them, in view of the ISS data set, as similar as possible. For each subclass in which there are enough observations to allow for RDDs on its firms with high versus low levels of index ownership, I find that passage of a proposal by a "high index" firm generates more value than does passage of a similar proposal by a "low index" firm.

7.5. S&P 500 Cutoff

This section replicates the Russell 1000/2000 cutoff results while using instead the 100 smallest firms in the S&P 500 and the 100 next largest firms in the S&P 1500. See Table AI.IV for the results. Thus I alleviate any concerns that might arise from relying only on the Russell cutoff and, at the same time, provide additional evidence that the reported results do in fact reflect firms' higher levels of index fund ownership.

8. Conclusion

Should the fast rise of index funds be worrying for firms' corporate governance? The largest passive funds' institutions argue that they actively participate in the management of their portfolio firms, but the current literature is divided about the effect of such participation.[15] This paper presents an empirical approach to identifying the role of index funds in corporate governance by studying their votes in proxy meetings. I use the stock market reaction after proxy meetings involving close-call votes to measure a proposal's value.

First, I show that index fund voting is more supportive of value-enhancing than of value-reducing proposals. Abnormal returns after a proxy meeting that features passed proposals are increasing in index fund support. Second, index funds optimally allocate resources to monitor proposals for which their votes are more likely to be pivotal. As these funds' stakes increase or as a vote outcome more nearly approaches the passing requirement, index funds devote more attention to the focal proposal. This attention is persistent: index funds continue to monitor any firm whose previous proposal(s) they overwhelmingly opposed. Third, index fund ownership promotes the adoption of value-creating proposals; more such proposals pass in firms with higher than with lower index fund ownership. Finally, I find evidence of management catering their proposals to index funds in this sense: managers of firms with higher index fund ownership present fewer value-reducing proposals.

These results join the stream of literature arguing that index funds have a positive effect on corporate governance through their participation in proxy meetings. I empirically show that the large positions of such funds allow them to internalize the benefits of monitoring and to bear the cost of identifying votes that can enhance the firm's value.[16] However, debates over the effect of

[15] See, for example, the Blackrock head of investment's stewardship on its role in monitoring (Hale, 2017) as well as Vanguard's open letter to directors of public companies worldwide (McNabb, 2017).
[16] Confirming Fisch, Hamdani and Solomon (Forthcoming) and Lewellen and Lewellen (2019) predictions

passive investors on the future of financial markets are far from resolved. In the first place, there has been rapid *international* growth in index fund assets under management. In five years, the size of investment in global passive vehicles has doubled (*Financial Times*, 2018). Along with most research on institutional or passive investors, my paper focuses on how they affect US firms. Hence scholars could investigate also the effects of both domestic and international index funds on the corporate governance of international firms. Second of all, the concentration of market ownership in the hands of only a few passive fund families has increased the relevance of concerns about anti-competitive behavior (see e.g. Azar, Schmalz and Tecu, 2018).

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Figures

Figure 1. RDD Plots around the Passing Requirement

The graphs illustrate one-day abnormal returns after voting as a function of the excess vote ratio above or below the passing requirement. Each dot represents a bin of observations at 1% intervals. Each bin estimated line is surrounded by 95% confidence intervals.

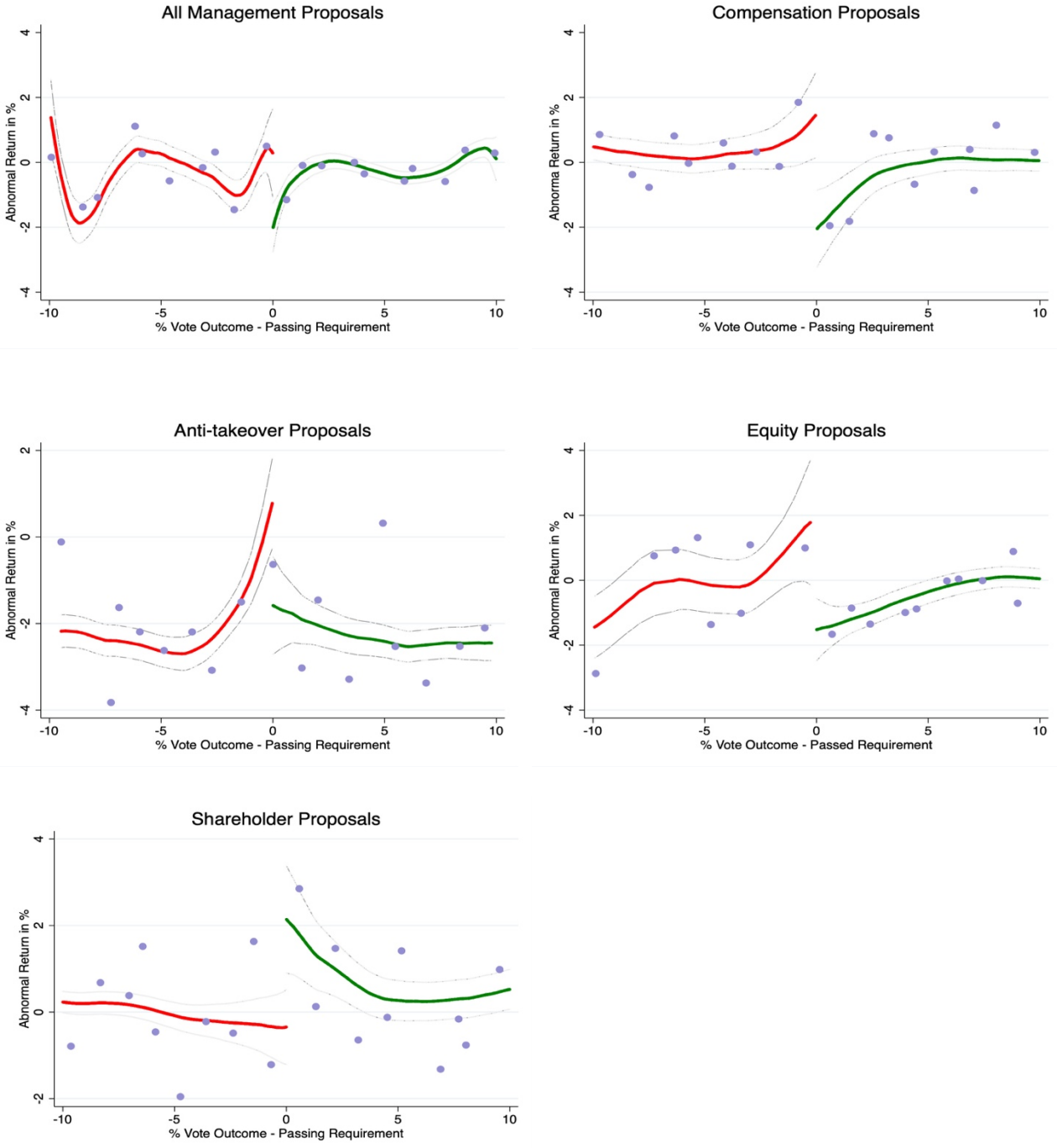
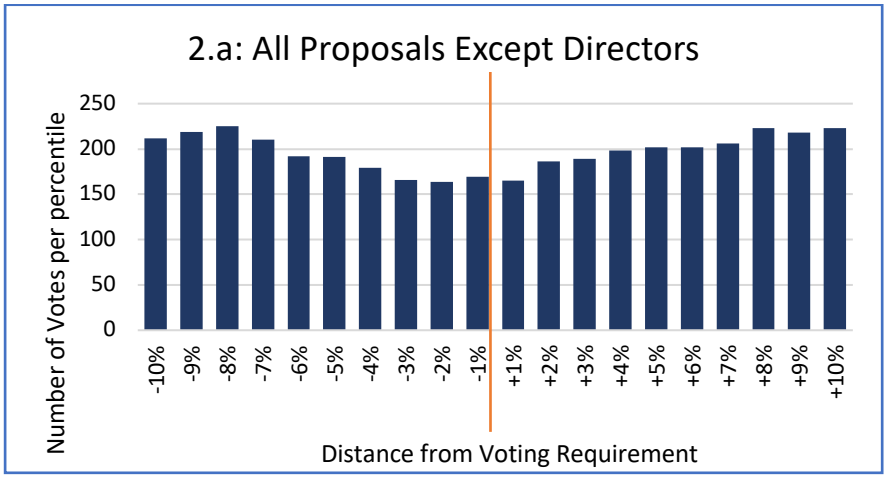
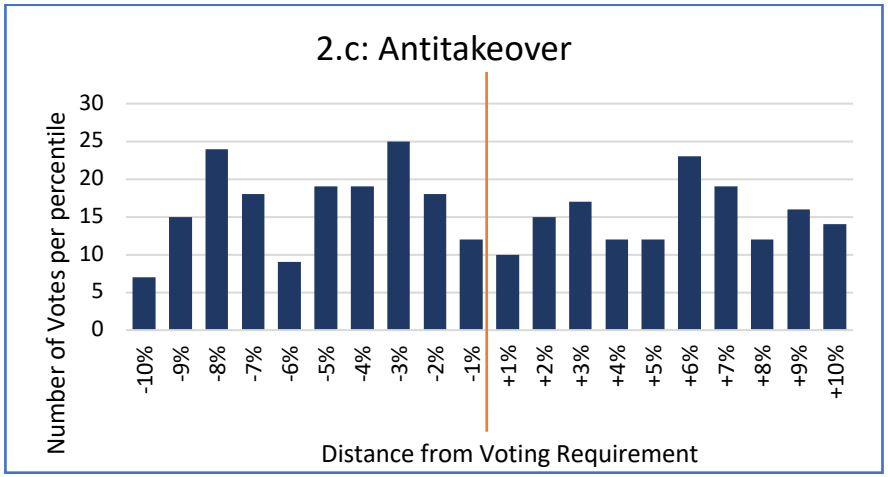
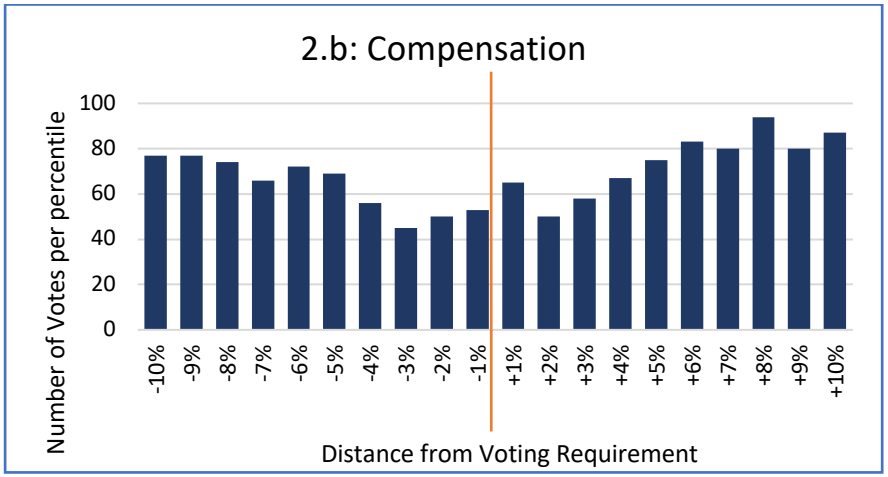


Figure 2. Histogram of Votes around the Passing Requirement

These histograms report the number of votes around the passing requirement at each percentile within 10% of the threshold.







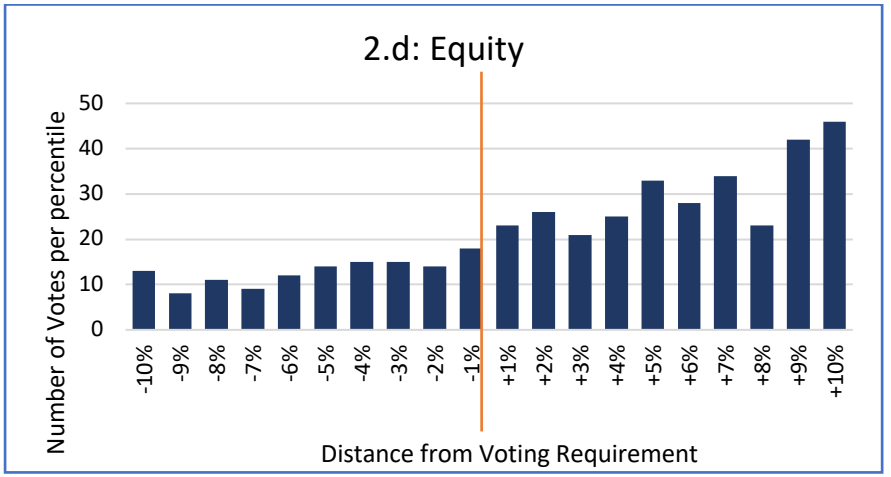
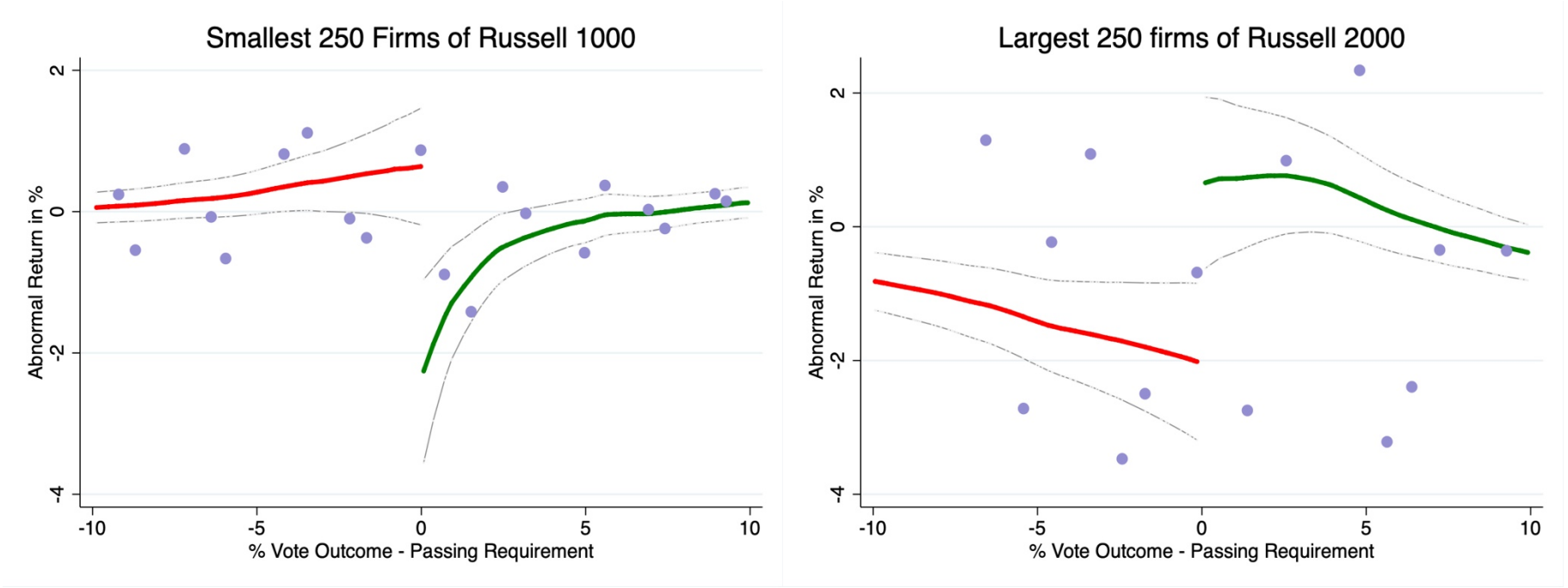


Figure 3. RDD Plots for Firms around the Russell 1000/2000 Cutoff

Here, for all eligible management-sponsored proposals, one-day abnormal returns (based on RDD regressions) around the passing requirement are plotted separately by level of index fund ownership.



Tables

Table I

Summary Statistics of Fund Votes

Panel A: Index Funds

This panel of the table describes the voting tendencies of index funds during 2005–2016. It reports the percentage of funds voting with management, voting for a management proposal recommended by Institutional Shareholder Services, voting for ISS-recommended proposals, voting with the ultimate outcome, for all the five classes of management-sponsored as well as shareholder-sponsored proposals. Results are presented separately for all votes as well as for close-call votes around the 20% and 10% threshold for passage. The data set comprises 5,263,676 votes—at 5,637 different firms—of 1,217 index funds from 102 different families.

	Anti-takeover	**Compensation**	**Director**	**Equity**	**Organization**	**Routine**	**Shareholder**	**Total**
All Votes								
Votes with management	81.93%	88.38%	95.89%	86.35%	97.45%	98.10%	34.73%	94.20%
ISS recommend. with management	91.36%	87.00%	96.84%	87.17%	96.76%	97.99%	54.99%	94.54%
Votes with ISS	84.69%	88.44%	95.42%	89.16%	97.81%	99.07%	60.07%	94.30%
Votes with outcome	75.79%	89.02%	95.70%	86.48%	97.46%	99.10%	26.93%	94.47%
Number of observations	59,147	1,211,759	2,730,634	94,500	57,824	1,106,556	3,256	5,263,676
Votes around 20%								
Votes with management	86.74%	52.55%	76.26%	73.49%	93.84%	63.05%	38.77%	65.52%
ISS recommend. with management	86.01%	22.77%	55.86%	69.64%	91.56%	46.05%	96.09%	45.73%
Votes with ISS	92.07%	59.69%	76.45%	80.55%	94.96%	79.26%	41.47%	71.11%
Votes with outcome	66.55%	57.54%	63.67%	72.69%	93.46%	65.23%	38.84%	63.30%
Number of observations	20,678	102,765	45,257	20,113	11,096	10,706	1,483	212,098
Votes around 10%								
Votes with management	76.77%	45.67%	80.55%	71.63%	86.93%	56.18%	56.71%	63.32%
ISS recommend. with management	76.61%	11.08%	66.12%	65.49%	82.37%	35.19%	64.63%	42.42%
Votes with ISS	83.97%	59.13%	84.65%	80.58%	91.20%	75.81%	81.10%	73.58%
Votes with outcome	58.29%	51.33%	57.82%	68.59%	83.97%	54.19%	57.32%	56.52%
Observations	12,196	41,300	20,309	9,221	2,501	5,854	164	91,545

Panel B: Non-Index Mutual Funds

This panel of the table follows the same format as Panel A. These results are based on 7,020,312 votes (at 5,453 firms) of 5,106 non-index funds from 351 families.

	Anti-takeover	**Compensation**	**Director**	**Equity**	**Organization**	**Routine**	**Shareholders**	**Total**
All Votes								
Votes with management	90.85%	88.02%	96.90%	89.16%	96.90%	98.75%	48.53%	95.18%
Votes with ISS	93.97%	90.64%	96.74%	91.48%	97.37%	98.91%	72.64%	95.76%
Votes with outcome	81.47%	89.10%	96.72%	89.68%	97.20%	98.80%	41.22%	95.23%
Number of observations	77,411	1,481,994	3,852,555	123,613	60,879	1,421,587	2,273	7,020,312
Votes around 20%								
Votes with management	88.70%	44.04%	72.36%	70.53%	91.16%	61.15%	69.84%	60.54%
Votes with ISS	93.96%	67.11%	79.09%	79.83%	93.06%	80.28%	70.83%	75.65%
Votes with outcome	66.02%	51.93%	61.09%	71.70%	91.15%	65.65%	69.93%	59.52%
Number of observations	29,195	120,719	56,146	21,234	9,005	13,502	1,114	250,915
Votes around 10%								
Votes with management	89.77%	35.90%	78.54%	64.01%	80.67%	51.87%	60.17%	58.85%
Votes with ISS	95.11%	67.56%	87.29%	79.42%	85.57%	76.18%	69.49%	78.53%
Votes with outcome	54.42%	46.75%	57.04%	64.55%	76.94%	52.80%	61.02%	52.81%
Observations	17,348	46,920	25,379	8,748	1,899	6,659	118	107,071

Table III

Summary Statistics of Funds and Firms

Panel A: Funds

This panel of Table III reports descriptive statistics of the variables used to characterize the index fund votes. The sample includes all funds and votes available in the data (from CRSP) from 2005 to 2016. IF = index fund, S.D. = standard deviation.

Variable	Description	Observations	Mean	S.D.	Non-IF Means
TNA	Fund's total net assets (USD millions)	5,190,100	3214.02	11992.03	1436.23
Fund age	Fund age (years)	5,194,993	10.79	6.66	14.94
Per common stock	Fund's percentage of TNA invested in common stocks	5,194,993	95.26%	0.04	86.43%
Total votes per month	Average number of meetings the fund voted on per month	5,194,993	241.46	302.85	79.39
Top five family	Dummy set to 1 only if focal fund is in one of the top five families (Fidelity, State Street, Vanguard, T. Rowe Price, Goldman Sachs)	5,194,993	27.49%	0.45	15.99%
High Metropolitan Statistical Area	Indicator set to 1 only if the fund is located in a "high concentration" area (Boston, Chicago, New York City, Philadelphia, San Francisco)	4,226,246	43.47%	0.50	48.58%
Percentage of TNA	Stock holding as a percentage of fund's TNA	5,128,837	0.21%	0.01	0.68%
Percentage of firm	Stock holding as percentage of firm's equity	5,184,342	0.11%	0.00	0.19%
Turnover	Fund's turnover ratio	4,158,552	33.26%	0.82	82.70%
Expense ratio	Fund's expense ratio	4,190,690	0.37%	0.00	1.04%

Panel B: Firms

This panel of the table reports characteristics of all the firms whose votes are reported in ISS Voting Analytics for the 2005–2016 period. Firm-specific variables are all computed using yearly (or, if available, quarterly) data from Compustat. Calculations for the holdings of mutual funds are based on the CRSP Mutual Funds database. Lending fees (from the Markit Securities Finance database) are for the period 2005–2010. *Note:* p*n* = *n*th percentile.

Variable	Description	Mean	S.D.	p1	p25	p50	p75	p99
Market value	Firm's market value (USD millions)	7588.75	27265.97	14.46	291.55	971.37	3743.73	139235.4
Past performance	Excess return from year prior to vote	8.11%	157.87%	–91.34%	–22.86%	–3.02%	16.65%	271.66%
ROA	Net income of prior year ÷ Total assets	0.013	0.143	–0.645	0.003	0.030	0.070	0.274
B/M ratio	Book-to-market ratio	0.633	0.587	0.033	0.297	0.504	0.811	2.780
Firm leverage	Ratio of Total debt to Market value of equity	0.213	0.326	0.000	0.014	0.113	0.332	0.948
Index funds holdings	Shares held by index funds as proportion of firm's total shares outstanding	7.50%	6.17%	0.02%	2.36%	6.39%	11.50%	24.41%
Non-index funds holdings	Shares held by non-index mutual funds as proportion of firm's total shares outstanding	17.01%	11.47%	0. 06%	7.77%	16.10%	24.60%	46.50%
Lending fee	Average annualized lending fee per share until 2010 (basis points)	67.61	136.17	–66.51	0.75	12.18	75	545.02

Table IV:

Regression Discontinuity Design Results

The table shows the results from running an RDD on all votes between 2005 and 2016. All regressions are run on the day after the proxy meeting and then again in the following week (i.e., five trading days later). The bandwidth is determined using mean squared errors. All regressions include fixed effects (FE) for the firm's market value, liabilities, the year, and the month. Narrowly passed proposals for increasing compensation, adding an anti-takeover provision, or increasing stock liquidity are followed by lower abnormal returns than are similar management-sponsored proposals that narrowly fail.

	All Proposals		***Compensation Proposals***		***Anti-takeover Proposals***		***Equity Proposals***	
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**
	1-day abnormal returns	**7-day abnormal returns**	**1-day abnormal returns**	**7-day abnormal returns**	**1-day abnormal returns**	**7-day abnormal returns**	**1-day abnormal returns**	**7-day abnormal returns**
Pass	–1.98**	–2.69*	–1.05**	–4.12*	–1.16**	–1.76**	–3.77***	–5.02***
	(0.78)	(1.56)	(0.45)	(2.18)	(0.55)	(0.84)	(1.43)	(1.88)
Constant	0.86	3.83	1.55*	3.57	0.05	0.05	3.17	2.62
	(0.26)	(2.48)	(0.79)	(4.22)	(0.99)	(0.84)	(2.37)	(2.01)
Observations	2,565	2,526	1,064	1,064	290	290	489	489
R^2/Z	0.016	0.012	0.029	0.021	0.219	0.019	0.146	0.029
Bandwidth	0.11	0.11	0.08	0.08	0.11	0.11	0.101	0.101
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	No	No	No	No	No	No
Company Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors (in parentheses) are clustered at the company level.

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

Table V

Index Fund Votes and Value Creation

This table reports the effects of index fund voting, for various types of proposals, on the firm's abnormal returns after the vote takes place. For each close-call vote, all the index fund votes in favor of a proposal are aggregated then multiplied by total index fund share of the company into the variable IF^{For}, which represents the percentage of index funds voting for that proposal weighted by their holdings of the firm. Pass is an indicator set equal to 1 only if the proposal passes, and ISS^{For} is a dummy set to 1 only if ISS is in favor of the proposal. Regressions are run for all votes—as well as separately by class (compensation, anti-takeover, and equity)—on the day of the proxy meeting and also during the subsequent week. All regressions include company controls (past performance, size, book-to-market ratio, industry, liabilities, and ROA) and time fixed effects. The regressions reported in columns [1] and [2] control for the class of proposal.

	All Votes		***Compensation Votes***		***Anti-takeover Votes***		***Equity Votes***	
	[1] 1-day abnormal returns	**[2] 7-day abnormal returns**	**[3] 1-day abnormal returns**	**[4] 7-day abnormal returns**	**[5] 1-day abnormal returns**	**[6] 7-day abnormal returns**	**[7] 1-day abnormal returns**	**[8] 7-day abnormal returns**
Pass	–0.82**	–2.14***	–1.08**	–1.27**	–1.66*	–4.04***	–3.80***	–7.25**
	(0.39)	(0.63)	(0.55)	(0.61)	(0.85)	(1.29)	(1.38)	(2.88)
IF^{For}	–4.90	–19.75*	–5.53	–23.78**	–18.71	–13.25	–57.61*	–127.22**
	(5.15)	(11.93)	(6.71)	(11.95)	(12.38)	(13.81)	(34.43)	(60.69)
Pass × IF^{For}	12.66**	25.71**	16.40**	31.79**	25.23**	33.75**	76.55**	152.80**
	(6.26)	(13.06)	(7.53)	(12.73)	(12.53)	(16.89)	(36.02)	(64.90)
Pass × ISS^{For}	–0.07	1.09	–0.75	3.10*	–3.16***	2.08	–0.05	0.58
	(0.44)	(1.00)	(1.07)	(1.63)	(1.21)	(1.77)	(1.78)	(3.32)
ISS^{For}	–0.11	–0.17	0.55	–3.06*	2.58**	1.31	0.01	2.23
	(0.41)	(0.92)	(1.03)	(1.65)	(1.04)	(1.56)	(1.63)	(2.85)
Constant	1.78**	1.47	2.55**	1.52	–1.00	0.19	5.68	1.08
	(0.88)	(2.28)	(1.13)	(1.34)	(0.72)	(1.17)	(4.43)	(3.96)
Observations	1,230	1,230	781	781	226	226	173	173
R^2	0.03	0.04	0.06	0.01	0.04	0.18	0.24	0.15
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	No	No	No	No	No	No

Robust Standard errors (in parentheses) are clustered at the company level.
*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table VI

Value Creation as a Function of Votes by Index versus Non-Index Funds

This table compares how index and non-index fund voting for a proposal affects abnormal returns after the vote. For each close-call vote, all index fund votes in favor of the proposal are aggregated into the IF^{For} variable; I create its analogue, non-IF^{For}, for non-index mutual funds. Then the same procedure is followed as described for Table V.

	All Votes		***Compensation Votes***		***Anti-takeover Votes***		***Equity Votes***	
	[1] 1-day abnormal returns	**[2] 7-day abnormal returns**	**[3] 1-day abnormal returns**	**[4] 7-day abnormal returns**	**[5] 1-day abnormal returns**	**[6] 7-day abnormal returns**	**[7] 1-day abnormal returns**	**[8] 7-day abnormal returns**
Pass	–0.88**	–1.77**	–1.23**	–1.32*	–2.40**	–3.66**	–3.55**	–6.02**
	(0.43)	(0.73)	(0.58)	(0.75)	(1.20)	(1.81)	(1.54)	(2.97)
IF^{For}	–6.68	–24.72**	–5.00	–24.56**	–19.73*	–11.49	–68.37	–151.95*
	(5.36)	(10.64)	(6.66)	(12.06)	(11.66)	(14.09)	(42.04)	(81.07)
Pass × IF^{For}	13.42**	28.18**	15.81**	33.53***	26.92*	38.94**	89.21**	169.55**
	(6.43)	(12.19)	(7.56)	(12.79)	(14.85)	(16.90)	(43.79)	(82.75)
Non-IF^{For}	–0.30	16.70**	–3.98	18.92*	–2.26	–21.50**	1.98	40.36
	(4.55)	(7.49)	(5.04)	(11.45)	(7.47)	(9.76)	(20.00)	(30.29)
Pass × Non-IF^{For}	2.62	–14.89*	4.57	–13.56	2.09	22.47**	–2.27	–45.81
	(4.81)	(8.20)	(5.15)	(11.58)	(8.37)	(10.89)	(20.73)	(32.85)
Pass × ISS^{For}	–0.29	1.15	–0.70	3.78**	–3.46**	–1.91	–1.17	0.34
	(0.47)	(1.03)	(1.05)	(1.70)	(1.44)	(1.86)	(2.17)	(4.24)
ISS^{For}	–0.10	0.12	0.52	–3.70**	2.86**	3.73**	0.72	3.50
	(0.44)	(0.95)	(1.00)	(1.75)	(1.22)	(1.68)	(2.03)	(3.75)
Constant	0.66	–2.86	2.82**	–0.96	–1.00	3.16	4.94	0.79
	(0.64)	(1.93)	(1.17)	(1.26)	(0.99)	(2.55)	(4.68)	(4.63)
Observations	1,230	1,230	781	781	226	226	173	173
R^2	0.02	0.04	0.06	0.02	0.05	0.30	0.24	0.18
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	No	No	No	No	No	No

Robust Standard errors (in parentheses) are clustered at the company level.

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

Table VII

Lending Fees and *For* Index Fund Votes

This table demonstrates that, on close-call votes, index funds do not delegate their voting to borrowers. I first run the full specification with the votes of both index and non-index funds, ISS recommendations, and firms' and funds' controls for the period (until 2010) during which there are lending data available on abnormal returns. I then control for the lending fee and interact it with the main variable of interest, Pass × IF^{For}. The lending fee is denominated in basis points and then rescaled (i.e., divided by 1,000). I run the analysis on abnormal returns for both 1-day and 7-day windows.

	[1] 1-day abnormal returns before 2010	**[2] 7-day abnormal returns before 2010**	**[3] 1-day abnormal returns with fee**	**[4] 7-day abnormal returns with fee**	**[5] 1-day ab.ret. with fee & non-IF**	**[6] 7-day ab.ret. with fee & non-IF**
Pass	–0.53	–0.70	–2.84**	–1.17	–0.82	–0.58
	(0.52)	(1.56)	(1.40)	(1.59)	(0.88)	(1.64)
Pass × IF^{For}	30.07*	70.59**	43.29*	101.04***	41.44*	104.53***
	(15.32)	(28.02)	(23.95)	(32.39)	(24.52)	(37.87)
IF^{For}	–23.91	–63.61**	–32.87	–96.61***	–42.03*	–98.08**
	(14.78)	(32.00)	(25.12)	(34.28)	(23.10)	(39.12)
ISS^{For}	1.49*	4.80**	–0.84	4.83**	1.19	3.80*
	(0.85)	(2.31)	(1.36)	(2.28)	(1.38)	(2.21)
Pass × ISS^{For}	–1.17	–2.77	0.80	–3.91*	–0.69	–2.38
	(0.90)	(2.38)	(1.38)	(2.27)	(1.37)	(2.20)
Lending fee × Pass			–2.84	–2.99	–2.42	–2.44
			(2.10)	(2.73)	(1.79)	(5.11)
Lending fee × IF^{For}			–103.07***	–204.99***	–90.10***	–209.80**
			(40.42)	(39.38)	(27.54)	(98.26)
Lending fee × Pass × IF^{For}			117.66***	217.26***	113.18**	287.15**
			(41.17)	(39.31)	(49.20)	(128.44)
Pass × Non-IF^{For}					7.58	–3.82
					(13.29)	(18.73)
Non-IF^{For}					–5.35	1.98
					(13.27)	(18.05)
Lending fee			0.68*	3.29**	0.85	0.01*
			(0.40)	(1.52)	(0.53)	(0.01)
Constant	–0.01	–0.59	0.66	–0.53	0.60	–3.68*
	(0.98)	(2.37)	(1.60)	(2.53)	(1.21)	(2.07)
Observations	600	600	535	535	535	535
R^2	0.07	0.07	0.02	0.09	0.03	0.10
Company Controls	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	Yes	Yes	Yes	Yes

Robust Standard errors (in parentheses) are clustered at the company level.

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

Table VIII

Index Fund Determinants of Attention

This table reports the results of a probit regression on the likelihood of a fund's votes being *with* management's recommendation for all management proposals (except directors' elections). Column [1] uses all votes regardless of their outcome; columns [2] and [3] restrict the sample to close-call votes around (respectively) 20% and 10% of the threshold; columns [4]–[6] replicate the results with additional controls. All regressions include time (year and month), proposal class, and industry fixed effects. In addition to the variables described in Table III, several proposal- and meeting-specific items are used. Annual is an indicator set equal to 1 if the proxy meeting is held annually (or set to 0 otherwise), and "ISS with management" is a dummy set to 1 only if the ISS recommendation matches management's. Proposals/meeting is the number or items up for vote at the focal meeting. ETF = exchange-traded fund, MSA = Metropolitan Standard District.

	[1]	[2]	[3]	[4]	[5]	[6]
	All votes	**Around 20%**	**Around 10%**	**All votes w/ controls**	**Around 20% w/ controls**	**Around 10% w/ controls**
log(TNA)	0.077**	0.073**	0.078**	0.070**	0.071**	0.080**
	(0.032)	(0.034)	(0.037)	(0.031)	(0.034)	(0.037)
% of TNA	–0.084**	–0.085*	–0.099*	–0.062*	–0.081**	–0.111**
	(0.041)	(0.047)	(0.059)	(0.033)	(0.028)	(0.030)
% of firm	5.186***	3.441**	–2.781***	5.076***	4.457***	–3.087***
	(0.774)	(1.673)	(0.998)	(0.0678)	(1.032)	(0.791)
Top five	–0.450***	–0.586***	–0.634***	–0.474***	–0.592***	–0.627***
	(0.127)	(0.146)	(0.150)	(0.130)	(0.146)	(0.151)
MSA	–0.473***	–0.264*	–0.224	–0.486***	–0.265*	–0.222
	(0.128)	(0.155)	(0.166)	(0.129)	(0.155)	(0.166)
Turnover	0.074*	–0.285	–0.373	0.085**	–0.264	–0.388
	(0.040)	(0.276)	(0.296)	(0.040)	(0.278)	(0.297)
ETF	0.417***	0.569***	0.557***	0.468***	0.585***	0.549***
	(0.129)	(0.161)	(0.173)	(0.128)	(0.158)	(0.171)
Log(Market value)	0.092***	0.094***	0.104***	0.092***	0.072***	0.075***
	(0.024)	(0.024)	(0.028)	(0.021)	(0.021)	(0.023)
Firm leverage	0.005***	0.005***	0.002	0.005***	0.003**	0.001
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)
ROA	0.177***	–0.118	–0.386***	0.175***	–0.065	–0.364***
	(0.041)	(0.076)	(0.100)	(0.043)	(0.077)	(0.097)
B/M	–0.028**	0.043***	0.081***	–0.024**	0.043***	0.075***
	(0.011)	(0.015)	(0.028)	(0.011)	(0.015)	(0.028)
Past performance	–0.099***	–0.128***	–0.047***	–0.067***	–0.124***	–0.053***
	(0.014)	(0.024)	(0.012)	(0.012)	(0.023)	(0.012)
ISS with management	3.258***	1.810***	2.147***	3.256***	1.811***	2.139***
	(0.085)	(0.085)	(0.084)	(0.085)	(0.085)	(0.084)
Annual				0.412***	0.067	0.011
				(0.009)	(0.052)	(0.057)
Votes/Month (thousands)				0.113***	–0.006	–0.217
				(0.012)	(0.158)	(0.540)
Close votes per month (thousands)				0.008***	0.031***	0.032***
				(0.002)	(0.006)	(0.010)
Proposals/meeting				0.012***	0.025	0.019
				(0.003)	(1.003)	(1.004)
Previous-year disagreement				–0.251***	–0.109***	–0.077**
				(0.023)	(0.031)	(0.033)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,810,079	104,319	44,761	1,810,079	104,319	44,761

Robust standard errors (in parentheses) are clustered at the fund level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table IX

Blackrock Acquisition of Barclays Global Investors

This table reports the results of a difference-in-differences probit regression on the probability of voting with management for Blackrock (at the fund level in columns [1]–[3] and at the family level in columns [4]–[6]) on firms that were held by BGI and Blackrock—as compared with firms that were held only by Blackrock—prior to the acquisition. "Both" is an indicator set to 1 only if a firm was held by both families before December 2009, and the "Post" dummy is set to 0 a year before the merger (from November 2008 to November 2009) or set to 1 thereafter (i.e., from November 2009 to November 2010). The coefficient of interest is that for the interaction between these two indicator variables. As before, "ISS with management" is a dummy set to 1 only if ISS recommends in favor of the management proposal. All regressions include company controls (size, book/market, industry, liabilities, past performance, and ROA), proposal class fixed effects, and time fixed effects.

	At the Fund Level			***At the Family Level***		
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
	All votes	**Votes around 20%**	**Votes around 10%**	**All votes**	**Votes around 20%**	**Votes around 10%**
Both	0.075***	0.190***	0.135**	4.664***	0.405***	0.377***
	(0.024)	(0.043)	(0.063)	(0.290)	(0.066)	(0.090)
Post	–0.124***	–0.071	0.014	5.013***	0.407***	0.540***
	(0.030)	(0.053)	(0.093)	(0.345)	(0.054)	(0.069)
Both × Post	–0.103***	–0.157**	–0.373***	–4.769***	–0.263***	–0.332***
	(0.039)	(0.075)	(0.128)	(0.355)	(0.078)	(0.104)
ISS with management	0.914***	1.279***	1.680***	1.128***	0.810***	0.845***
	(0.019)	(0.041)	(0.071)	(0.189)	(0.037)	(0.053)
Constant	0.742***	1.083***	0.216	–4.222***	0.124	–0.330*
	(0.109)	(0.257)	(0.186)	(0.495)	(0.131)	(0.185)
Observations	34,122	9,509	3,552	6,066	2,654	979
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	Yes	Yes	Yes	Yes
Company controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund controls	Yes	Yes	Yes	Yes	Yes	Yes

Robust Standard errors (in parentheses) are clustered at the company level.

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

Table X

Persistence of Fund Attention after Disagreeing with Firm Management

This table presents results from a probit regression on the likelihood of an index fund voting with management at the proposal level as a function of a previous disagreement between the firm and that fund. I put index fund disagreement to 1 only if more than 80% of index fund shares have cast a vote—on any proposal and regardless of whether the vote was a close call—that was contrary to management recommendation. Regressions include company's financials (size, liabilities, past performance, book/market, ROA, and industry), an indicator for whether the meeting is annual, an ISS dummy for whether it recommends favoring the management proposal, time fixed effects, and proposal class fixed effects. "1 year after disagreement" is a dummy set to 1 only if the vote is taken within a year of any sample index fund's disagreement; "Within first year of disagreement" is a dummy set to 1 only if the focal vote occurs at least a year after a first disagreement with the firm in the sample.

	Post- first-disagreement			1 Year ***Post-disagreement***		
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
	All votes	**Votes around 20%**	**Votes around 10%**	**All Votes**	**Votes around 20%**	**Votes around 10%**
Within first year of disagreement	–1.55***	–1.62***	–1.72***			
	(0.04)	(0.06)	(0.09)			
1 year after disagreement				–2.07***	–2.27***	–2.42***
				(0.04)	(0.06)	(0.10)
Annual	0.30***	0.02	–0.06	0.25***	0.03	–0.20
	(0.06)	(0.09)	(0.13)	(0.06)	(0.10)	(0.15)
ISS recommend.	1.42***	1.38***	1.47***	1.22***	1.23***	1.37***
	(0.03)	(0.07)	(0.11)	(0.04)	(0.07)	(0.13)
Constant	0.48*	0.34	0.82	1.02***	0.86*	1.16
	(0.24)	(0.41)	(0.60)	(0.27)	(0.48)	(0.73)
Observations	17,201	4,734	1,964	17,201	4,734	1,964
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls	Yes	Yes	Yes	Yes	Yes	Yes

Robust Standard errors (in parentheses) are clustered at the company level.

*$p < 0.1$, ***$p < 0.01$

Table XI

RDD around the Russell 1000–Russell 2000 Cutoff

This table reports results of RDD regressions on abnormal returns across two subgroups: the 250 firms above the Russell1000/2000 cutoff and the 250 firms below that cutoff. All regressions include a constant, company market value, year fixed effects (in columns [1]–[4]), and proposal class fixed effects (in columns [1] and [2]). The last two rows present results from testing for the equality of the Pass coefficient in the two regressions.

	All Management Votes		***Compensation Votes***		***Anti-takeover Votes***		***Shareholder Votes***	
	[1] Abnormal 1-day returns	**[2] Abnormal 7-day returns**	**[3] Abnormal 1-day returns**	**[4] Abnormal 7-day returns**	**[5] Abnormal 1-day returns**	**[6] Abnormal 7-day returns**	**[7] Abnormal 1-day returns**	**[8] Abnormal 7-day returns**
Top Russell 2000								
Pass	1.87**	3.63**	2.21**	3.47**	1.29*	1.99*	4.67*	5.49**
	(0.92)	(1.77)	(1.08)	(1.63)	(0.72)	(1.09)	(2.61)	(2.03)
Observations	182	182	113	113	23	23	36	36
R^2/Z	0.25	0.25	0.23	0.31	0.13	0.23	0.09	0.18
Bandwidth	0.12	0.12	0.11	0.11	0.10	0.10	0.08	0.08
Bottom Russell 1000								
Pass	–2.41**	–3.70***	–2.76**	–4.40**	–1.97*	–2.39*	–3.15**	–4.76**
	(1.19)	(1.41)	(1.17)	(2.00)	(1.01)	(1.18)	(1.33)	(2.07)
Observations	170	170	109	109	28	28	43	43
R^2/Z	0.14	0.07	0.39	0.32	0.86	0.66	0.13	0.10
Bandwidth	0.12	0.12	0.11	0.11	0.11	0.11	0.08	0.08
H0: High[Pass] = Low[Pass]								
χ^2	10.85	11.16	13.74	13.74	8.07	9.25	6.60	6.36
Prob > χ^2	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01

Robust standard errors (in parentheses) are clustered at the company level.

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

Table XII

Firms with High versus Low Ownership of Index Funds

Panel A: Summary Statistics

This table reports summary statistics of two sets of firms distinguished by the level of index fund investment as a percentage of their market value. Low- and high-concentration groups are those containing firms that are, respectively, below or above the yearly index investment median.

	Low–Index Ownership Group					***High–Index Ownership Group***				
Variable	**Mean**	**S.D.**	**p1**	**p50**	**p99**	**Mean**	**S.D.**	**p1**	**p50**	**p99**
Pass (around 10% of the vote requirement)	55.62%	49.82%	0	1	1	58.95%	50.00%	0	1	1
Market value (USD millions)	7,798.13	30,659.04	10.02	542.43	148,378.70	7,336.63	22,509.38	95.20	1,545.23	133,363.50
ROA	0.013	0.070	–0.326	0.007	0.144	0.013	0.047	–0.189	0.009	0.096
B/M	0.614	0.571	0.0282	0.480	2.743	0.583	0.456	0.047	0.495	2.045
Firm leverage	0.231	0.262	0.000	0.133	0.955	0.263	0.263	0.000	0.184	0.959
Index fund holdings	4.06%	3.63%	0.007%	2.98%	12.60%	10.57%	6.49%	0.28%	10.71%	26.06%
Non-index fund holdings	15.38%	10.93%	0.09%	14.46%	43.13%	18.84%	10.46%	0.10%	18.22%	43.22%

Panel B: RDD Results

This table gives the results of RDD regressions on two subgroups of firms: firms with a high (resp. low) index ownership are those for which the share of index investors is higher (resp. lower) than the focal year's median for all firms in the sample (Russell 3000 companies). All regressions include a constant, time (both year and month) fixed effects, firm financials, and (in columns [1] and [2]) proposal class fixed effects. The table's last two rows present results from testing the null hypothesis (H0)—that is, for the equality of the Pass coefficient in the two regressions. They are always statistically different *except* in the case of 1-day abnormal returns following votes on equity proposals.

	All Management Votes		***Compensation Votes***		***Anti-takeover Votes***		***Equity Votes***	
	[1] 1-day returns	**[2] 7-day returns**	**[3] 1-day returns**	**[4] 7-day returns**	**[5] 1-day returns**	**[6] 7-day returns**	**[7] 1-day returns**	**[8] 7-day returns**
High Index Ownership								
Pass	–0.53*	–3.44*	1.32*	4.30*	2.19**	4.82*	–3.20**	–6.38**
	(0.32)	(1.85)	(0.78)	(2.31)	(0.96)	(2.79)	(1.40)	(3.14)
Observations	1,086	1,086	245	247	134	134	151	151
R^2/Z	0.040	0.023	0.101	0.122	0.339	0.212	0.295	0.252
Bandwidth	0.126	0.126	0.047	0.047	0.109	0. 109	0.120	0.120
Low Index Ownership								
Pass	–2.27***	–5.40***	–1.74*	–3.65*	–1.75**	–2.80**	–4.01**	–8.81**
	(0.44)	(2.00)	(0.96)	(2.14)	(0.79)	(1.39)	(2.00)	(4.30)
Observations	1,035	1,035	241	241	130	130	150	150
R^2/Z	0.044	0.070	0.207	0.224	0.493	0.524	0.327	0.261
Bandwidth	0.111	0.111	0.049	0.049	0.110	0. 110	0. 110	0.110
H0: High[Pass] = Low[Pass]								
χ^2	2.86	3.69	5.48	6.15	8.07	5.65	0.58	3.00
Prob > χ^2	0.09	0.055	0.019	0.013	0.004	0.017	0.446	0.083

Robust Standard errors (in parentheses) are clustered at the company level

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

Panel C: RDD Results for Shareholder Proposals by Bandwidth

This table reports results of RDD regressions on high– and low–index concentration firms for all shareholder-sponsored proposals between 2005 and 2016 varying the bandwidths around the passing requirement. Firms with a high (resp. low) index concentration are those for which the share of index investors is higher (resp. lower) than the focal year's median for all firms in the sample (mainly Russell 3000 companies). All regressions include a constant, company financials, and time (year and month) fixed effects. As in Panel B, the last two rows give the results from testing for the equality of the Pass coefficient in the two regressions; here they are always statistically different *except* for the case of 1-day abnormal returns after proposal votes that are within 5% of the passing requirement.

	[1] Abnormal 1-day returns	**[2] Abnormal 7-day returns**	**[3] Abnormal 1-day returns**	**[4] Abnormal 7-day returns**	**[5] Abnormal 1-day returns**	**[6] Abnormal 7-day returns**
High Index Ownership						
Pass	1.08**	2.02**	1.49***	3.10**	2.30***	3.55**
	(0.54)	(1.01)	(0.52)	(1.20)	(0.81)	(1.74)
Observations	535	535	250	250	145	145
R^2/Z	0.081	0.015	0.155	0.159	0.199	0.265
Bandwidth	0.10	0.10	0.05	0.05	0.03	0.03
Low Index Ownership						
Pass	–0.77*	–1.68**	0.91**	1.87**	1.11**	1.95**
	(0.46)	(0.85)	(0.40)	(0.91)	(0.50)	(0.81)
Observations	422	422	248	248	129	129
R^2/Z	0.081	0.015	0.155	0.159	0.199	0.265
Bandwidth	0.10	0.10	0.05	0.05	0.03	0.03
H0: High[Pass] = Low[Pass]						
χ^2	6.19	4.97	2.30	3.01	3.64	3.20
Prob > χ^2	0.012	0.025	0.129	0.082	0.056	0.069

Robust standard errors (in parentheses) are clustered at the company level.

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

Table XIII

Classes of Proposals by Firms' Level of Fund Ownership

This table reports the agenda description of proposals that are more likely to be presented at proxy meetings for a group of high– than of low–index fund ownership firms; it also reports coefficients for the Pass dummy in a regression of close-call votes on abnormal returns one day after the proxy meeting. No coefficient (N/C) is reported when there are not enough observations to enable running the regression.

Proposal	[1] Low IF ownership	[2] High IF ownership	[3] Average 1-day value creation
Reduce supermajority	Less	More	1.18** (0.56)
Eliminate right to act by written consent	More	Less	–0.80** (0.39)
Approve omnibus stock plan	More	Less	–1.11* (0.66)
Advisory vote to ratify executive officer compensation	Less	More	1.28** (0.57)
Advisory vote on golden parachute	Less	More	1.20** (0.59)
Increase authorized common stock	More	Less	–4.68** (2.21)
Approve reverse stock split	More	Less	N/C
Approve issuance of equity (or equity-linked securities) without pre-emptive rights	More	Less	–3.73** (1.72)
Approve merger agreement	More	Less	–8.36*** (2.68)
Change state of incorporation	More	Less	N/C

Robust standard errors are reported in parentheses.

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

Table XIV

Voting by Top Passive Families

Panel A: Index Ownership by Top Three Families versus the Rest

This table reports the share of each family's assets under management in passive funds (column [1]) and those families' ratio of ownership among all the Russell 3000 firms' equity (column [2]). Values are computed for 2016 and are based on the CRSP Mutual Funds database.

	[1] Proportion of assets under management in passive funds	**[2] Ratio of investment in Russell 3000**
Blackrock	89.9%	4.55%
Vanguard	87.3%	4.33%
State Street	97.5%	1.88%

Panel B: Votes by Top Three Families of Funds

In this robustness test, I separate index funds into those that are part of one of the top three passive fund families (Blackrock, Vanguard, and State Street) and all other index funds. The variable $IF3^{For}$ denotes the aggregated weighted percentage of index funds within the top three families' ratio of votes in favor of a proposal (as weighted by their holdings of the firm); $IFNot3^{For}$ is a similar ratio for index funds that are not part of the top three families, and non-IF^{For} is the same variable but for non-index funds. The Pass indicator variable is set equal to 1 only if the proposal passes. All regressions include company controls (size, market liabilities, book/market, and ROA).

	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
	1-day abnormal returns	**7-day abnormal returns**	**1-day abnormal returns with ISS**	**7-day abnormal returns with ISS**	**1-day abnormal returns for IF only**	**7-day abnormal returns for IF only**
Pass	–0.89**	–1.54**	–0.86**	–1.72***	-0.75*	-1.05*
	(0.43)	(0.60)	(0.42)	(0.61)	(0.39)	(0.60)
Pass × $IF3^{For}$	15.43**	25.79**	15.57**	25.16**		
	(6.77)	(11.87)	(7.15)	(12.79)		
$IF3^{For}$	–12.15**	–20.31*	–12.13*	–20.26*		
	(6.01)	(10.46)	(6.65)	(11.28)		
Pass × $IFNot3^{For}$	–11.09	29.60	–10.40	25.24		
	(30.33)	(32.99)	(36.79)	(34.20)		
$IFNot3^{For}$	31.78	15.43	32.03	13.30		
	(29.39)	(30.41)	(36.46)	(31.91)		
Pass × $_{Noactive}IF3^{For}$					21.70**	37.53**
					(8.94)	(18.74)
$_{Noactive}IF3^{For}$					-12.43*	-25.21
					(7.12)	(16.61)
ISS^{For}			–0.01	0.06	-0.21	-0.39
			(0.82)	(0.94)	(0.47)	(0.91)
Pass × ISS^{For}			–0.09	0.54	0.13	0.75
			(0.81)	(1.04)	(0.51)	(0.98)
Observations	1,103	1,232	1,103	1,232	816	816
R^2	0.04	0.03	0.04	0.03	0.04	0.04
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Company controls	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors (in parentheses) are clustered at the company level.

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

Appendices

Appendix I: RDD McRary (2008) and Pre-differences tests

Histograms can be deceiving, and a more robust framework is provided McCrary (2008) density plots (figure AI.I). Since there seems not to be any discontinuity in these density estimates, it follows that there is no manipulation at the passing requirement on close-call proposals, therefore validating the first assumption of the RDD. Yet the plots do evidence gross manipulation regarding my *modified* version of management-sponsored proposals. In particular, the double hump strongly suggests the existence of some management manipulation for particular proposals to pass further from the threshold. That finding does not preclude running an RDD, so this paper does not elaborate on the manipulation of votes. In table AI.1, I validate a second assumption of the RDD: that the passage/failure of a proposal cannot be explained by pre-differences in firm's characteristics.

Figure AI.I. Density Test

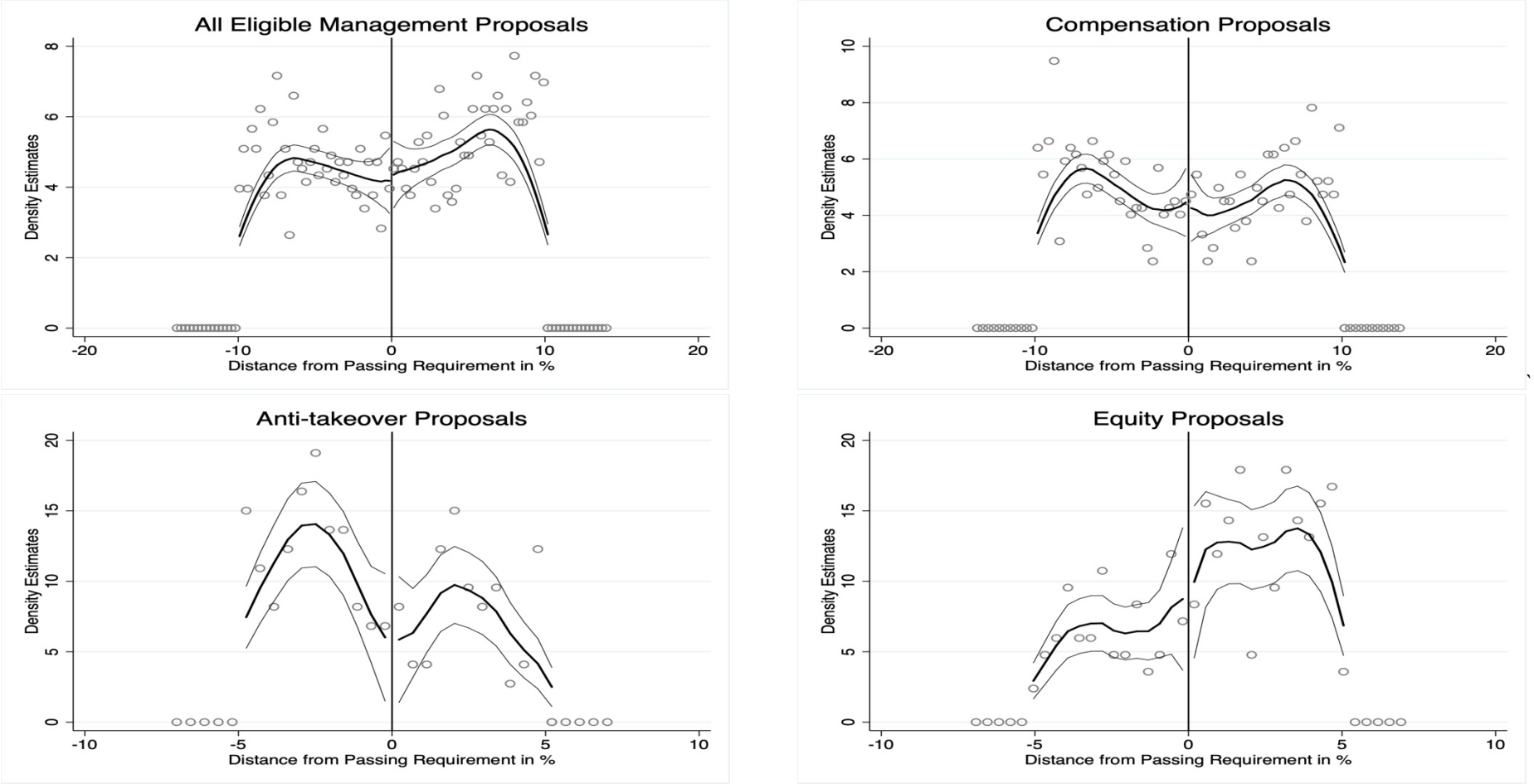


Table AI.I: Pre-Voting Differences in Firm Characteristics

This panel confirms that also the second RDD assumption—namely, no meaningful pre-differences in the sample firms' characteristics—is not violated. The table presents results from testing for whether a proposal's passage can explain firm characteristics prior to the vote. I report the coefficient of the Pass dummy from regressions on each of the variables from the first column of the table. The regressions include polynomials of the vote's outcome as well as time fixed effects. Each data column represents a different sample of votes. The first (resp. last) three columns report the values for management-sponsored (resp. shareholder-sponsored) proposals using either all votes or those closer to the passing requirement. None of these coefficients is statistically significant enough to explain any differences in the characteristics of any firms.

	Management-Sponsored Proposals			***Shareholder-Sponsored Proposals***		
	All votes	**Votes around 20%**	**Votes around 10%**	**All votes**	**Votes around 20%**	**Votes around 10%**
Abnormal returns 1 day before proxy meeting	0.005 (0.007)	0.001 (0.006)	0.000 (0.009)	–0.008 (0.015)	–0.000 (0.013)	0.004 (0.013)
Abnormal returns 7 days before proxy meeting	0.069 (0.060)	0.051 (0.052)	0.029 (0.034)	–0.355 (0.422)	0.054 (0.396)	0.138 (0.453)
Abnormal returns 1 month before proxy meeting	0.004 (0.007)	0.003 (0.006)	0.006 (0.009)	–0.007 (0.007)	0.002 (0.010)	0.011 (0.012)
Market capitalization	0.018 (0.058)	–0.071 (0.076)	–0.111 (0.098)	–0.062 (0.072)	–0.033 (0.147)	0.247 (0.211)
Market liabilities	3.179 (3.260)	12.458 (13.399)	3.115 (15.987)	0.024 (0.155)	0.039 (0.121)	–0.002 (0.183)
R&D/Assets	0.005 (0.004)	0.012 (0.017)	0.003 (0.020)	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)
ROA	–0.002 (0.005)	–0.006 (0.006)	–0.002 (0.010)	0.001 (0.002)	–0.000 (0.003)	–0.003 (0.005)
Percentage of index fund investment	0.000 (0.028)	–0.004 (0.003)	–0.006 (0.006)	0.002 (0.003)	0.000 (0.004)	0.003 (0.005)
Percentage of non-index fund investment	0.009 (1.131)	–0.003 (0.035)	–0.023 (0.018)	–0.005 (0.012)	–0.013 (0.018)	0.001 (0.026)

Robust standard errors (in parentheses) are clustered at the company level.

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

Appendix II: Tables

Table AII.I: Varying Bandwidths (Robustness)—All Votes

This table reports results from RDD analysis of varying the bandwidth around the passing requirement. All classes of voted-on proposals are used, and all regressions include a fixed effect for class of proposal. Time FE include both year and month fixed effects. H0 = null hypothesis.

	[1] Abnormal 1-day returns	**[2] Abnormal 7-day returns**	**[3] Abnormal 1-day returns**	**[4] Abnormal 7-day returns**	**[5] Abnormal 1-day returns**	**[6] Abnormal 7-day returns**
High Index Concentration						
Pass	–0.74**	–1.62**	–0.68**	–2.21**	–1.44**	–2.38**
	(0.37)	(0.81)	(0.33)	(1.09)	(0.68)	(1.19)
Observations	895	895	497	497	293	293
R^2/Z	0.048	0.040	0.037	0.068	0.110	0.063
Bandwidth	0.1	0.1	0.05	0.05	0.03	0.03
Low Index Concentration						
Pass	–1.41***	–4.79**	–1.45***	–4.22**	–2.05**	–4.39**
	(0.53)	(2.00)	(0.53)	(2.14)	(0.79)	(1.79)
Observations	933	933	475	475	272	272
R^2/Z	0.109	0.076	0.110	0.100	0.189	0.193
Bandwidth	0.1	0.1	0.05	0.05	0.03	0.03
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	Yes	Yes	Yes	Yes
Company financials	Yes	Yes	Yes	Yes	Yes	Yes
H0: High[Pass] = Low[Pass]						
χ^2	3.31	3.08	2.97	3.11	2.93	4.52
Prob > χ^2	0.069	0.080	0.085	0.078	0.086	0.033

Standard errors (in parentheses) are clustered at the company level.

**$p < 0.05$, ***$p < 0.01$

Table AII.II: RDD with CEM Matching (Robustness)

	All Management Votes		***Compensation Votes***		***Anti-takeover Votes***		***Equity Votes***	
	[1] Abnormal 1-day returns	**[2] Abnormal 7-day returns**	**[3] Abnormal 1-day returns**	**[4] Abnormal 7-day returns**	**[5] Abnormal 1-day returns**	**[6] Abnormal 7-day returns**	**[7] Abnormal 1-day returns**	**[8] Abnormal 7-day returns**
High Index Ownership								
Pass	–0.45**	–1.03**	1.59**	4.20*	1.99**	3.19**	–3.86**	–6.64**
	(0.22)	(0.50)	(0.76)	(2.16)	(0.98)	(1.57)	(1.87)	(2.88)
Observations	1,213	1,213	240	240	133	133	106	106
R^2/Z	0.03	0.01	0.10	0.11	0.18	0.25	0.24	0.23
Bandwidth	0.126	0.126	0.047	0.047	0.109	0. 109	0.12	0.12
Low Index Ownership								
Pass	–1.31***	–4.22**	–1.68**	–4.35**	–2.34***	–3.01**	–5.34**	–9.60**
	(0.47)	(1.90)	(0.81)	(2.18)	(0.86)	(1.48)	(2.41)	(4.56)
Observations	1,134	1,134	241	241	136	136	150	150
R^2/Z	0.05	0.04	0.25	0.26	0.57	0.50	0.25	0.31
Bandwidth	0.111	0.111	0.049	0.049	0.110	0. 110	0. 110	0.110
H0: High[Pass] = Low[Pass]								
χ^2	2.98	2.72	8.05	6.01	8.70	4.17	1.81	3.29
Prob > χ^2	0.08	0.09	0.00	0.01	0.00	0.04	0.17	0.06

Standard errors (in parentheses) are clustered at the company level.

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

Table AII.III: RDD on Subclasses (Robustness)

This table reports results from RDD regressions for groups with high or low levels of index funds ownership on different subclasses of proposals. I run regressions only on subclasses with enough observations to yield statistically meaningful results. "High IF" and "Low IF" are the coefficient for Pass in the corresponding regression "Difference" is the difference between the two coefficients; "Bandwidth" is the distance from the passing requirement specified by mean squared error; "Obs. high" and "Obs. low" give the respective number of observations within each group.

Proposal subclass	**High IF**	**Low IF**	**Difference**	**Bandwidth**	**Obs. high**	**Obs. low**
Management-Sponsored						
Ratify executive officer	2.42*	–1.93**	4.35***	0.04	169	123
	(1.03)	(0.95)				
Advisory vote on golden parachute	1.12**	–2.46*	3.58***	0.10	46	28
	(0.44)	(1.31)				
Amend omnibus stock plan	2.93***	–3.57**	6.5**	0.11	196	220
	(0.32)	(1.25)				
Declassify Board of Directors	2.00**	–4.01*	–6.01***	0.09	153	86
	(0.98)	(2.11)				
Reduce supermajority vote requirement	2.09**	–2.66**	4.75***	0.07	85	59
	(0.95)	(1.29)				
Increase authorized common stocks	–1.86***	–4.20**	2.34	0.08	67	54
	(0.45)	(1.96)				
Shareholder-Sponsored						
Adopt proxy access	2.15*	–3.02*	5.17**	0.11	43	37
	(1.23)	(1.74)				
Require majority vote for election of directors	3.61***	1.62**	1.99*	0.10	135	120
	(1.24)	(0.66)				

Standard errors (in parentheses) are clustered at the company level.

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

Table AII.IV: RDD around S&P 500 (Robustness)

This table summarizes the results of running an RDD on all 2005–2016 close-call management-sponsored proposals for the 200 firms around the S&P 500 cutoff. The table's last two rows test for whether *differences* between RDD coefficients are significant.

	All Management Votes		***Compensation Votes***		***Anti-takeover Votes***	
	[1] Abnormal 1-day returns	**[2] Abnormal 7-day returns**	**[3] Abnormal 1-day returns**	**[4] Abnormal 7-day returns**	**[5] Abnormal 1-day returns**	**[6] Abnormal 7-day returns**
100 Smallest Firms of S&P500						
Pass	1.55*	4.35*	1.92*	4.05*	1.45*	4.39**
	(0.87)	(2.50)	(1.04)	(2.00)	(0.69)	(1.55)
Observations	111	111	33	33	27	27
R^2/Z	0.215	0.238	0.610	0.514	0.598	0.609
Bandwidth	0.12	0.13	0.09	0.09	0.10	0.10
100 Largest Firms after S&P500						
Pass	–5.62**	–6.13**	–3.00*	–4.63*	–3.05**	–5.27*
	(2.60)	(0.028)	(1.74)	(2.61)	(1.29)	(1.79)
Observations	101	102	34	34	27	27
R^2/Z	0.141	0.282	0.622	0.599	0.577	0.589
Bandwidth	0.12	0.13	0.09	0.09	0.10	0.10
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Proposal class FE	Yes	Yes	No	No	No	No
Company financials	Yes	Yes	Yes	Yes	Yes	Yes
H0: High[Pass] = Low[Pass]						
χ^2	2.92	4.53	10.56	3.25	3.31	4.52
Prob > χ^2	0.087	0.033	0.001	0.071	0.069	0.033

Standard errors (in parentheses) are clustered at the company level.

*$p < 0.1$, **$p < 0.05$