Corporate Governance and Earnings Management: Evidence from Shareholder Proposals*

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August 2020

* Accepted by Marlene Plumlee. We thank Marlene Plumlee, two anonymous reviewers, and seminar participants at the University of Texas at Dallas for helpful comments.

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This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/1911-3846.12640

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ABSTRACT

We examine the causal effects of corporate governance on earnings management using shareholder-sponsored proposals that pass or fail by a small margin of votes in annual shareholder meetings. This setting provides a causal estimate that overcomes concerns of endogeneity. Specifically, compared with firms whose shareholder proposals fall just short of a majority threshold, firms whose shareholder proposals narrowly pass have similar characteristics but a discretely higher likelihood of implementing improvements in governance. As such, we expect that firms whose shareholder proposals pass the threshold by a small margin exhibit a significantly lower level of earnings management. Employing a regression discontinuity design, we find results that support our expectation based on the propensity to just meet or beat analysts' forecasts by one cent as a proxy for earnings management. In addition, we show that the results are driven by governance changes that increase directors' monitoring. Our results are robust to using discretionary accruals as an alternative measure of earnings management. Collectively, the results suggest that improvements in corporate governance curtail earnings management, and support the underlying premise of regulators that improvements in corporate governance would improve financial reporting.

Keywords: shareholder activism, corporate governance, earnings management, shareholder proposals

1. Introduction

In this paper, we use shareholder proposals that pass or fall short of the majority threshold by a small margin to examine the causal relation between corporate governance and earnings management. Prior research on this relation provides mixed evidence. For example, while Klein (2002) and Chen et al. (2015) find that corporate governance is negatively associated with earnings management, Zhao and Chen (2008) find contrary evidence, and Larcker et al. (2007) observe mixed relations between board attributes (e.g., CEO/Chairman duality, board independence) or antitakeover provisions (e.g., staggered board, poison pill) and earnings management.

Establishing the causal effect of changes in corporate governance on earnings management is challenging, due to potential endogeneity issues. To address this issue, we use the identification strategy employed in Cuñat et al. (2012), which relies on shareholder voting support around the majority threshold. The characteristics of firms whose shareholder proposals garner 51% support are likely to be similar to those of firms whose shareholder proposals garner 49% support. However, this small difference in voting support can lead to discrete changes in the probability of implementing governance proposals (Ertimur et al. 2010; Cuñat et al. 2012).

Our primary measure of earnings management is based on firms just meeting or beating analysts' earnings forecasts by one cent (*JMBE*). This measure captures effects of various earnings management tools: discretionary accruals (Ayers et al. 2006), tax expense (Dhaliwal et al. 2004), shifting line items (McVay 2006), and real decisions (Bens et al. 2003; Hribar et al. 2006; Herrmann et al. 2003). In our tests, we limit our sample to firms that just meet or beat/miss expectations by one cent. Our focus on these firms is similar to McVay et al. (2006) and Bhojraj et al. (2009) and provides a powerful test; we are able to maximize the likelihood that the firms

in our sample would have missed (beaten) the expectation if they had not increased (had increased) earnings through earnings management.

Our sample contains 736 firm-years (388 firms) from 2003 to 2015 with shareholder proposals. Our identification strategy assumes that a proposal's passing or failing by a small margin of votes leads to a discretely different likelihood of implementing the proposed governance provision (Ertimur et al. 2010; Cuñat et al. 2012). We verify this assumption using hand-collected data on the actual implementation status using the regression discontinuity design (RDD) with the robust nonparametric inference procedure proposed by Calonico et al. (2014). We find that firms whose proposals just pass the majority threshold are 54.6% to 56.0% more likely to implement the proposed governance provisions, compared with firms whose proposals just fail.

We examine the effects of voting outcomes for shareholder proposals in the annual meeting for fiscal-year *t*-1 on the likelihood of *JMBE* for the earnings of fiscal-year *t* using RDD. We find that firms whose proposals just pass the majority threshold are 24.1% to 33.1% less likely to *JMBE* after the vote, compared with firms whose proposals just fail. The results are similar for *JMBE* five years after the vote, suggesting that the disciplinary effects are persistent. We also conduct a falsification test by examining *JMBE* before the votes and find no evidence that the majority support for shareholder proposals is related to the pre-vote *JMBE*. Collectively, these results suggest that the direction of causality runs from shareholder support for the proposals and the resulting governance changes to reductions in earnings management — and not in the opposite direction.

We examine whether board-related proposals drive our results. Board-related proposals increase director accountability, which in turn is likely to improve accounting quality (Klein

2002; Chen et al. 2015). We find that firms whose board-related (non-board-related) proposals just pass are 38.3% to 48.5% (4.5% to 22.8%) less likely to *JMBE* after the votes than firms whose board-related proposals (non-board-related) just fail. This supports the prediction that our results are attributable to board-related proposals. We also find that the lower earnings management following the passage of a board-related proposal is attributable to firms with better information environments, i.e., lower information acquisition costs.

We then examine whether our results are attributable to proposals targeting antitakeover provisions. Following Gompers et al. (2003) and Bebchuk et al. (2009), we consider proposals that are part of the G-Index and E-Index, respectively, and find that our results are not driven by proposals to remove antitakeover provisions.[1] However, for proposals related to repealing classified board, a specific type of G-Index and E-Index proposal that enhances the boards' monitoring role, we find that firms whose proposals just pass the majority threshold are significantly less likely to *JMBE* after the votes, relative to firms whose proposals just fail.[2]

Our results are generally robust to the following sensitivity tests: using alternative measures of earnings management, considering a subsample of firm-years with only one proposal, considering alternative ranges of earnings surprises for *JMBE*, and using a logit regression.

The contribution of the study is twofold. First, following Cuñat et al. (2012), we employ the RDD around the majority threshold of the shareholder proposals' voting outcomes to

[1] The G-Index and E-Index, introduced by Gompers et al. (2003) and Bebchuk et al. (2009) respectively, are measures of firms' governance quality. The G-Index is based on 24 governance provisions, while the E-Index is based on 6 provisions that are a subset of the 24 provisions considered by the G-Index. Since corporate takeovers are an important mechanism in disciplining managers, both of these measures of governance quality, especially the E-Index measure, considers anti-takeover provisions.

[2] Classified board or staggered board structures allow some directors to serve longer terms than others, and thus constrain potential takeovers. Proposals to repeal classified board provisions seek to remove such barriers to takeovers and improve corporate governance.

examine the effect of corporate governance. Thus, unlike prior studies that document associations between corporate governance and earnings management (e.g., Klein 2002; Larcker et al. 2007; Zhao and Chen 2008), our findings provide a causal estimate of the effect of corporate governance on earnings management. Second, the study adds to the literature on the consequences of shareholder proposals. Prior research suggests that shareholder proposals that garner sufficient shareholder support increase firm value (Cuñat et al. 2012). Our results complement this finding by isolating a specific mechanism through which these proposals can decrease agency costs and hence increase firm value — lowering earnings management. This is consistent with the regulators' premise that improvements in corporate governance would improve financial reporting, which in turn enhances firm value.

One concern with RDD is that results are attributable to a small number of observations around the threshold, which could compromise the generalizability of the results.[3] However, Lee and Lemieux (2010) show that RDD estimates are a weighted average treatment effect across all observations because of the polynomial estimation. This argument alleviates concerns about a lack of generalizability of the RDD's results. Another generalizability concern in our setting pertains to the small sample imposed by the earnings management measure of just meeting or just beating earnings thresholds. As discussed, to mitigate this concern, we conduct a robustness test using a non-threshold-based earnings management measure — discretionary accruals — and obtain qualitatively similar results. Nevertheless, we caution readers about the relatively small sample size of our analyses.

[3] We thank an anonymous reviewer for pointing this out.

The rest of the paper is organized as follows: Section 2 provides background and discusses empirical expectations. Section 3 provides variable measurement and empirical design, and Section 4 presents the empirical analysis. Section 5 concludes.

2. Background and empirical expectation

Background

Shareholder proposals

Shareholder activism allows investors to bring changes in a company's management or operations without a change in control (Gillan and Starks 2007). Shareholder activism occurs in many forms, such as shareholder proposals, private negotiations, hedge fund interventions, and proxy contests (Denes et al. 2017). This study focuses on shareholder proposals.

Shareholders can make proposals under Rule 14a-8 of the Securities and Exchange Commission (SEC) Act of 1934. A shareholder, who has shares worth at least $2,000 or 1% of the market value of the stock for at least one year prior to the annual meeting date, can make one proposal with a 500-word supporting statement. The proposals, subject to SEC review, need to be received by the firm at least 120 days before the proxy statements are mailed to shareholders. The proposals, which are generally non-binding (Ferri 2012), request that all shareholders vote on the proposed items.[4] Ferri (2012) refers to these proposals as "low-cost activism," because it provides a mechanism for small shareholders to convey opinions to management.

Consequence of shareholder proposals

Cuñat et al. (2012) examine shareholder proposals that receive or fail to receive majority support by a small margin. Compared to firms whose proposals fail by a small margin, firms whose proposals pass by a small margin exhibit an additional 1.3% abnormal return on the day

[4] The SEC and courts have allowed some shareholder proposals to be construed as binding bylaw amendments. However, such proposals are rare (Ferri 2012).

of the vote; for proposals targeting antitakeover provisions, the additional abnormal return is 2.8%. Cuñat et al. (2012) also document superior long-run performance for firms whose proposals pass by a small margin, compared to firms whose proposals fail by a small margin. Their study provides evidence that corporate governance leads to value enhancements.

Ferri and Sandino (2009) find that firms whose shareholders have passed compensation-related proposals for expensing stock options are more likely to follow through by expensing stock options. Cuñat et al. (2012) show that firms tend to remove antitakeover provisions following the passage of shareholder proposals that recommend their removal. Ertimur et al. (2010) show that shareholder proposals that have majority support are more likely to be implemented. Collectively, these studies document improvements in governance practices are related to low-cost shareholder activism.[5]

Corporate governance and earnings management

Prior studies that examine the association between corporate governance and earnings management find mixed results. On the one hand, Beasley (1996) shows that board independence is negatively associated with the likelihood of financial statement fraud. Klein (2002) finds that board independence and audit committee independence are negatively associated with earnings management. Efendi et al. (2007) show that restatements are more likely for firms whose CEOs also act as board chair. Chen et al. (2015) use the stock exchange regulatory reform to show that board independence is related to lower earnings management when the cost of information acquisition is low. Together, these findings suggest that the monitoring role of the board of directors disciplines earnings management.

[5] Other studies examine firm characteristics that are targeted by low-cost shareholder activism (e.g., Thomas and Cotter 2007; Ertimur et al. 2010; Ertimur et al. 2011).

On the other hand, Zhao and Chen (2008) find that weak corporate governance, as measured by staggered boards, is negatively associated with earnings management. Agrawal and Chadha (2005) find mixed evidence on the relation between various corporate governance features and financial statement restatements. Similarly, Vafeas (2005) and Larcker et al. (2007) find a mixed relationship between various board attributes and earnings management.

The challenge in studying the relation between corporate governance and earnings management is that corporate governance is endogenous, and thus, likely to be correlated with unobservable firm characteristics that also drive earnings management. As Brickley and Zimmerman (2010, 240) state, "it is difficult to ascertain whether an observed association (e.g., between board structure and characteristics of the firm's financial reporting system) is driven by cause and effect (and if so in which direction) or omitted exogenous factors that jointly determine both variables." This challenge of mitigating endogeneity concerns in relating corporate governance to earnings management leads us to use the shareholder proposals around the majority threshold as an exogenous shock to examine the causal link.

Research question and empirical expectation

Corporate governance mitigates agency problems and thus lowers earnings management (Klein 2002; Chen et al. 2015). Accordingly, we hypothesize that firms whose shareholder proposals narrowly pass have lower earnings management in the year following the proposal, compared to firms whose shareholder proposals narrowly fail (Ertimur et al. 2010; Cuñat et al. 2012). With our identification strategy of focusing around the majority threshold, evidence showing a negative relation between majority votes for shareholder proposals and subsequent

earnings management will support a causal relation between corporate governance and earnings management.[6]

However, we may not find such a relation for at least two reasons. First, corporate governance may not be related to earnings management (Larcker et al. 2007) because corporate governance practices could exist in form but not in substance. Second, since shareholder proposals seldom target accounting issues, governance changes may not impact earnings management.

3. Variable measurement and research design

Variable measurement

Shareholder voting support

Each shareholder proposal receives votes "for," "against," or "abstain." We compute *Vote_Pct* as the number of votes in support of a specific proposal divided by the base specified in the firm's charter. The base can be the sum of votes "for" and "against," or the sum of votes "for," "against," and "abstain," or the number of shares outstanding. For firms with multiple shareholder proposals in a year, we use the proposal with the highest *Vote_Pct*.[7] We consider a proposal as having obtained majority support (*Pass*) if *Vote_Pct* is greater than 50%.[8]

[6] Even though implementation of the proposal, i.e., the corporate governance change, could take more than one year, directors likely increase their monitoring effort immediately because the passage of the proposal could impose career-related costs such as directors losing board elections. Consistent with this, Fos et al. (2017) show that firms whose directors are close to the next election exhibit higher CEO turnover-performance sensitivity. We thank an anonymous reviewer for alerting us to this argument.

[7] We use the proposal with the highest shareholder voting support because it indicates the maximum shareholder power. We find similar results when we use firm-years with only one proposal. Please see supporting information, "Online Appendix Table OA1," as an addition to the online article.

[8] In the sample, there are five firm-years with pass threshold greater than 50%. In these cases, *Vote_Pct* is adjusted by subtracting the difference between the threshold and 50%. The results are similar when we exclude these observations. Please see supporting information, "Online Appendix Table OA2," as an addition to the online article.

Earnings management measure

Earnings management is measured using *JMBE*, defined as an indicator variable that is equal to one if the difference between the actual earnings per share and the analysts' most recent consensus earnings per share forecast prior to the earnings announcement is between zero and one cent, and zero otherwise. We use *JMBE* as our primary measure of earnings management for two reasons. First, the incidence of *JMBE* captures the aggregate effect of various earnings management tools. Prior studies document a variety of earnings management tools to *JMBE*: creating cookie jar reserves for restructuring charges (Moehrle 2002), managing tax expenses (Dhaliwal et al. 2004), using discretionary accruals (Ayers et al. 2006), or making real decisions such as repurchasing shares (Bens et al. 2003; Hribar et al. 2006) and disposing assets (Herrmann et al. 2003). Second, *JMBE* is subject to fewer alternative explanations than other proxies of earnings management. Dechow et al. (2010, 365) note that, of the papers they reviewed, none of the studies "provide evidence in support of any alternative explanation to the earnings management explanation for the kink around the consensus analyst forecast."[9] Dechow et al. (2010, 365) conclude that "evidence that earnings are likely managed when firms just meet or beat analysts' earnings forecast is more persuasive," providing strong support for earnings management implications among *JMBE* firms.

Research design

Alignment of shareholder voting support and earnings management

We relate the voting outcomes of shareholder proposals considered in the shareholder meeting of year *t*-1 to *JMBE* pertaining to the subsequent year's earnings announcement, i.e., *JMBE* of year *t.* For example, a shareholder proposal considered at a May 2006 annual meeting

[9] Other earnings management proxies are often subject to alternative explanations. For example, small positive earnings can be explained by asymmetric taxes rather than opportunistic accounting choices (Beaver et al. 2007).

pertaining to the fiscal year ended on December 31, 2005, is matched with *JMBE* in February 2007's earnings announcement pertaining to the fiscal year ended on December 31, 2006.

Regression discontinuity design

We use the RDD to examine the causal effect of majority support for shareholder proposals on earnings management. RDD is a quasi-natural experimental design where the treatment depends on whether an observed assignment variable exceeds a threshold value (Lee and Lemieux 2010). In this study, the treatment is the corporate governance change, and the assignment variable is *Vote_Pct*. Prior studies use RDD to examine shareholder proposal voting. Cuñat et al. (2012) document a positive effect of governance changes on shareholder value. Ertimur et al. (2015) document positive abnormal returns around meeting dates, when shareholder proposals related to the adoption of majority voting systems are passed. Armstrong et al. (2013) study the effects of shareholder voting support for management-sponsored equity compensation plans on CEO compensation. Following Cuñat et al. (2012), we use firms whose proposals just pass or just fall short of the majority threshold as our identification strategy.

Implementing RDD requires selecting a bandwidth around the threshold, reflecting a tradeoff between bias and efficiency. A narrow bandwidth reduces bias and power. The literature proposes several algorithms to identify optimal bandwidth that minimizes the mean-squared error of the estimator. We follow the algorithm proposed by Calonico et al. (2014) to identify the optimal bandwidth.[10] We fit either a local linear or a third order polynomial to obtain RDD estimates. We do not use higher order polynomials because Gelman and Imbens (2019) show that they often lead to noisy estimators. To visually confirm the discontinuity near the majority

[10] Calonico et al. (2014) propose a distributional approximation that starts from bias correction and improves its performance in finite samples by considering additional variability introduced by the bias estimate. Fully data-driven, this approach is used in Boone and White (2015) and Chen et al. (2019).

threshold, we follow Calonico et al. (2015) and plot graphs with evenly spaced bins along with two smooth third order polynomials lines fitted on either side of the majority threshold. In robustness tests, we estimate the discontinuity with fixed bandwidths and use a regression approach to implement the RDD.

RDD in our context relies on two key assumptions. First, for voting outcomes around the threshold, passing the majority threshold is not likely to be correlated with firm characteristics. However, if there are perceived private benefits of control from failed shareholder proposals, firms may manipulate shareholder voting outcomes. This concern is mitigated by the observation in Kahan and Rock (2008) that there are numerous impediments for managers to influence voting outcomes.[11] More importantly, to the extent that the voting outcome cannot be precisely manipulated around the threshold, the variation in treatment near the threshold is still randomized (see Lee 2008). Nevertheless, we conduct empirical tests to examine this assumption in Section 4.

Second, a small difference in voting support around the threshold can lead to discrete changes in corporate governance. This assumption does not require a proposal to be binding: RDD can be built on "imperfect compliance" (Lee and Lemieux 2010). Consistent with the discrete changes in corporate governance, for proposals close to the threshold, Ertimur et al. (2010) show that the probability of implementation is 20.7% higher with a majority vote. For our subsample of board-related proposals, we hand-collect the subsequent implementation status of the proposed changes and validate this assumption in Section 4.[12]

[11] Examples of impediments include shares being held under the names of custodians such as brokerage houses, leading to proxy materials not being delivered on time, votes not being counted or verified, and shares being lent out.

[12] Determining implementation status for other types of proposals such as compensation is challenging using public filings.

The fact that RDD focuses on observations around a specific threshold raises concerns about generalizability. However, Lee and Lemieux (2010) note that when there are heterogeneous treatment effects, the discontinuity in RDD is a weighted average treatment effect across *all* observations, where the weights are proportional to the ex ante likelihood that an observation's realization of assignment variable is close to the threshold. While we do not observe the ex ante probability distribution of *Vote_Pct* at the firm level and hence cannot assess the gap between the regression discontinuity estimate and the overall average treatment effect, it remains true that the regression discontinuity estimate is averaged across a large population.

4. Sample selection and empirical analysis

Sample selection

We obtain shareholder proposals data from RiskMetrics (now ISS), which covers all S&P 1500 companies plus an additional 500 widely-held firms in the United States, for the sample period 2003-2015. We start from 2003 because after the Enron-type scandals, the landscape of shareholder proposals substantially changed. According to Georgeson (2003), 56% more governance proposals came to a vote and 59% more governance proposals achieved majority support in 2003 relative to 2002. Furthermore, the array of corporate financial fraud increased the scrutiny and public pressure for firms to mitigate earnings management.[13] RiskMetrics classifies a proposal as either related to corporate governance or social responsibility. We focus on governance-related proposals because our objective is to examine the causal relation between corporate governance and earnings management. We start with 4,732 governance-related shareholder proposals that are not related to a proxy contest. As mentioned earlier, for firm-years

[13] In untabulated analysis, we do not find support for lower *JMBE* around the majority threshold for the sample from 1997-2003.

with multiple proposals, we use the proposal with the highest *Vote_Pct* and code *Pass* accordingly. This procedure reduces the sample to 2,948 firm-year (proposal) observations.

We obtain data on the most recent consensus analyst forecasts and actual earnings from I/B/E/S, accounting variables from COMPUSTAT, returns data from CRSP, and institutional ownership data from Thomson Reuters 13F.[14] Each firm-year (proposal) is matched with the subsequent years' analysts' annual consensus forecast in I/B/E/S.[15] We use raw forecast data unadjusted for stock splits and exclude firms that do not have data on firm characteristics that we discuss in Section 4. We further restrict the sample to firms that meet market expectations or beat or miss expectations by one cent. The final sample contains 736 firm-years (proposals) in the one-cent bandwidth around consensus analyst forecast, representing 388 firms.

Descriptive statistics

Panel A of Table 1 provides the annual frequency of firms with shareholder proposals, the percentage of proposals that pass the majority threshold, and the average vote outcome. Panel B of Table 1 provides summary statistics of the sample firms. Firms with *JMBE* = 1 account for 78.4% of the sample, consistent with Bhojraj et al. (2009). We examine firm characteristics shown in prior studies to be associated with *JMBE* (e.g., Barton and Simko 2002; Matsumoto 2002; Cheng and Warfield 2005). The market-to-book ratio (*MTB*), market capitalization (*MCAP*), and return-to-equity (*ROE*) are included to proxy for firm growth, size, and performance, respectively. *Shares* is the number of common shares. Firms with more shares

[14] The results are similar when we use individual analyst forecasts issued in the month prior to earnings announcement to compute consensus. Please see supporting information, "Online Appendix Table OA3," as an addition to the online article.

[15] We use annual earnings because they are audited and monitored intensely by boards. In addition, prior studies show that managers have stronger incentives to manage fourth quarter earnings (Jacob and Jorgensen 2007; Das et al. 2009). The results are similar when we use quarterly earnings. Please see supporting information, "Online Appendix Table OA4," as an addition to the online article.

outstanding are less likely to manage earnings, because a one cent shortfall in EPS translates into more dollars of actual earnings. *InstOwn* is total institutional ownership. Firms with higher institutional ownership have greater incentives to avoid negative earnings surprises. *Numest* is the number of analyst forecasts. More analyst forecasts imply higher capital market pressure, which can motivate managers to meet earning targets. Finally, *CV_AF* is the coefficient of variation of the latest forecasts used to calculate the consensus EPS forecast. Managers are likely to miss imprecise expectations. Appendix 1 contains detailed variable definitions. The descriptive statistics of firm characteristics suggest that our sample firms tend to be large and profitable and have significant analyst following.

[Insert TABLE 1 Here]

Appendix 2 provides the breakdown of the proposals by type. A proposal is board-related if it pertains to board independence (e.g., separating chairman/CEO), director election (e.g., repealing classified board), or director compensation. Firm-year observations with board-related proposals account for 42.12% of the sample and obtain an average vote outcome of 48.92%, which is slightly higher than the full sample mean of 45.05%.

Validating the assumptions

Identifying assumptions

Although it is challenging to validate the assumption that firms do not have precise control over shareholder votes around the majority threshold, it can be assessed indirectly by checking for voting outcome discontinuity around the majority threshold – a discontinuity would cast doubt on the validity of the assumption. We follow McCrary (2008) to plot a histogram of voting outcomes and fit the histogram using local linear regressions on either side of the majority

threshold. Figure 1 presents the results. The discontinuity estimate is -0.026 (*t*-stat = -0.112) and supports the assumption.

[Insert FIGURE 1 Here]

Additionally, we examine whether discontinuities exist around the majority threshold in firm characteristics measured before the vote. If firms that can precisely manipulate the voting outcome around the majority threshold have similar firm characteristics, then those characteristics are likely to exhibit discontinuities. Panel A of Table 2 shows the mean of firm characteristics (*MTB*, *MCAP*, *ROE*, *Shares*, *InstOwn*, *Numest*, and *CV_AF)* measured before the vote in bins of *Vote_Pct*. For example, a *Vote_Pct* bin of (0.50, 0.51] represents observations that obtain a voting percentage of 50% to 51%. The last three columns provide the test for the difference in means around the majority threshold. Specifically, the [0.49, 0.51], [0.48, 0.52], and [0.45, 0.55] columns represent the difference in mean between (0.50, 0.51] and [0.49, 0.50], between (0.5, 0.52] and [0.48, 0.50], and between (0.50, 0.55] and [0.45, 0.50] bins of voting outcomes, respectively. We find that none of the pre-existing firm characteristics exhibit a statistically significant difference in means for the narrow voting outcome bins around the majority threshold.

[Insert TABLE 2 Here]

We then use the RDD to test for discontinuities around the majority threshold for these pre-existing firm characteristics. For each firm characteristic, we fit a local linear (first order) or a third order polynomial on either side of the majority threshold with the optimal bandwidth. Panel B of Table 2 shows that these characteristics are similar for firms with proposals around the majority threshold. Collectively, the results suggest that any differences in earnings

management around the majority threshold is attributable to voting outcome, and not to these characteristics.

Proposal implementation

RDD relies on the assumption that firms whose proposals pass by a small margin have an increased likelihood of implementing proposals, compared with firms whose proposals fail by a small margin. We validate this assumption for the subsample of board-related proposals. More than 80% of board-related proposals target declassifying the board, voting threshold for electing directors, or separating the CEO/chairman. Proposals on these topics that obtain majority support from shareholders likely increase director accountability and curtail earnings management (Klein 2002; Chen et al. 2015).

We examine the subsequent proxy filings to obtain data on whether the proposals were implemented. Specifically, repealing classified board typically requires a shareholder vote on an amendment to bylaws. Since management proposals almost always pass, we consider the proposal to be implemented if the ballot at the next shareholder meeting includes a management-sponsored proposal to amend company bylaws to declassify the board. Bylaws may be amended before voting takes place. Thus, if the proxy statements discuss amendments, we consider such proposals as implemented as well. We take the same approach for proposals that seek to implement majority vote to elect directors. We consider a proposal to separate CEO/chairman as implemented if the next year's proxy statement shows that the board cancelled an existing policy of CEO/chairman or if an independent director assumed the role of chairman. For other board-related proposals (less than 20% of proposals), we examine the following year's proxy statement to determine its implementation.

Panel A of Table 3 shows the distribution of the implementation status conditional on *Vote_Pct*. The fraction of firms that implement proposals increases sharply, from 16.67% to 72.73%, as the proposal crosses the majority threshold. Panel B of Table 3 shows results of the RDD test on the effect of majority support for a proposal on its subsequent implementation. Using the optimal bandwidth, the results show that, compared to firms whose proposals just fail to obtain majority support, firms whose proposals just obtain majority support are 56.0% (*z*-stat = 3.465) and 54.6% (*z*-stat = 1.994) more likely to implement the proposals, for the linear and third order polynomial estimations, respectively. These results validate the assumption that firms whose proposals pass by a small margin have a significantly higher likelihood of implementing the proposal that firms whose proposals fail by a small margin.

[Insert TABLE 3 Here]

Results

Shareholder proposal voting outcome and meeting or beating analysts' earnings forecasts

We next examine our main research question. Panel A of Table 4 provides the mean of *JMBE* by specific bins of *Vote_Pct* and a univariate analysis of *JMBE* for three *Vote_Pct* bandwidths surrounding the majority threshold. Specifically, the [0.49, 0.51], [0.48, 0.52], and [0.45, 0.55] columns represent the difference in mean *JMBE* across (0.5, 0.51] and [0.49, 0.50], (0.50, 0.52] and [0.48, 0.50], and (0.50, 0.55] and [0.45, 0.50] bins of voting percentage, respectively. The differences in *JMBE* incidence between proposals that pass the threshold (*Pass* = 1) and proposals that fall short of the threshold (*Pass* = 0) are -28.6%, -24.6%, and -22.9% (*t*-stat = -2.272, -2.589 and -3.132) for the voting outcome bins of [0.49, 0.51], [0.48, 0.52], and [0.45, 0.55], respectively. These significant differences provide initial support for the relation between corporate governance and earnings management.

[Insert TABLE 4 Here]

Panel B of Table 4 provides the RDD estimates for *JMBE* around the majority threshold. Using the optimal bandwidth, the results show that, compared to firms whose proposals just fail to obtain majority support, firms whose proposals just obtain majority support are 33.1% (*z*-stat = -3.602) and 24.1% (*z*-stat = -1.675) less likely to *JMBE* after the votes, for the linear and third order polynomial estimations, respectively. The results are consistent with panel A of Figure 2, which illustrates the RDD estimation for the third order polynomial. Panel A of Figure 2 shows that, as voting just crosses the majority threshold, the frequency of *JMBE* decreases markedly. We obtain similar results with fixed bandwidths of [0.45, 0.55], [0.40, 0.60], and [0.35, 0.65] surrounding the majority threshold. Collectively, the results show that corporate governance impacts earnings management.

[Insert FIGURE 2 Here]

Panel C of Table 4 examines *JMBE* of the sample firms for five years after the votes around the majority threshold. Using the optimal bandwidth, the results show that, compared to firms whose proposals just fail to obtain majority support, firms whose proposals just obtain majority support are 11.9% (*z*-stat = -2.090) and 16.0% (*z*-stat = -1.920) less likely to *JMBE* for the five years after the votes, for the linear and third order polynomial estimations, respectively. The results suggest that the effects of governance changes on earnings management are long-term, albeit slightly weaker than the short-term effect.

Panel D of Table 4 provides the results of the falsification test based on *JMBE* before the vote. If the assignment of the shareholder vote is random, then *JMBE* in the prior year should be unrelated to a proposal marginally obtaining majority support. There is no statistically significant difference in *JMBE* before the vote around the majority threshold. Collectively, these results

provide confidence that the effect of governance changes on earnings management is causal and that this effect is economically significant and long-lasting.

The impact of board-related proposals

This sub-section examines whether the results are driven by board-related proposals, because such proposals enhance the board's monitoring role.[16] Panel A of Table 5 splits the sample into board-related and other proposals. Using the optimal bandwidth, the results show that, compared to firms whose board-related proposals just fail to obtain majority support, firms whose board-related proposals just obtain majority support are 48.5% (z-stat = -3.573) and 38.3% (z-stat = -1.735) less likely to *JMBE* after the votes, for the linear and third order polynomial estimations, respectively. The results for other types of proposals appear weaker. Compared to firms whose non-board-related proposals just fail to obtain majority support, firms whose non-board-related proposals just obtain majority support are 22.8% (z-stat = -1.933) and 4.5% (z-stat = -0.269) less likely to *JMBE* after the votes, for the linear and third order polynomial estimations, respectively.[17] This suggests that board-related proposals drive the results in Table 4, which supports that governance changes that increase the directors' monitoring role lead to lower earnings management.

[Insert TABLE 5 Here]

The impact of information acquisition costs

We examine how majority support for board-related proposals affects earnings management in firms with different information environments. Prior studies show that the

[16] We also expect majority support for auditing-related proposals to affect earnings management. However, there is only one proposal in our sample related to auditing which has negligible effect on our regression discontinuity estimates. The proposal requires the company to limit consulting by auditors and obtains a voting outcome of 12%.

[17] The results are similar with the three fixed bandwidths. Please see supporting information, "Online Appendix Table OA5," as an addition to the online article.

effectiveness of board monitoring on firm performance and accounting quality depends on information acquisition cost (Duchin et al. 2010; Armstrong et al. 2014; Chen et al. 2015). Following Duchin et al. (2010), we use analyst forecast dispersion (*CV_AF*), analyst forecast error (*Error*), and analyst coverage (*Numest*) to proxy for directors' information acquisition cost. Panels B, C, and D of Table 5 provide the RDD estimation results for the optimal bandwidths when the subsample of board-related proposals is partitioned based on the medians of *CV_AF*, *Error*, and *Numest*, respectively. Low analyst forecast dispersion, low analyst forecast error, and high analyst coverage indicate low information acquisition costs. The results show that majority support for board-related proposals is effective in significantly reducing earnings management only when information acquisition cost is low. This confirms prior studies' findings that information cost impacts effective board monitoring.

The impact of proposals targeting antitakeover provisions

Cuñat et al. (2012) find that the increase in firm value around the majority threshold is driven by proposals to remove antitakeover provisions. Accordingly, we explore whether such proposals drive our results on earnings management. Following Gompers et al. (2003) and Cuñat et al. (2012), we classify proposals on repealing classified boards, removing poison pills, and eliminating supermajority provisions, etc. as "G-Index" proposals. The left-side columns of panel A of Table 6, under "G-Index Proposals," provide the RDD estimation results for this subsample. Using the optimal bandwidth, the results show that, compared to firms whose G-Index proposals just fail to obtain majority support, firms whose G-Index proposals just obtain majority support are 35.1% (z-stat = -1.745) and 28.0% (z-stat = -1.190) less likely to *JMBE* after the votes, for the linear and third order polynomial estimations, respectively. In the right-side columns of panel A of Table 6, under "G-Index Proposals Excluding Board-Related Proposals,"

we report the RDD estimation results after removing board-related proposals from the G-Index proposals. In this subsample, we find that, compared to firms whose proposals just fail to obtain majority support, firms whose proposals just obtain majority support are 17.5% (z-stat = -0.965) less likely to *JMBE* after the vote for the linear estimation and 17.9% (z-stat = 1.233) more likely to *JMBE* after the vote for the third order polynomial estimation. These results suggest that the results in Table 4 are not attributable to proposals targeting antitakeover provisions.

[Insert TABLE 6 Here]

We consider an alternative approach for classifying the proposals. Bebchuk et al. (2009) show that provisions pertaining to classified boards, poison pills, golden parachutes, supermajority requirements for mergers and charter amendments, and imposing limits to shareholder bylaw amendments are important for corporate governance, and they construct an E-Index based on these provisions. We classify proposals related to these provisions as "E-Index" proposals (Appendix 2). These results in panel B of Table 6 are qualitatively similar to those in panel A of Table 6 and suggest that results in Table 4 are not attributable to proposals targeting antitakeover provisions.

These findings are consistent with Larcker et al.'s (2007) findings of mixed relations between antitakeover provisions and earnings management, but appear to be inconsistent with Cuñat et al.'s (2012) finding that increase in firm value is driven by antitakeover proposals. However, effects on firm value can arise through various channels, not just earnings management. To the extent that the Cuñat et al.'s (2012) finding is driven by channels other than earnings management, our results are not inconsistent.

Only one of the proposal categories examined by Gompers et al. (2003) and Bebchuk et al. (2009) enhance board monitoring as well, i.e., "repealing classified boards." Given that

enhanced board monitoring is an important channel for curtailing earnings management, we consider the subsample with only repealing classified boards. The results of the RDD estimation for this subsample (panel C of Table 6) show that, compared to firms whose proposals to repeal classified boards just fail to obtain majority support, firms whose proposals to repeal classified boards just obtain majority support are 88.3% (z-stat = -1.853) and 96.3% (z-stat = -1.753) less likely to *JMBE* after the votes, for the linear and third order polynomial estimations, respectively. The small sample size impacts the statistical significance. However, the results suggest that this type of proposals that target antitakeover provisions enhances the board's monitoring role and thereby mitigates earnings management.

Additional tests

Alternative measure of earnings management

This sub-section uses an alternative measure of earnings management that is based on discretionary accruals (*DA*) to examine the effect of majority support for shareholder proposals. As discussed earlier, one of the reasons for using *JMBE* as our main earnings management proxy is that it is likely to reflect all varieties of earnings management. In contrast, *DA* only considers accruals-based earnings management, and hence is likely to be less powerful, potentially resulting in statistically weaker results.

We measure *DA* as the absolute value of abnormal accruals. Abnormal accruals are the difference between total accruals and normal accruals, estimated using the cross-sectional modified Jones model, as introduced in Dechow et al. (1995) and augmented by McNichols (2002). We start with 2,948 firm-year observations with shareholder proposals. After excluding financial firms (SIC 6000-6999) and utility firms (SIC 4900-4999), 2,118 firm-years remain. Requiring the variables for estimating normal levels of accruals further reduces the sample to

1,944 observations. An additional requirement of a minimum of 15 observations per industry-year leaves 1,645 observations to estimate *DA*.

The results in Table 7 based on *DA* are qualitatively similar to, but statistically weaker than, the results based on *JMBE*. Specifically, compared to firms whose proposals just fail to pass the majority threshold, firms whose proposals just pass the majority threshold have: (a) lower *DA* in the fiscal year after the vote, (b) lower *DA* in the five-year window after the vote, and (c) statistically similar *DA* in the year before the vote. Panel B of Figure 2 presents the regression discontinuity plot based on *DA,* which shows discontinuity around the majority threshold. Overall, these results show a causal effect of governance changes on accruals-based earnings management.

[Insert TABLE 7 Here]

In untabulated tests, we use the real earnings management proxy based on Roychowdhury (2006) in place of *JMBE*. Compared to firms that fail to obtain majority support for shareholder proposals, firms that obtain majority support for shareholder proposals do not exhibit significantly lower real earnings management. There are two possible reasons for this. Corporate governance could be ineffective in disciplining real activities earnings management, due to the difficulty in determining whether discretionary spending cuts are value-enhancing or motivated by earnings management. Alternatively, the measure of real earnings management could be noisy (Siriviriyakul 2015; Srivastava 2019; Cohen et al. 2020). For example, Srivastava (2019) shows that real earnings management measures could reflect firms' competitive strategies.

Sensitivity tests

Repeated observations. In our sample, 588 (69%) of the 736 observations appear more than once, 82% are new shareholder proposals, and 18% are repeated shareholder proposals. Of the repeated proposals, roughly 20% had passed before but were not adopted, and the rest had not passed. The relatively small proportion of repeated proposals that had passed suggests that boards of directors often adopt proposals that pass. Importantly, to the extent that the RDD procedure satisfies the key assumptions of randomized experiments, the repeating observations by themselves are not a concern.[18] Nevertheless, in panel A of Table 8, we examine firms with one observation in the sample. The coefficient estimates exhibit similar economic magnitudes to those in the main tests, but with weaker statistical significance, presumably due to a lower number of observations.[19]

[Insert TABLE 8 Here]

Alternative cutoffs for *JMBE*. In panel B of Table 8, we examine alternative ranges of earnings surprises for *JMBE*: [-2 cents, 1 cent], [-3 cents, 2 cents], [-4 cents, 3 cents], and [-5 cents, 4 cents]. We find statistically significant results for the linear estimation, but both the magnitude and statistical significance of the discontinuity estimate decrease as range size increases. This suggests that, with bigger ranges of earnings surprises, *JMBE* has reduced power, as it may not capture earnings management. Consistent with this, the results with the third order estimation are not statistically significant for any of the alternative windows.[20]

[18] The key assumptions embedded in randomized experiments are that each observation is an independent draw from an underlying identical distribution, for the treatment and benchmark groups. Thus, even though proposals are repeated, as long as they do not consistently fall into the pass-by-small-margin or fail-by-small-margin categories, the repeating observations are not a concern.

[19] Results with the three fixed bandwidths yield similar inferences. Please see supporting information, "Online Appendix Table OA6," as an addition to the online article.

[20] Results with the three fixed bandwidths yield similar inferences. Please see supporting information, "Online Appendix Table OA7," as an addition to the online article.

Dynamics of shareholder activism. The sample period spans 2003-2015. The number of governance-related shareholder proposals and shareholder support for these proposals spiked in 2003 and remained high. However, as many important governance practices had been widely adopted, both the number of proposals and the percentage of majority-supported proposals began decreasing after early 2010s (Papadopoulos 2019). This institutional change may reduce the power of shareholder activism in identifying the relation between corporate governance and earnings management. Panel C of Table 8 partitions the sample into two sub-periods, with 2010 as the cutoff, and indicates that the main results are weaker in the latter period.

Public scrutiny. We examine whether our results in panel A of Table 5 could be attributed to shareholder activism drawing public scrutiny on boards of directors. As large firms garner more public scrutiny, we partition the subsample of board-related proposals using market capitalization and using firm membership in the S&P 500. The results are significant for both small and large firms, which confirms that the results are not attributable to public scrutiny.[21]

Regression approach. We use the regression approach to complement the RDD approach. We regress *JMBE* on *Pass*, a set of control variables (see Section 4), polynomials of voting outcomes, together with industry and year fixed effects using a logit regression. By including the polynomials of the voting outcomes, the coefficient on *Pass* represents the discontinuity estimate of the effect of *Pass* on *JMBE*. Specifically, we follow Cuñat et al. (2012) and include fourth order polynomials to reliably estimate the treatment effect at the majority threshold.

Panel D of Table 8 presents the estimation results. Column (1) shows that *JMBE* of firms whose proposals just pass the majority threshold are 30.0% lower compared to firms whose proposals just fail to pass after the vote. Column (2) shows the long-term effect of shareholder

[21] Please see supporting information, "Online Appendix Table OA8," as an addition to the online article.

voting support on earnings management. We include year-to-meeting fixed effects (i.e., year *t*+1, year *t*+2, year *t*+3 and year *t*+4) and interact *Pass* with the year-to-meeting fixed effects.[22] In particular, year *t*+1 (*t*+2…*t*+4) takes the value of 1 if *JMBE* pertains to the operation results in year *t*+1 (*t*+2…*t*+4) and 0 otherwise. The regression compares annual *JMBE* for firms whose proposals just pass the majority threshold in shareholder vote pertaining to year *t-1* with firms whose proposals just fail to pass. We find that *JMBE* for the five years after the votes appears lower for firms whose proposals just pass the majority threshold, compared to firms whose proposals just fail to pass, suggesting governance changes significantly impact earnings management over time. Columns (3) and (4) separately consider board-related proposals and other proposals, respectively. We find that the negative effect of *Pass* on *JMBE* is more pronounced for board-related proposals than for other proposals. The *Chi*-Squared test shows the difference is significant. Collectively, the regression results provide further confidence to the robustness of main inferences.

5. Conclusion

This study uses RDD to examine the causal effect of corporate governance on earnings management. RDD relies on the identifying assumption that while firms with shareholder-sponsored proposals under Rule 14a-8 that pass or fail by a small margin of votes have similar characteristics, they differ in the likelihood of governance provisions being implemented. We find that firms with proposals that marginally pass are less likely to just meet or beat analysts' forecasts than firms with proposals that just fail. Furthermore, the results are driven by board-related proposals that increases directors' monitoring. Collectively, the results suggest that improvements in corporate governance curtail earnings management and provide insights on the

[22] Year *t* is used as the benchmark group, and thus its fixed effect is omitted from regression.

role of shareholder activism in curbing earnings management and mitigating agency cost. The results support regulators' premise that improving corporate governance will improve financial reporting quality. Furthermore, our results show that low-cost shareholder activism is effective in curtailing earnings management and enhancing financial reporting quality, by improving corporate governance.

An important concern related to RDD is that the results are attributable to a small number of observations around the threshold, which could compromise the generalizability of the results. Another generalizability concern pertains to the small sample, which is imposed by the earnings management measure of just meeting or just beating earnings thresholds. To mitigate this concern, we use discretionary accruals and obtain qualitatively similar results. Nevertheless, we caution readers about the relatively small sample size of our analyses. Even though identifying an exogenous shock to governance is difficult, future research can examine alternative settings by potentially identifying regulatory shocks to mitigate these concerns.

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Appendix 1
Variable definitions

Variable	Definition/Measurement
CV_AF	Coefficient of variation (standard deviation scaled by the mean) of the latest forecasts used to calculate the consensus EPS measured at the annual earnings announcement before the vote.
DA	We use the following procedure to calculate *DA*. First, we run the following cross-sectional regression by year and two-digit SIC codes (excluding finance and utility companies) as described in Dechow et al. (1995) and modified by McNichols (2002): $TA_t = \alpha + \beta_1(\Delta Rev_t) + \beta_2 PPE_t + \beta_3 CFO_{t-1} + \beta_4 CFO_t + \beta_5 CFO_{t+1} + \varepsilon,$ where *TA* is the earnings before extraordinary items and discontinued operations less operating cash flows (from continuing operations) taken from the statement of cash flows; ΔRev is the current sales revenue less prior year's sales revenue; *PPE* is the gross property, plant and equipment; *CFO* is operating cash flows (from continuing operations). All variables are scaled by prior year's total assets. Second, the estimated coefficients from this regression are used to compute abnormal accruals for each firm as follows: $AA = TA - [\alpha + \widehat{\beta_1}(\Delta Rev - \Delta AR) + \widehat{\beta_2} PPE + \widehat{\beta_3} CFO_{t-1} + \widehat{\beta_4} CFO_t + \widehat{\beta_5} CFO_{t+1}]$, where ΔAR is accounts receivables less prior year's accounts receivable, scaled by prior year's total assets. *DA* is calculated as the absolute value of *AA*.
Error	The difference between actual earnings for fiscal-year-end before the shareholder vote and the latest consensus analyst forecast prior to the annual earnings announcement scaled by market capitalization at the end of the prior fiscal year.
InstOwn	The total percentage holding of institutional investors measured before the shareholder meeting.
JMBE	A dummy variable which is equal to one if $0 \leq SUR \leq 0.01$, and zero otherwise.
MCAP	Natural logarithm of market capitalization (in million USD) at the end of the fiscal year before the vote.
MTB	Market-to-book ratio at the end of the fiscal year before the vote.
Numest	The number of analysts' forecasts outstanding in the month of the annual earnings announcement before the vote.
Pass	A dummy variable which is equal to one if *Vote_Pct >50%*, and zero otherwise.
ROE	Return-to-equity for the fiscal year before the vote.
Shares	The number of common shares (in billion USD) outstanding at the end of fiscal year before the vote.

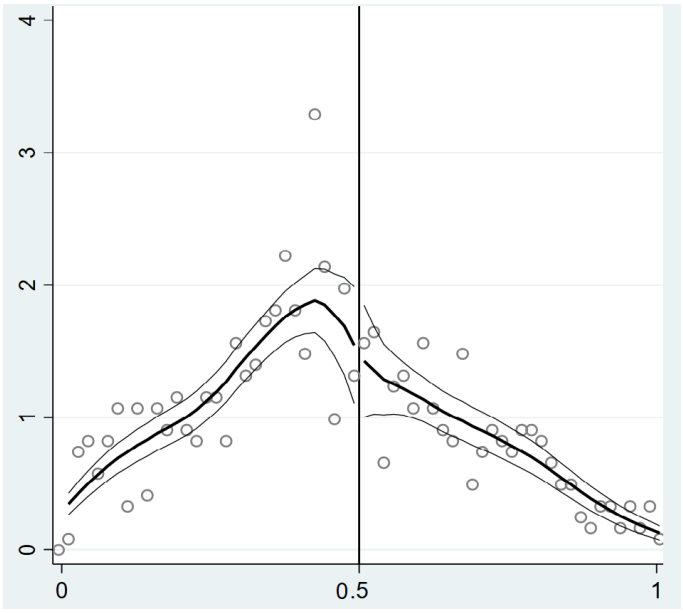
Variable	Definition/Measurement
SUR	The difference between actual earnings for fiscal-year-end after the shareholder vote and the latest consensus analyst forecast prior to the annual earnings announcement.
Vote_Pct	Shareholder voting outcome calculated as the percentage of "vote-for" scaled by a firm-specific base on annual shareholder meeting pertaining to year *t-1*.

Appendix 2
Classifications of shareholder proposals

Description	#Obser-vations-Full Sample	%Majority-Supported Proposals	Average Vote Outcome	#Obser-vations [-15%,+15%] around Threshold	Board	G-Index	E-Index	Note
add performance criteria to equity-based awards	3	33.33	39.51%	2	No	No	No	
advisory vote on compensation	40	22.50	44.35%	36	No	No	No	
approve/disclose/limit SERPs	4	0.00	30.36%	3	No	No	No	
award performance-based stock options	20	0.00	27.43%	8	No	No	No	
cap executive pay	5	0.00	7.99%	0	No	No	No	
commit to/report on board diversity	12	0.00	17.40%	2	No	No	No	
confidential voting	1	100.00	97.86%	0	No	Yes	No	
cumulative voting	22	4.55	34.99%	13	Yes	Yes	No	Director election
disclose executive compensation	1	0.00	6.00%	0	No	No	No	
double board nominees/more nominees than seats	1	0.00	25.00%	0	Yes	No	No	Director election
eliminate supermajority provision	43	83.72	68.06%	10	No	Yes	Yes	
equal access to proxy/allow shareholder nominees	18	55.56	46.24%	8	Yes	No	No	Director election
expense stock options	30	46.67	46.20%	25	No	No	No	
increase compensation committee independence	1	100.00	52.00%	1	No	No	No	
increase key committee independence	1	0.00	8.70%	0	Yes	No	No	Board independence
independent nominating committee	1	0.00	37.63%	1	Yes	No	No	Board independence
limit consulting by auditors	1	0.00	12.00%	0	No	No	No	
limit director tenure	2	0.00	3.12%	0	Yes	No	No	Director accountability
link executive pay to social criteria	3	0.00	8.57%	0	No	No	No	
link pay to performance/recoup bonuses	59	6.78	24.66%	19	No	No	No	
majority vote shareholder committee	12	8.33	31.44%	4	Yes	No	No	Director election

majority vote to elect directors	74	48.65	51.22%	46	Yes	No	No	Director election
majority/increase independent directors	2	0.00	23.50%	0	Yes	No	No	Board independence
methods of counting votes	1	0.00	17.80%	0	No	No	No	
miscellaneous compensation	4	0.00	27.14%	2	No	No	No	
miscellanea	7	42.86	38.17%	1	No	No	No	
redeem or vote poison pill	47	76.60	60.98%	21	No	Yes	Yes	
reincorporate to U.S states	2	0.00	16.20%	0	No	No	No	
remove antitakeover provisions and others	7	14.29	37.06%	1	No	Yes	No	
repeal classified board	102	86.27	68.56%	32	Yes	Yes	Yes	Director election
require equity awards to be held	26	0.00	25.51%	1	No	No	No	
require only majority vote	1	100.00	82.80%	0	No	Yes	Yes	
restrict director compensation	1	0.00	7.69%	0	Yes	No	No	Director accountability
separate chairman/CEO / independent board chairman	74	5.41	30.67%	30	Yes	No	No	Board independence
shareholders can act by written consent	42	23.81	44.41%	38	No	Yes	No	
shareholders may call special meeting	34	41.18	48.39%	25	No	Yes	No	
study sell/spinoff company	4	0.00	11.20%	0	No	No	No	
vote on future golden parachutes	25	52.00	49.79%	16	No	Yes	Yes	
vote on targeted share placement	3	33.33	40.56%	2	No	No	No	
Total	736	38.72	45.05%	347				
Board	310	45.16	48.92%	134				
G-Index	324	62.04	57.87%	156				
E-Index	218	79.82	64.74%	79				

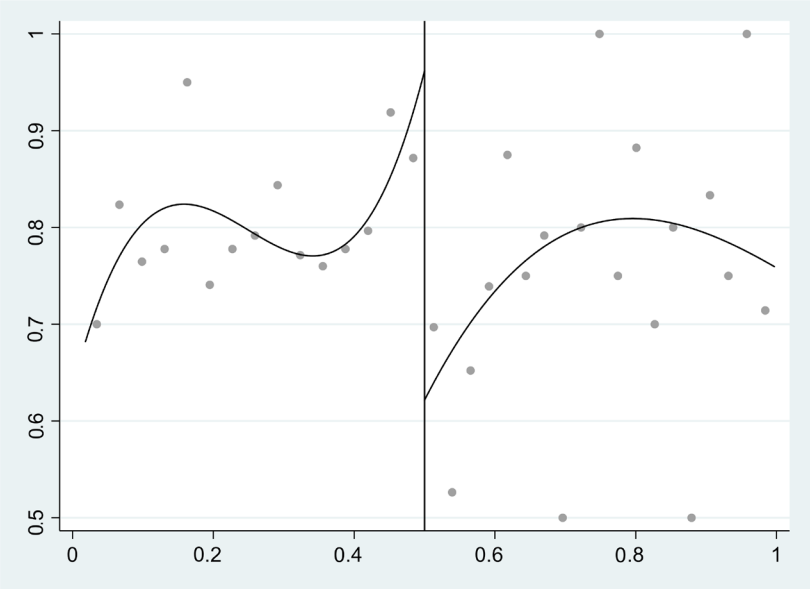
FIGURE 1 Test for discontinuity of voting outcome at the majority threshold



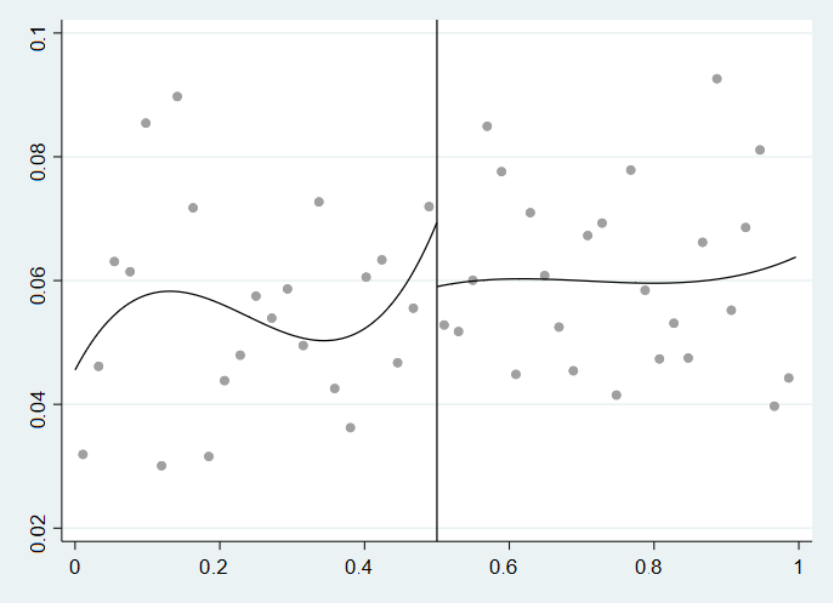
Notes: This figure plots the distribution of the voting outcome. The *x*-axis is the voting outcome, *Vote_Pct.* The horizontal line at *Vote_Pct* = 0.50 is the majority threshold. The sample contains 736 observations. The discontinuity estimate of the vote shares distribution at the majority threshold is -0.026 (*t*-stat = -0.112). The test statistic follows McCrary (2008).

FIGURE 2 Regression discontinuity plots of earnings management proxies after the shareholder vote

Panel A: *JMBE*



Panel B: *DA*



Notes: These figures present the regression discontinuity plots of earnings management proxies—*JMBE* in Panel A and *DA* in Panel B for firms with shareholder proposals voted in shareholder meetings between 2003 and 2015 around the majority threshold of *Vote_Pct* = 50%. The *x*-axis is the vote outcome, *Vote_Pct*. The dots represent the mean value of the earnings management proxies for evenly spaced bins of *Vote_Pct* and are fitted with 3rd order polynomial. The variable definitions are in Appendix 1.

TABLE 1
Descriptive statistics

Panel A: Sample distribution by year

Year	Number of firms	Percentage of Passed Proposals	Average Vote Outcome
2003	81	45.68	43.45%
2004	64	37.50	38.37%
2005	65	35.38	41.92%
2006	68	44.12	47.25%
2007	67	35.82	44.76%
2008	34	29.41	41.79%
2009	51	47.06	49.87%
2010	64	40.63	48.86%
2011	41	36.59	48.54%
2012	50	38.00	48.07%
2013	44	34.09	42.61%
2014	50	32.00	43.70%
2015	57	38.60	47.38%
Total	736	38.72	45.05%

Panel B: Summary statistics

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
JMBE	736	0.784	0.412	1.000	1.000	1.000
Pass	736	0.387	0.487	0.000	0.000	1.000
Vote_Pct	736	0.450	0.226	0.293	0.432	0.608
MTB	736	3.852	4.616	1.742	2.714	4.336
MCAP	736	9.443	1.558	8.478	9.504	10.533
ROE	736	0.188	0.446	0.084	0.141	0.214
Shares	736	0.973	1.680	0.165	0.363	0.971
InstOwn	736	0.808	0.194	0.690	0.802	0.917
Numest	736	16.326	7.994	11.000	16.000	21.000
CV_AF	736	0.032	0.041	0.010	0.020	0.030

Notes: Panel A presents the sample observations by year. Panel B provides the summary statistics of the variables. The definitions of the variables are in Appendix 1. All continuous variables are winsorized at 1% and 99%.

TABLE 2
Tests of pre-existing firm characteristics

Panel A: Univariate tests of firm characteristics around the majority voting threshold

	Mean of the Variables by *Vote_Pct*										Univariate Test		
Vote_Pct	[0, 0.25)	[0.25,0.45)	[0.45,0.48)	[0.48,0.49)	[0.49,0.5]	(0.5,0.51]	(0.51,0.52]	(0.52,0.55]	(0.55,0.75]	(0.75,1]	[0.49,0.51]	[0.48,0.52]	[0.45,0.55]
Pass	0	0	0	0	0	1	1	1	1	1			
N	144	251	30	14	12	14	13	24	148	86	26	53	107
MTB	3.709	4.171	5.141	5.271	3.224	4.161	3.012	3.936	3.342	3.500	0.937	-0.718	-1.000
MCAP	9.568	9.732	10.112	9.310	9.691	9.858	9.776	9.676	8.983	8.750	0.167	0.333	-0.070
ROE	0.155	0.218	0.260	0.298	0.182	0.164	0.172	0.321	0.177	0.100	-0.018	-0.076	-0.013
Shares	1.145	1.156	1.744	1.302	1.142	1.083	0.659	1.056	0.592	0.471	-0.058	-0.349	-0.542
InstOwn	0.777	0.791	0.795	0.795	0.804	0.793	0.867	0.823	0.809	0.903	-0.011	0.029	0.028
Numest	16.993	16.880	17.600	15.143	16.917	18.143	20.769	17.000	15.318	13.837	1.226	3.446	1.435
CV_AF	0.035	0.032	0.033	0.026	0.029	0.022	0.029	0.052	0.025	0.033	-0.007	-0.002	0.008

Panel B: Regression discontinuity estimates of firm characteristics

	Coefficient	*z*-Statistic	Optimal Bandwidth	Coefficient	*z*-Statistic	Optimal Bandwidth
MTB	-0.978	-0.912	±0.153	-1.295	-0.913	±0.241
MCAP	0.516	1.235	±0.125	0.527	0.885	±0.225
ROE	-0.074	-0.973	±0.128	-0.069	-0.739	±0.211
Shares	-0.501	-0.857	±0.126	-0.399	-0.523	±0.198
InstOwn	0.018	0.410	±0.134	-0.029	-0.448	±0.185
Numest	3.236	1.596	±0.129	2.519	0.805	±0.191
CV_AF	0.002	0.236	±0.150	-0.004	-0.382	±0.171
Polynomial order		1			3	

Notes: Panel A provides the univariate tests of the variables representing firm characteristics measured before the vote in specific bins of *Vote_Pct* around the majority threshold of *Vote_Pct* = 50%. Panel B provides the regression discontinuity estimates for the variables representing firm characteristics measured before the vote. For each firm characteristic variable, the coefficients are estimated by fitting a local linear (polynomial order = 1) or 3rd order polynomial on either side

of the majority threshold of *Vote_Pct* = 50%. We follow Calonico et al.'s (2014) bias-correction methodology and use the optimal bandwidth. ***, **, and * represent two-tailed significance levels of 1 percent, 5 percent, and 10 percent, respectively. The definitions of the variables are in Appendix 1.

TABLE 3
Tests of implementing board-related proposals

Panel A: Distribution of implementation of board-related proposals by voting outcome

Vote_Pct	[0,40%)	[40%,50%]	(50%,60%]	(60%,100%]	Total
#Implemented	9	9	24	65	107
Total	119	54	33	103	309
%Implemented	7.56%	16.67%	72.73%	63.11%	34.63%

Panel B: Regression discontinuity estimates of implementation of board-related proposals

	Optimal Bandwidth		Fixed Bandwidth		
Coefficient	0.560***	0.546**	0.567	0.576***	0.582***
z-Statistic	3.465	1.994	1.642	2.917	3.755
Bandwidth	±0.137	±0.208	±0.050	±0.100	±0.150
Polynomial order	1	3	1	1	1
#Observations	309	309	309	309	309

Notes: Panel A provides the distribution of proposal implementation status for specific bins of *Vote_Pct*. Panel B provides the regression discontinuity estimates for implementation of board-related proposals. The optimal bandwidth coefficients are estimated by fitting a local linear (polynomial order = 1) or 3rd order polynomial on either side of the majority threshold of *Vote_Pct* = 50%. We follow Calonico et al.'s (2014) bias-correction methodology and use both the optimal bandwidth and fixed bandwidths around the majority threshold. ***, **, and * represent two-tailed significance levels of 1 percent, 5 percent, and 10 percent, respectively. The definitions of the variables are in Appendix 1.

TABLE 4
Earnings management proxy of just meeting or beating analysts' forecasts around the majority voting threshold

Panel A: Univariate tests of *JMBE* around the majority voting threshold

	Mean of the Variable by *Vote_Pct*										Univariate Test		
Vote_Pct	[0, 0.25)	[0.25,0.45)	[0.45,0.48)	[0.48,0.49)	[0.49,0.5]	(0.5,0.51]	(0.51,0.52]	(0.52,0.55]	(0.55,0.75]	(0.75,1]	[0.49,0.51]	[0.48,0.52]	[0.45,0.55]
Pass	0	0	0	0	0	1	1	1	1	1			
N	144	251	30	14	12	14	13	24	148	86	26	53	107
JMBE	0.792	0.793	0.833	0.929	1.000	0.714	0.692	0.583	0.757	0.802	-0.286**	-0.246**	-0.229***

Panel B: Regression discontinuity estimates of *JMBE* in fiscal-year that ends after the vote

	Optimal Bandwidth		Fixed Bandwidth		
Coefficient	-0.331***	-0.241*	-0.564***	-0.306***	-0.247***
z-Statistic	-3.602	-1.675	-4.138	-2.863	-2.748
Bandwidth	±0.141	±0.205	±0.050	±0.100	±0.150
Polynomial order	1	3	1	1	1
#Observations	736	736	736	736	736

Panel C: Regression discontinuity estimates of *JMBE* in the five-year window after the vote

	Optimal Bandwidth		Fixed Bandwidth		
Coefficient	-0.119**	-0.160**	-0.151*	-0.164***	-0.114**
z-Statistic	-2.090	-1.920	-1.953	-2.659	-2.133
Bandwidth	±0.125	±0.164	±0.050	±0.100	±0.150
Polynomial order	1	3	1	1	1
#Observations	3,013	3,013	3,013	3,013	3,013

Panel D: Regression discontinuity estimates of *JMBE* in the fiscal-year that ends before the vote

	Optimal Bandwidth		Fixed Bandwidth		
Coefficient	0.060	0.091	0.116	0.125	0.067
z-Statistic	0.493	0.521	0.643	0.972	0.616
Bandwidth	±0.120	±0.196	±0.050	±0.100	±0.150
Polynomial order	1	3	1	1	1
#Observations	773	773	773	773	773

Notes: Panel A provides the univariate tests of *JMBE* measured at the fiscal-year that ends after the vote in specific bins of *Vote_Pct* around the majority threshold of *Vote_Pct* = 50%. Panel B provides the regression discontinuity estimate for *JMBE* measured at the fiscal-year that ends after the vote. Panel C provides the regression discontinuity estimate for *JMBE* measured over the five-year window after the vote. Panel D provides the regression discontinuity estimate for *JMBE* measured at the fiscal-year that ends before the vote. The optimal bandwidth coefficients are estimated by fitting a local linear (polynomial order = 1) or 3rd order polynomial on either side of the majority threshold of *Vote_Pct* = 50%. We follow Calonico et al.'s (2014) bias-correction methodology and use both the optimal bandwidth and fixed bandwidths around the majority threshold. ***, **, and * represent two-tailed significance levels of 1 percent, 5 percent, and 10 percent, respectively. The definitions of the variables are in Appendix 1.

Table 5
Regression discontinuity estimates of earnings management proxy of just meeting or beating analysts' forecasts: cross-sectional analysis

Panel A: Partition by board and non-board related proposals

	Board-Related Proposals		Non-Board-Related Proposals	
Coefficient	-0.485***	-0.383*	-0.228*	-0.045
z-Statistic	-3.573	-1.735	-1.933	-0.269
Bandwidth	±0.163	±0.178	±0.134	±0.146
Polynomial order	1	3	1	3
#Observations	310	310	426	426

Panel B: Partition by median analyst forecast dispersion (*CV_AF*)

	Low Information Acquisition Cost *CV_AF* below median		High Information Acquisition Cost *CV_AF* above median	
Coefficient	-0.459**	-0.529*	-0.231	-0.219
z-Statistic	-2.063	-1.801	-1.297	-0.660
Bandwidth	±0.152	±0.214	±0.128	±0.187
Polynomial order	1	3	1	3
#Observations	127	127	183	183

Panel C: Partition by median analyst forecast error (*Error*)

	Low Information Acquisition Cost *Error* below median		High Information Acquisition Cost *Error* above median	
Coefficient	-0.557**	-0.867**	-0.186	-0.395
z-Statistic	-2.127	-1.977	-1.113	-1.567
Bandwidth	±0.120	±0.160	±0.119	±0.263
Polynomial order	1	3	1	3
#Observations	154	154	156	156

Panel D: Partition by median analyst coverage (*Numest*)

	Low Information Acquisition Cost *Numest* above median		High Information Acquisition Cost *Numest* below median	
Coefficient	-0.383**	-0.770***	-0.320	-0.409
z-Statistic	-2.290	-3.732	-1.233	-1.039
Bandwidth	±0.175	±0.124	±0.127	±0.196
Polynomial order	1	3	1	3
#Observations	152	152	158	158

Notes: Panel A partitions the sample based on board-related proposals (see Appendix 2 for classification). Panels B, C, and D partition the board-related proposals by information acquisition cost. All panels provide the regression discontinuity estimate for *JMBE* measured at the fiscal-year that ends after the vote. The optimal bandwidth coefficients are estimated by fitting a local linear (polynomial order = 1) or 3rd order polynomial on either side of the majority threshold of *Vote_Pct* = 50%. We follow Calonico et al.'s (2014) bias-correction methodology and use both the optimal bandwidth and fixed bandwidths around the majority threshold. ***, **, and * represent two-tailed

significance levels of 1 percent, 5 percent, and 10 percent, respectively. The definitions of the variables are in Appendix 1.

TABLE 6
Regression discontinuity estimates of earnings management proxy of just meeting or beating analysts' forecasts for proposals targeting antitakeover provisions

Panel A: Proposals targeting antitakeover provisions using G-index categories

	G-Index Proposals		G-Index Proposals Excluding Board-Related Proposals	
Coefficient	-0.351*	-0.280	-0.175	0.179
z-Statistic	-1.745	-1.190	-0.965	1.233
Bandwidth	±0.116	±0.158	±0.116	±0.118
Polynomial order	1	3	1	3
#Observations	324	324	200	200

Panel B: Proposals targeting antitakeover provisions using E-index categories

	E-Index Proposals		E-Index Proposals Excluding Board-Related Proposals	
Coefficient	-0.230	-0.149	-0.127	0.399
z-Statistic	-0.897	-0.435	-0.465	1.439
Bandwidth	±0.102	±0.159	±0.131	±0.132
Polynomial order	1	3	1	3
#Observations	218	218	116	116

Panel C: Proposals on repealing classified board

Coefficient	-0.883*	-0.963*
z-Statistic	-1.853	-1.753
Bandwidth	±0.070	±0.137
Polynomial order	1	3
#Observations	102	102

Notes: Panel A considers a subsample of proposals using the G-Index categories of governance provisions of Gompers et al. (2003). Panel B considers a subsample of proposals using the E-Index categories of governance provisions of Bebchuk et al. (2009). The G-Index and E-Index categories are provided in Appendix 2. Panel C considers proposals related to repealing classified boards which are common to both G-Index and E-Index. All panels provide the regression discontinuity estimate for *JMBE* measured at the fiscal-year that ends after the vote. The optimal bandwidth coefficients are estimated by fitting a local linear (polynomial order = 1) or 3rd order polynomial on either side of the majority threshold of *Vote_Pct* = 50%. We follow Calonico et al.'s (2014) bias-correction methodology and use both the optimal bandwidth and fixed bandwidths around the majority threshold. ***, **, and * represent two-tailed significance levels of 1 percent, 5 percent, and 10 percent, respectively. The definitions of the variables are in Appendix 1.

TABLE 7
Regression discontinuity estimates of earnings management proxy of discretionary accruals

Panel A: *DA* in fiscal-year that ends after the vote

	Optimal Bandwidth		Fixed Bandwidth		
Coefficient	-0.025*	-0.033*	-0.043**	-0.032**	-0.028**
z-Statistic	-1.839	-1.662	-2.159	-2.144	-2.389
Bandwidth	±0.113	±0.227	±0.050	±0.100	±0.150
Polynomial order	1	3	1	1	1
#Observations	1,645	1,645	1,645	1,645	1,645

Panel B: *DA* for five-year window after the vote

	Optimal Bandwidth		Fixed Bandwidth		
Coefficient	-0.016**	-0.011	-0.011	-0.012*	-0.015**
z-Statistic	-2.498	-1.241	-1.348	-1.733	-2.493
Bandwidth	±0.111	±0.163	±0.050	±0.100	±0.150
Polynomial order	1	3	1	1	1
#Observations	6,440	6,440	6,440	6,440	6,440

Panel C: *DA* in fiscal year that ends before the vote

	Optimal Bandwidth		Fixed Bandwidth		
Coefficient	-0.003	-0.005	-0.005	-0.004	-0.004
z-Statistic	-1.054	-1.052	-1.103	-1.232	-1.445
Bandwidth	±0.120	±0.196	±0.050	±0.100	±0.150
Polynomial order	1	3	1	1	1
#Observations	1,680	1,680	1,680	1,680	1,680

Notes: Panel A provides the regression discontinuity estimate for *DA* measured at the fiscal-year that ends after the vote. Panel B provides the regression discontinuity estimate for *DA* measured over the five-year window after the vote. Panel C provides the regression discontinuity estimate for *DA* measured at the fiscal-year that ends before the vote. The optimal bandwidth coefficients are estimated by fitting a local linear (polynomial order = 1) or 3rd order polynomial on either side of the majority threshold of *Vote_Pct* = 50%. We follow Calonico et al.'s (2014) bias-correction methodology and use both the optimal bandwidth and fixed bandwidths around the majority threshold. ***, **, and * represent two-tailed significance levels of 1 percent, 5 percent, and 10 percent, respectively. The definitions of the variables are in Appendix 1.

TABLE 8
Sensitivity tests

Panel A: Regression discontinuity estimates for firms with only one-year observation in the sample

Coefficient	-0.404***	-0.244
z-Statistic	-2.927	-1.023
Bandwidth	±0.169	±0.191
Polynomial order	1	3
#Observations	228	228

Panel B: Regression discontinuity estimates for alternative cutoffs for *JMBE*

	[-2c,1c]		[-3c,2c]		[-4c,3c]		[-5c,4c]	
Coefficient	-0.268***	-0.102	-0.162*	-0.029	-0.170**	-0.107	-0.159**	-0.119
z-Statistic	-2.876	-0.595	-1.873	-0.177	-1.976	-0.785	-1.981	-0.928
Bandwidth	0.182	0.187	0.193	0.187	0.144	0.209	0.139	0.199
Polynomial order	1	3	1	3	1	3	1	3
#Observations	831	831	1,148	1,148	1,385	1,385	1,580	1,580

Panel C: Regression discontinuity estimates for different periods of time

	Year 2003 - 2009		Year 2010-2015	
Coefficient	-0.324***	-0.365**	-0.320**	-0.029
z-Statistic	-2.650	-1.992	-2.269	-0.163
Bandwidth	±0.134	±0.168	0.173	0.166
Polynomial order	1	3	1	3
#Observations	430	430	306	306

Panel D: Logit regression with dependent variable - *JMBE*

	(1) *JMBE* in Fiscal-Year that Ends After the Vote	(2) *JMBE* for Five-Year Window After the Vote, Long-Run Effect	(3) Board-Related Proposals	(4) Non- Board-Related Proposals
Pass	-0.300***		-1.121***	-0.178
	(-2.67)		(-3.14)	(-1.34)
*Pass * Year t*		-0.205***		
		(-3.28)		
*Pass * Year t+1*		-0.109		
		(-1.62)		
*Pass * Year t+2*		-0.229***		
		(-3.26)		
*Pass * Year t+3*		-0.177**		
		(-2.53)		
*Pass * Year t+4*		-0.193***		
		(-2.75)		
Controls	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Year-to-Meeting Fixed Effects	No	Yes	No	No
4th order Polynomials	Yes	Yes	Yes	Yes
Observations	736	3,013	310	426
Pseudo R-squared	0.122	0.099	0.234	0.161
p-value of *Chi*-Squared Test of difference in coefficient on *Pass*			0.016	

Notes: Panel A provides the regression discontinuity estimate for *JMBE* measured at the fiscal-year that ends after the vote for firms with only one-year observation, i.e., excluding firms with multiple years in the sample. Panel B provides the regression discontinuity estimate for *JMBE* measured using alternative earnings surprise windows as shown in the columns. Panel C provides the regression discontinuity estimate for *JMBE* for different periods of time. In Panel A, B, and C, the optimal bandwidth coefficients are estimated by fitting a linear or 3rd order polynomial on either side of the majority threshold of *Vote_Pct* = 50%. We follow Calonico et al.'s (2014) bias-correction methodology. Panel D presents the effect of passing a proposal on *JMBE* at the fiscal-year that ends after the vote (Column 1) and for the five-year window after the vote (Column 2). In Column 2, *Year t* (*t+1…*) takes the value of one if *JMBE* pertains to the year *t* (*t+1…*)'s operation. Column (3) and (4) replicate the specification in Column (1) separately for board-related proposals and non-board-related proposals. All columns include industry and year fixed effects and Column 2 further includes a year-to-meeting fixed effects (i.e., *Year t+1* to *Year t+4*). We use logit regressions and present marginal effects. In all columns, polynomials of order 4 are fitted on either side of the passing threshold, so the coefficients represent the average treatment effects of passing a proposal on *JMBE* near the majority threshold. ***, **, and * represent two-tailed significance levels of 1 percent, 5 percent, and 10 percent, respectively. The definitions of the variables are in Appendix 1.