Are Shareholder Votes Rigged?

Laurent Bach & Daniel Metzger[1]

December 2016

Abstract

In this paper, we show that since 2003 there have been 75% more shareholder proposals rejected by a margin of one percent of shares outstanding than proposals that were approved by a similarly narrow margin. As a result, there is a large and discontinuous drop in the density of voting results on these proposals exactly where the majority threshold of each proposal is located. Using counterfactual distributions, we estimate that 11% of closely-contested proposals that were eventually rejected by voters would have passed if management had not been able to systematically affect the voting results. These results confirm that management holds vast and exclusive powers over the voting process at big US corporations and imply that these powers are used by entrenched managers to block valuable improvements to corporate governance. Our findings also have important implications for empirical researchers in corporate governance who use RDD to identify causal effects of corporate governance.

[1] Stockholm School of Economics & Swedish House of Finance, Drottninggatan 98, Stockholm, Sweden. E-mail: laurent.bach@hhs.se; daniel.metzger@hhs.se. We thank Alberto Allegrucci and Erik Fredriksen for outstanding research assistance.

1 Introduction

Voting has become an essential means to take decisions on controversial corporate governance issues. Its popularity as a governance tool relies on the premise that the voting process leads to an accurate representation of the beliefs of the shareholder base, while the alternative decision-making process, board representation, has failed to curb the worst governance practices such as excessive executive pay. An essential prerequisite to support this view is that corporate elections are a fair process that is not "rigged" in favor of management. In practice that may not be the case at U.S. corporations, since management has exclusive access to crucial data on the ongoing voting process, including the identity of the voters and vote tallies in real time. In this paper, we investigate whether this advantage allows the management to shape voting results in their favor.

Analyzing voting results on shareholder proposals on corporate governance in large U.S. companies between 2003 and 2016, we find that there is an abnormal share of shareholder proposals that are won with a small margin by management. Since 2003, there have been about 75% more shareholder proposals rejected by a margin of one percent of shares outstanding than proposals that were approved by a similarly narrow margin. As a result, there is a large and discontinuous drop in the density of voting results on these proposals exactly where the majority threshold of each proposal is located. These anomalies in the distribution of voting results reveal that there are substantial effects of vote rigging on the success rate of shareholder proposals: using counterfactual distributions, we estimate that about 11% of those proposals that have been rejected by a margin of less than 10% of the votes would have passed if management had not been able to affect the voting results.

Those abnormal voting results would bear few consequences if the affected proposals were of little impact to start with. Yet, we show that the likelihood to manipulate[2] votes is greater when proposals have a greater potential to lead to a change in corporate governance provisions. First of all, we show that management started to manipulate vote shares only after voting results on shareholder proposals had real consequences. Shareholder proposals are non-binding and, before 2003, even majority-supported shareholder proposals were rarely implemented. After the Enron

[2] In line with the literature on RDD we use the term "manipulation" of voting outcomes when referring to the discontinuity in the density of voting results right at the level where a proposal passes or does not pass. This does not imply that actors involved in manipulation are doing anything illegally from a legal point of view.

scandal and the subsequent Sarbanes-Oxley reforms in 2003, however, the rate of implementation of winning proposals increased sharply (see also Bach and Metzger, 2016). Secondly, the discontinuity in voting results is only discernible when the proposal is on a topic that is largely supported by proxy advisors, but typically opposed by management, such as the removal of poison pills, classified boards, proxy access and majority voting.

Our results suggest that when management strongly opposes a shareholder proposal, it takes distinct actions to make sure it does not pass. However, before one can judge whether these practices should be prevented or not, it is important to understand better how in practice management distorts voting outcomes. The abnormal number of elections that are closely won by management could come from two sources: an unusual turnout rate favoring management or, conditional on the number of voters, an abnormal propensity of voters to take the side of management. Indeed, we find that there is much more systematic bias in voting results in favor of management when turnout is high. To encourage turnout, managers may be inclined to boost the participation of outside retail shareholders, who are known to favor management, or they may simply try to acquire additional voting rights by themselves. Managers may also affect the results by convincing some institutional shareholders to make voting decisions that go contrary to their usual guidelines. It has been shown by Cvijanovic, Dasgupta and Zachariadis (2015) that funds that have connections to managers tend to vote in their favor when there is a contested meeting. However, we show here that on average mutual funds, and especially the largest ones, tend to vote more *against* management when eventually management narrowly *wins* a vote. This is consistent with the idea that large funds act as a counterweight to the power to shape votes that is held by management. This also means that voters who contribute to the bias in voting results are prevalently not funds but instead retail investors or corporate insiders. Consistent with this hypothesis we show that managers are indeed more likely to exercise their option packages to obtain additional votes when they expect to face contested shareholder proposals.

Our results shed also new light on the voting process at U.S. corporations, which is a topic that has received a lot of attention in recent years. Most papers focus on the impact of proxy advisors

and on the voting decisions made by mutual funds.[3] It is well known from this literature that voters' decisions are affected by public advice and private lobbying, just as in all elections. However, we know little about the exact mechanics of voting, from the communication of the proxies to the announcement of final results, and its impact on the outcome of the vote. We are the first ones to document that managers hold a decisive advantage over other parties in affecting the outcome and that they use these powers to systematically affect voting outcomes. Such an advantage goes beyond the lobbying and trading of favors that have been documented so far, which may lead to question the fairness of the entire voting process as it stands.

Our findings also have some implications for empirical researchers in corporate governance. In order to identify the impact of governance features such as poison pills or classified boards, recent literature relies on the analysis of close votes on shareholder proposals on these issues (e.g., Cuñat, Giné, and Guadalupe (2012, 2013, and 2014), Cheng, Hong, and Shue (2014), and Popadak (2013)). Our results cast some doubts on the internal validity of these approaches, at least for the period after 2003.

The rest of the paper is organized as follows. Section 2 describes the mechanics of proxy voting and its potential for abuse in the U.S. Section 3 provides our baseline evidence of vote manipulation. Section 4 presents the data selection process underlying our statistical tests. Section 5 provides a detailed empirical analysis of the causes and consequences of vote rigging. Section 6 concludes.

2 Institutional Context

Given that going from 49.9% of votes to 50.01% can make a difference between approval and rejection of a proposal, some parties may be interested in trying to manipulate the vote and make sure a proposal is narrowly rejected or approved. In this section, we shed light on key aspects of the voting process that may leave room for an extensive and precise pre-determination of voting results.

[3] See Matvos and Ostrovsky (2010), Iliev and Lowry (2014), and Cvijanovic, Dasgupta, and Zachariadis (2015), and Cvijanovic, Groen-Xu, and Zachariadis (2015), for instance.

2.1 A Short Summary of the Voting Process

Shareholders of U.S. public corporations may be required to vote during annual general meetings (the AGM) or special meetings, which may be called for in between two AGMs by management or a substantial portion of the shareholder base. We focus here on explaining how votes take place for general meetings[4].

Just as in any election, it must first be decided who are the shareholders eligible to vote at the meeting. Because shares trade on a continuous basis, a precise date at which a shareholder must own the share in order to be eligible to vote must be decided by the company. This is the record date, generally set a few weeks before the actual meeting takes place. Once this date is set, the company must notify this date, together with proxy materials, to the shareholders in its share register. Once shareholders are informed, they may send back their marked proxy card so that votes can be tabulated and announced on the day of the general meeting.

What makes the process complex is that only a few economic owners of the shares are registered in the company books under their own name (about 25% of shares on average according to SEC (1997)), since nowadays shares are bought and sold through intermediaries (typically brokers). Other shareholders, that is the very large majority, are recorded under "street name", and are called "beneficial" owners. The Depositary Trust Corporation (DTC) keeps track of all the brokers that own shares of any given company at any point in time. It has to promptly provide the issuer with a list of these brokers when notified. Those brokers may then provide a list of economic owners of the shares to the company (the so-called beneficial owners) or they may act as an intermediary in the entire communication process, depending on whether the beneficial owner has opted to deliver its identity to the issuing company or not (the former kind of owner are called non-objecting beneficial owners, or NOBOs, and the latter are called objecting beneficial owners, or OBOs).

The complexity of the process is caused by the huge amount of trading in listed shares together with the willingness to preserve the anonymity of brokers and shareowners. However, the result of a system with so many intermediaries is that there are huge costs to compiling a list of potential

[4] The process is regulated and codified at several levels of government and may in theory vary a lot from state to state, from one trading venue to another. However, we focus here on the biggest firms, which tend to list on the New York stock exchange and incorporate in a tight set of states, so we will focus on these cases with little loss of generality.

voters, organizing the communication of voting materials to these voters and, finally, tabulating the proxy cards sent by voters. In practice a single entity, Broadridge (formerly called ADP), essentially holds a natural monopoly over all those tasks in exchange for a fee from issuing companies as well as any third-party willing to communicate with shareholders. This private company acts in practice as the single intermediary in charge of communicating materials to voters and tabulating their votes.

2.2 How can Managers Take Advantage of the Current Voting Process?

By the nature of its tasks, Broadridge knows in real time the number of votes already cast for each position in the proxy card. However, contrary to the usual process in political elections, it can provide this information to some of its clients, often on an intra-daily basis, from the time the proxy materials are distributed to the day of the AGM. In theory, all parties sending proxy materials to shareowners through Broadridge are also eligible to access real time information on the current vote tally. In practice, issuing companies are privileged recipients of this information, because they are by default eligible to it[5], and because other interested parties may not have been able to pay fees to communicate with shareholders in the first place[6].

Furthermore, Broadridge is also entitled to provide a list of the names and addresses of beneficial owners to the issuers and other third-parties sending proxy materials, provided those owners have not objected to having their identity communicated to the company (the so-called NOBOs, which represent about 25% of street name shareowners according to SEC (2004))[7]. Again, because issuing companies have to pay Broadridge anyway in order to make sure the election takes place and because they pay the fees out of corporate funds, it is predominantly the issuer and not the

[5] An often stated reason for making real-time results available to issuers is that they must make sure that a quorum at the AGM is reached and decision-making is not paralyzed by the lack of voter participation at the AGM.
[6] Having paid Broadridge to distribute materials may not even be enough to receive the voting information. During the 2013 proxy season, Broadridge refused to deliver real-time vote tallies to sponsors of a shareholder proposal to separate the CEO and chairman positions at JP Morgan (Source: http://dealbook.nytimes.com/2013/05/15/jpmorgan-voters-are-denied-access-to-results).
[7] Given that issuing companies also have access to the name and addresses of shareholders directly registered in the company's share register, this means that they have in total the name and address of about 45% of shares eligible to vote on average. This does not include more infrequent and noisy sources of information such as 13d, 13f and 13g SEC filings.

shareholder proponents who have access to information that is potentially crucial in order to influence the final voting results[8].

Finally, even in these cases where both management and the proposal sponsors have the same information, the simple fact that management typically has access to much more resources and networks than the shareholder activists means that, more often than not, it is only the management who can use this real time information to contact voters and influence the final result[9].

2.3 Why Would Management Want to Influence Votes on Non-binding Proposals?

Even if voting results on non-binding proposals turn out to matter for the reputation of the management of targeted companies, the fine-tuning of voting results by management may make sense if and only if a very specific threshold of support for the proposal is considered a defeat for management. Bach and Metzger (2016) indeed show that the decision to implement the message sent by voters crucially depends after 2003 on whether the proposal reached the majority of votes according to a metric determined ex-ante by the firm's corporate charter[10]. This might be because 50% is a focal point that all parties deem as especially significant or because of potential legal consequences. Regardless of the underlying mechanism, the existence of a clear threshold separating victory from defeat for management provides clear incentives to fine-tune the results so as to be able to claim a victory against shareholder activists.

Overall, this description of the voting process at U.S. public companies suggests that some interested parties have the means to obtain a very precise result on the day of the AGM, and that the ability to do so is overwhelmingly on the side of management rather than on the side of shareholder proposal sponsors. In the rest of the paper, we will assess to what extent this active

[8] A special case when there is substantial symmetry in access to information between the issuer and the shareholder activists is proxy contests. However, these cases are very rare in comparison with the number of cases a simple shareholder proposal is on the ballot, which is what we consider here.

[9] In the case of management proposals, influencing the result is even trivially easy for management because it can choose to remove its own proposal from the proxy up until the day of the AGM if it sees the results are not in its favor. Previous scholars have indeed already shown statistical evidence of manipulation in this particular case (Listokin, 2008). Because shareholder proposals cannot be removed from the ballot at last minute, voting results for these ballot items are instead assumed not to be manipulated, which is why they have received much more attention from empirical researchers.

[10] The metric may change across firms because the denominator for the ratio of support for the proposal may or may not include abstentions and/or non-participating shares. See Section 3 and Bach and Metzger (2016) for more details.

management of votes has taken place in the period since 2003, which is when we expect there are strong incentives for management to fine-tune voting results.

3 Main Evidence on Vote Rigging

We are obviously not able to document the extent of vote rigging using direct evidence of management fine-tuning the results. This is why we rely instead on statistical identification, which starts from the assumption that voting results should follow a well-behaved distribution in the absence of vote manipulation.

3.1 A Simple Test for the Presence of Vote Rigging

Indeed, considering that U.S. public firms count at least several thousand shareholders, if shareholders took their decisions independently from each other, the central limit theorem predicts that across general meetings the distribution of voting support for shareholder proposals should follow a normal distribution. Even in the case where voters' decisions are correlated with each other but the degree of voter correlation is itself independent of the final result, one should expect that, if not normal, the density of voting results should follow a continuous function.

As McCrary (2008) shows analytically, the case where an agent has powers to influence vote shares very precisely (making some of these votes perfectly correlated with each other) and where this agent has a specific interest in making sure the vote share does not go above a specific threshold (here, 50%) will generate a very specific density of voting results, with a large discontinuity precisely around the target threshold of 50%. This prediction leads to a simple statistical test for the existence of systematic manipulation of votes. It consists in estimating a polynomial fit of the density separately to the left and to the right of the 50% threshold and then measuring the distance between the two polynomial functions right at the level of 50%. This test is now routinely run in any econometric study involving a regression discontinuity design. The difference here is that we are actually expecting that there is substantial manipulation and that the test rejects the null hypothesis that there is no manipulation of voting results.

To get a sense of how the method works, we provide in Figure 1, panel A, an introductory analysis of the density of voting results for shareholder proposals on governance topics from 2003 to 2016[11]. Each data point represents the frequency in the data of proposals reaching between n and n+1 % of the vote in their favor, where n is an integer from 10 to 90. What one can readily see is that there are about 75% more shareholder proposals reaching a level of support between 49% and 49.99% than there are proposals between 50% and 50.99%. We also display in this figure the polynomial fit of the density to the left and right of the 50% threshold. At this threshold, the difference between the two polynomial functions represents a downwards jump in the density of about -40%. The McCrary test provides a standard error for the size of the jump, which is equal to 9.4% in this example, meaning that the discontinuity is highly significant in both economic and statistical terms.[12]

3.2 Quantifying the Effect of Vote Rigging on Voting Outcomes

The methodology proposed by McCrary (2008) is meant to be a local identification of vote manipulation, i.e., it will identify the precision with which votes are manipulated right around the 50% threshold, but not how many proposals are successfully manipulated by management relative to a scenario where management cannot affect voting results. For instance, looking at Figure 1, panel A, it is very clear that due to management incentives to manipulate votes, there are too many proposals at 49% and too few at 50, but there also too many proposals at 48, 47, 46% and too few at 51, 52, 53%, and so on. If one wants to document the economic importance of vote manipulation, one needs to add up all the proposals below 50% that should have been above 50%, what one could call the missing shareholder successes.

If one wants to estimate the total number of proposals that should have passed in the absence of manipulation by management, one needs to estimate not just a counterfactual density at the 50% threshold, but a counterfactual distribution over a larger support of voting results. There is an active

[11] We provide the details of sample construction in the following section of the paper.
[12] To judge the robustness of this result, one can run placebo tests, which consists in testing whether the McCrary test detects voting manipulation in other parts of the density of voting results. This is what we do in Figure 9, which shows very clearly that the only level of vote shares for which there is significant manipulation according to the test is precisely the 50% threshold.

literature on how to proceed with such an estimation in public finance[13]. This literature is concerned with estimating the number of taxpayers who are induced to move to lower income brackets when there are discontinuous differences in *average* tax rates from one bracket to another[14]. This kind of tax schedule generates a steep incentive to avoid earning income just above the threshold. As a result, there is an excess mass of taxpayers just before tax rates change (the notch) and an under-representation of taxpayers just after the notch. It is easy to translate this idea to our specific case, where management generates an excess mass of voting results just before 50%, at the expense of having too few proposals reaching levels of support just above 50%.

The methodology for estimating the counterfactual distribution of votes in the absence of manipulation relies on the assumption that the movement of votes due to vote management is restricted to a tight interval of voting results, which we will call the "treated" vote interval. In our case, managers may want to change the "natural" result of an election if it is slightly above 50%, but not if the proposal has natural support base of 90% of the electorate; similarly, they may move voting results on a given proposal slightly below 50%, but will not be interested in making sure the shareholder proposal reaches less than 20% of the vote. As a result, for a large part of the potential voting results, the possibility of manipulation should not affect the density of voting results. We will call these intervals of voting results the "control" vote intervals. One can then use the shape of the vote density in the "control" vote intervals to produce a polynomial fit of the density and extrapolate what would be the density of votes in the "treated" zone of voting results if there was no possibility to systematically influence the voting results[15].

This is what we do in Figure 1, panel B. As a baseline, we assume that the "treated" interval of voting result (i.e., the zone in between the dashed lines) lies between 40% and 60% of the total number of valid votes. Outside the dashed lines, we estimate a polynomial regression (of order 5) of the density of voting results; the resulting fitted density (in other words, the counterfactual

[13] See Best and Kleven (2016) for an example, and Kleven (2016) for a review of this literature. We thank Michael Best for making his programs available to us.

[14] Such features of tax systems are called tax "notches". Instances in which *marginal* tax rates change discontinuously from one income bracket to another are called tax "kinks" and they require slightly different methods in order to identify movers.

[15] A refinement of this methodology consists in making sure that the counterfactual density integrates to one. Best and Kleven (2016) show that this provides only second-order improvements in the quality of the fit at the expense of robustness of the results, which is why we do not implement this refinement here.

density) is the red curve, which we project in and outside the treatment zone. One can clearly see from the graph that there is a negligible distance between the counterfactual and the true density outside the "treated" zone, which suggests the polynomial fit produces little estimation error. On the contrary, within the treated zone, there is a large gap between the two curves, which should be interpreted as the treatment effect of active vote management. According to this estimation, there are about 7% of all proposals in the 40 to 60% range that were moved from a victory for shareholder activists to a defeat due to active vote management by companies.

To make sense of the magnitude of these numbers, one should compare the number of missing successful proposals with the total number of proposals that are narrowly rejected, say by a margin of less than 10%. Figure 1, panel B implies that more than 11% of those contested yet rejected proposals would have passed if elections had not been systematically biased in favor of management.

4 Data

The data sources we use in this analysis are standard sources in the corporate governance literature, in particular among articles dedicated to shareholder voting. However, since we uncover new evidence contradicting one of the central assumptions in the literature, namely that votes on shareholder proposals are not systematically biased in favor of management, it is important that we explain how our way of looking at the data leads to this new finding.

4.1 Voting Results

One of the main findings from Bach and Metzger (2016) is that the results of a vote on shareholder proposals are scrutinized by different parties using different voting metrics. This is possible because some shareholders choose not to participate in the election at all, some participate but actively abstain on certain items, which leaves room for interpretation as to whether these shareholders should be counted as voting against the proposal or not.

Shareholder organizations, such as the Council of Institutional Investors (CII), most often follow a single standard across all firms, whereby a winning proposal is one that reaches at least 50% of votes effectively cast for and against the proposal. One of the main commercial datasets of voting results, the one provided by RiskMetrics on WRDS, only provides voting results using this metric

for the period starting in 2007 which, as we will argue later on, is the period where most of the vote rigging has been taking place.

In order to judge whether or not a shareholder proposal has garnered a majority of votes, management may use a more demanding metric than the one followed by shareholder representatives. It could in particular treat abstentions or non-participating shares as de factor votes against the shareholder proposal. The reason is that the company's state of incorporation may suggest in its corporate code such a voting metric or that the corporate charter of the firm specifies this particular way of counting votes.[16] Companies can, however, opt out of the state rule and specify a firm-specific voting rule in their corporate charter. If one wants to identify whether management biases voting results in its favor, it is important to observe the voting measure that managers use to determine their victory or their defeat. This information is available on the RiskMetrics-WRDS dataset until 2006 and on the database provided by the proxy advisor ISS, Voting Analytics, for the period starting in 2003.

ISS-Voting Analytics is particularly convenient because it also allows for the computation of voter turnout rates and specifies the position that ISS took on each proposal as a proxy advisor. Both kinds of information will be useful when it comes to determining when vote rigging by management is most likely happening. Our baseline sample is therefore made of all shareholder proposals addressing governance issues in that dataset, that is 4,442 ballot items in total from 2003 to 2016, as can be seen from Table 1, Panel A.

We also make use a subset of the WRDS-RiskMetrics from Bach and Metzger (2016). This sample includes the ten most supported proposal types over the period 1997-2011, shareholder support being defined here by the number of times a proposal type has obtained a majority of votes "for" and "against".[17] The purpose of this data is twofold. First, we make use of the early data to investigate the time series pattern of vote rigging[18]. Second, this data contains hand-collected

[16] We provide a list of majority thresholds according to the state rule in Table A3 in the appendix.
[17] This leaves us with the following proposal topics (by order of popularity): repeal classified board, eliminate or vote on poison pills, eliminate super-majority requirements, require majority vote for director elections, right to call special meetings, right to act by written consent, vote on golden parachutes, option expensing, say-on-pay, separation between CEO and chairman.
[18] In Figure 10, we also use this alternative source of information on voting results for the period 2003-2011 to confirm the evidence of manipulation of voting results.

information on implementation of these shareholder proposals as well as information on the identity of the sponsors for the period between 1997 and 2011. Table 1, Panel B shows the corresponding time-series evidence.[19]

4.2 Mutual Fund Voting Decisions

Mutual funds represent the majority of the ownership base of most companies we consider in this analysis. It is therefore particularly interesting to analyze whether and how mutual funds play a role in the manipulation of voting results benefiting the management. To this end, we again rely on ISS-Voting Analytics, since it provides for every shareholder proposal since 2003 the voting decision made by each mutual fund holding shares in the company.

We are particularly interested in analyzing whether large mutual play a special role. To this end, we define the size of each mutual fund family as equal to the number of voting decisions that funds within the fund family have made during each proxy season.

4.3 CEO Option Package Exercises

CEOs often hold stock or options of their own company. These ownership stakes allow CEOs to directly vote on the shareholder proposals themselves. While stocks can directly be voted on, owners of options need to exercise these option right before the record date to obtain the voting rights of the underlying stocks. We test whether CEOs in contested shareholder proposals are more likely to exercise their option packages to increase their voting rights. We mainly follow Fos and Jiang (2015) in constructing data on the exercise of CEO options. Information on CEO options and their exercises comes from Thomson Reuter Insider Filings. We collect information on the record date from N-PX filings through SEC Edgar and details on option packages and their exercises from Thomson Insider through WRDS. Appendix 10.3 contains details on the construction of the sample and comparisons with Fos and Jiang (2015).

[19] The main reason for observing higher passing rates in the Bach and Metzger (2016) data compared to the ISS data between 2003 and 2016 is the specific subsample of proposals in Bach and Metzger (2016) which focus on the ten most supported proposals.

5 Detailed Evidence on Vote Rigging

In Section 3, we have provided early evidence that the manipulation of voting results is an important phenomenon. In this section, we will provide a more detailed characterization of this practice, in order to better understand its causes and consequences.

5.1 When Did Vote Rigging Become Detectable?

The importance of shareholder proposals has grown over time since their modern inception in the late eighties. In fact, as has already been documented in Ertimur and Ferri (2010) and Bach and Metzger (2016), a massive shift in the importance given to shareholder proposals by management has taken place in 2003-2004. Table 1, Panel B and Figure 3, Panel A show that before 2003 it was not very common that majority-supported shareholder proposals were implemented (in only 26% of the cases). After 2003 the implementation rate jumps to a level of about 70%. This happened in the absence of any direct change in regulation on the topic, which suggests that the reputational cost of not listening to the vote went up significantly after the Enron scandal and the debate around the SOX reforms. Under this new regime, votes on shareholder proposals essentially became referenda and it should not be surprising that as a result, the management of targeted companies found it important to actively campaign against these proposals (Georgeson, 2003, 2004). We therefore do not expect to detect manipulation of voting results at the 50% threshold before 2003. We provide a graphical version of this test in Figure 3, Panel B. It clearly shows that, contrary to the post-2003 period, there is no apparent discontinuity in the density of vote shares around the 50% threshold. The corresponding estimate of the jump in density according to the McCrary test is equal to -12%, with a standard error of 17.8%, which is both economically and statistically insignificant.

Incidentally, this also helps understand why previous large-sample tests of the manipulation hypothesis have yielded negative results. The main such test has been performed by Cuñat et al. (2012) using all governance proposals from 1997 to 2007. Given that the largest part of their sample was in a period where there was little incentive to manipulate, their negative result on manipulation is perfectly consistent with our message in this paper.

5.2 What Kind of Proposals are Most Affected?

We may expect that management will campaign more aggressively against certain types of proposals. The relevance of the manipulation we have documented will also depend on what types of proposals are prevented from passing. It is therefore interesting to investigate what kind of proposals attract the greatest amount of vote management by companies. This is what we test in Figures 3 to 5 as well as in Tables 2 and 3 using McCrary and RDD covariate tests.[20]

In Figure 3, we differentiate proposal types depending on whether the proxy advisor ISS generally thinks the proposal is good for companies or not. More precisely, for each proposal type, we compute the frequency with which ISS has advised shareholders to vote for it across firms and years. We consider that shareholder-value-friendly proposals are those whose approval frequency by ISS is higher than the median across proposal types[21]. Panel A shows very clearly that management only tries to manipulate the results when ISS considers the content of the proposal to reflect good governance practices. On the contrary, there is no discernible manipulation by management when ISS does not consider the proposal to be a uniformly good idea. This result is very important because it means that it is precisely when the proposal is likely good for shareholder value that management fights it the most.

In Figure 4, we consider whether the decision to manage the votes depends on whether the proposal has a greater potential of implementation once it has passed, which we measure using the average probability of implementation of a proposal type conditional on the proposal receiving a majority of votes. The idea here is that some proposals can be disregarded by management even when they receive large support, either because the content is too vague or because the law or the corporate charter does not give management powers to act on the proposal. What the graphs show very clearly and not surprisingly is that managements feels an urge to bias voting results in their favor only when they know a shareholder victory would effectively constrain their actions.

[20] For each of these graphical tests, we also provide the corresponding numerical results of the McCrary test in Table 2 and RDD covariate tests in Table 3. In the RDD methodology, such tests should yield insignificant results in order to prove the absence of manipulation. We use these tests with the opposite aim to show that manipulation leads to systematic differences in pre-election covariates just around the threshold.

[21] An alternative would be to distinguish proposals based on the decision made by ISS for each specific firm. However, this could well be a very endogenous split as some of the efforts that management could make in the first place is to try and convince ISS to be on their side.

Finally, in Figure 5, we distinguish proposals according to the identity of the proponent, i.e., whether the sponsor of the proposal is an individual shareholder or an institutional investor (typically a pension fund). These two types of sponsors are known to engage differently with the companies they wish to reform. Pension funds are more likely to have long-term relationships with companies; they also often remove their proposals before the vote when their negotiations with companies have yielded a satisfying result. Moreover, they may also have the skill and resources to counteract any efforts to manage voting outcomes by the management. Consistent with these hypotheses, we indeed find that management does not significantly manipulate voting results on a proposal when its sponsor is an institutional investor.

Overall, our results suggest that manipulation of voting results will take place precisely when shareholder votes should be most effective at improving shareholder value, i.e., when the proposed reform is proven and tested at other companies, when its content is easy to implement and when informal ways to negotiate with management are unavailable.

5.3 How Long-Lasting are the Effects of Vote Rigging?

The rigging of votes that we document would not be that costly in the end if these shareholder contests were repeated games, in which shareholder proponents who are convinced that their reform is good for the firm will keep on submitting the reform proposal at successive general meetings until the proposal finally reaches a majority. Unless management has full powers over the voting results, these repeated attempts would then eventually lead to a victory for the activist, even if in the short-run it is frustrated by management's ability to manipulate votes.

An easy way to gauge this possibility is to run a regression discontinuity design taking as an outcome the probability that the content of the proposal that is being voted upon will pass (i.e., reach 50% of the votes) either now or in the next one, three or five years. We show results from this exercise in Figure 6. If the repeated nature of shareholder proposals fully annihilated the consequences of vote rigging, we would see that proposals that are narrowly rejected today have in fact a very high probability to pass in the future. In the RDD setup, this would mean that there should not be a big discontinuity in the likelihood of proposal passage if one considers not just this year's passage but passage of the proposal in the future. Figure 6 shows very clearly, however, that the potential repeated submission of a shareholder proposal does very little to make sure that a

proposal that is narrowly rejected today will eventually pass in the future. In fact, a proposal that has been rejected with an extremely narrow margin today only has a 10% probability of winning in the next five years.

This means that the manipulation of votes by management way is a very effective way to repeal shareholders' attempts to reform the company.

5.4 Which Shareholders Contribute to Vote Rigging? The Case of Mutual Funds and CEOs

It is not enough for management to have privileged access to real-time information on voting results. In order to affect the results in a decisive way, companies must rely on shareholders who will vote against the proposal at their request. This can be done either through making sure shareholders who otherwise would not have participated to send back their proxy card in favor of management views (this is what we call the "participation" channel) or through asking shareholders who otherwise would have voted for the proposal to overturn their decision and vote against it (we will call this the "vote switching" channel).

It is possible to identify the participation channel because we have data on the turnout rate for every general meeting. We then classify votes on shareholder proposals in two groups: those where the turnout rate is above and below the median. Figure 7 shows that voting manipulation only takes place where the turnout rate is above the median. Our preferred explanation is that high participation reflects the efforts made by management to get friendly voters to participate in their favor or decisions made by companies' insiders to exercise stock options and increase their voting power just before the vote (in a similar fashion to what has been documented by Fos and Jiang (2016) for proxy contests). Another possible interpretation is that high turnout arises when the vote has special importance and that this is precisely when management wants to influence voting results the most. The second interpretation is consistent with Cvijanovic, Groen-Xu, and Zachariadis (2016) who use participation rates to estimate the importance of proposals as perceived by shareholders. Both explanations are clearly not contradictory.

We can shed some light on the "vote switching" channel using data on voting decisions made by mutual funds. Indeed, thanks to SEC regulations, this data is accessible in the ISS-Voting Analytics

database since 2003. Using this data, we can test whether mutual funds make peculiar voting decisions when the proposal eventually gets 49.9% of the votes rather than 50.01%. It is important to mention that there is considerable heterogeneity among mutual funds voting in the same meeting on the same proposal. We hypothesize that the very large fund families might have a very specific behavior, either particularly cooperative with management (since management can easily contact them) or particularly aggressive (since these funds reap a bigger share of the profits from monitoring managers). In Figure 8, we show the fraction of funds voting with management on a specific shareholder proposal as a function of the voting support reached eventually by that proposal. Panel A provides the results for the biggest 10% fund families and panel B for the smallest 50% fund families[22]. Interestingly, large funds seem to try and counteract efforts made by management to influence the votes: they are much more likely to vote against management precisely when management narrowly wins the vote. On the other hand, panel B shows that small funds do not significantly side with either management or shareholder activists in the case of narrow votes won by management. This implies that there is a third group of voters, which we cannot precisely identify here, voting in favor of management to make sure proposals to reform the company narrowly fail. This group probably includes corporate insiders, friendly block holders as well as a significant number of small retail shareholders, who are known to side with management when they participate (Saccone, 2010).

There is one group that we can actually identify and is naturally expected to vote with the management: the CEOs of these companies targeted by shareholder proposals. Under strict assumptions (e.g., perfect markets) it can be theoretically shown that CEOs should not exercise their options before maturity. However, under more realistic assumptions, CEOs may want to exercise their options if they are sufficiently deep in the money (e.g., Hall and Murphy 2002 and Sircar and Xiong 2007). We use data on option holdings and exercises to estimate a baseline model for the likelihood of option exercise by CEOs employing a large array of firm characteristics as well as time fixed effects. We then test whether the arrival of a shareholder meeting makes it more likely that CEOs exercise their option rights to obtain additional voting rights. If managers expect a clear voting outcome, i.e., a vote share far away from the 50% threshold, the extra voting rights

[22] As shown in Table 3, the impact of fund size on the propensity to counteract management manipulation is fairly linear so the exact choice of size grouping of fund families does not change the results in any significant way.

acquired by exercising the options are unlikely to impact the passing rate of a proposal. If, however, the voting outcome is expected to be close to the 50% threshold, the extra votes of CEOs might indeed be decisive. For that reason, we conjecture that CEOs are more likely to exercise their options when proposals are expected to be contested.

We conduct a linear regression analysis as well as a survival analysis. The dependent variable is a dummy variable equal to one of the CEO exercises at least 25% of a given option package. The covariates are option package controls and standard firm controls as employed in Fos and Jiang (2015). Moreover, we include a set of four dummy variables related to the presence of the record date of an upcoming shareholder meeting in a given month. The first three dummies are nested: the first dummy "Month with record date of general shareholder meeting" is one if the record date of a general annual shareholder meeting falls into a given month. The second dummy "Month with record date of general shareholder meeting with shareholder proposal on program" is one if the record date of a general annual shareholder meeting with a corporate governance shareholder proposal on the program falls into a given month. The third dummy "Month with record date of general shareholder meeting with contested corporate governance proposal" is one if the record date of a general annual shareholder meeting with an ex-post contested (i.e., vote share between 45% and 55%) shareholder proposal falls into a given month. The last dummy "Month with record date of special shareholder meeting" is one if the record date of a special annual shareholder meeting falls into a given month. The last dummy is not nested and serves as a comparison to benchmark the size of any potential effect. Our main variable of interest is the third dummy variable that is equal to one if a record date is affiliated with a shareholder meeting with an ex-post contested proposal, i.e., a proposal with voting support between 45% and 55%. Note that due to the nesting one needs to add up the coefficients of the first three dummies for comparisons with average non-record date months.

The likelihood of exercising a substantial part of an option package is 0.73% in an average month (the same as in Fos and Jiang (2015)). This likelihood is 27% higher in a month with an annual shareholder meeting (without a shareholder proposal considered in our analysis). If the meeting has a shareholder proposal on the program the likelihood to exercise an option package increases by 110% compared to a month without any meeting; if the shareholder proposal turns out to be

contested (i.e., between 45% and 55% voting support) the likelihood to exercise is 302% higher (see column 2 of Table 4). To benchmark the magnitude, we also look at special shareholder meetings. In months with a record date of a special shareholder meeting the likelihood to exercise increases by 137%. Columns 3 and 4 show consistent evidence using survival analysis (COX model).

Taken together these results show evidence supportive of the hypothesis that CEOs strategically exercise their option packages to obtain additional voting rights in contested shareholder proposals.

6 Conclusion

In this paper, we provide original evidence that the voting system at U.S. corporations can be systematically and precisely influenced by management to obtain results in their favor. We show that this is likely detrimental to shareholder value because it primarily prevents well-recognized, easy-to-implement proposals from winning a majority for a long time after the proposals are initially discussed.

These results question the efficiency of current voting procedures. This starts with the privileged access to information that corporations currently have. There have been ongoing discussions on whether or not communications with shareholders should be made easier and more transparent. Our paper suggests that the communication privilege given to issuing companies contributes significantly to management entrenchment. Kahan and Rock (2007) have identified other flaws in the current process of shareholder voting in the U.S. (e.g., votes not counted (by early closing or mistake)). Recent technological advancement such as the blockchain technology have been brought forward to address many of these issues. In February 2016, the NASDAQ Talinn (Estonia) Stock Exchange announced a pilot program for blockchain voting in shareholder meetings for companies listed on the exchange (see Yermack (2016)). As votes will be added to the blockchain which is publicly observable, management will not have any informational advantages. However, it may be still better able to mobilize shareholders to vote in its favor.

More generally, our results add new evidence that the balance of powers between management and activists is clearly in favor of the former, even when it comes to areas such as voting on shareholder proposals where there is in theory a greater level-playing field than in director

elections. This suggests that putting ever more contentious issues to a shareholder vote may not be the ultimate solution to all agency conflicts.

Finally, this new evidence suggests that closely-contested votes in corporate elections should be treated with extra caution when used to identify causal effects of governance provisions. Finding evidence of manipulation does not per se indicate the existence of a causal bias in those RDD estimates, but this means that this type of identification should not be considered a gold standard anymore in the context of governance studies. This suggests in particular that more complex econometric specifications allowing for such manipulation, such as the one proposed by Gerard, Rokkanen and Rothe (2015), should be used instead.

7 References

Bach, L. and Metzger, D., 2016, Why Do Shareholder Votes Matter?, Working paper, Stockholm School of Economics.

Best, M.C. and Kleven, H.J., 2016. Housing market responses to transaction taxes: Evidence from notches and stimulus in the UK. *Review of Economic Studies* (forthcoming).

Calonico, S., Cattaneo, M. and Titiunik, R., 2014, Optimal data-driven regression-discontinuity plots, Working paper, University of Michigan.

Calpers, 2013, Vote calculation methodologies, technical report.

Cattaneo, M., Frandsen, B. and Titiunik, R., 2014, Randomization inference in the regression discontinuity design: An application to party advantages in the U.S. Senate, *Journal of Causal Inference*, forthcoming.

Cheng, I., Hong, H. and Shue, K., 2014, Do managers do good with other people's money?, Working paper, University of Chicago.

Council of Institutional Investors, 2012, The OBO/NOBO Distinction in Beneficial Ownership: Implications for Shareowner Communications and Voting, mimeo.

Cuñat, V., Giné, M. and Guadalupe, M., 2012, The vote is cast: The effect of corporate governance on shareholder value, *Journal of Finance* 67, pp. 1943–1977.

Cuñat, V., Giné, M. and Guadalupe, M., 2013, Corporate governance and value: Evidence from 'close calls' on shareholder governance proposals, *Journal of Applied Corporate Finance* 25, pp. 44-54.

Cuñat, V., Giné, M. and Guadalupe, M., 2014, Say pays! Shareholder voice and firm performance, LSE working paper.

Cvijanovic, D., Dasgupta, A. and Zachariadis, K. E., 2016, Ties That Bind: How Business Connections Affect Mutual Fund Activism. *The Journal of Finance*, 71: 2933–2966.

Cvijanovic, D., Groen-Xu, M. and Zachariadis, K. E., 2016, Free-riders and Underdogs: Participation in Corporate Voting. Working Paper.

Ertimur, Y., Ferri, F. and Stubben, S., 2010, Board of directors' responsiveness to shareholders:

Evidence from shareholder proposals, *Journal of Corporate Finance* 16, pp. 53-72.

Fos, V., 2013, The disciplinary effects of proxy contests, *Management Science*, forthcoming.

Fos, V. and Jiang, W., 2016, Out-of-The-Money CEOs: Private Control Premium and Option Exercises, *Review of Financial Studies*, 29: 1549-1585

Gerard, F., Rokkanen, M. and Rothe, C., 2016. Identification and Inference in Regression Discontinuity Designs with a Manipulated Running Variable. Working Paper.

Georgeson Associates, 2003, 2004, Annual report on corporate governance

Hall, B. J., Murphy, K. J., 2002. Stock options for undiversified executives. Journal of Accounting and Economics 33 (1), 3-42.

Illiev, P. and Lowry, M., 2014, Are mutual funds active voters?, *Review of Financial Studies*, forthcoming.

Imbens, G. and Kalyanaraman, K., 2012, Optimal bandwidth choice for the regression discontinuity estimator, *Review of Economic Studies* 79, pp. 933-959.

Kahan, M. and Rock, E., 2007. Hanging Chads of Corporate Voting, The. Geo. LJ, 96, p.1227.

Kalay, A., Karakas, O., Pant, S., 2014. The market value of corporate votes: Theory and evidence from option prices. The Journal of Finance 69 (3), 1235{1271.

Kleven, H., 2016, Bunching, *Annual Review of Economics*, Vol. 8: 435 -464.

Listokin, Yair, 2008, Management Always Wins the Close Ones, *American Law and Economics Review*, Vol. 10, Issue 2, pp. 159-184, 2008

Matvos, G., and M. Ostrovsky, 2010, Heterogeneity and peer effects in mutual fund proxy voting, *Journal of Financial Economics*, 98, 90-112.

McCrary, J., 2008, Manipulation of the running variable in the regression discontinuity design: A density test, *Journal of Econometrics* 142, pp. 698- 714.

New York Stock Exchange, 2006, Report and Recommendations of the Proxy Working Group to the New York Stock Exchange, mimeo.

Popadak, J., 2013, A corporate culture channel: How increased shareholder governance reduces firm value, Working Paper, Wharton.

Saccone, F., 2010, E-Proxy Reform, Activism, and the Decline in Retail Shareholder Voting, SSRN working paper.

Securities and Exchange Commission, 1997, Order Granting Approval to Proposed Rule Change and Notice of Filing and Order Granting Accelerated Approval to Amendment No. 1 to Proposed

Rule Change Relating to a One-Year Pilot Program for Transmission of Proxy and Other Shareholder Communication, mimeo.

Securities and Exchange Commission, 2004, Request for Rulemaking Concerning Shareholder Communications, mimeo.

Sircar, R., Xiong, W., 2007. A general framework for evaluating executive stock options. Journal of Economic Dynamics and Control 31 (7), 2317-2349.

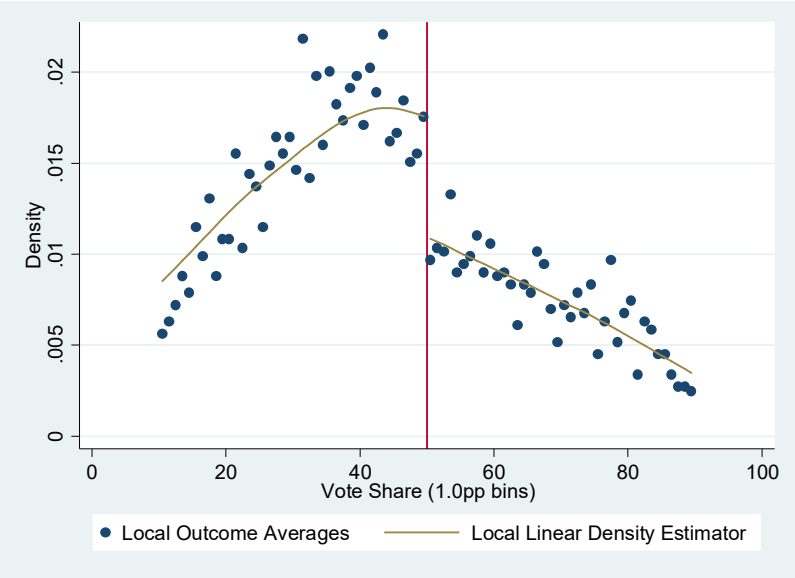
Yermack, D., 2015. Corporate Governance and Blockchains, National Bureau of Economic Research.

8 Figures

Figure 1: Distribution of Voting Shares Around the Approval Thresholds

Panel A shows the results of the McCrary (2008) test for shareholder proposals between 2003 and 2016. Proposals are grouped into one percentage-point bins: proposals that passed by between 0% and 1% are assigned to the first bin to the right of the red vertical line, and those that failed by similar margins are assigned to the first bin to the left of that line. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). Panel B shows an estimate of the counterfactual distribution in the absence of manipulation using the methodology by Best and Kleven (2016). The omitted area is between 40% and 60% between the dashed vertical lines. Source: ISS (2003-2016).

Panel A: McCrary Test



Panel B: Counterfactual Distribution

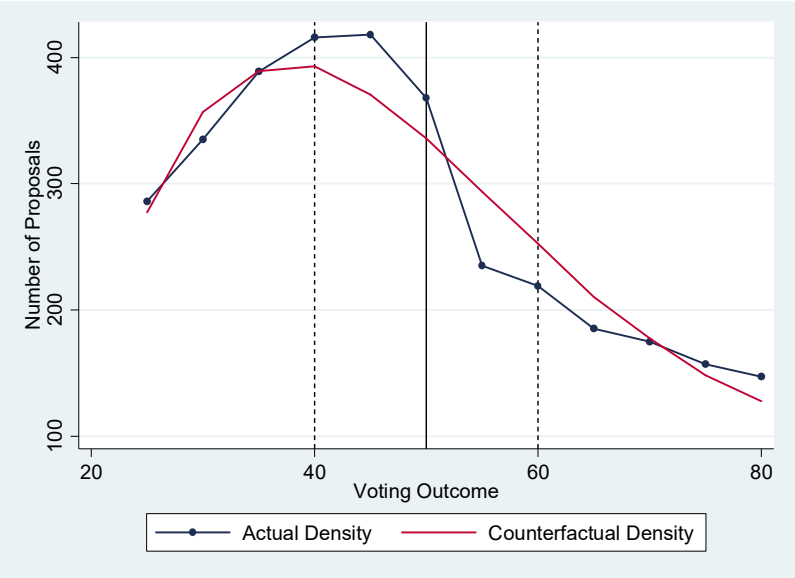
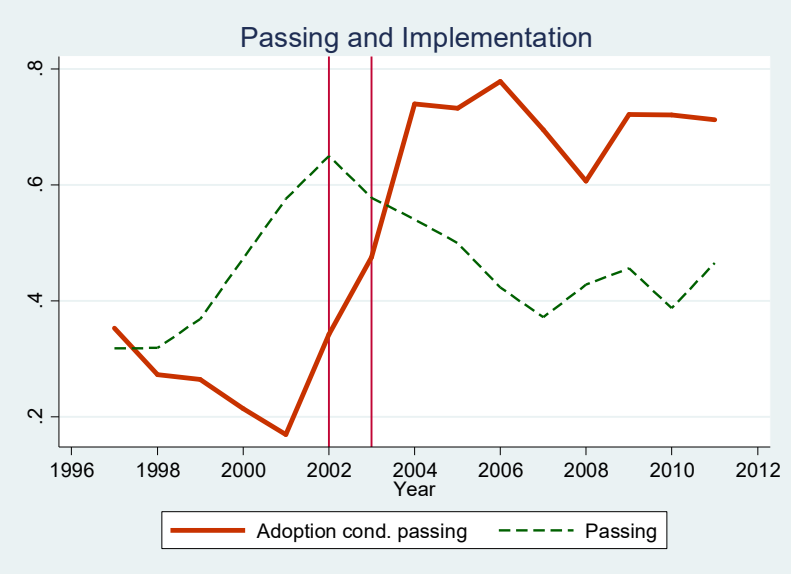


Figure 2: Passing and Implementation rates

Panel A shows time trends of passing and, conditional on passing, implementation rates. A proposal passes if the voting share in favor of the proposal reaches 50% according to the voting rule of interest. A proposal is considered to be implemented if management adopts the content of the proposal within two years after the shareholder meeting. Panel B shows the results of the McCrary (2008) test for shareholder proposals between 1997 and 2003. Proposals are grouped into one percentage-point bins: proposals that passed by between 0% and 1% are assigned to the first bin to the right of the red vertical line, and those that failed by similar margins are assigned to the first bin to the left of that line. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). Source: Riskmetrics (1997-2011) and DEF 14A filings (1997-2011).

Panel A: Passing rates and Implementation



Panel B: Pre-SOX period (before 2003)

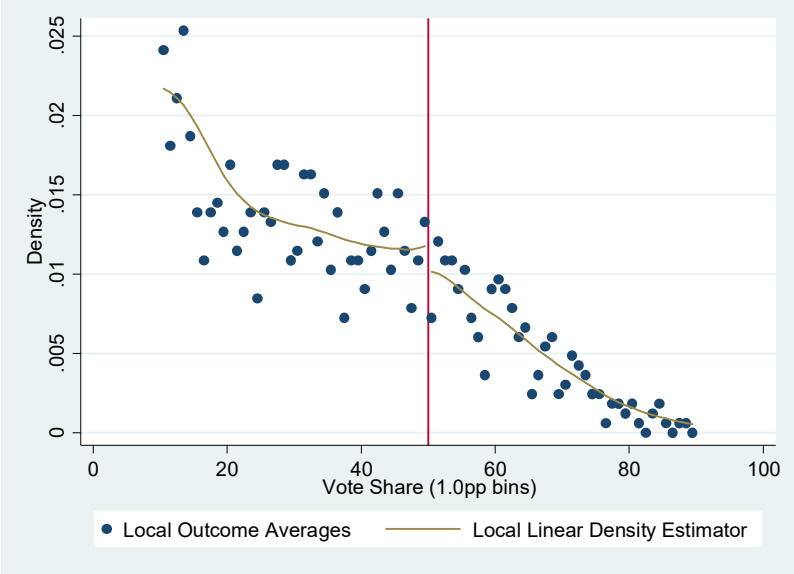
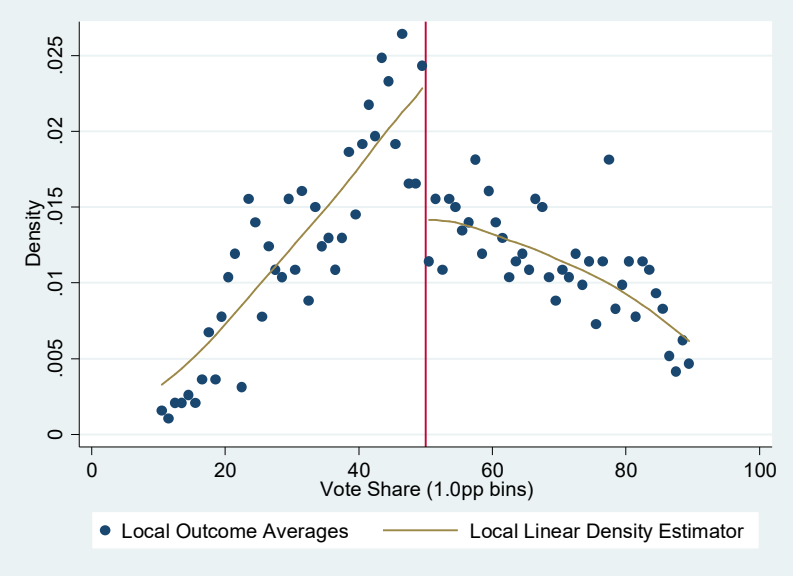


Figure 3: Proposals with high vs. low support from ISS

The graphs shows the results of the McCrary (2008) test for shareholder proposals between 2003 and 2016 for different subsamples. Proposals are grouped into one percentage-point bins: proposals that passed by between 0% and 1% are assigned to the first bin to the right of the red vertical line, and those that failed by similar margins are assigned to the first bin to the left of that line. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). Shareholder proposals are divided in proposals that receive relatively high support from ISS (voting recommendation "for") on average (Panel A) and relatively low support (Panel B). For each proposal type we calculate the mean voting support by ISS and split proposals along the median of this average voting support. Source: ISS (2003-2016).

Panel A: Proposals with high ISS support



Panel B: Proposals with low ISS support

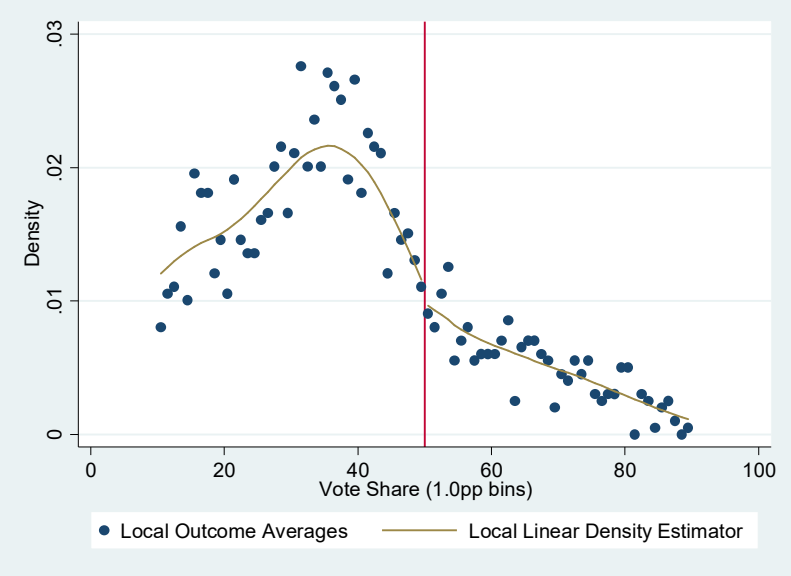
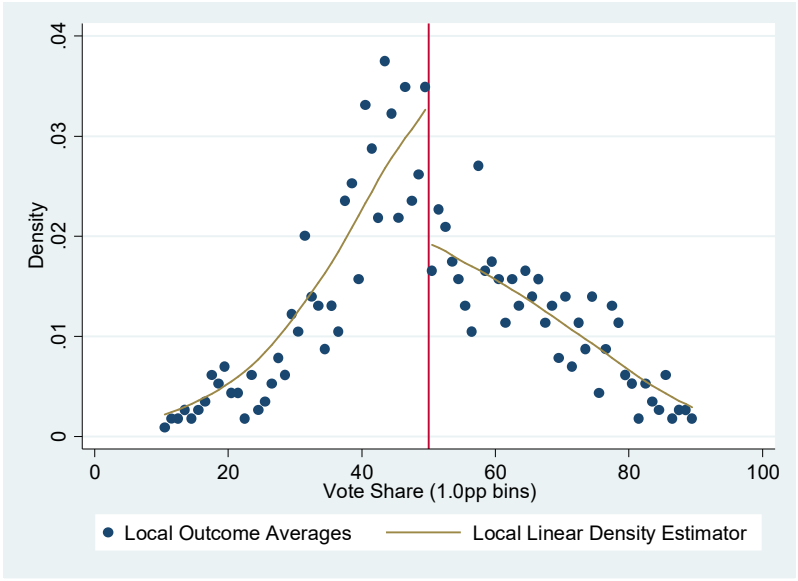


Figure 4: Proposals with high vs. low implementation rates

The graphs shows the results of the McCrary (2008) test for shareholder proposals between 2003 and 2016 for different subsamples. Proposals are grouped into one percentage-point bins: proposals that passed by between 0% and 1% are assigned to the first bin to the right of the red vertical line, and those that failed by similar margins are assigned to the first bin to the left of that line. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). Shareholder proposals are split along high and low implementation rates conditional on passing the majority threshold. For each proposal type we calculate the average implementation rate conditional on passing and split the sample along the median. Panel A (B) shows results for proposals with relatively high (low) conditional implementation rates. Source: Riskmetrics (2003-2011).

Panel A: Proposals with high impl. rates conditional on passing



Panel B: Proposals with low impl. rates conditional on passing

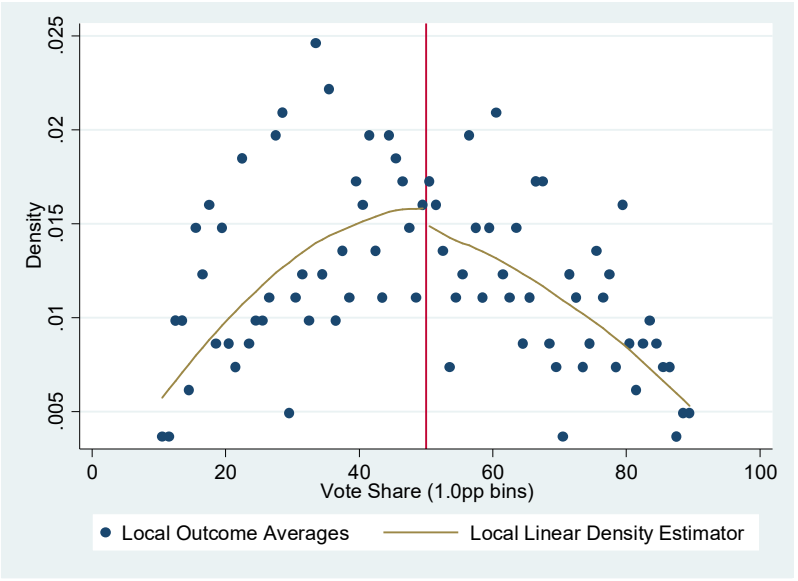
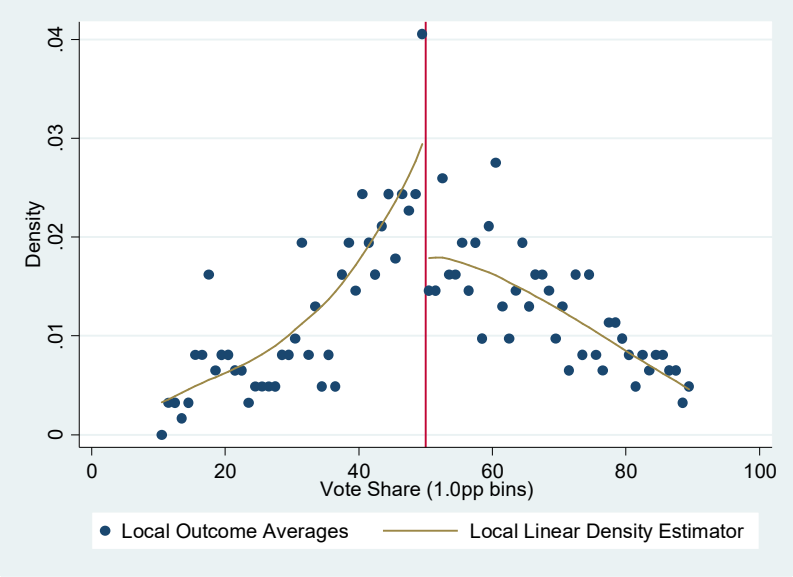


Figure 5: Proposals sponsored by individuals vs. institutional investors

The graphs shows the results of the McCrary (2008) test for shareholder proposals between 2003 and 2016 for different subsamples. Proposals are grouped into one percentage-point bins: proposals that passed by between 0% and 1% are assigned to the first bin to the right of the red vertical line, and those that failed by similar margins are assigned to the first bin to the left of that line. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). The proposals are divided into proposals sponsored by individuals (Panel A) and institutional investors (Panel B). Source: Riskmetrics (2003-2011).

Panel A: Proposals sponsored by individuals



Panel B: Proposals sponsored by institutional investors

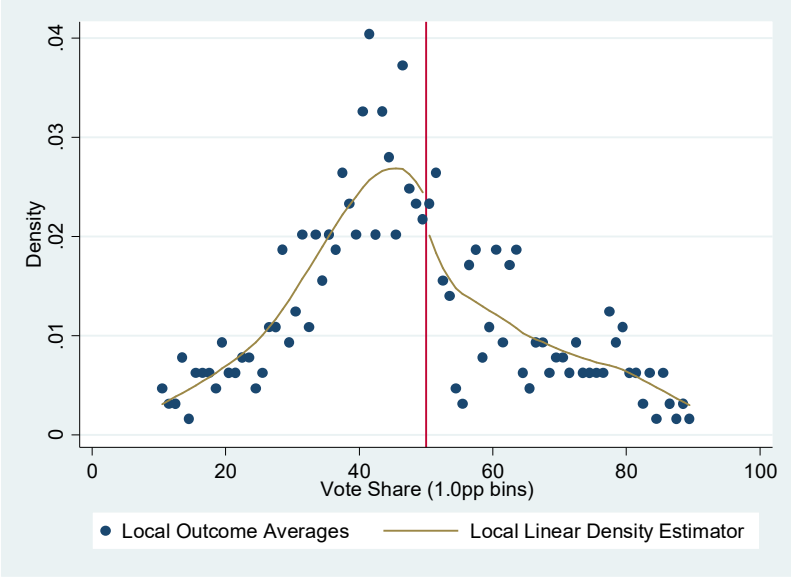


Figure 6: Future Passing Rate for Proposals Currently on the Ballot

The figures shows RDD plots for future passing rates of shareholder proposals based on voting support in year t. Passing in the same year / within 1, 3, 5 years is a dummy that is equal to one if the proposal passes in the same year or is the same type of proposal passes within 1, 3, or 5 years at the same firm. The interval size of bin averages is chosen according to the methodology in Calonico et al. (2015). Source: ISS (2003-2016).

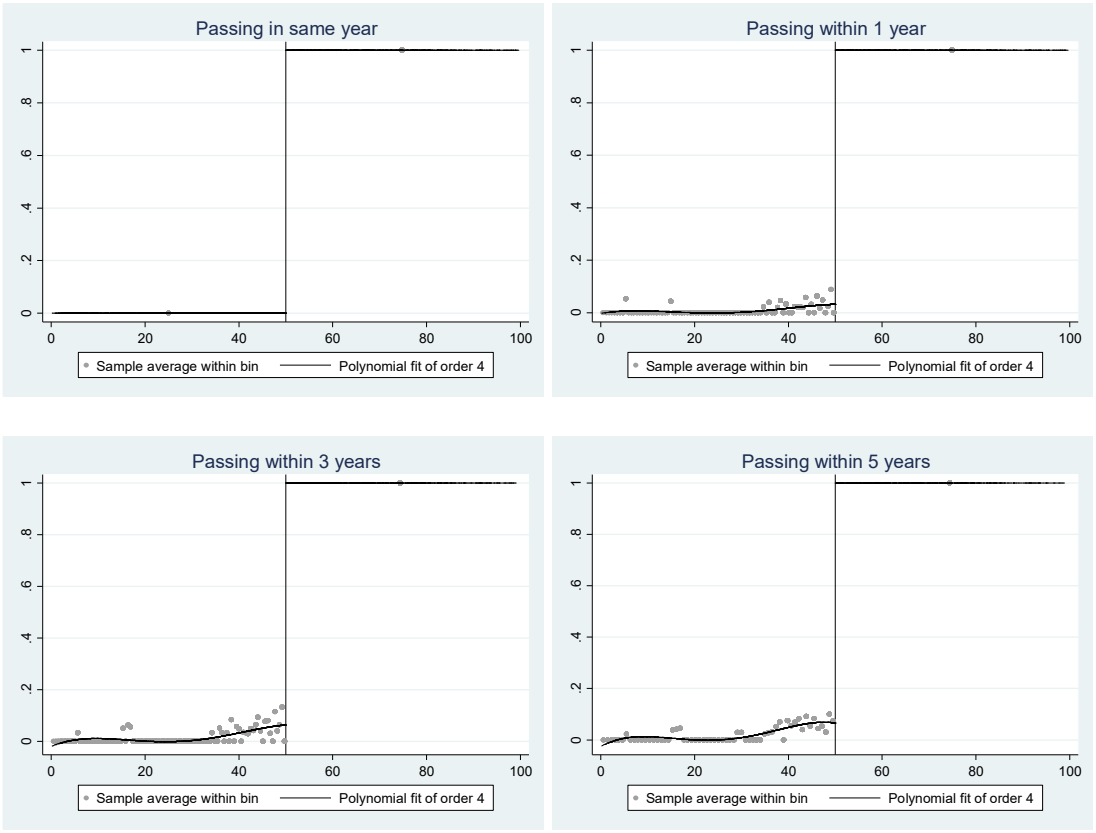
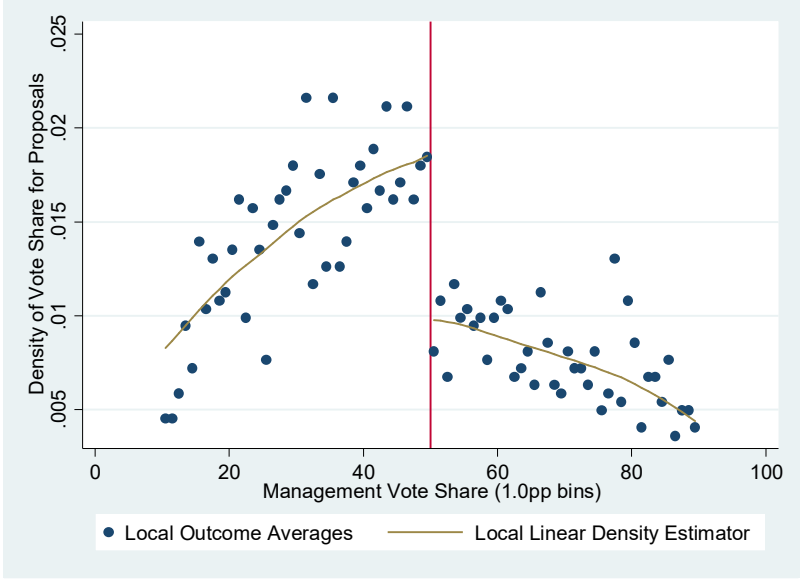


Figure 7: Participation

Panel A and B show the results of the McCrary (2008) test for shareholder proposals between 2003 and 2016 for different subsamples. Proposals are grouped into one percentage-point bins: proposals that passed by between 0% and 1% are assigned to the first bin to the right of the red vertical line, and those that failed by similar margins are assigned to the first bin to the left of that line. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). Shareholder proposals are split along the median participation rate defined as number of votes divided by number of shares outstanding. Source: ISS (2003-2016).

Panel A: Proposals with high participation



Panel B: Proposals with low participation

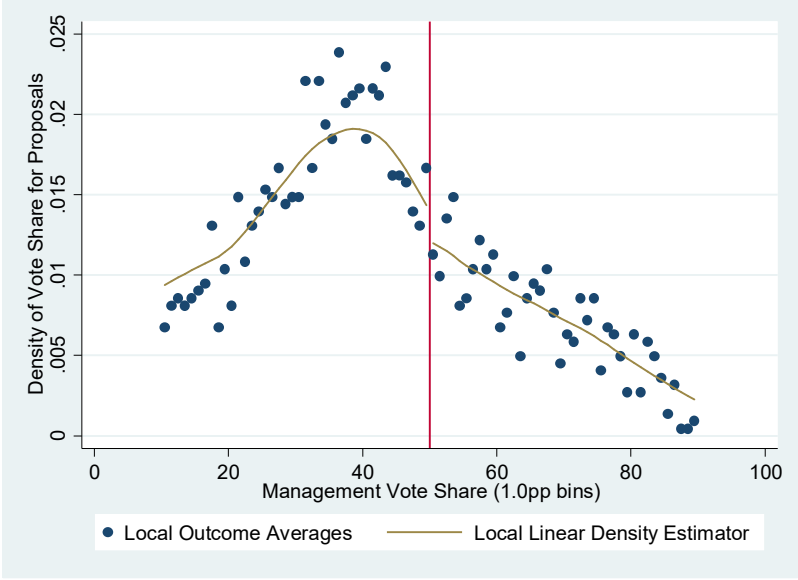
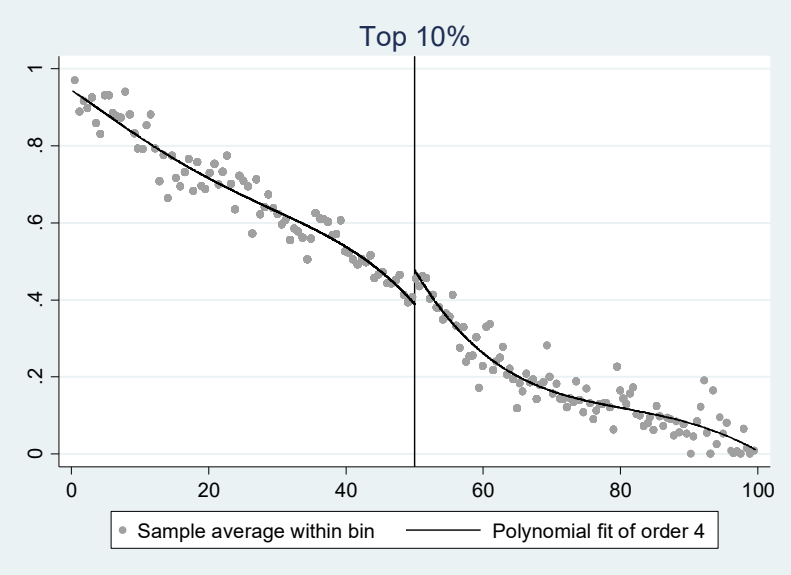


Figure 8: Mutual Fund Voting

The outcome variable is the average share of funds voting against the proposal among fund families belonging to the same size group (in this case, the group of fund families belonging to the top 10% of the size distribution (panel A) vs. the group of fund families belonging to the bottom 50% of the size distribution (panel B)). The size of a fund family is measured by the number of funds that it includes. The interval size of bin averages is chosen according to the methodology in Calonico et al. (2015). Source: ISS (2003-2016).

Panel A: Top 10%



Panel B: Bottom 50%

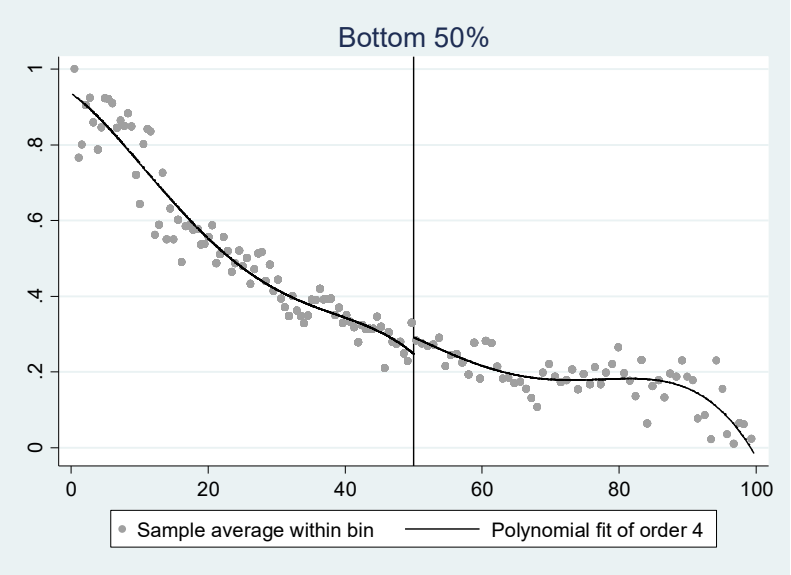


Figure 9: Placebo cutoffs

The graph shows the log densities of the McCrary (2008) test for shareholder proposals between 2003 and 2016 for different (placebo) cut-off values. The local linear regression is estimated using the bandwidth suggested by McCrary (2008).

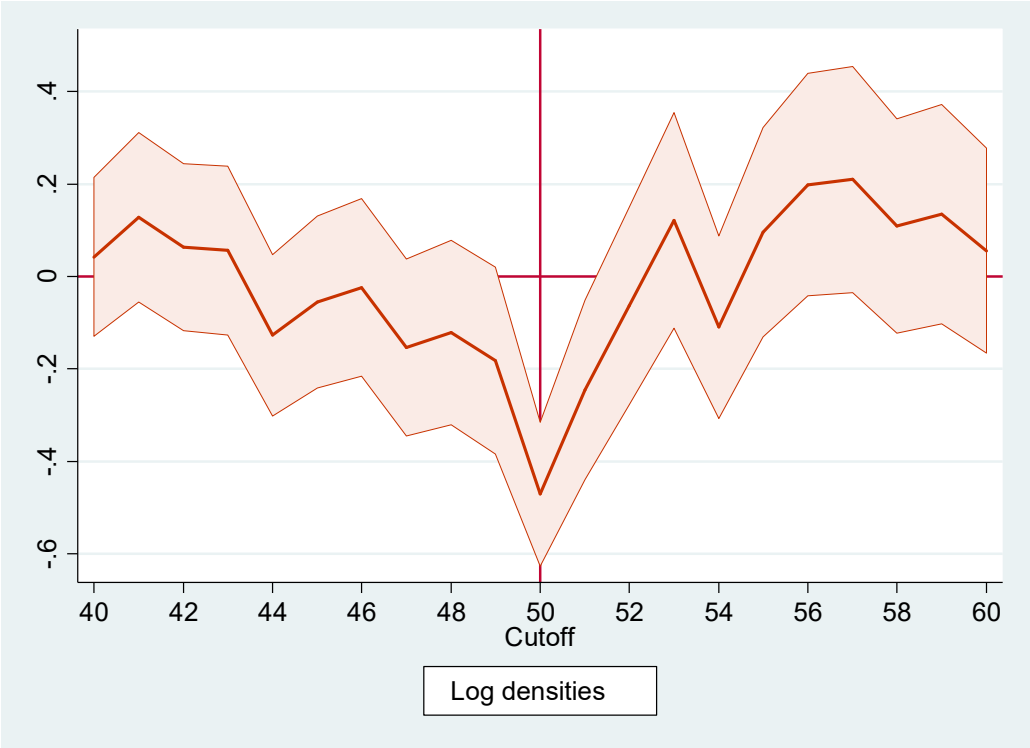
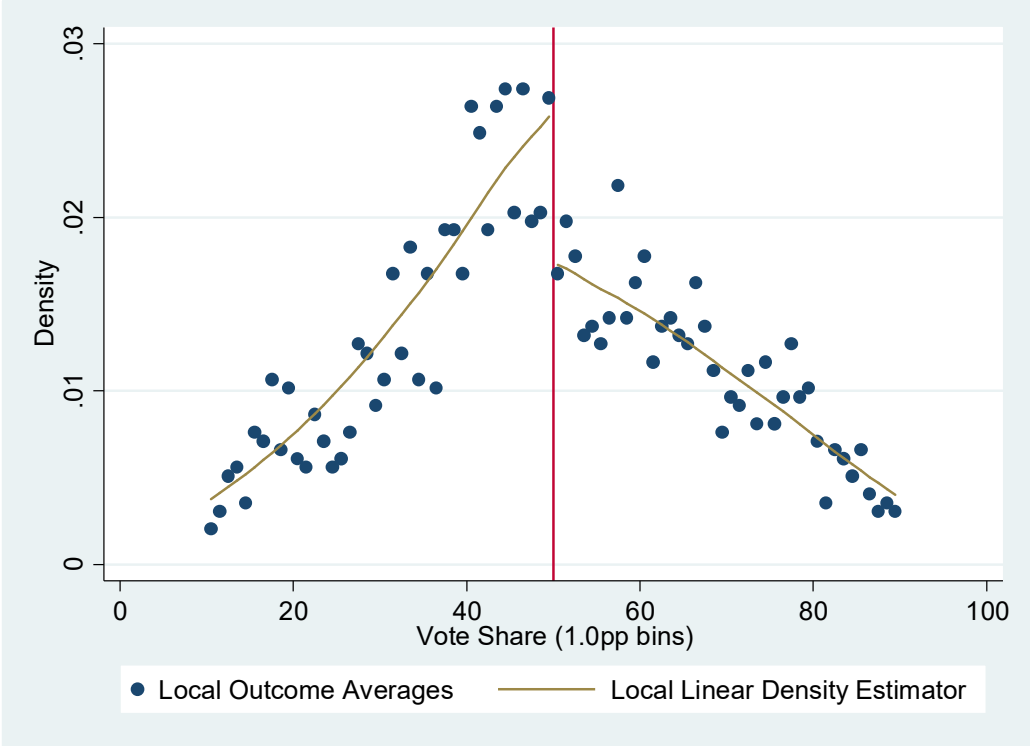


Figure 10: Distribution of Vote Shares Around the Approval Threshold (Riskmetrics Sample)

The figure shows the results of the McCrary (2008) test for shareholder proposals between 2003 and 2011 for shareholder proposals as in Bach and Metzger (2016). Proposals are grouped into one percentage-point bins: proposals that passed by between 0% and 1% are assigned to the first bin to the right of the red vertical line, and those that failed by similar margins are assigned to the first bin to the left of that line. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). Source: Riskmetrics (1997-2011) and DEF 14A filings (1997-2011).



9 Tables

Table 1: Shareholder Proposals and Voting Rules

Panel A: ISS Sample (2003 – 2016)

Panel A shows the distribution of proposals and the rates of support of proposals over time using the ISS data from 2003 to 2016. A proposal has *passed* if the voting share in favor of the proposal reaches 50% according to the voting rule. Source: ISS (2003 – 2016).

	Year														
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
Number of Proposals	346	252	307	340	317	392	479	333	270	328	320	284	376	98	4442
Avg. voting support	40.21	40.58	38.64	45.19	39.80	40.95	44.51	42.29	44.49	46.05	40.32	39.42	40.90	32.86	41.70
Passing rate	0.382	0.373	0.313	0.362	0.297	0.278	0.351	0.345	0.341	0.375	0.263	0.232	0.290	0.153	0.320

Panel B: Riskmetrics Sample (1997 – 2011)

Panel B shows the distribution of proposals and voting rules across time and the rates of support and implementation of proposals over time using the Riskmetrics sample of Bach and Metzger (2016) supplemented with hand collected data on implementation from Edgar. The sample includes the ten most supported proposal types over the period 1997-2011, shareholder support being defined here by the number of times a proposal type has obtained a majority of votes "for" and "against". This following proposal topics are included (by order of popularity): repeal classified board, eliminate or vote on poison pills, eliminate super-majority requirements, require majority vote for director elections, right to call special meetings, right to act by written consent, vote on golden parachutes, option expensing, say-on-pay, separation between CEO and chairman. A proposal has *passed* if the voting share in favor of the proposal reaches 50% according to the voting rule. A proposal is considered to be implemented if management adopts the content of the proposal within two years after the shareholder meeting. Source: Riskmetrics (1997-2011), DEF 14A filings (1997-2011).

	Year															
	1997	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*Total*
Number of Proposals	66	69	102	89	90	117	241	172	166	229	211	206	261	215	170	2404
Passing rate	32%	32%	37%	46%	57%	64%	58%	54%	51%	42%	37%	44%	46%	40%	48%	46%
Implemented	12%	7%	12%	9%	11%	28%	35%	50%	48%	54%	31%	35%	42%	51%	37%	36%
Impl.|passing	35%	23%	27%	20%	18%	34%	48%	72%	73%	79%	70%	60%	72%	72%	71%	59%

Table 2: Discontinuity Results

The table the log densities of the McCrary (2008) test for shareholder proposals between 2003 and 2016 for different subsamples. The local linear regression is estimated using the bandwidth suggested by McCrary (2008). The first row shows results for our baseline sample (first column) and before SOX (2nd column). Rows 2 to 5 present the log densities of the sample splits corresponding to Figures 3 to 5, and 7. Source: ISS (2003 – 2016) and Riskmetrics (1997-2011), DEF 14A filings (1997-2011).

		McCrary Test				
		Log density	**s.e.**		**Log density**	**s.e.**
1	*Baseline*	-0.396	0.094	*Before 2003*	-0.124	0.178
2	*ISS support (high)*	-0.468	0.114	*ISS support (low)*	-0.037	0.189
3	*Implementation rate (high)*	-0.532	0.130	*Implementation rate (low)*	-0.048	0.174
4	*Sponsored by Individual*	-0.421	0.165	*Sponsored by Institutional Investor*	-0.039	0.230
5	*Participation high*	-0.627	0.117	*Participation low*	-0.067	0.162

Table 3: RDD Estimates

Each row presents the treatment effect of passing a shareholder proposal at the threshold as defined in the corporate charter. We use the local polynomial Regression Discontinuity (RD) point estimators with robust bias-corrected confidence intervals from Calonico et al. (2014, 2016ab). We report ordinary standard errors and corresponding p-values as well as robust ones. The variables are defined in Table A1 in the Appendix. *** p<0.01 ** p<0.05 * p<0.1 Source: ISS (2003 – 2016) and Riskmetrics (1997-2011), DEF 14A filings (1997-2011).

	coeff.	s.e.	p-value	p-value (robust)	N
Proposals with high ISS support (mean)	-0.046	0.019	0.013**	0.014**	3922
Proposals with high ISS support (dummy)	-0.103	0.062	0.096*	0.097*	3922
High adoption (mean)	-0.012	0.011	0.264	0.401	1959
High adoption (dummy)	-0.096	0.067	0.147	0.257	1959
Sponsor: Individual	-0.199	0.092	0.031**	0.022**	1261
Participation	-0.029	0.012	0.017**	0.021**	4438
Participation high (dummy)	-0.139	0.058	0.016**	0.025**	4442
Vote share against (top 50% funds)	0.053	0.019	0.006***	0.004***	3728
Vote share against (bottom 50% funds)	0.017	0.023	0.448	0.634	3674
Vote share against (top 25% funds)	0.061	0.021	0.004***	0.002***	3728
Vote share against (bottom 75% funds)	0.021	0.015	0.173	0.23	3719
Vote share against (top 10% funds)	0.069	0.025	0.006***	0.003***	3726
Vote share against (bottom 90% funds)	0.035	0.016	0.033**	0.036**	3719

Table 4: Exercise & sell and proxy contests: Hazard model with competing risk

This table shows the determinants of CEO exercise–and–sell decisions. Results are presented at the option package–month level using the Cox proportional hazards model with competing risks (Fine and Gray 1999). The table reports exponentiated coefficients or hazard ratios. The p-values, based on standard errors clustered at the option package level, indicate the significance levels for whether the hazard ratios are significantly different from unity. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Exercise			
	LPM		Cox	
	(1)	(2)	(3)	(4)
Record date annual shareholder meeting	0.002***	0.002***	0.347***	0.125**
	(0.000)	(0.000)	(0.062)	(0.063)
Record date annual shareholder meeting with shareholder proposal	0.007***	0.006***	0.229	0.007
	(0.002)	(0.002)	(0.142)	(0.127)
Record date annual shareholder meeting with contested shareholder proposal	**0.011*** **	**0.014*** **	**1.087*** **	**0.903*** **
	(0.004)	**(0.004)**	**(0.206)**	**(0.152)**
Record date special shareholder meeting	0.010***	0.010***	0.900***	0.198
	(0.002)	(0.002)	(0.169)	(0.162)
Years to Maturity		-0.007***		-3.981***
		(0.000)		(0.160)
Market Cap ($ mil)		-0.000***		-0.000
		(0.000)		(0.000)
BM		-0.001***		-0.090***
		(0.000)		(0.009)
Growth		0.005***		0.249***
		(0.001)		(0.059)
Stock Ret		0.002***		0.046***
		(0.000)		(0.008)
Idiosyncratic Volatility		-0.002*		-0.843***
		(0.001)		(0.128)
Dividend Yield		-0.014***		-6.376***
		(0.003)		(0.989)
Illiq (As Fos 2015)		0.000		0.000
		(0.000)		(0.000)
Dividend Record Month		-0.000		0.121***
		(0.000)		(0.039)
Earnings Month		0.001***		-0.025
		(0.000)		(0.038)
New Grant		0.009***		
		(0.000)		
Year dummies	Yes	Yes	Yes	Yes
#option package months	986,364	794,367	965,331	774,863

10 Appendix

10.1 Variables

Table A1: Definition of Variables
Panel A: Voting Outcomes and Participation (Main sample)

Variable Name	Description	Database
Vote share	Percentage of votes for proposal over denominator according the bylaws of the company	ISS/Voting Analytics
Contested proposals	Dummy equal to one if the vote share is between 45% and 55%.	ISS/Voting Analytics
Passing	Dummy for when a proposal reaches 50% of votes according to the Management threshold, i.e., if the vote share Management reaches 50%	ISS/Voting Analytics
ISS support (high / low)	Dummy that is equal to one if the average support for a proposal type is above / below the median support by ISS for all proposal types.	ISS/Voting Analytics
ISS recommendation	The average support by ISS for each proposal type.	ISS/Voting Analytics
Participation (high / low)	Dummy that is equal to one if participation (fraction of votes voted as of shares outstanding) is above the mean participation.	ISS/Voting Analytics
Participation rate	The fraction of all shares outstanding for which a vote has been submitted.	ISS/Voting Analytics
Mutual fund vote share (top 10%, bottom 50%)	Fraction of the largest 10% (smallest 50%) mutual fund families voting against a shareholder proposal. Fund family size is measured by counting the number of funds (stock holdings) within a fund family.	ISS/Voting Analytics

Panel B: Voting Outcomes, Proposal Implementation (Sample from Bach and Metzger (2016))

Variable Name	**Description**	**Database**
Vote share	Percentage of votes for proposal over denominator according the the bylaws of the company	RiskMetrics, ISS/Voting Analytics, Georgeson corporate governance reviews, and SEC filings in EDGAR
Passing	Dummy for when a proposal reaches 50% of votes according to the Management threshold, i.e., if the vote share Management reaches 50%	RiskMetrics, ISS/Voting Analytics, Georgeson corporate governance reviews, and SEC filings in EDGAR
Implementation	Dummy for implementation of the proposal by the management in the year after the shareholder meeting.	SEC filings in EDGAR
Implementation (high / low)	For each proposal type we calculate the fraction of proposals that are implemented conditional on having passed the management threshold. Implementation high refers to proposal types for whose average implementation rate is above the median of all types.	SEC filings in EDGAR
Sponsor	Classifies the sponsor of a proposal into Private Sponsors and Institutional Sponsors	RiskMetrics, ISS/Voting Analytics, Georgeson corporate governance reviews, and SEC filings in EDGAR

Panel C: CEO Option Holding and Exercising

Variable Name	Description	Database
Record date annual shareholder meeting	Month containing the record date of regular annual shareholder meeting.	N-PX filings in EDGAR
Record date annual shareholder meeting with shareholder proposal	Month containing the record date of regular annual shareholder meeting with a shareholder proposal on the program.	N-PX filings in EDGAR, ISS/Voting Analytics
Record date annual shareholder meeting with contested shareholder proposal	Month containing the record date of regular annual shareholder meeting with a shareholder proposal on the program which turns out to be contested, i.e., the vote share lies between 45% and 55%.	N-PX filings in EDGAR, ISS/Voting Analytics
Record date special shareholder meeting	Month containing the record date of special shareholder meeting obtained from N-PX filings.	N-PX filings in EDGAR
Exercise	A dummy that is equal to one if a CEO exercises at least 25% of her option package holdings in a given month.	Thomson Insider
Exercise and Hold	A dummy that is equal to one if a CEO exercises at least 25% of her option package holdings in a given month and does not sell more than 25% of the acquired shares within the next three month or before the next record date if that date comes first.	Thomson Insider

10.2 Implementation

We look at SEC filings in the year following the meeting in order to check whether the proposal is implemented and count as missing observations for which the firm has merged or gone bankrupt before implementation of the proposal could be observed in that year. Because we want to rule out cases where a firm had already decided to implement the proposal before the vote took place, we also look at filings made in the year before the meeting. We do not condition our search for implementation on a proposal having reached majority vote. The form of implementation is very proposal-specific so we now detail our criteria for implementation per proposal type.

10.2.1 Repeal Classified Boards

Putting in place the annual election of directors requires an amendment to the bylaws, which most of the time requires a shareholder vote. For that reason, almost all cases of implementation of such proposals involve the submission by management of a proposal to amend the bylaws at the following annual meeting, which can be checked in the corresponding proxy statements. We have also considered a proposal to declassify the board as implemented if the following year the board does not recommend voting against a similar shareholder proposal the following year. Sometimes, bylaws are amended without a vote taking place, and such amendments are notified in 8-K filings.

10.2.2 Repeal or vote on Poison Pills

Poison pill proposals may take place regardless of whether the firm currently has a pill (i.e., a rights plan) in place. The difference is that when the firm already has a rights plan, shareholder proponents primarily push for the elimination of the current plan, while if there's no pill they generally want the board to commit to put future pills to a shareholder vote. There are many ways management can react to a successful proposal (Giné and Moussawi, 2007). For firms with an existing pill, we consider a proposal to have been substantially implemented if an existing pill terminates earlier than originally planned or if it is substantially lightened through a chewable feature, the end of dead-hand provisions or regular oversight by independent directors (TIDE provisions). This information is generally available in 8-A12B or 8-K filings. For firms that do not have a pill, proposals are implemented through commitments made by the board to consult shareholders in case a pill should be adopted[23]. Such policies are usually advertised in proxy statements. We do not

[23] In a few cases, bylaws are also amended to make sure shareholders are consulted.

make distinctions between policies that always require a shareholder vote before adopting a pill and those that give boards an option to skip this step (*fiduciary out* clause).

10.2.3 Eliminate Supermajority Requirements

By design, the reduction of voting requirements requires a shareholder vote. We mark a proposal as implemented if the following year management submits a proposal to amend the corresponding bylaws or if the board does not recommend voting against a similar shareholder proposal. We consider that management has reacted to the proposal if it has acted to remove some but not all supermajority requirements.

10.2.4 Right to Call a Special Meeting or Act by Written Consent[24]

Implementing those proposals requires an amendment to the bylaws, but not necessarily a vote. We consider such a proposal implemented if bylaws are directly amended by the board (8-K filing) or if the following year management submits a proposal to amend the corresponding bylaws or if the board does not recommend voting against a similar shareholder proposal. If management reduces the special meeting requirement, but not down to the level initially demanded by shareholder proponents, we still regard the proposal as implemented.

10.2.5 Majority Voting in Director Elections

Following the movement for majority voting started in 2004-2005, companies have officially implemented majority voting but with many degrees of efficacy (Cai, Garner and Walkling, 2013). We mark such proposals as implemented if boards have amended or made steps to amend the bylaws to impose majority voting for directors or resignation policies for directors failing to get a majority of votes. This means we do not consider the simple adoption of non-binding resignation guidelines as implementation. This very light step has in fact been taken by most listed firms, even if not asked by shareholders, making its relevance dubious. Moreover, ISS has stated that it does not consider such guidelines as a form of implementation of majority-vote proposals (Allen, 2007).

10.2.6 Vote on Golden Parachutes

Golden parachute proposals typically require a shareholder vote on the adoption of severance payments above a certain limit. We consider a proposal implemented if the board commits never

[24] Those two proposal types are often mixed together by proponents and management, which is why we bundle them.

to implement such severance payments in the future or if it commits to put their adoption to a vote. This commitment is generally displayed in the proxy statement.

10.2.7 CEO-Chairman Separation

Those proposals generally require the board to regularly appoint an independent chairman. We consider such proposals to be implemented if the board enacts such a policy, if it cancels an existing policy of having the CEO as chairman, if it creates a position of lead independent director/presiding director, if it starts to organize non-executive board sessions or if an independent director becomes chairman for a non-temporary period.

10.2.8 Say-on-Pay

This is implemented if either a management proposal to organize an advisory vote on executive compensation is submitted or such a vote is organized at the next meeting. Firms benefitting to TARP funds were required by law to hold such a vote starting in 2009; for those firms, we consider that proposals discussed in 2008 have an unobservable implementation status. Similarly, we consider that all proposals discussed in 2010, which were implemented following the Dodd-Frank Act, have an unobservable self-implementation status.

10.2.9 Option Expensing

We consider that a proposal to expense employee stock option plans is implemented if in the next 10-K statement, such plans are indeed expensed in the official income statement (not just as part of pro forma accounts). The FASB imposed option expensing in December 2004, so we consider that proposals discussed from 2004 onwards have an unobservable self-implementation status.

10.3 Sample Details on Option Exercises

We mainly follow Fos and Jiang (2015) in constructing data on the exercise of CEO options. Information on CEO options and their exercises comes from Thomson Reuter Insider Filings. We restrict the analysis on firms that at least once belonged to S&P1500 index. We consider as options awarded to a CEO the following derivatives: employee stock options, convertible preferred stocks, directors' stock option, rights, incentive stock options, warrants, non-qualified stock options. We keep observations having cleanse level "reliable" or "high reliability" only. As in Fos et al. (2015) the unit of analysis is option package-month belonging to a give CEO, and an option package is defined as options granted to a CEO having the same vesting and expiration dates. Time vested options, having same expiration date and exercise price, are considered part of the same package where we pick the longest vesting date, transaction excluded. We exclude option packages with missing or incomplete information on CEO, vesting or expiration date. Finally, only option packages where we observe at least a grant (trancode "A") or an exercise (trancode "M") are considered.

The exit date of the option package is the earliest of an exhaustive exercise, the expiration date or the end of the data sample. We consider an exercise if more than 25% of the options part of a package id are exercised and we check the sales of share between exercise and the earliest between ninety days and a record date of shareholder meeting. We distinguish between Exercise & Sell if at least 25% of the exercised options are being sold during this period. Table A2 shows summary statistics of all employed variables.

Table A2: Summary Statistics for Option Exercise Analysis

The table reports summary statistics for option and firm variables recorded at the option package-month level (the unit of observation for our main regression analysis) as in Fos and Jiang (2015). Columns (1) and (2) report the mean and standard deviation of each variable. Columns (4)–(6) report their values at the 25th, 50th, and 75th percentiles.

	mean	sd	p25	p50	p75	N
Exercise	0.73%	8.51%	0.00%	0.00%	0.00%	986,364
Exercise & Hold	0.61%	7.78%	0.00%	0.00%	0.00%	986,364
Exercise & Sell	0.12%	3.47%	0.00%	0.00%	0.00%	986364
Record date annual shareholder meeting	6.88%	25.31%	0.00%	0.00%	0.00%	986364
Record date annual shareholder meeting with shareholder proposal	1.17%	10.76%	0.00%	0.00%	0.00%	986364
Record date annual shareholder meeting with contested shareholder proposal	0.21%	4.62%	0.00%	0.00%	0.00%	986364
Record date special shareholder meeting	0.34%	5.80%	0.00%	0.00%	0.00%	986364
Years to maturity	3.96	2.57	1.83	3.67	5.83	986,364
Market cap	10565.02	25339.95	873.562	2391.792	8778.28	798,279
Book to market	48.63%	57.67%	26.38%	42.52%	64.30%	798,279
Growth	9.88%	24.11%	0.67%	7.08%	15.33%	795,206
Stock return	16.41%	76.36%	-10.19%	10.24%	32.99%	798,359
Idio. Volatility	32.73%	18.63%	20.52%	28.26%	39.36%	798,264
Dividiend yield	1.36%	3.46%	0.00%	0.52%	2.05%	798,219
Illiquidity	84515.35	90990.45	27601.06	55804.15	113127.8	798,279
Dividend record month	18.36%	38.71%	0.00%	0.00%	0.00%	799,351
Earnings month	33.31%	47.13%	0.00%	0.00%	100.00%	799,351
New grant	0.66%	8.12%	0.00%	0.00%	0.00%	986,364

Table A.3: Voting Rules according to the State Law

This table shows the voting rule according to the state low for the different states in the US. We collect data on the voting rules on state level from LexisNexis.

State	Voting Rule	State	Voting Rule
Alaska	F/(F+A+AB)	Mississippi	F/(F+A)
Alabama	F/(F+A)	Montana	F/(F+A)
Arkansas	F/(F+A)	North Carolina	F/(F+A)
Arizona	F/(F+A)	North Dakota	F/(F+A+AB)
California	F/(F+A)	Nebraska	F/(F+A)
Colorado	F/(F+A)	New Hampshire	F/(F+A)
Colorado	F/(F+A+AB)	New Jersey	F/(F+A)
Connecticut	F/(F+A)	New Mexico	F/(F+A+AB)
District of Columbia	F/(F+A)	Nevada	F/(F+A)
Delaware	F/(F+A+AB)	New York	F/(F+A)
Florida	F/(F+A)	Ohio	F/(F+A)
Georgia	F/(F+A)	Oklahoma	F/(F+A+AB)
Hawaii	F/(F+A)	Oregon	F/(F+A)
Iowa	F/(F+A)	Pennsylvania	F/(F+A)
Idaho	F/(F+A)	Rhode Island	F/(F+A+AB)
Illinois	F/(F+A+AB)	South Carolina	F/(F+A)
Indiana	F/(F+A)	South Dakota	F/(F+A)
Kansas	F/(F+A+AB)	Tennessee	F/(F+A)
Kentucky	F/(F+A)	Texas	F/(F+A+AB)
Louisiana	F/(F+A)	Utah	F/(F+A)
Massachusetts	F/(F+A)	Virginia	F/(F+A)
Maryland	F/(F+A)	Vermont	F/(F+A)
Maine	F/(F+A)	Washington	F/(F+A)
Michigan	F/(F+A)	Wisconsin	F/(F+A)
Minnesota	F/(F+A+AB)	West Virginia	F/(F+A)
Missouri	F/(F+A+AB)	Wyoming	F/(F+A)