Governance, CEO power, and Relative Performance Evaluation (RPE) Effectiveness[*]

Lin Ge
Ole Miss Business
University of Mississippi

Frederik P. Schlingemann
Katz Graduate School of Business
University of Pittsburgh
Rotterdam School of Management
Erasmus University

Hong Wu
School of Accounting and Finance
Hong Kong Polytechnic University

Jing Zhao
School of Accounting and Finance
Hong Kong Polytechnic University

Abstract

We study whether changes in corporate governance and CEO power affect bonus-based implicit relative performance evaluation (RPE). We rely on a regression discontinuity design of shareholder proposals to proxy for shocks to CEO power. The effect of shareholder proposals on RPE is stronger under situations where shareholder proposals are expected to better capture changes in CEO power. We identify important real effects associated with the strengthening of RPE and find that idiosyncratic risk increases and co-movement decreases between firms and their peers in terms of changes in capital and inventory investment and changes in Tobin's Q after a shareholder proposal is passed.

JEL: G34
Keywords: RPE, corporate governance, CEO power, shareholder proposal

[*] We thank Chen Cai, Kuan-Cheng Ko, Ron Masulis, Florian Wedlich, Jun Yang, and seminar participants at the Paris Financial Management Conference, the Midwest Finance Association Meetings, the Eastern Finance Association, and Xiamen University for their helpful comments. Lin Ge is grateful to ELG Metals Fellowship from the University of Pittsburgh. Frederik Schlingemann gratefully acknowledges the financial support from the Barry J. Epstein Fellowship and the H.R. and Betty Young Fellowship.

1. Introduction

In their seminal work, Berle and Means (1932) emphasize that in diffusely-owned corporations with separated ownership and control, managers (the agents) are more likely to pursue their own interests than those of the shareholders (the principals). A classic moral hazard problem arises in this view because unobservable actions by, for example, the CEO may affect shareholders' wealth negatively, yet the CEO would bear only a fraction of these costs. Agency theory (contracting theory) predicts that the design of CEO compensation could serve as a mechanism to incentivize managers to maximize the shareholders' wealth thereby mitigating the costs associated with moral hazard (see e.g., Diamond and Verrecchia, 1982).[1] One such design, commonly referred to as Relative Performance Evaluation (RPE), is based on the use of peer performance in assessing the CEO's performance. Theories on RPE postulate that RPE insulates the CEO from common exogenous risks and provides more informative signals to the shareholders with respect to the CEO's decisions (e.g., Lazear and Rosen, 1981; Holmstrom, 1982; Nalebuff and Stiglitz, 1983). Empirical studies using an implicit approach to identify RPE in executive compensation contracts provide mixed evidence but do find support for RPE. For example, DeFond and Park (1999) find support for RPE in the case of highly-competitive industries, while Garvey and Milbourn (2003) and Rajgopal et al. (2006) have found evidence of RPE in relation to CEOs' age and wealth constraints and her outside employment opportunities, respectively. Albuquerque (2009, 2013) and Tice (2015) empirically corroborate the use of RPE, where peer firms are matched based on certain firm characteristics.

An important, yet largely unexplored issue in testing the predictions of the RPE model is the ambiguous role of corporate governance, and consequently, the power of the CEO relative to her shareholders. On the one hand, moral hazard problems become more pertinent as CEO power increases (i.e., shareholder oversight and corporate governance reduces). In this context, previous research on RPE

[1] Other mechanisms to mitigate agency conflicts between managers and shareholders include the managerial labor market (e.g., Fama, 1980), product market competition (e.g., Alchian, 1950), capital structure decisions (e.g., Myers, 1984), block holders (e.g., Shleifer and Vishny, 1986), and the market for corporate control (e.g., Manne, 1965).

often follows an efficient contracting approach, which assumes that the board of directors designs executive compensation in order to maximize shareholder wealth. This suggests that firms may choose to adopt RPE to better incentivize CEOs that have become more powerful.

On the other hand, CEOs may also be better able to exert influence on their own pay-setting process and extract greater rents if weakened corporate governance translates into more power of the CEO. Anecdotal and empirical evidence indicates that executives, in particular CEOs, have the power to influence the design of their compensation contracts and use this power opportunistically to make their compensation more favorable for themselves. For example, Bebchuk and Fried (2004) show that managerial power explains many observed features of compensation plans such as low pay-performance sensitivity, gratuitous severance arrangements, and the timing and structure of equity incentives. With more power, a self-serving CEO would be more likely to affect the pay-setting process to better reflect his preferences, which would reduce the hypothesized effectiveness of RPE in realigning the interests of the CEO with those of the shareholders.

In this paper, we investigate the relation between changes in corporate governance environment and the use of RPE. To the extent that changes in governance reflect changes in CEO power, we are hence interested in understanding how changes in CEO power relate to RPE. We identify two hypotheses with respect to changes in CEO power and the effectiveness of RPE. First, based on the efficient contracting view, we hypothesize a positive relation between changes in CEO power and the effectiveness and use of RPE because boards of directors will institute more RPE to effectively incentivize CEOs that become more powerful. Alternatively, and based on agency theory, we hypothesize that changes in CEO power and the effectiveness and use of RPE are negatively related because CEOs that become more powerful are better able to successfully influence the pay-setting process in self-serving ways.

Testing these hypotheses is challenged by properly identifying the effects of changes in CEO power because the choice of governance provisions affecting CEO power is likely endogenous and correlated with other firm characteristics. For example, comparing the use of RPE for firms with different governance structures will likely capture the effects of those unobserved firm characteristics rather than

the effects of actual changes in corporate governance. To overcome this problem, we need a setting in which governance rules are exogenously or "randomly" adopted.

In order to identify shocks to corporate governance, and implicitly, shocks to CEO power, we follow Cuñat, Gine, and Guadalupe (2012) and use a regression discontinuity design (RDD) of shareholder-sponsored proposals. Unlike management-sponsored proposals, shareholder-sponsored proposals cannot be removed strategically by management. Moreover, Cuñat, et al., (2012) identify average positive abnormal returns for shareholder governance proposal that pass relative to those that fail, consistent with a decrease in CEO power when shareholder-sponsored proposals are passed.[2] Our empirical strategy estimates the effect of passing a shareholder proposal on bonus-based implicit RPE. As an important component in CEOs' compensation plans, bonus is often considered an important instrument to incentivize managers to maximize shareholder value. Compared to the base salary component, which is usually quite stable over the years, the bonus-based RPE component is more likely to change after proposals are passed and is more relevant to test our hypotheses based on changes in CEO power. We compare the RPE of firms whose shareholder-sponsored proposals are passed by a small margin with those firms that fail the proposals by a small margin. For these close-call proposals, passing is "locally" exogenous and therefore uncorrelated with firm characteristics. In the close neighborhood of the threshold, the small difference in the vote share (say, from 49% to 51%) leads to a discrete change in the probability of implementing a proposal.[3] Thus, by focusing on these close-call proposals, we can causally estimate the effect of passing a shareholder proposal on the level of RPE.

Our analysis shows that, after a proposal is passed (treated), the coefficient on the interaction term between a binary (pass=1, no pass=0) indicator variable ('passing dummy') and peer performance is significantly negative, which suggests that RPE strengthens after a negative shock to CEO power. Following the passage of shareholder proposals, firms use more bonus-based RPE.

[2] Similarly, Cai and Walkling (2011) find positive abnormal returns when the House passes the Say-on-Pay Bill, which suggests that shareholders value the ability to exert more control through shareholder proposals. For a summary of the literature on shareholder voting and corporate governance, see Yermack (2010).
[3] Ertimur, Ferri, and Stubben (2010) show that passed proposals are 20.7% more likely to be implemented.

To substantiate the effect of CEO power on RPE, we take a closer look at situations where passing a shareholder proposal is most likely to be associated with a change in CEO power. For example, our results become stronger when we focus on proposals that particularly target the firm's corporate governance structure. Such proposals include those that intend to separate CEO and Chairman, improve board independence, etc. These proposals, if passed, are likely to have a stronger effect on CEO power. Interestingly, proposals that intend to cap the CEO pay or to grant stock options do not have a significant effect on RPE. These proposals, although targeting directly on CEO compensation, do not seem to affect the use of RPE.

Second, to the extent that firms with entrenched CEOs have greater room for improvement, we predict a more pronounced strengthening of RPE for firms with more CEO entrenchment. We find evidence consistent with this prediction. In particular, we find that our results are stronger if firms have a higher CEO power index, adapted from Li, Lu, and Phillips (2015) and for firms with CEO duality, where she also holds the title of chairman of the board. Intuitively, these results suggest that shareholder proposals are more effective in aligning the CEO's and shareholders' interests when CEO power is less constrained. Further, we also consider the moderating effect of the strength of external monitoring. To the extent that the effectiveness of shareholder proposals hinges on how institutional investors monitor the firm, we should expect that firms with strong external monitoring should experience greater strengthening of RPE after the passing of the proposals. Indeed, we find that the strengthening of RPE is stronger for firms with more concentrated institutional ownership and higher block ownership.

Finally, for the purpose of external validity, we identify important real effects associated with the strengthening of RPE. Specifically, we find an increase in idiosyncratic risk and less co-movement between firms and their peers in terms of changes in capital and inventory investment and changes in Tobin's Q after a shareholder proposal is passed. This suggests that as RPE strengthens at the firm level, the CEO is evaluated not only by the firm's stand-alone performance, but also and even more by the firm's relative performance among its peers. According to the neo-classical theory of diminishing marginal returns, if the firm competes with peers by focusing on the same set of investment opportunities,

the returns to these investments would be decreasing. Hence, to outperform their peers, treated firms focus more on idiosyncratic investment opportunities relative to firms with failed proposals (untreated).

Our paper contributes to the growing literature on CEO power and corporate decisions. Grinstein and Hribar (2004) show that CEOs with more power tend to engage in larger mergers and acquisitions deals, and that the market responds more negatively to their acquisition announcements. Cornett, Marcus, and Tehranian (2008), document that constrained CEO power reduces the use of discretionary accruals. However, it is not obvious that the CEO power will unambiguously have a negative impact on firm value. For example, Li et al. (2015), show that CEO power may also be positively associated with benefits to the shareholders, particularly in the context of competitive product markets. Thus, whether a reduction in CEO power, as proxied by passing a shareholder proposal, will enhance RPE adoption is an empirical question that is worth testing.

In the context of executive compensation, Bebchuck and Fried (2003 and 2004) show that executives have the power to influence the design of their compensation contracts and use this power opportunistically to increase their compensation. Bebchuck, Cremers, and Peyer (2011) and Morse, Nanda, and Seru (2011) also show that powerful CEOs diminish the efficiency of managerial compensation. Our paper adds to this line of literature by shedding light on the effectiveness of RPE, which is a pivotal component in the CEO compensation design. We employ an exogenous change in CEO power and show that the RPE is strengthened after a shareholder proposal is passed. Consistent with Morse et al. (2011), we find that while powerful CEOs influence the board in setting pay terms that are more favorable to themselves, shareholder proposals can act as a disciplinary device that strengthens CEOs' incentives.

Our paper also relates to the literature on the effectiveness of shareholder proposals. Cuñat et al. (2012) document a positive abnormal return after a proposal is passed. Bach and Metzger (2017), show that large voting support for a proposal can be effective even if management refuses to implement changes, and this effect is positively received by the market. Our paper complements their studies that focus on the firms' overall performance, and we focus on RPE which is a specific aspect of executive

compensation. By doing so, our paper also adds to Cuñat, Gine, and Guadalupe (2015), who find little evidence of shareholder proposals affecting the pay levels and pay structure. Our results indicate that, although passing a shareholder proposal may not change the average level of CEO pay per se, firms could increase RPE to avoid compensating CEO for taking on the systematic risk and make their compensation structure more favorable to shareholders.

Our paper also relates to the pay-for-luck literature. Bertrand and Mullainathan (2001) show that executive pay is as sensitive to exogenous forces as it is to firm specific performance, and that pay for luck is less significant among firms with better corporate governance. Garvey and Milbourn (2006) find less pay for luck when the luck is down (i.e. when the industry benchmark is low). We contribute to this line of study by focusing on RPE, which is considered as a way to filter out the "luck" component in CEO pay. We introduce an exogenous shock to CEO power and show that firms tend to use more RPE to filter out systematic risk after the CEO power is reduced. Finally, our paper shows that as the rewards for systematic risk decline, firms tend to focus more on idiosyncratic investment opportunities to beat their peers' performance. Taken together, our paper shows an important role of corporate governance in firms' RPE adoption and demonstrates how shareholder proposals are an important channel through which firms are able to improve corporate governance.

2. Literature and hypotheses development

Relative performance evaluation (RPE) is designed to filter out common market risk from the CEO's compensation, so that the CEO is protected from this common risk and firms do not need to pay CEO the premium for taking on that common risk. Shareholders choose between using relative and absolute performance benchmarks. Theory predicts relative performance evaluation (RPE) improves risk-sharing between the principal and agent by controlling for common exogenous shocks. Thus, RPE rewards the agent for performance under their control while shielding the agent from systematic risk common to multiple agents (e.g., Lazear and Rosen 1981, Holmstrom 1982, Nalebuff and Stiglitz 1983).

Prior empirical work provides mostly mixed evidence for RPE. Some papers find support for RPE using "implicit" RPE models based stock performance of peer firms. For example, DeFond and Park (1999) find the use of RPE in highly-competitive industries, while Garvey and Milbourn (2003) find evidence of RPE in firms with younger and less wealthy CEOs. Rajgopal et al. (2006) find that the use of RPE depends on CEO's outside employment opportunities. Other recent papers find support for the use of RPE, once peers are matched on certain firm characteristics (Albuquerque, 2009, 2013 and Tice, 2015). Evidence of RPE in practice is also confirmed by tests of "explicit" RPE, which is based on firms' proxy disclosures and return-based metrics (Bannister et al. 2003; Gong et al. 2011).

In contrast, several studies investigate accounting-based RPE and fail to find empirical support for its use. These studies implicitly model RPE with accounting measures, such as return on assets (Gibbons and Murphy 1990; Albuquerque 2009) and return on equity (Janakiraman et al. 1992), and find no supporting evidence. The recent work by Lobo, Neel, and Rhode (2017) shows that accounting-based RPE is more likely to be adopted among firms with greater accounting comparability with potential performance peers.

The closest paper to our study is the theoretical work by Dikolli et al. (2016). In their model, they hypothesize a link between CEO power and a firm's use of RPE, which suggests that firms with powerful CEO are less likely to use RPE. In other words, even though RPE is designed to maximize firm value through efficient contracting, a CEO might be able to use her power to influence the design of her compensation package to her favor (Bebchuk and Fried, 2003, 2004; Bebchuck, Cremers, and Peyer, 2011; Morse, Nanda, and Seru, 2011). Our paper provides empirical support for Dikolli et al. (2016).

2.1 CEO Compensation and Relative Performance Evaluation

Agency theory (contracting theory) predicts that the design of CEO compensation could serve as a mechanism to incentivize managers to maximize shareholders' wealth thereby mitigating the costs associated with moral hazard (see e.g., Diamond and Verrecchia, 1982). For example, Jensen and Meckling (1976) show that managerial equity ownership helps to realign the interests of managers and

shareholders, but if taken too far, will exacerbate agency problems and result in managerial entrenchment. Holmstrom (1982) and Holmstrom and Milgrom (1987) argue that in order to provide more appropriate incentives, executive pay should not be tied to factors beyond the control of the executive (e.g., exogenous shocks or luck), but instead should be based on the firm's performance relative to that of an appropriate benchmark of peer firm performance. For example, relative performance evaluation (RPE) insulates the CEO from common exogenous risks and provides more informative signals to the shareholders with respect to the CEO's decisions (e.g., Lazear and Rosen, 1981; Nalebuff and Stiglitz, 1983). As discussed in the previous section, however, the empirical literature provides mixed evidence in support of relative performance evaluation (RPE).

Another strand of the literature on RPE explores whether RPE is more prevalent in some firms than in others based on various firm characteristics. Aggarwal and Samwick (1999) find that there is a positive association between firm's use of RPE and the degree of competition in the industry. Himmelberg, Hubbard, and Love (2002) document that CEO talent (i.e., outside job opportunities) is associated with positive industry returns, and hence the lack of RPE. Similarly, De Angelis and Grinstein (2014) show that RPE provides competitive compensation for CEO talent. In other words, RPE is based on the ranking of CEO performance relative to peers, and is especially prevalent when CEO talent is more transferable. Garvey and Milbourn (2003) suggest that RPE is observed in firms with younger and less wealthy executives. Therefore, even though there is a lack of RPE in average firm level, there does appear to be variations in the use of RPE associated with various executive, firm, or industry characteristics.

2.2 *CEO power and RPE*

Anecdotal and empirical evidence indicates that executives, in particular CEOs, have the power to influence the design of their compensation contracts and may use this power opportunistically to increase their compensation (Bebchuk and Fried 2003, 2004). For example, Adams, Almeida and Ferreira (2005) and Core et al. (1999) document a positive relation between CEO power and the level of CEO

compensation. Bebchuk and Fried (2004) argue that managerial power explains many observed features of compensation plans that are favorable to executives, such as low pay-performance sensitivity, gratuitous severance arrangements, and the timing and structure of equity incentives.

Core et al. (1999) document a positive relation between CEO power (weaker governance) and the level of CEO compensation due to agency problems. Bebchuk and Fried (2004) argue that managerial power helps explain many observed practices of CEO compensation plans that favor executives (e.g. low pay-performance sensitivity, gratuitous severance arrangements, and the timing and structure of equity incentives). More recently, Morse et al. (2011) and Abernethy et al. (2014) explore how CEOs use their power to influence the performance measurement process. Morse et al. (2011) analyzes ex-post manipulations of incentive contracts by powerful CEOs to influence the board to shift the weight towards the better performance measures. Abernethy, Kuang and Qin (2014) find evidence of powerful CEOs manipulating the choice of performance measures and performance standards at the adoption of performance vested stock option plans in order to gain favorable compensation packages for themselves. Overall, CEOs do seem to have the power to influence the design of their own compensation package.

A key feature of RPE is the selection of the peer group (benchmark). Anecdotal evidence, however, indicates that executives (who are interested in getting paid more) are often times involved in choosing which companies should be included in the peer group (Morgenson, 2006), which may be perceived as cherry-picking by the shareholders.[4] This observation is further confirmed by research studies. Bizjak et al. (2009) note that although compensation committees of the board are primarily responsible for designing compensation packages, executives can participate in the selection of peers. Gong, Li and Shin (2011) find that a firm is more likely to be selected as a peer when the expected stock performance of the firm is lower. And more recently, Bettis et al., (2014) find that firms with powerful CEOs, as measured by the CEO also serving as the chair of the board of directors, significantly reduces firm's likelihood of adopting RPE.

[4] Since 2006, the SEC requires the board to disclose peer companies used to set executive pay. Since 2011, all public companies are required to hold non-binding advisory shareholder ("say-on-pay") votes on executive compensation programs during their annual shareholder meetings.

2.3 Hypotheses

Despite the theoretical literature and empirical studies described above, there remains a gap in the empirical literature establishing a link between CEO power and the firm's use of RPE. On the one hand, studies such as Morse et al. (2011) find that powerful CEOs are likely to exert their power in the pay-setting process. In that case, the passing of shareholders proposals, which is supposed to reduce CEO power, is expected strengthen the incentive alignment between CEO and shareholders. Hence we should expect that the passing of shareholder proposals is associated with stronger RPE. On the other hand, if we believe that the existing RPE contracts are the outcome of efficient contracting, we should not expect the passing of shareholder proposals to increase RPE. To that end we develop the following hypotheses:

H1 (Efficient contracting hypothesis): *Changes in CEO power and the effectiveness and use of RPE are positively related as the boards of directors will institute more RPE to effectively incentivize a more powerful CEO.*

H1A (Agency hypothesis): *Changes in CEO power and the effectiveness and use of RPE are negatively related as more powerful CEOs are better able to successfully influence the pay-setting process in self-serving ways.*

Finally, to the extent that CEO power is related to the effectiveness and use of RPE, we would expect there to be real effects as well. For example, Wruck and Wu (2017) show that after adopting a relative performance evaluation (RPE) plan, the correlation between firm and industry return is lower. In the same spirit, we investigate the effects of shareholder proposal on the co-movement of changes in investment and Tobin's Q. As RPE strengthens through the passage of a shareholder proposal, competition between peers is expected to intensify. To better compete with their peers, firms are expected to restrain from

taking common investment decisions as more capital devoted to the same investment opportunity generates diminishing returns. Hence, we predict that the change of investments for firms with strengthened RPE will co-move less with that of their peers. Similarly, we expect that RPE will make it more efficient for a CEO to increase idiosyncratic risk (e.g., Park and Vrettos, 2015; Wruck and Wu, 2017) and therefore predict a positive relation between the passing of a shareholder proposal and changes in idiosyncratic risk. This leads to our third and final hypothesis:

H2: *As a result of more effective use of RPE through the passing of a shareholder proposal, firms' investments will co-move less with their peers, but idiosyncratic risk will increase.*

In the remainder of the paper, we first introduce the sample and empirical strategy. Our empirical analysis begins with providing support for validity of RDD in the context of passing shareholder proposals and proceeds with testing our main hypotheses.

3. Sample Construction and Empirical Strategy

3.1 Sample Construction

We follow Cuñat et al. (2012) and use a regression discontinuity design to estimate the effect of governance proposals on RPE. We start with all shareholder-sponsored proposals in annual meetings for the time period 1997 to 2014. We obtain data on shareholder-sponsored proposals from RiskMetrics, which covers all S&P 1500 companies and an additional 400 to 500 widely held companies. These data are available since 1997. We collect all the proposals that are categorized into governance-related type in the original database with a valid voting result. The shareholder proposal data include useful information on the date of annual meeting, resolution type, and the vote for percentage. In this study, we check the description of each proposal and classify each proposal into one of five categories: Board, G-index, Compensation, Audit, and Other. In this way, the preliminary sample consists of 5,370 shareholder

proposals in 3,341 firm-meetings from 902 companies. All the analyses throughout the paper are conducted on the proposal level.

Panel A and B of Table 1 present the distribution of shareholder votes by year and major proposal type, respectively. Generally, the number of proposals is approximately evenly distributed across the sample years with a passing rate of 37%. Among the 5,370 proposals, 2,165 (40%) are G-index related proposals with an approval rate of 42%, 466 (9%) are voting-related with approval rate of 42%, and 811 (15%) are board-related where only 10% cases are approved. Both G-index and voting-related proposals can be treated as antitakeover provisions, while board-related proposals mostly aim to remove CEO duality and increase board independence.[5] Out of 5,370 proposals, 1,441 (27%) have vote shares between 40% and 60%, which we use as the local bandwidth in later analyses. Not surprisingly, the average vote within the 20% bandwidth is about 49%, with a standard deviation of 5.7%. The average vote percentage of these local votes is close to the 50% threshold, implying that these votes are relatively evenly distributed on both sides of the threshold.

[Insert Table 1 here]

We retrieve a sample of CEO compensation data from 1997 to 2014 from ExecuComp. We focus on the short-term cash bonus to estimate RPE. While the previous literature has found evidence on the weak form of RPE estimated using total compensation, we expect shareholder proposals will have a greater impact on bonus-based RPE because cash bonus is an important component of compensation plans and, usually, relies on the CEO's performance. Unlike the salary component, which is usually stable over the years, cash bonuses vary often substantially from year to year and provide incentives in the very short-run (annually). Moreover, a cash bonus is more likely to be rigged as the CEO's near-term private

[5] A more detailed composition of these 5,370proposals is listed in Appendix A by their types defined in RiskMetrics database. Out of 2,165 proposals related to G-index, 659 (30%) aim at repealing classified board, 338 (16%) to restore cumulative voting and 306 (14%) to redeem poison pill. The 466 proposals related to voting are dominated by the 396 proposals to require majority vote to elect directors. Among 811 board proposals, 479 are proposals to remove duality of CEOs, and the rest are to enhance board independence from a variety of aspects.

information about his own and peer performance is more precise. Our bonus data comprises of 31,184 firm year observations from 1997 to 2014.

Finally, for each firm-meeting-proposal, we require years [–2, +4] around a shareholder proposal to estimate the effect of passing the proposal on RPE. We use the [–2, –1] window to test the validity of our RDD design and the [0, +4] for our main RDD design. Our final sample contains 8,353 observations. We report summary statistics in Panel C of Table 1. The sample size reduces in the later models due to the inclusion of various control variables, the break-down for sub-sample analysis, and the restriction of voting results within 40% to 60% for RDD analysis. Panel D summarizes the correlations among our main control variables we use in our main analyses, reported in Table 3. The highest correlation is between firm and peer firm returns. Correlations among the other variables are mostly low.

3.2 Empirical Design

As explained in the previous section, we use the change in a CEO's annual bonus as the dependent variable in specifications where we estimate the effect of the passing of governance proposals on relative performance evaluation. We use this approach based on two reasons. First, though previous literature uses total compensation as the dependent variable to estimate the "implicit" RPE, total compensation, as a whole is costly for CEOs to influence, as the whole package involves multiple components. Annual bonus, on the other hand, is offered to incentivize CEOs to focus on short-term performance and hence is easier for CEOs to influence. Second, the explicit RPE contracts are typically used when setting the following two components in CEO pay: bonus and restricted stock grants. Our use of change in bonuses as the dependent variable is hence consistent with the actual RPE contracts.

We use a regression discontinuity design (RDD) to estimate the effect of the passing of shareholder proposals on RPE. Suppose that firm i votes on a shareholder proposal at time t, and the proposal receives a vote share v_{it}. The variable P_{it} is a dummy variable indicating whether a proposal passes or fails with threshold v^*. The voting rule is defined as $P_{it} = 1(v_{it} > v^*)$, and zero otherwise. We test the effect of passing a shareholder proposal on bonus-based RPE with a regression model where we regress the change

in bonus (ΔBONUS) on the firm's own performance (RET), peer performance (PEER_RET), the dummy variable indicating whether a proposal passes or not (P_{it}) and the interaction term between the dummy variable and peer performance, using the following specification:

$$\Delta BONUS_{it} = \alpha_t + \beta_t RET_{it} + \gamma_t PEER\_RET_{it} + \vartheta_t P_{it} + \theta_t P_{it} \times PEER\_RET_{it} + \mu_{it} , \quad (1)$$

where θ_t is the coefficient of interest, which captures the effect of passing a shareholder proposal on RPE. When we estimate this model on the full sample of the proposals, voting results may be affected by firm characteristics that are also correlated with the setting of bonus payments. To mitigate endogeneity concerns, we control for firm, industry, and year effects.

Alternatively, to identify a causal effect of the passage of shareholder proposals on RPE, we examine the results when votes are sufficiently close to the passing threshold v^*. Intuitively, for these narrowly decided proposals, those that pass by a small margin (say 51%) and those that fail by a small margin (say 49%) can, approximately, be treated as quasi-experiments. For example, Lee (2008) states that as long as the voting results cannot be perfectly manipulated, leaving some random components to the votes, those close to the cutoff point can be approximated as random experiment. This suggests that one can compare the RPE of firms with a proposal that barely passes with that barely fails. If there are some random components in the votes near the threshold, then the estimate is consistent and can be interpreted as causal.[6] However, while narrowing the voting outcome window can alleviate the bias, it also reduces the number of observations and power. We therefore deploy two strategies. First, to improve efficiency, we exploit all data in the sample regardless of the voting outcome while adding polynomials in vote share to capture the relationship between unobserved variables correlated with vote results and the outcome variable (Lee and Lemieux, 2010). Equation (1) can then be rewritten as the following:

[6] Please note, compared to matching techniques (for example, propensity score matching), RDD does not guarantee the balance on all the covariates. Instead, RDD focuses on satisfying "randomness" in the assignment of the treatment to either sides of the threshold (proposal passed vs. not passed).

$$\Delta BONUS_{it} = K + \beta_t RET_{it} + \gamma_t PEER\_RET_{it} + \vartheta_t P_{it} + \theta_t P_{it} \times PEER\_RET_{it} + \sum_{j=1}^{j=g}(v_i - v^*)^j \gamma_{j,l} +$$

$$\sum_{j=1}^{j=g}(v_{it} - v^*)^j P_{it}\gamma_{j,l} + \mu_{it}\ , \qquad (2)$$

where g denotes the order of polynomials, ranging from one to six in our analyses. There are two parts of polynomial terms to allow for different functional forms on the left- and right-hand of the cutoff point. Second, we choose vote shares between 40% and 60% as the close-call window. To further alleviate concerns regarding omitted variables, we follow Imbens and Lemieux (2008) and control for additional polynomials in case the window is not 'close' enough.

3.3 Validity tests of RDD

In this section we present some validity test results for RDD in our shareholder voting setting. We focus on two tests commonly used to evaluate the internal validity of RDD. First, we test whether there is any manipulation around the threshold. Next, we test whether there is any preexisting difference before the treatments take into effect.

[Insert Figure 1 here]

The identification assumption to validate RDD is that vote shares near the cutoff cannot be (perfectly) manipulated. A straightforward way to test this assumption would be to check the distribution of share vote around the threshold, and see whether there is any 'jump' or discontinuity around the cutoff point. If the voting results tend to be manipulated, we should observe voting clustered at one side of the threshold. Figure 1 plots the distribution of shareholder proposal vote percentage for all shareholder proposals (Panel A) and for all different types of shareholder proposals (Panel B). It can be seen that the density of share votes near the 50% threshold do not appear to cluster on either side of the cutoff point. This graph

supports the local exogenous assumption used to identify the causal link between corporate governance and management disclosure.

[Insert Table 2 here]

Second, we estimate the impact of pre-voting differences in firm characteristics on the likelihood of passing a proposal for both the entire sample of proposals and proposals whose votes are close to the passing threshold. Table 2 reports the results. Model (1) tests the pre-voting difference for the entire sample of proposals while Model (2) does for the proposals with votes in the [40%, 60%] window around the 50% window. We use a probit specification for models (1) and (2). The dependent variable is a dummy, which equals one if a proposal is passed, and zero otherwise. The independent variables include firm characteristics found in the extant literature that could potentially affect the voting outcomes, such as the change in CEO bonus, Tobin's Q, leverage, firm return, peer return (matched by 2-digit SIC code and size), sales, ROA, ROE, whether CEO is also the chairman of the board, the number of employees, CEO ownership, and growth. We include the polynomial in the voting share of order four in both regressions to estimate the effect at the discontinuity. Comparing the two columns, we find that when we restrict our sample to firms with proposals passed by a small margin, there are no significant differences between those firms falling on either side of the threshold. This supports our identification strategy using regression discontinuity that assumes no observable firm characteristics are affecting the voting results. In other words, whether the proposal will pass or not is purely random around the threshold. Taken together, the results of the validity tests support our use of RDD as the identification strategy.

4. Main Results

4.1 Main results

Table 3 reports the impact of the change in CEO power on the firm's use of RPE in CEO compensation. Our hypothesis H1 posits that the passage of a shareholder proposal improves the firm's

corporate governance and, consequently, reduces CEO power. To that end, the passing of a shareholder proposal is treated as an exogenous shock to CEO power. To test the effect of the passing of shareholder proposal on RPE, we estimate OLS regressions on the full sample (proposals of all types and passed by all margins) and on the restricted sample, where proposals pass by a small margin, or certain types of proposals pass. The dependent variable is the change in bonus adjusted by inflation in all models.

[Insert Table 3 here]

In Panel A of Table 3, we report the results for the first three regression specifications estimated on the full sample. Model (1) presents the average effect of the passing of a shareholder proposal (Pass) on RPE. The effect of the passage of a shareholder proposal on RPE is captured by θ_t, which is the coefficient of the interaction term Pass × Peer Return. The coefficient on the interaction term is negative and significant at the one-percent level, which is consistent with the hypothesis that a decrease in CEO power increases a firm's use of RPE. In Model (2) we find a similar result when we include additional controls that can potentially affect the use of RPE in CEO compensation such as whether CEO is also the chairman of the board, CEO ownership, ROA, Book-to-Market, sales, whether CEO is also serving in the compensation committee of the board, stock volatility, and Tobin's Q. The results show that, for firms without passing a proposal, a one-standard-deviation increase in peer return (26.9%) will lead to a 1.8% increase in bonus. In contrast, after the passage of a proposal, the same one-standard-deviation increase in peer return is associated with 18% less increase in the bonus, indicating an increase in RPE. In Model (3), the coefficient on the interaction term continues to be negative and significant when we add pre-voting firm return and pre-voting peer return, as well as the interaction term Pass × Firm Return to control for the proportion of firm's own performance which might differentially drive bonus changes for those firms that have passed shareholder proposals.

In Model 4, we restrict our sample to firms whose proposals have passed with a small margin (<10%). The results in Table 2 show there is no evidence that firms falling on either side of the threshold

are significantly different from one another in terms of the probability that a proposal passes, which helps in testing for a causal relationship between the passing of shareholder proposal and RPE. The coefficient on the interaction term Pass × Peer Return continues to be negative and significant.

Finally, in Models (5), (6), and (7), we conduct sub-sample analyses to investigate whether the relationship found in earlier models differs with different proposal types. In Model (5), we consider only compensation related proposals. Interestingly, the passing of compensation-specific proposals does not seem to affect firms' use of RPE. In Model (6), we focus on the sub-sample of board and G-Index related proposals and find that the passing of these proposals increase firms' use of RPE. Insofar as the passing of a shareholder proposal is associated with a decline in CEO power, our results suggest that board and G-index related proposals are more relevant than compensation-specific proposals for CEOs. Finally, in Model (7) we re-estimate Model (6) based on only those governance related proposals that passed by a small margin, and the result remains the same, negative and significant ($\theta_t = -2.954$, t-statistic = 2.10). Taken together, the results in Table 3 show that the passing of shareholder proposals, particularly governance-related proposals, improves RPE.

To understand the timing and persistence of the effect, we conduct sub-sample analyses to explore the effect of the passing of shareholder proposal on firm's use of RPE one year after or two to four years after the proposal is passed. These results are presented in Panel B of Table 3. The coefficients on the interaction term Pass × Peer Return is significant for the year $t = 1$ in Model (2), which implies that the effect of passing a shareholder proposal on RPE is captured predominantly in the year immediately following the passing of the proposal.

Our next step is to conduct a number of cross-sectional analyses. First, we expect that variation in firm or CEO characteristics will make passing a shareholder proposal more or less relevant as a mechanism to capture changes in CEO power. Therefore, we expect the relation, as proposed in our hypotheses H1 and H1A, between CEO power and the effectiveness and use of RPE, to be stronger for firms with more entrenched CEOs because arguably there is more room for improvement for these firms. Second, we expect that the effectiveness of shareholder proposals correlates with the monitoring strength

of a firm's institutional investors. In order to investigate this, we conduct cross-sectional analyses based on the ownership structure of a firm, and expect the relation to be stronger for firms with higher and more concentrated institutional ownership. For these analyses, we separate our sample into two subsamples by the sample median level. The results for these tests are reported in Panels A and B of Table 4.

[Insert Table 4 here]

In Panel A, we focus on the cross-sectional implications for our results based on whether varying the ex-ante level of CEO Power. In Models (1) and (2), we construct a CEO Power Index adapted from Li, Lu, and Phillips (2017) in order to capture the overall power of a CEO. This will mitigate concerns that a potential measurement error of one particular measure of CEO power biases our results. The index is constructed as the log value of one plus the sum of the following six components: whether CEO is also the founder; whether CEO is also the chairman of the board; CEO ownership (above or below sample median); CEO tenure (above or below sample median); Institutional Ownership (above or below sample median); and busy board (above or below sample median). In Models (3) and (4), we repeat the first two models, but proxy CEO power only with whether CEO is also the chairman of the board. The results are consistent in both sets of analyses, indicating that shareholder proposals are indeed more effective in case of a powerful CEO.

In Panel B, we compare the effect of CEO power on RPE between firms with better or worse monitoring from their institutional owners. In Models (1) and (2), we use block ownership as a proxy for the monitoring effectiveness of institutional owners, and find that the effect is stronger when block ownership is high. In Models (3) and (4), we measure monitoring effectiveness by institutional ownership concentration, that is, the sum of squared share ownership over all institutional investors. The intuition is that more concentrated institutional ownership is associated with more influential institutional shareholders and hence stronger monitoring. We find that the effect of passing a shareholder proposal on RPE is stronger when ownership concentration is high, which is consistent with our conjecture. Both sets

of analyses confirm that the effectiveness of shareholder proposals does depend on the monitoring quality of a firm's institutional investors.

4.2. Real effects of RPE

In the previous section we presented evidence that shows that passing a shareholder proposal strengthens RPE. In this section of the paper we explore the external validity of our results and ask whether there are real effects of the passage of shareholder proposals in the context of RPE. Specifically, to the extent that CEO power relates to the effectiveness and use of RPE we would expect to see real effects on corporate decision-making because managers will need to focus more on the firms' performance relative to their peers. For example, to better compete with their peers, firms are expected to restrain from taking common investment decisions as this will result in greater return co-movement. Empirically, we expect that RPE will make it more efficient for a CEO to increase idiosyncratic risk (e.g., Park and Vrettos, 2015; Wruck and Wu, 2017) and therefore predict a positive relation between the passing of a shareholder proposal and changes in idiosyncratic risk. We do not expect systematic risk to increase after the passing of a shareholder proposal. Similarly, if passing a shareholder proposal increases the effectiveness of RPE, we expect that the change of investments for firms will co-move less with that of their peers after the passing of a shareholder proposal.

We first test whether passing a shareholder proposal increases the firm's idiosyncratic risk and report the results in Table 5. The results are based on OLS regressions where the dependent variable is the post-proposal idiosyncratic risk in Models (1) and (2). In Models (3) and (4) the dependent variable is post-proposal systematic risk. Idiosyncratic risk is defined as the square root of the variance of the residual, from a Fama-French three factor model plus industry returns. Similarly, systematic risk is defined as the square root of the variance of the sum of the risk-free rate and the predicted value, from a Fama-French three factor model plus industry returns. Both risk measures are estimated following Park and Vrettos (2015).

We follow specifications offered in the literature (*e.g.*, McLean, Zhang and Zhao, 2012) and include control variables that potentially affect firms' change in investment: ROA, Sales Growth, Leverage, Tobin's Q, and Size. We also include the ex-ante level of risk, institutional ownership, and an indicator variable for low (below median) CEO ownership. Finally, each specification includes polynomial terms and year and firm fixed effects. Our main variable of interest is Pass, which is an indicator variable equal to 1 if the shareholder proposal passed and measures the incremental change in idiosyncratic (relative to the intercept) from before to after the shareholder proposal is put to a vote as a result of the proposal being passed. In Model (1) we estimate this coefficient for the full sample, while in Model (2) we focus on the 10% voting threshold sub-sample. In both models, the coefficient on Pass is positive and significant at the ten percent level. This result is consistent with those reported in Park and Vrettos (2015) and Wruck and Wu (2017), but are economically relatively weak. This is perhaps not surprising as we are not comparing RPE versus no RPE situations, but are asking whether the effectiveness of RPE changes with corporate governance in general and with changes in CEO power specifically. In Models (3) and (4) we repeat the same analysis for systematic risk and find no evidence of a marginal impact of passing a shareholder proposal on changes in systematic risk.

[Insert Table 5 here]

Next, we analyze the co-movements between the firm and its industry peers in terms of change in capital expenditure and inventory turnover, change in R&D expenses, and change in firm value measured by Tobin's Q and report the results in Table 6. Here again, we first consider the effect of the passing of shareholder proposal on change in capital expenditure and inventory turnover with the full sample in Model (1). As before, each specification includes control variables that potentially affect firms' change in investment: ROA, Sales Growth, Tobin's Q, and Size. The effects are captured by the interaction term between proposal passing dummy and change in peer CAPEX & Inventory. We find that the passing of proposals significantly decreases the co-movement between the firm and its industry peers' capital

expenditure and inventory turnover (Pass × Δ Peer CAPEX & Inventory = –0.405, *t*-statistics= –2.61). For proposals passed by a small margin, the result remains similar as shown in Model (2) (Pass × Δ Peer CAPEX & Inventory = –0.575, *t*-statistics = –2.05). Then we extend our analysis by looking at the impact of proposal passing on the co-movement between the firm and its industry peers' R&D expenses. We do not find significant results as shown in Models (3) and (4). Lastly, we look at the co-movement of investments that are associated with firm value (as measured by Tobin's Q) in model (5) and (6). In general, we only find weak evidence of such effect: the coefficient on Change in Peer's Tobin's Q × Pass is significantly negative, but only at the 10% level. This indicates that the strengthening of bonus-based RPE create short-term incentives for CEOs to change their investment decisions in a more idiosyncratic way so that more firm-specific information impound into the stock price in the short-run, but not for investments that affect stock prices in a longer horizon. However, shifting from common investment opportunities does not reduce the co-movement of firm value. In concert, the results in Tables 6 and 7 provide evidence of real effects of the passage of shareholder proposals on the firm's corporate decision-making and complement the results reported in Wruck and Wu (2017). They show an increase in idiosyncratic risk and a decline in the correlation between firm and industry returns after firms adopt a relative performance evaluation (RPE) plan. Taken together, our results are also consistent with the hypothesis that passing a shareholder proposal decreases the power of a CEO and results in more effectiveness in RPE. The results are also in line with Park and Vrettos (2015) and Wruck and Wu (2017) who find evidence that the use of RPE in CEO's incentive contracts increases CEOs' preferences for idiosyncratic risk.

[Insert Table 6 here]

5. Conclusions

We investigate whether improvements in corporate governance increase the effectiveness of relative performance evaluation (RPE). Our paper tries to fill a void in the literature and tests the predictions of the RPE model in the ambiguous role of corporate governance and, consequently, the power of the CEO

relative to his shareholders. On the one hand, moral hazard problems may become more pertinent as CEO power increases and shareholder oversight and corporate governance reduces. This view follows that of previous research on RPE based on an efficient contracting approach and assumes that the boards of directors efficiently design executive compensation in order to maximize shareholder wealth. An alternative view we explore, based on both anecdotal and empirical evidence, shows that more powerful CEOs may exert more influence on their own pay-setting process. In this view, more powerful CEOs may act in more self-serving ways, and consequently would reduce the effectiveness of RPE in realigning the interests of the CEO with those of the shareholders.

We deploy a regression discontinuity design in the same spirit as Cuñat, Gine, and Guadalupe (2012) to overcome the endogenous nature in the choice of governance provisions and its likely correlation with other firm characteristics. Specifically, we estimate the effect of passing a shareholder proposal on bonus-based implicit RPE. We document a number of novel and important findings. First, the passing of a proposal negatively affects the relationship between peer performance and the change in bonus, which suggests that RPE strengthens after a negative shock to CEO power.

Second, we find that the effect of shareholder proposal on RPE is stronger in cases where we would expect shareholder proposals to be more relevant as mechanisms to capture changes in CEO power. For example, we find a stronger effect for firms with weaker governance and strong CEO power before the shareholder meeting.

Finally, we investigate whether there are any real effects of such strengthened RPE. We find that idiosyncratic risk increases and co-movement decreases in changes in capital and inventory investment. We also find some evidence that co-movement in firm value (Tobin's Q) between firms and their peers after a shareholder proposal is passed decreases. This suggests that RPE strengthens at the firm level when there is greater competition among peers. Taken together, our paper shows an important role of corporate governance in the firm's effectiveness of RPE and demonstrates how shareholder proposals are an important channel through which firms are able to improve corporate governance.

References

Abernethy, M. A., Kuang, Y. F., & Qin, B. (2014). The influence of CEO power on compensation contract design. *The Accounting Review*, *90*(4), 1265-1306.

Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *Review of Financial Studies*, *18*(4), 1403-1432.

Aggarwal, R. K., & Samwick, A. A. (1999). Executive compensation, strategic competition, and relative performance evaluation: Theory and evidence. *The Journal of Finance*, *54*(6).

Albuquerque, A. (2009). Peer firms in relative performance evaluation. *Journal of Accounting and Economics*, *48*(1), 69-89.

Albuquerque, A. (2013). Do growth-option firms use less relative performance evaluation? *The Accounting Review*, *89*(1), 27-60.

Alchian, A. A. (1950). Uncertainty, evolution, and economic theory. *The Journal of Political Economy*, 211-221.

Bach, L., & Metzger, D. (2017). Why Do Shareholder Votes Matter? *Swedish House of Finance Research Paper*, (13-01).

Bannister, J. W., & Newman, H. A. (2003). Analysis of corporate disclosures on relative performance evaluation. *Accounting Horizons*, *17*(3), 235-246.

Bebchuk, L. A., Cremers, K. M., & Peyer, U. C. (2011). The CEO pay slice. *Journal of Financial Economics*, *102*(1), 199-221.

Bebchuk, L. A., & Fried, J. M. (2003). Executive compensation as an agency problem. *The Journal of Economic Perspectives*, *17*(3), 71-92.

Bebchuk, L. A., & Fried, J. M. (2004). *Stealth compensation via retirement benefits* (No. w10742). National Bureau of Economic Research.

Berle, A. A. Jr., & Means, G. C. (1932). The Modern corporation and private property. *Macmillan, New York*.

Bertrand, M., & Mullainathan, S. (2001). Are CEOs rewarded for luck? The ones without principals are. *Quarterly Journal of Economics*, 901-932.

Bettis, J. C., Bizjak, J. M., Coles, J. L., & Young, B. (2014). The presence, value, and incentive properties of relative performance evaluation in executive compensation contracts. *Value, and Incentive Properties of Relative Performance Evaluation in Executive Compensation Contracts (February 8, 2014)*.

Bizjak, J., Lemmon, M., & Whitby, R. (2009). Option backdating and board interlocks. *Review of Financial Studies*, *22*(11), 4821-4847.

Cai, Jie, and Ralp A. Walkling, 2011. Shareholders' say on pay: Does it create value?, *Journal of Financial and Quantitative Analysis* 46-2, 299-339.

Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, *51*(3), 371-406.

Cornett, M. M., Marcus, A. J., & Tehranian, H. (2008). Corporate governance and pay-for-performance: The impact of earnings management. *Journal of Financial Economics*, *87*(2), 357-373.

Cuñat, V., Gine, M., & Guadalupe, M. (2012). The vote is cast: The effect of corporate governance on shareholder value. *The Journal of Finance*, *67*(5), 1943-1977.

Cuñat, V., Gine, M., & Guadalupe, M. (2015). Say pays! Shareholder voice and firm performance. *Review of Finance*, rfv056.

De Angelis, D., & Grinstein, Y. (2014). Relative performance evaluation in CEO compensation: A non-agency explanation. *Available at SSRN 2432473*.

DeFond, M. L., & Park, C. W. (1999). The effect of competition on CEO turnover. *Journal of Accounting and Economics*, *27*(1), 35-56.

Diamond, D. W., & Verrecchia, R. E. (1982). Optimal managerial contracts and equilibrium security prices. *The Journal of Finance*, *37*(2), 275-287.

Dikolli, S. S., Diser, V., Hofmann, C. & Pfeiffer, T. (2016). CEO Power and Relative Performance Evaluation. AAA 2014 Management Accounting Section (MAS) Meeting Paper. *Available at SSRN 2312650*

Ertimur, Y., Ferri, F., & Stubben, S. (2010). Board of directors' responsiveness to shareholders: Evidence from shareholder proposals. *Journal of Corporate Finance* 16, 53-72.

Fama, E. F. (1980). Agency Problems and the Theory of the Firm. *The Journal of Political Economy*, 288-307.

Garvey, G., & Milbourn, T. (2003). Incentive compensation when executives can hedge the market: Evidence of relative performance evaluation in the cross section. *The Journal of Finance*, *58*(4), 1557-1582.

Garvey, G. T., & Milbourn, T. T. (2006). Asymmetric benchmarking in compensation: Executives are rewarded for good luck but not penalized for bad. *Journal of Financial Economics*, *82*(1), 197-225.

Gibbons, R., & Murphy, K. J. (1990). Relative performance evaluation for chief executive officers. *ILR Review*, *43*(3), 30-S.

Gong, G., Li, L. Y., & Shin, J. Y. (2011). Relative performance evaluation and related peer groups in executive compensation contracts. *The Accounting Review*, *86*(3), 1007-1043.

Grinstein, Y., & Hribar, P. (2004). CEO compensation and incentives: Evidence from M&A bonuses. *Journal of Financial Economics*, *73*(1), 119-143.

Himmelberg, C. P., Hubbard, R. G., & Love, I. (2002). Investor Protection. *Ownership, and the Cost of Capital*, *12*.

Holmstrom, B. (1982). Moral hazard in teams. *The Bell Journal of Economics*, 324-340.

Holmstrom, B., & Milgrom, P. (1987). Aggregation and linearity in the provision of intertemporal incentives. *Econometrica: Journal of the Econometric Society*, 303-328.

Imbens, G. W., & Lemieux, T. (2008). Regression discontinuity designs: A guide to practice. *Journal of Econometrics*, *142*(2), 615-635.

Janakiraman, S. N., Lambert, R. A., & Larcker, D. F. (1992). An empirical investigation of the relative performance evaluation hypothesis. *Journal of Accounting Research*, 53-69.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Lazear, E. P., & Rosen, S. (1981). Rank-Order Tournaments as Optimum Labor Contracts. *The Journal of Political Economy*, *89*(5), 841-864.

Lee, D. S. (2008). Randomized experiments from non-random selection in US House elections. *Journal of Econometrics*, *142*(2), 675-697.

Lee, D. S., & Lemieux, T. (2010). Regression discontinuity designs in economics. *Journal of Economic Literature*, *48*(2), 281-355.

Li, M., Lu, Y., & Phillips, G. (2017). When are powerful CEOs beneficial? *University of Southern California Working Paper*.

Lobo, G., M. Neel, and A. Rhodes. (2017). Accounting Comparability and Relative Performance Evaluation in CEO Compensation. Working paper.

Manne, H. G. (1965). Mergers and the market for corporate control. *The Journal of Political Economy*, 110-120.

McLean, R. D., Zhang, T., & Zhao, M. (2012). Why does the law matter? Investor protection and its effects on investment, finance, and growth. *The Journal of Finance*, *67*(1), 313-350.

Morgenson, G. (2006). Peer pressure: Inflating executive pay. *New York Times*, *3*(1).

Morse, A., Nanda, V., & Seru, A. (2011). Are incentive contracts rigged by powerful CEOs? *The Journal of Finance*, *66*(5), 1779-1821.

Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, *39*(3), 574-592.

Nalebuff, B. J., & Stiglitz, J. E. (1983). Prizes and incentives: towards a general theory of compensation and competition. *The Bell Journal of Economics*, 21-43.

Park, H., & Vrettos, D. (2015). The moderating effect of relative performance evaluation on the risk incentive properties of executives' equity portfolios. *Journal of Accounting Research* 53, 1055-1108.

Rajgopal, S., Shevlin, T., & Zamora, V. (2006). CEOs' outside employment opportunities and the lack of relative performance evaluation in compensation contracts. *The Journal of Finance*, *61*(4), 1813-1844.

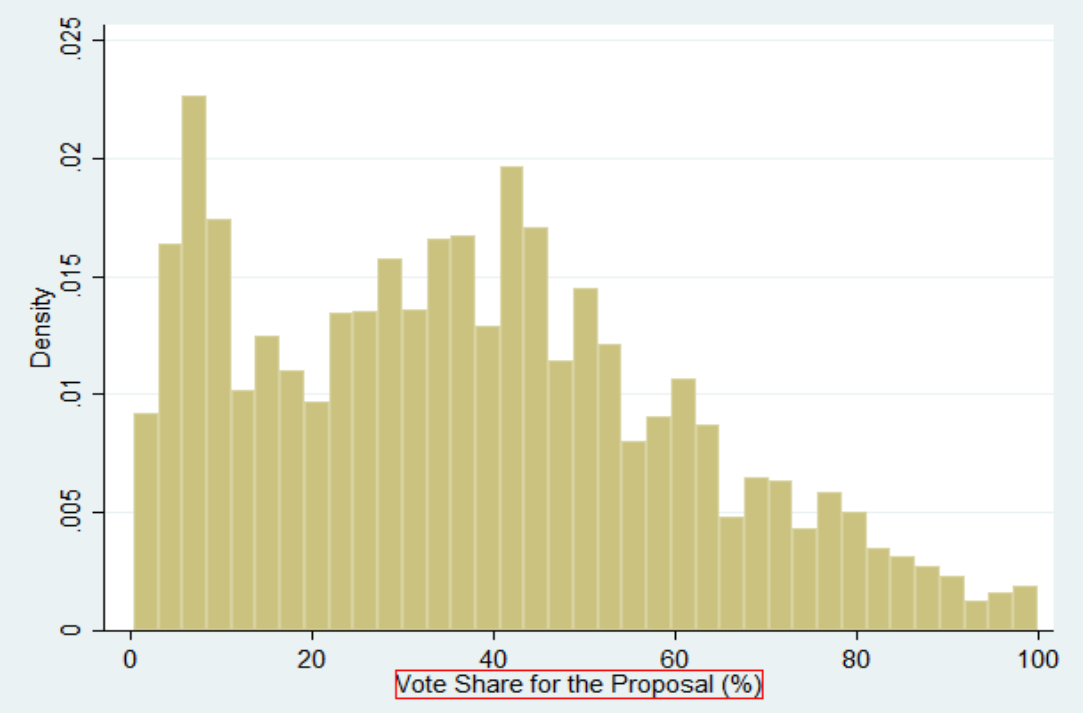
Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. The Journal of Political Economy, 461-488.

Tice, F. M. (2015). The effect of relative performance evaluation on investment efficiency and firm performance. *Available at SSRN*.

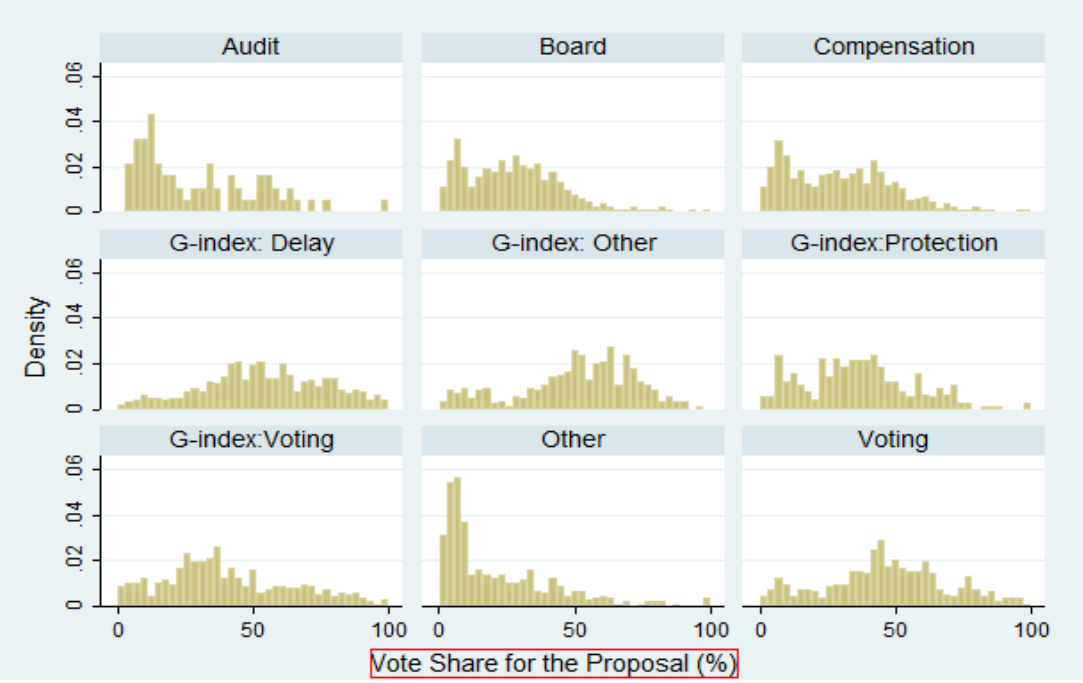
Wruck, K., and Wu. Y. (2017). Do CEOs make their own luck? Relative versus absolute performance evaluation and firm risk. Working Paper.

Yermack, D. (2010) Shareholder voting and corporate governance, *Annual Review of Financial Economics* 2, 1-23.

Figure 1 Distribution of vote shares



Panel A: *Distribution of vote shares for all shareholder proposals*



Panel B: *Distribution of vote shares for all different types of shareholder proposals*

Table 1: Summary Statistics

Table 1 reports the summary statistics for shareholder proposals and variables. Panel A summarizes the number, average vote share, and approval rate of shareholder proposals by year. Panel B summarizes the shareholder proposals by their resolution types. Panel C summarizes the variables. Panel D summarizes the correlations between main control variables to be used in Table 3.

Panel A: *Shareholder Proposal Summary Statistics by Year*

Year	# of Shareholder Proposals	Average Vote Share	Approved Proposals	Approved Proposals (%)	Std. Dev. Vote Share
1997	188	22.56%	19	10.11%	17.67%
1998	185	24.81%	20	10.81%	18.58%
1999	224	27.76%	38	16.96%	21.70%
2000	230	29.69%	53	23.04%	22.07%
2001	238	29.71%	58	24.37%	22.29%
2002	255	37.02%	87	34.12%	23.71%
2003	424	37.25%	148	34.91%	23.06%
2004	372	33.61%	108	29.03%	25.68%
2005	330	36.36%	93	28.18%	24.09%
2006	395	41.29%	124	31.39%	23.02%
2007	419	37.66%	99	23.63%	21.45%
2008	332	40.97%	96	28.92%	22.28%
2009	406	45.10%	149	36.70%	21.25%
2010	341	41.74%	102	29.91%	20.87%
2011	252	44.63%	82	32.54%	22.10%
2012	291	45.53%	100	34.36%	24.81%
2013	274	39.51%	71	25.91%	23.12%
2014	214	39.49%	48	22.43%	22.40%
Total	5,370	37.37%	1495	27.84%	23.28%

Table 1 – *Continued*

Panel B: *Shareholder Proposal Summary Statistics by Type*

Proposal Type	# of Shareholder Proposals	Average Vote Share	Approved Proposals	Approved Proposals (%)	Std. Dev. Vote Share
Audit	69	29.79%	15	21.74%	21.92%
Board	811	27.63%	78	9.62%	17.88%
Compensation	1,442	29.58%	202	14.01%	18.94%
G-Index: Delay	988	53.67%	541	54.76%	22.37%
G-Index: Other	317	51.13%	183	57.73%	21.39%
G-Index: Protection	281	36.51%	66	23.49%	20.00%
G-Index: Voting	579	40.59%	176	30.40%	23.28%
Other	417	21.29%	40	9.59%	20.20%
Voting	466	46.56%	194	41.63%	21.93%
Total	5,370	37.37%	1495	27.84%	23.28%

Panel C: *Control Variables Summary Statistics*

Variable	N	Mean	Std. Dev.	Min	Max
Pre-voting Firm Return	47,974	1.137	0.268	0.337	3.151
Pre-voting Peer Return	48,353	1.141	0.518	0.033	18.743
Firm Return	48,353	1.124	0.461	0.024	27.194
Peer Return	47,993	1.124	0.269	0.088	3.194
CEO chairman dummy	48,353	0.562	0.496	0	1
CEO ownership dummy	48,353	0.303	0.460	0	1
CEO ownership	21,179	1.972	5.206	0	45.35
ROA	48,353	0.044	0.083	-2.877	1.328
B/M	41,861	0.479	1.687	-60.600	17.979
Ln(Sales)	48,353	9.387	1.556	2.884	13.070
Interlock dummy	48,353	0.024	0.154	0	1
Average volatility	45,635	0.256	0.137	0.050	1.772
Number of Meetings	24,320	8.475	3.256	1	49

Panel D: *Correlation Table of Main Control Variables*

	Firm Return	Peer Return	ROA	B/M	Sales	Interlock	Volatility	Tobin's Q
Peer Return	0.481	1.000						
	(0.000)							
ROA	0.102	0.091	1.000					
	(0.000)	(0.000)						
B/M	0.031	0.026	0.059	1.000				
	(0.000)	(0.000)	(0.000)					
Sales	-0.050	-0.009	0.057	-0.050	1.000			
	(0.000)	(0.045)	(0.000)	(0.000)				
Interlock	0.005	-0.017	0.012	-0.001	-0.037	1.000		
	(0.248)	(0.000)	(0.010)	(0.811)	(0.000)			
Volatility	0.127	0.033	-0.234	-0.056	-0.240	-0.006	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.235)		
Tobin's Q	0.178	0.070	0.368	-0.101	-0.079	0.016	0.069	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
CEO ownership	0.026	0.010	-0.018	-0.043	-0.205	0.080	0.092	0.046
	(0.000)	(0.030)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Table 2: Probit estimation of pre-voting firm characteristics

This table shows probit model estimation of the likelihood of passing a proposal on a set of firm characteristics. The dependent variable is a dummy variable that equals to one if a shareholder proposal is passed. In Column (1), the model is estimated on the full sample of proposals. In Column (2), the model is estimated on the sample of proposals with vote shares within the 10% of the majority threshold. t-statistics are in parentheses. a, b, and c indicate significance at 1%, 5%, and 10% levels. Variable definitions are included in Appendix B.

	Full Sample	10% Threshold
	(1)	(2)
Change in Bonus	-0.006	-0.004
	(-0.78)	(-0.28)
Tobin's Q	-0.035	0.434
	(-0.06)	(0.35)
Leverage	0.112	-0.043
	(0.61)	(-0.12)
Firm Return	0.002	0.055
	(0.05)	(0.43)
Peer Return	-0.192[c]	-0.327
	(-1.69)	(-1.40)
Sale	-0.162[a]	-0.041
	(-6.53)	(-0.90)
ROA	-0.559	-1.142[c]
	(-1.55)	(-1.78)
ROE	0.000	-0.000
	(0.51)	(-0.45)
CEO Chairman	0.109	0.082
	(1.64)	(0.67)
Employee	-0.001[a]	-0.001
	(-2.71)	(-0.80)
CEO Ownership	-0.094	-0.004
	(-1.62)	(-0.04)
Growth Option	0.011	-0.447
	(0.02)	(-0.36)
Polynomial	-0.000[a]	0.000
	(-9.99)	(1.14)
Intercept	0.754[c]	0.547
	(1.76)	(0.79)
Industry FE	Yes	Yes
Year FE	Yes	Yes
N	4,598	1,227
Pseudo R^2	0.145	0.085

Table 3: Regression analyses: Shareholder proposals and RPE

This table shows regression analyses of the effect of shareholder proposals on RPE. Panel A reports the OLS regression analyses of the effect of passing governance proposals on RPE; Panel B reports the effect of passing governance proposals on RPE in different periods after the annual meeting. In Panel A, Columns (1) – (3) report results on the full sample of proposals, with different specifications. The dependent variable is the change in annual bonus. Column (4) reports results on the sample of proposals within the 10% of the majority threshold. Column (5) reports results on the sample of proposals where resolution type is related to Compensation. Column (6) reports results on the sample of governance proposals where resolution type is related to Board and G-Index. Column (7) reports results on the sample of governance within the 10% of the majority threshold. T statistics are in parentheses. [a], [b], and [c] indicate significance at 1%, 5%, and 10% levels. Standard errors are clustered at firm-meeting year level. Variable definitions are included in Appendix B.

Panel A: *Main Results*

	Full Sample	Full Sample	Full Sample	10% Threshold	Compensation related proposals	Governance related proposals	Governance Related proposals & 10% threshold
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pre-voting Firm Return			-0.438 [a]	-0.414 [c]	-0.260	-0.457 [a]	-0.398 [b]
			(-3.74)	(-1.83)	(-1.20)	(-3.76)	(-2.00)
Pre-voting Peer Return			0.176	0.077	0.227	0.123	0.233
			(1.16)	(0.23)	(1.14)	(0.71)	(0.70)
Pass × Firm Return			-0.161	0.458	-2.468	-0.006	0.609
			(-0.40)	(0.76)	(-1.09)	(-0.01)	(0.98)
Firm Return	0.675[a]	0.630 [a]	1.857 [a]	1.377 [a]	2.615 [a]	1.731 [a]	1.211 [a]
	(4.12)	(3.81)	(6.75)	(3.49)	(4.24)	(6.16)	(2.79)
Pass	0.627[b]	0.709 [b]	1.541 [c]	2.502 [c]	3.315	1.508 [c]	2.542 [c]
	(2.26)	(2.50)	(1.89)	(1.70)	(1.07)	(1.80)	(1.75)
Peer Return	-0.028	0.066	-1.155 [a]	-1.147	-1.166 [c]	-1.088 [b]	-1.244
	(-0.14)	(0.32)	(-2.83)	(-1.11)	(-1.86)	(-2.20)	(-1.18)
Pass × Peer Return	**-0.630 [a]**	**-0.690 [a]**	**-1.334 [b]**	**-2.710 [c]**	**-0.381**	**-1.463 [b]**	**-2.954 [b]**
	(-2.70)	**(-2.89)**	**(-2.07)**	**(-1.95)**	**(-0.25)**	**(-2.14)**	**(-2.10)**
CEO Chairman (0,1)		-0.130	0.222	-0.954	0.130	0.271	-0.796
		(-0.86)	(0.80)	(-1.63)	(0.25)	(0.94)	(-1.20)

Table 3 – *continued*

CEO Ownership (0,1)		0.076	0.629 [c]	1.454 [c]	1.018	0.570	1.400 [c]
		(0.69)	(1.81)	(1.86)	(1.17)	(1.50)	(1.77)
ROA		0.136	1.044	-0.912	0.113	1.357	0.181
		(0.22)	(0.79)	(-0.23)	(0.04)	(1.02)	(0.05)
BM		-0.015	-0.186 [b]	-0.415	-0.263	-0.194 [b]	-0.693
		(-1.58)	(-1.99)	(-1.08)	(-0.95)	(-2.11)	(-1.22)
Sale		0.158	0.570 [c]	-0.230	0.936	0.487	-0.302
		(1.41)	(1.66)	(-0.31)	(1.45)	(1.40)	(-0.42)
Interlock		0.307	0.286	2.613 [b]	0.066	0.347	1.848
		(1.06)	(0.68)	(2.51)	(0.12)	(0.72)	(1.49)
Volatility		1.084 [a]	-0.269	0.371	-3.573	0.039	0.453
		(3.00)	(-0.24)	(0.15)	(-1.40)	(0.03)	(0.17)
Tobin's Q			-0.018	0.132	0.170	-0.094	0.134
			(-0.14)	(0.66)	(0.44)	(-0.69)	(0.68)
Number of Meetings			-0.023	0.061	-0.072	-0.010	0.105
			(-0.66)	(0.92)	(-1.05)	(-0.27)	(1.62)
Intercept	-0.520	-2.065 [c]	-5.668 [c]	1.927	-9.543	-4.892	1.900
	(-1.31)	(-1.83)	(-1.78)	(0.30)	(-1.46)	(-1.53)	(0.31)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Polynomials	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	16,944	15,926	5,043	1,081	1,133	3,789	907
Adjusted R^2	0.152	0.156	0.100	0.029	0.069	0.079	0.018

Table 3 – *continued*

Panel B: *Timing of the Effect*

	t = 1	t = 1	t = [2,4]	t = [2,4]
	Full Sample	10% Threshold	Full Sample	10% Threshold
	(1)	(2)	(3)	(4)
Pre-voting Firm Return	-1.125 [b]	-1.486	-0.220	-0.325
	(-2.44)	(-1.22)	(-1.42)	(-1.06)
Pre-voting Peer Return	0.946	2.478	-0.087	0.261
	(1.41)	(1.41)	(-0.41)	(0.65)
Pass × Firm Return	0.277	-0.744	-0.863	-0.060
	(0.46)	(-0.49)	(-1.48)	(-0.07)
Firm Return	1.129 [b]	1.981	2.300 [a]	1.666 [a]
	(2.17)	(1.30)	(5.96)	(2.78)
Pass	1.606	5.937 [c]	1.630	1.321
	(1.16)	(1.94)	(1.35)	(0.66)
Peer Return	-0.394	0.465	-2.094 [a]	-2.111
	(-0.58)	(0.20)	(-3.97)	(-1.29)
Pass × Peer Return	**-1.407**	**-3.944** [c]	**-1.011**	**-1.952**
	(-1.19)	**(-1.65)**	**(-1.30)**	**(-1.06)**
CEO Chairman (0,1)	0.307	0.212	0.236	-1.292
	(0.62)	(0.19)	(0.62)	(-1.35)
CEO Ownership (0,1)	0.608	0.242	0.833 [b]	1.749 [c]
	(0.89)	(0.19)	(2.14)	(1.94)
ROA	1.891	-4.233	0.358	-3.425
	(0.84)	(-0.53)	(0.20)	(-0.85)
BM	-0.127	0.240	-0.169	-0.146
	(-0.44)	(0.35)	(-1.07)	(-0.25)
Sale	-0.146	-1.181	1.257 [b]	-0.297
	(-0.18)	(-0.71)	(2.47)	(-0.27)
Interlock	0.477	1.652	0.100	4.776 [b]
	(0.97)	(0.91)	(0.14)	(2.42)
Volatility	3.311	8.470	-2.025	-0.070
	(1.38)	(1.58)	(-1.13)	(-0.02)
Tobin's Q	-0.026	1.035 [c]	0.062	0.204
	(-0.11)	(1.78)	(0.32)	(0.76)
Number of Meetings	0.008	0.201	-0.044	0.020
	(0.11)	(1.32)	(-0.86)	(0.20)
Intercept	-0.765	0.489	-10.588 [b]	4.633
	(-0.11)	(0.03)	(-2.31)	(0.46)
Industry/Year/Firm FE	Yes	Yes	Yes	Yes
Polynomials	Yes	Yes	Yes	Yes
N	1,835	401	3,208	680
Adjusted R^2	0.066	0.006	0.129	0.058

Table 4: Cross-sectional regression analyses

This table shows cross-sectional analyses of the effect of passing a proposal on RPE. The dependent variable is the change in bonus. Panel A reports OLS regression analyses of the effect of passing governance proposals on RPE for firms with high versus low CEO power; Panel B reports OLS regression analyses of the effect of passing governance proposals on RPE for firms with high versus low shareholder power. The sample is sub-divided into above (High) and below (Low) median models based on various CEO power and institutional ownership measures (*t*-statistics reported in parentheses). [a], [b], and [c] indicate significance at 1%, 5%, and 10% levels. Standard errors are clustered at firm-meeting level. Variable definitions are in Appendix B.

Panel A: *The role of CEO power*

	CEO Power		**CEO is the Chairman**	
	High (1)	**Low (2)**	**Yes (3)**	**No (4)**
Pre-voting Firm Return	0.073	-0.121	-0.179	0.234
	(0.81)	(-1.13)	(-1.33)	(0.95)
Pre-voting Peer Return	-0.137	0.038	-0.107	-0.001
	(-0.66)	(0.27)	(-1.48)	(-0.01)
Pass	0.099	1.843 [a]	1.222 [b]	0.667
	(0.20)	(2.78)	(2.14)	(0.97)
Firm Return	1.442 [a]	2.658 [a]	2.211 [a]	1.731 [a]
	(6.23)	(9.74)	(8.49)	(5.96)
Pass × Firm Return	0.904 [a]	-0.829 [c]	0.085	-0.366
	(3.17)	(-1.95)	(0.30)	(-0.97)
Peer Return	-0.854 [b]	-2.017 [a]	-1.119 [a]	-1.852 [a]
	(-2.27)	(-5.32)	(-3.64)	(-3.18)
Pass × Peer Return	**-0.960** [b]	**-0.835** [c]	**-1.104** [b]	**-0.209**
	(-2.13)	**(-1.67)**	**(-2.30)**	**(-0.30)**
CEO Chairman (0,1)	-0.148	0.298	0.816 [a]	-0.147
	(-0.23)	(1.25)	(2.71)	(-0.35)
CEO Ownership (0,1)	1.070 [a]	-0.048	2.134 [a]	4.303 [c]
	(2.60)	(-0.11)	(3.03)	(1.86)
ROA	2.553 [c]	2.352 [b]	0.227 [c]	0.077
	(1.65)	(2.46)	(1.89)	(0.46)
BM	0.430 [c]	-0.265 [b]	0.443 [b]	-0.165
	(1.78)	(-2.35)	(1.99)	(-0.24)
Sale	0.256	-0.046	0.485	2.215 [b]
	(0.64)	(-0.19)	(1.57)	(2.25)
Interlock	1.237	0.219	0.649	0.044
	(1.65)	(0.55)	(1.10)	(0.03)
Volatility	-0.206	0.476	-0.031	-0.163
	(-0.21)	(0.49)	(-0.37)	(-1.11)
Tobin's Q	-0.384 [a]	-0.071	-0.006	0.038
	(-3.42)	(-0.87)	(-0.25)	(0.69)
Number of Meetings	-0.011	-0.003	-5.661 [a]	1.805
	(-0.27)	(-0.09)	(-2.81)	(0.31)
Intercept	-2.815	-0.483	9280	2333
	(-0.76)	(-0.21)	0.115	0.348
Industry/Year/Firm FE	Yes	Yes	Yes	Yes
Polynomials	Yes	Yes	Yes	Yes
N	5,380	6,233	9,280	2,333
Adjusted R^2	0.153	0.169	0.115	0.348

Panel B: *The role of shareholder power*

	Block Ownership		Ownership Concentration	
	High (1)	**Low (2)**	**High (3)**	**Low (4)**
Pre-voting Firm Return	-0.082	0.047	-0.043	-0.070
	(-1.12)	(0.40)	(-0.49)	(-0.67)
Pre-voting Peer Return	0.117	-0.157	0.088	-0.119
	(1.14)	(-0.76)	(0.82)	(-0.57)
Pass	1.083 [b]	1.757 [b]	1.034 [b]	1.653 [b]
	(2.55)	(2.25)	(2.26)	(2.02)
Firm Return	1.661 [a]	2.115 [a]	1.777 [a]	2.333 [a]
	(7.26)	(7.53)	(7.27)	(7.76)
Pass × Firm Return	0.399	-0.697*	0.220	-0.862 [b]
	(1.03)	(-1.88)	(0.54)	(-2.24)
Peer Return	-0.400	-2.034 [a]	-1.054 [b]	-1.772 [a]
	(-1.21)	(-5.74)	(-2.54)	(-5.42)
Pass × Peer Return	**-1.382** [a]	**-0.841**	**-1.142** [a]	**-0.575**
	(-3.30)	**(-1.36)**	**(-2.59)**	**(-0.84)**
CEO Chairman (0,1)	-0.021	0.548 [b]	-0.025	0.482 [b]
	(-0.08)	(2.30)	(-0.09)	(2.05)
CEO Ownership (0,1)	0.192	0.386	0.348	0.414
	(0.65)	(1.00)	(1.14)	(1.05)
ROA	2.101 [a]	0.871	1.526 [c]	0.942
	(2.76)	(0.56)	(1.75)	(0.78)
BM	-0.073	-0.134	-0.130	-0.044
	(-0.57)	(-1.43)	(-0.94)	(-0.49)
Sale	0.459	0.469 [c]	-0.007	1.000 [a]
	(1.21)	(1.68)	(-0.02)	(3.87)
Interlock	1.457 [b]	-0.055	1.166 [b]	-0.142
	(2.51)	(-0.16)	(2.37)	(-0.39)
Volatility	1.247	-0.342	2.706 [a]	-0.379
	(1.46)	(-0.40)	(3.09)	(-0.45)
Tobin's Q	-0.271 [b]	0.212 [c]	-0.226 [c]	0.275 [b]
	(-2.49)	(1.74)	(-1.91)	(2.15)
Number of Meetings	0.068 [b]	-0.097 [a]	0.034	-0.049
	(2.29)	(-3.16)	(1.19)	(-1.46)
Intercept	-6.324 [c]	-4.584 [c]	-1.851	-10.633 [a]
	(-1.92)	(-1.66)	(-0.71)	(-4.37)
Industry/Year/Firm FE	Yes	Yes	Yes	Yes
Polynomials	Yes	Yes	Yes	Yes
N	5,834	5,779	6,167	5,446
Adjusted R^2	0.186	0.179	0.150	0.194

Table 5: Changes in idiosyncratic and systematic risk

This table presents OLS regression analyses on the effect of passing a shareholder proposal on the idiosyncratic and systematic risks of a firm. The dependent variables are the median annual risks (measured yearly using Fama-French three factor model that also incorporates industry returns) within three years after the passing of the proposal. Models (1) and (2) present the results on idiosyncratic risk, and Models (3) and (4) present the results on systematic risk. Pre-proposal risks are the median annual risks measured within three years before the passing of the proposal. All models include firm and year fixed effects as well as polynomials terms (t-statistics reported in parentheses). a, b, and c indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered at firm-meeting level. Variable definitions are provided in Appendix B.

	Post-proposal Idiosyncratic Risk		**Post Proposal Systematic Risk**	
	(1)	**(2)**	**(3)**	**(4)**
	Full Sample	**10% Threshold**	**Full Sample**	**10% Threshold**
Pass	**0.050**[c]	**0.070**[c]	**0.056**	**0.071**
	(1.83)	**(1.77)**	**(1.58)**	**(1.27)**
Pre-proposal Idiosyncratic Risk	-0.142[a]	-0.178[a]		
	(-9.42)	(-7.88)		
Pre-proposal Systematic Risk			-0.212[a]	-0.222[a]
			(-17.54)	(-11.91)
ROA	-2.423[a]	-2.338[a]	-2.929[a]	-2.343[a]
	(-5.73)	(-4.24)	(-6.78)	(-3.99)
Size	0.309[a]	0.280[c]	0.469[a]	0.270
	(3.29)	(1.72)	(3.49)	(1.34)
Sales Growth	-3.003[a]	-2.087	-3.785[b]	-2.524
	(-3.27)	(-1.59)	(-2.40)	(-0.92)
Tobin's Q	0.008	-0.154[b]	0.285[a]	0.263[a]
	(0.16)	(-2.05)	(4.56)	(2.80)
CEO Ownership (0,1)	0.142[a]	0.090	-0.220[b]	-0.160
	(2.65)	(1.20)	(-2.56)	(-1.16)
Leverage	0.901[b]	-0.764	0.402	-1.038
	(2.31)	(-1.35)	(0.88)	(-1.52)
Institutional Ownership	-0.540[a]	-0.594[b]	-0.505	-1.291[a]
	(-2.93)	(-2.48)	(-1.53)	(-3.18)
Intercept	8.809[a]	9.700[a]	11.131[a]	12.187[a]
	(7.22)	(5.04)	(5.56)	(3.91)
Year FE	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Polynomials	Y	Y	Y	Y
N	27983	7668	27983	7668
Adjusted R^2	0.737	0.771	0.752	0.775

Table 6 Shareholder proposals and co-movement

This table shows OLS regression analyses of the effect of passing a shareholder proposal on the co-movement of change in the investment and Tobin's Q. Columns (1) and (2) report results of the change in capital and inventory investment for all proposals and those within the 10% of the majority threshold. Columns (3) and (4) report results of the change in R&D expenses for all proposals and those within the 10% of the majority threshold. Columns (5) and (6) report results of the change in Tobin's Q for all proposals and those within the 10% of the majority threshold. T-statistics are in parentheses. [a], [b], and [c] indicate significance at 1%, 5%, and 10% levels. Standard errors are clustered at firm-meeting year level. Variable definitions are included in Appendix B.

	Δ Capital Expenditure & Inventory Turnover		Δ R&D Expense		Δ Tobin's Q	
	Full Sample	10% Threshold	Full Sample	10% Threshold	Full Sample	10% Threshold
	(1)	(2)	(3)	.(4)	(5)	(6)
Pass	-0.003	0.004	0.000	0.001	0.019	0.029
	(-0.68)	(0.42)	(0.15)	(0.93)	(1.29)	(0.93)
Δ Peer CAPEX & Inventory	1.363[a]	1.410[a]				
	(8.60)	(5.27)				
Pass × Δ Peer CAPEX & Inventory	-0.405[a]	-0.575[b]				
	(-2.61)	(-2.05)				
Δ Peer R&D			1.835[a]	1.755[a]		
			(5.53)	(3.28)		
Pass × Δ Peer R&D			-0.251	-0.314		
			(-0.56)	(-0.48)		
Δ Peer Tobin's Q					0.667[a]	0.864[a]
					(13.98)	(10.61)
Pass × Δ Peer Tobin's Q					0.046	-0.137[c]
					(0.92)	(-1.65)
ROA	0.962[a]	1.105[a]	-0.018[a]	-0.022[a]	-0.154	0.228
	(29.37)	(18.41)	(-5.90)	(-4.00)	(-1.03)	(0.63)
Tobin's Q	-0.007[a]	-0.013[a]	-0.000	-0.001		
	(-2.68)	(-3.59)	(-0.16)	(-0.82)		

Table 6 – *Continued*

	Δ Capital Expenditure & Inventory Turnover		Δ R&D Expense		Δ Tobin's Q	
	Full Sample	10% Threshold	Full Sample	10% Threshold	Full Sample	10% Threshold
	(1)	(2)	(3)	.(4)	(5)	(6)
Total Assets	0.006	0.001	0.001	0.001	-0.173[a]	-0.257[a]
	(1.06)	(0.08)	(1.54)	(0.85)	(-10.83)	(-6.88)
Sales Growth	-0.738[a]	-0.949[a]	-0.041[a]	-0.057[a]	-0.169	-0.109
	(-7.03)	(-4.93)	(-5.69)	(-4.40)	(-0.96)	(-0.35)
CAPEX + Sale					-0.594[a]	-0.789[a]
					(-5.76)	(-3.03)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Polynomials	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.670[a]	0.934[a]	0.039[a]	0.056[a]	1.901[a]	2.456[a]
	(6.64)	(4.53)	(4.75)	(3.60)	(8.64)	(4.59)
N	16,676	4,520	16,873	4,566	16,873	4,566
Adjusted R^2	0.261	0.281	0.107	0.089	0.288	0.358

Appendix A:

Detailed Composition of All Shareholder Proposals

Shareholder Resolutions	# of Proposals	Shareholder Resolutions	# of Proposals
Add performance criteria to equity-based awards	25	Independent compensation committee	10
Advisory vote on compensation	252	Independent nominating committee	21
Affirm political nonpartisanship	8	Issue postmeeting report	3
Allow union/employee reps. on the board	10	Lead director	11
Anti-greenmail	3	Limit consulting by auditors	57
Approve executive compensation	164	Limit director tenure	49
Approve/disclose/limit SERPs	48	Link executive pay to social criteria	105
Award performance-based stock options	110	Link pay to performance/recoup bonuses	190
Board Misc.	22	Majority independent directors	28
Bylaws	9	Majority vote shareholder committee	16
Cap executive pay	73	Majority vote to elect directors	396
Change annual meeting date	8	Minimum director stock ownership	7
Change annual meeting location	16	Misc compensation	43
Charter	1	Misc. Voting	6
Classfied Board	659	Miscellanea	194
Commit to/report on board diversity	74	No discretionary voting	4
Compensation plans	97	No repricing underwater stock option	8
Counting shareholder votes	7	Nominee statement in proxy	3
Create nominating committee	2	Pay directors in stock	18
Cumulative vote	338	Pension fund surplus reporting	15
Director indemnification	2	Poison pill	306
Director liability	2	Reincorporate to U.S. state	38
Directors' duties	5	Require equity awards to be held	160
Disclose executive compensation	84	Restore preemptive rights	1
Disclose prior government service	2	Restrict director compensation	18
Double board nominees	50	Restrict nonemployee director pensions	18
Eliminate Dual Class	18	Rotate auditor	2
Equal access to proxy	37	Secret ballot	25
Executive severance	10	Separate chairman/CEO	479
Expense stock options	104	Shareholder advisory committee	11
Fair price	3	Shareholder approval of auditors	10
Golden Parachutes	170	Special Meeting	206
Hire independent compensation consultant	7	Study sell company	89
Improve postmeeting report	2	Supermajority	204
Increase audit committee independence	4	Unequal voting	2
Increase compensation committee indep..	4	Vote on targeted share placement	3
Increase key committee independence	61	Written consent	123
		Total	**5370**

Appendix B:

Variable Definitions

- ***Change in Bonus:*** The change in bonus (cash and non-cash) earned by the CEO during the year. This variable is adjusted for inflation.
- ***Pass Dummy:*** The value equals to 1 if the shareholder proposal is passed, zero otherwise.
- ***Firm Stock Return:*** The natural logarithm of [(1+*retann*/100)/(1+*cpiann*)], where *retann* is the annualized stock return using CRSP monthly stock price of the firm, and *cpiann* is the annual CPI inflation from CRSP-Indexes-U.S.Treasury and Inflation.
- ***Peer Stock Return:*** The stock return of the peer firms (in the same two-digit sic code and size quartile), excluding the own-firm stock return.
- ***CEO Chairman:*** The dummy variable equals to one if the CEO is also the chair of the board, and zero otherwise.
- ***CEO Ownership (Dummy):*** The dummy variable equals to one if the CEO ownership is lower than the median ownership of CEOs in our sample, and zero otherwise. The CEO ownership (%) is calculated as the number of shares (excluding options) owned by the CEO divided by the number of common shares outstanding for the firm.
- ***Return on Assets (ROA):*** The net income divided by total assets.
- ***Return on Equity (ROE):*** The net income divided by total equity.
- ***Book-to-Market:*** The ratio of the book value of assets at beginning of the year to the market value of the firm. Book value of equity is calculated using shareholders' equity plus deferred tax and investment credit minus preferred stock. Market value of equity is calculated by the number of common shares outstanding multiplied by share price.
- ***Firm Size:*** The natural logarithm of sales.
- ***Idiosyncratic Risk:*** the square root of the variance of the residual, from a Fama-French three factor model plus industry returns, estimated following Park and Vrettos (2015).
- ***Systematic Risk:*** the square root of the variance of the sum of the risk-free rate and the predicted value, from a Fama-French three factor model plus industry returns, estimated following Park and Vrettos (2015)
- ***Interlock Dummy:*** The dummy variable equals to one if the CEO is involved in an interlock relationship, and zero otherwise. Interlock relationship is defined as CEO also serves on the compensation committee of the board of the firm (as per ExecuComp).
- ***Volatility:*** The standard deviation of the firm stock return relative to the standard deviation of peer stock return during the past 36 months.

- ***Tobin's Q:*** Total asset minus book value of common equity minus deferred tax plus market value of common equity and then divided by total assets.
- ***Number of Board Meetings:*** The dummy variable equals to one if the number of board meetings held during the year is more than the median of the number of meetings held by firms in our overall sample, and zero otherwise.
- ***Employee:*** The number of employees of the firm (in thousands).
- ***Growth Option:*** The beginning-of-year ratio of the market value of the firm to the book value of assets. The market value of the firm is the book value of assets minus the book value of equity plus the market value of equity. Firm market value of equity is calculated as number of shares outstanding multiplied by the closing price at fiscal year-end.
- ***Sales Growth:*** The natural logarithm of sales in year t divided by the natural logarithm of sales in year t-1.
- ***Capex:*** Capital expenditure of the firm.
- ***Inventory:*** Total Inventory of the firm.
- ***R&D:*** Research and Development expenses of the firm.
- ***PPENT:*** Total Property, Plant and Equipment.