THE FREQUENCY OF SAY-ON-PAY VOTE, SHAREHOLDER VALUE, AND CORPORATE GOVERNANCE

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Abstract

Using a sample of 1,079 public firms listed on the U.S. stock market that filed the results of their frequency votes in 2011, we examine the market reaction to shareholders' decision on the frequency of the say-on-pay vote, and the relation between such decision and firms' existing corporate governance structures. When firms release the results of their shareholders' frequency vote in Form 8-K, we find that market reaction was significantly positive for firms with excess CEO equity pay, and for firms whose shareholders' preference for the frequency is the same as that recommended by the board. This positive market reaction is more pronounced for firms where shareholders change the recommendations of the boards by demanding more frequent votes on executive compensation. Overall, our study on the frequency of votes provides new insights that are different from prior studies, which mostly focus on say-on-pay votes. We show that the market perceives the shareholders' frequency vote as a value-increasing governance mechanism and a complement to the existing corporate governance.

Keywords: Corporate Governance, Shareholder Activism, Shareholder Value, Corporate Transparency

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1. INTRODUCTION

CEO compensation has become the subject of public scrutiny following the accounting scandals between 2000 and 2002 and during the 2008 financial crisis. Since 2002, the U.K., Australia, and several European countries have adopted legislation allowing shareholders to vote on firms' executive compensation strategy (known as say-on-pay legislation). Following the favorable experience in the U.K. and other countries, the U.S. House of Representatives passed the first say-on-pay Bill on April 20, 2007[1]. On January 25, 2011, the U.S. Securities and Exchange Commission (SEC) adopted the final rules implementing the say-on-pay provision of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act)[2].

The say-on-pay rules in the U.S. are different from those in other countries in two important ways. The final rules require that an advisory say-on-pay vote be held at least every three years. Firms can make recommendations about the frequency of the votes in their proxy statements or choose not to make any recommendations. However, in other countries (e.g., the U.K. and Australia), firms are required to hold an annual vote

[1] For a detailed history of events leading to say-on-pay legislation in the U.S., see Cai and Walkling (2011) and Larcker, Ormazabal, and Taylor (2011).

[2] The say-on-pay vote and the frequency vote were required for the proxy statement related to a company's first annual meeting on or after January 21, 2011. Smaller companies with a market value of less than $75 million were exempt from these votes until 2013. The effective date of the final rules was April 4, 2011. However, the compensation of directors is not subject to the shareholder advisory vote (SEC Final Rules: Rule 14a-21(a) and Rule 14a-21(b)).

on executive compensation. In addition, shareholders are able to vote on the frequency of the executive compensation vote. Such votes from shareholders are advisory and non-binding but mandated by the SEC. These two unique features of the U.S. requirements provide a natural setting to examine how shareholders use the say-on-pay vote to monitor the compensation of executives.

The goal of the say-on-pay rules in the U.S. is to increase communication between the boards and shareholders on compensation issues and give shareholders a greater voice in executive pay decisions. Because the final say-on-pay rules empower shareholders in decisions relating to executive compensation and have been long sought by shareholder-activism groups and institutions, it is natural to expect all the shareholders to be in favor of an annual vote that gives them the authority to monitor the compensation practices of firms. Institutional Shareholder Services (ISS), the most influential U.S. proxy advisory firm, suggests in its published 2011 U.S. Voting Guidelines Summary that shareholders vote for annual advisory votes on executive compensation. ISS argues that annual votes can provide the most consistent and clear communication channel for shareholders to raise concerns about executive compensation.

Prior literature on say-on-pay shows mixed results on the valuation consequence of say-on-pay vote (Cai & Walkling, 2011; Cuñat, Gine, & Guadalupe, 2012, 2016; Ferri & Maber, 2013; Larcker et al., 2011). Furthermore, we know very little about the relation between shareholders' frequency vote and corporate governance (Ferri & Oesch, 2016). Given the ongoing debate about the efficacy of say-on-pay regulation, the objective of this paper is to answer the following two research questions:

RQ1: How does the capital market react to the results of shareholders' frequency votes?

RQ2: What is the relation between such decisions and firms' existing corporate governance structures?

We perform two sets of analyses to answer these two questions. We begin by examining the market reaction to the results of shareholders' frequency votes that first became available in 2011. We select the date when firms file their Form 8-K with the SEC as the event date, as this is the date when the public is notified of the results of the frequency vote. Using standard event study methodologies, we find that three-day cumulative abnormal returns are significantly positive for firms with excess CEO equity pay, especially on the date of the Form 8-K filing. We also find that the cumulative abnormal returns are significantly negative when the boards' recommendations on the frequency of a say-on-pay vote are consistent with shareholders' preferences. Furthermore, the market reacts more strongly for firms in which shareholders prefer a less frequent vote on executive compensation than the boards' recommendations.

Next, we empirically examine the relation between shareholders' votes on the frequency of the say-on-pay vote and a firm's corporate governance. We pay special attention to whether the probability of shareholders' support for an annual vote is associated with the effectiveness of corporate governance. Firms with effective corporate governance (e.g., a higher percentage of board independence and institutional ownership, and lower CEO ownership) are more likely to receive the support of an annual vote from more than 50% of their shareholders. These results suggest that shareholders want to have more frequent monitoring of the CEO's compensation at a firm whose current corporate governance is considered to be effective.

Overall, the results in this paper suggest that the market perceives the shareholders' frequency vote as a value-increasing governance mechanism. Shareholders are more likely to support an annual vote on executive compensation at firms with effective corporate governance to monitor such compensation packages. When casting the frequency vote, shareholders do not seem concerned about excess pay to a firm's CEO or the firm's performance. They seem to use the more frequent say-on-pay vote as a complementary monitoring mechanism rather than a substitute one.

Our study contributes to the literature on say-on-pay in several ways. This paper is one of few studies (Ferri & Oesch, 2016) to examine the relation between shareholders' frequency votes and a firm's corporate governance structure. We use the initial shareholders' selection of the frequency vote that became available in 2011 to test how the shareholders plan to use the say-on-pay vote to monitor executive compensation programs. Prior studies on U.S. firms focus on the increased effectiveness of shareholders' proposals (Ertimur, Ferri, & Oesch, 2018; Ferri & Maber, 2013). Other studies on U.S. firms examine the stock market reaction around major legislative event dates prior to the final adoption in the U.S. (Cai & Walkling, 2011; Larcker et al., 2011). Little has been done to understand how shareholders choose how frequently to use the new power from the say-on-pay legislation.

The event study also provides important evidence on how investors perceive the effect of the frequency vote on executive compensation. Prior studies of market reactions to the say-on-pay legislative development in the U.S. give mixed findings. For example, Cai and Walkling (2011) find that the market reacts positively for firms with high excess CEO pay on the date when the U.S. House passed the say-on-pay bill in 2007. However, Larcker et al. (2011) find no significant market reaction around the same event. To the best of our knowledge, our study is the first to document the stock price reaction to the actual outcome of the frequency vote, which provides new evidence on the effects of corporate governance on shareholder value.

This study adds to the literature on the effects of alternative monitoring mechanisms on executive compensation. Studies of the relation between say-on-pay and corporate governance provide mixed results (Correa & Lel, 2016; Ferri & Maber, 2013). We present evidence that shareholders prefer an annual vote on executive compensation even though the current level of monitoring is already high, which suggests that shareholders' vote act as a complement to the corporate governance mechanism.

The rest of the paper is structured as follows. Section 2 describes the literature review and hypotheses development. Section 3 explains the research methodology. Section 4 presents empirical results and discussion. Section 5 concludes.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

On January 25, 2011, the SEC issued final rules under the Dodd-Frank Act requiring that all public companies hold the say-on-pay and frequency votes for all annual meetings occurring on or after January 21, 2011, with smaller reporting companies (e.g., those public companies with a public float of less than $75 million) being required to start doing so on or after January 21, 2013. According to the SEC's final rules, firms are required to conduct three types of shareholders' votes, whenever applicable, at their annual shareholders' meetings. First, an advisory vote must be conducted on the company's executive compensation at least once every three years (say-on-pay). Second, an advisory vote must occur at least once every six years to determine the frequency of say-on-pay votes (frequency vote) — an annual, biennial, or triennial vote. Third, an advisory vote on certain severance agreement arrangements must be held for meetings at which shareholders are to approve a merger or similar transaction (Golden Parachutes vote).

The board of directors can make recommendations on both the say-on-pay vote and the frequency vote in their proxy statements. As for the frequency vote, the board of directors discloses its recommendations for the frequency vote by choosing an annual, biennial, or triennial vote, or not making a recommendation. Based on the recommendations from companies, shareholders will either vote for one of the three frequencies or abstain. Firms are currently required to disclose the preliminary results of shareholder votes on say-on-pay and the frequency vote in Form 8-K within four business days following the day on which the shareholder meeting ends, and final voting results within four business days from which they become known. In the amended Item 5.07 of Form 8-K, firms must disclose the decision regarding how frequently they will conduct shareholder advisory votes on executive compensation.

Under the SEC's final rules, both the say-on-pay vote and the frequency vote are non-binding and advisory. Therefore, the results of shareholders' vote do not preclude a company from conducting the say-on-pay vote on a different frequency from the preference of a majority of its shareholders. However, the say-on-pay vote and the frequency vote can be effective tools for monitoring executive compensation matters by imposing a large reputational threat on directors with negative public attention, or through a subsequent "vote-no" campaign against directors responsible for setting executives' compensation. Therefore, companies have to carefully evaluate which frequency they would recommend to shareholders in the initial frequency vote. The decision will likely be based on each firm's investor relations history, corporate governance structure, and possible future executive compensation actions (Borges, 2011).

In this section, we develop the hypotheses in the context of prior studies on market reaction to shareholder votes, and the relation between say-on-pay legislation and other corporate governance mechanisms.

Prior research has provided mixed results on the valuation consequences of greater shareholder involvement in corporate governance. This is not surprising given the endogenous nature of the corporate governance system. For example, some studies find significant positive abnormal returns on the day of shareholders vote on governance-related proposals (Cuñat et al., 2012, 2016) or the adoption of say-on-pay regulation in the U.S. and U.K. (Cai & Walkling, 2011; Ertimur, Ferri, & Oesch, 2013; Ferri & Maber, 2013). Other studies document a negative or no market reaction to the adoption of say-on-pay regulation (Chu, Gupta, & Livne, 2021; Larcker et al., 2011). Depending on whether investors consider the existing compensation practice as value-maximizing or as rent extraction, they will react differently to the additional monitoring on executive compensation plans.

Prior studies also document that stock market reactions to a proposed regulation (i.e., say-on-pay regulation) will be most pronounced at firms that will be affected by the regulation (Larcker et al., 2011). We expect firms with existing compensation practices inconsistent with the say-on-pay regulation to have a stronger reaction than firms with existing compensation programs consistent with the say-on-pay regulation. Using a large sample of staggered adoption of say-on-pay across countries, Correa and Lel (2016) document that say-on-pay regulation has a greater impact on executive compensation at firms with higher levels of CEO excess pay. Based on this evidence, we predict the following hypothesis:

H1a: Market reactions are stronger to say-on-pay frequency vote results at firms with a higher level of excess pay.

Ferri and Oesch (2016) study the influence of the management recommendations on shareholder votes by examining the determinants and consequences of the voting outcomes. They find that when the management recommends annual frequency, shareholders are likely to support the recommendation with a majority vote. However, when the management recommends triennial frequency and shareholders agree with such recommendations, firms are less likely to change their pay practice in response to adverse say-on-pay votes, suggesting less frequent say-on-pay votes leads to less management accountability. Building on their findings, we develop the following prediction:

H1b: Market reactions are stronger to say-on-pay frequency vote results at firms where the boards recommend less frequent say-on-pay votes than shareholders' preferences.

As summarized in Armstrong, Guay, and Weber (2010), there are two perspectives of agency problems in linking managers' and shareholders' interests. The first perspective is that managers' interests are not aligned with those of shareholders and the board of directors. In this case, the board of directors uses monitoring mechanisms, such as executive compensation plans, to ensure that managers act in the shareholders' best interests. The other perspective is that the board's and managers' interests are aligned, but neither of them is aligned with the interests of shareholders. Under these circumstances, shareholders often take action to intervene or correct the board's decisions.

Prior studies of the largest U.K. firms find that the say-on-pay vote is effective in reducing inefficient components in executive compensation packages (Carter & Zamora, 2009; Ferri & Maber, 2013). Other studies cast doubt on the benefits of

say-on-pay. Cai and Walkling (2011) study the adoption of say-on-pay in the U.S. and find that the probability of companies targeted by shareholders-sponsored say-on-pay proposals, and find they are not the ones with overpaid CEOs or worse governance or performance than other firms. In the U.K., say-on-pay votes rarely have majority dissent (Ferri & Maber, 2013). Anecdotal evidence shows that individual shareholders' complaints about excessive CEO pay haven't translated into more votes for greater shareholder influence on executive pay. For example, in 2008, say-on-pay proposals failed to receive major support at annual meetings of big banks such as Citigroup, Merrill, and Morgan Stanley[3].

Shareholders' voting rights have become an important alternative monitoring mechanism. Since 2002, the frequency of, and voting support for, compensation-related shareholder proposals have increased dramatically (Gillan & Starks, 2007; Ertimur et al., 2013; Armstrong, Gow, & Larcker, 2013). However, whether shareholders voting rights are associated with corporate governance is still an open question. On the one hand, shareholders' votes may not be associated with corporate governance. Empirical evidence shows that proposals pertaining to compensation are more likely to be ignored by a board of directors and have no impact on CEO pay (Ertimur, Ferri, & Muslu, 2011; Martin & Thomas, 1999). In their untabulated tests, Ferri and Maber (2013) document that the increase in the sensitivity of CEO pays to poor performance after the adoption of say-on-pay in the U.K. does not differ significantly across levels of current corporate governance (e.g., institutional ownership, board size, and independence). By the same token, shareholders' voting rights have been shown to be associated with corporate governance. Such association can be either substitutive or complementary. When a firm's corporate governance is weak, shareholders view stronger voting rights as a substitute to align the CEO's incentives and their incentives.

Thompson and Edelman (2009) develop a new theory for shareholder voting based on information theory and show that shareholder voting is a method of error correction in corporate governance. When corporate governance is weak, compensation contracts are determined under sub-optimal conditions. Shareholders' votes can help improve communication between the board and shareholders, thereby reducing agency costs and resulting in a more efficient contract (Campos, 2007).

Alternatively, shareholders' voting and other corporate governance mechanisms can be complementary. The intuition behind this relation is that shareholders target firms with effective governance systems because they expect such firms to be more responsive and more likely to take their votes seriously. Prior studies have tested the complementary relation between different governance mechanisms. Governance mechanisms and shareholder rights have been shown to act as complements in studies of top management turnovers (Hadlock & Lumer, 1997), the fraction of equity compensation (Hartzell & Starks, 2003), and the effects of governance on equity price (Cremers & Nair, 2005). Studies on say-on-pay in the U.S. find that larger firms with a higher percentage of independent institutional holdings and independent directors are more likely to receive say-on-pay proposals (Cai & Walkling, 2011; Ertimur et al., 2011).

Because of the mixed results from these prior studies, we develop our second set of hypotheses in alternative forms:

H2: The likelihood of shareholders choosing an annual say-on-pay vote is not associated with the existing corporate governance.

3. RESEARCH METHODOLOGY

To examine the results of the frequency vote, we obtain the names of 1,335 public firms listed on the NYSE, AMEX, and NASDAQ, which had submitted their voting results by December 31, 2011, from the Compensia website[4]. Next, we hand-collected the voting results from the proxy statements and the 8-K filings. The CEO compensation data come from the ExecuComp database; the COMPUSTAT database is the source for firms' financial data; the board of directors' information was collected from the RiskMetrics database; institutional holdings come from Thomson Reuters. The industry classification is based upon Fama and French's (1997) 48-industry classification. We excluded firms with missing required data. The final sample consists of 1,079 distinct firms that filed the results of their frequency votes from January 21, 2011, to December 31, 2011.

We define excess CEO compensation as actual compensation minus expected compensation. Expected compensation is obtained from the pooled cross-sectional OLS regressions using all ExecuComp companies for the sample period 2003 to 2010[5]. As discussed in Section 2, all public firms subject to the SEC's final rules are required to report the results of the shareholder vote on the frequency of say-on-pay vote in Form 8-K immediately after their first annual meeting held after January 21, 2011. We choose the date when firms filed their Form 8-K as the event date because this is the date on which the voting results were released to all participants in the market.

We follow the methodology in Larcker et al. (2011) to examine how investors respond to the results of the frequency vote. For each firm, we calculate the event date abnormal returns (*AbnRet*) relative to the CRSP value-weighted market index.

We next test the cross-sectional variation in the market's reaction to the release of results of the frequency vote. We examine whether the abnormal returns on the date of Form 8-K are associated with excess CEO pay, board structure, and institutional ownership. We estimate the following cross-sectional OLS regression for each firm event:

[3] The say-on-pay proposals failed at Citigroup Inc., Merrill Lynch & Co., Bank of America Corp., and Morgan Stanley, the U.S. financial firms that posted the largest asset write-downs and credit losses since 2007 (Bloomberg.com, April 29, 2008).

[4] Compensia is a compensation consulting company that offers "thoughtful pay solutions" to companies. It provides a list of firms that have given their recommendations for the frequency vote publicly and updates the list frequently.

[5] Based on prior research (Core, Guay, & Larcker, 2008; Core, Holthausen, & Larcker, 1999; Murphy, 1999), the dependent variables are the natural logarithm of CEOs' total compensation (salary, bonus, long-term incentive plan payouts, the value of restricted stock grants, the value of options granted during the year, and any other annual pay), cash compensation (cash and bonus), and equity compensation (stock options and restricted stocks). The independent variables are the proxies for the economic determinants of CEO compensation, such as firm size (LogSales), growth opportunities (book-to-market ratio), stock return (Ret), accounting return (ROA), S&P 500 index constituent (S&P500), year controls and industry controls. We then estimate the excess CEO compensation as the residuals from these regressions.

$$AbnRet = \alpha + \beta_1 ExcessCEOPay_i + \beta_2 BoardInd\%_i + \beta_3 BoardSize_i + \beta_4 OutDirOwn_i + \beta_5 Duality_i + \\ + \delta\ Controls + \varepsilon_i \quad (1)$$

where, *AbnRet* is the abnormal return for firm *i* on the day the frequency vote results are disclosed. *ExcessCEOPay* takes three forms: *ExcessCEOtotal*, *ExcessCEOcash*, and *ExcessCEOequity*. To examine the effect of board features, we control for *BoardInd%* (the percentage of independent directors), *BoardSize* (total number of directors on the board), and *OutDirOwn* (percentage of stocks held by independent directors). *Duality* is an indicator variable equal to 1 if the CEO is also the chairman of the board, and 0 otherwise. *Controls* is a vector of firm characteristics including the size of the firm (logarithm of total assets), and the book-to-market ratio (book value of assets divided by the sum of the book value of liability and market value of equity).

Our empirical model follows those used in the literature on shareholder activism and executive compensation (Ertimur et al., 2013; McCahery, Sautner, & Starks, 2016). The literature on executive compensation often links CEO compensation to the effectiveness of the governance mechanism. Jensen (1993) argues that boards of directors are ineffective because there is little equity ownership by the executives and directors, boards are too large, and the CEO often serves as the board chair. Ineffective boards of directors are associated with a high level of CEO compensation (Core et al., 1999). Based on studies examining the probability of receiving a shareholder-sponsored say-on-pay proposal (Cai & Walkling, 2011; Ertimur et al., 2011), we estimate the following probit regression for the full sample:

$$VoteAnnual_i = \gamma_0 + \gamma_1 ExcessCEOPay_i + \gamma_2 PPS_i + \gamma_3 Size_i + \gamma_4 BM_i + \gamma_5 IndAdjRet_i + \gamma_6 IndAdjROA_i + \\ \gamma_7 Entrench_i + \gamma_8 ForComp_i + \gamma_9 Duality_i + \gamma_{10} CEOOwn_i + \gamma_{11} BoardSize_i + \gamma_{12} BoardInd\%_i + \\ + \gamma_{13} InstOwn_i + IndFixedEff + \varepsilon_i \quad (2)$$

The dependent variable *VoteAnnual* is an indicator variable, which equals 1 if the majority (≥ 50% of the total number of votes cast) of shareholders vote for an annual vote, and 0 otherwise. The independent variable *ExcessCEOPay* takes three forms: *ExcessCEOtotal*, *ExcessCEOcash*, and *ExcessCEOequity*. Assuming the observed board and ownership structures reflect the optimal CEO compensation level, excess CEO compensation is a sign of poor governance (Core et al., 1999), and poor governance is an important issue for shareholders when they are given the right to vote. Therefore, we include excess CEO compensation as the independent variable. We estimate equation (2) for *ExcessCEOtotal*, *ExcessCEOcash*, and *ExcessCEOequity* separately.

Following prior studies (Core, 2002; Lambert & Larcker, 1987), *PPS* are the pay-for-performance sensitivities that are estimated from the following time-series regression over 2001 to 2010 for each firm:

$$\Delta \ln(Comp)_{it} = \alpha + \beta_1 Returns_{it} + \beta_2 \Delta ROA_{it} + \varepsilon_{it} \quad (3)$$

where, *Comp* is CEO compensation taking three forms: total, cash, and equity compensation. The coefficients for stock returns (β_1) and the change of ROA (β_2) in the above regression represent the sensitivities to returns and ROA, respectively.

Prior studies have linked firms' characteristics and performance to executive compensation. These studies show that larger firms with more complex business and greater growth opportunities demand more skilled and high-quality managers who require higher wages (Frydman, 2019; Gabaix & Landier, 2008; Pan, 2017). CEO compensation is an observable board decision that should be based on the individual firm's unique characteristics, rather than one-size-fits-all. Following prior studies (Core et al., 1999), we control for firm size and growth opportunities through the natural log of the firm's total assets (*Size*) and book-to-market ratio (*BM*). A firm's performance measures include its accounting and stock returns. In a standard agency model, the level of pay is an increasing function of performance. A large body of empirical studies has shown that both accounting performance and stock price performance are important economic determinants of CEO pay (Core, 2002; Lambert & Larcker, 1987; Sloan, 1993). Similar to prior studies (Core et al., 2008; Ferri & Maber, 2013; Jensen & Murphy, 1990), we include firms' industry-adjusted contemporary stock returns (*IndAdjRet*) and return on total assets (*IndAdjROA*) as proxies for their performance.

Corporate governance measures include the board of directors' characteristics and ownership structure that have been shown to affect the effectiveness of corporate governance on CEO compensation. Core et al. (1999) argue that both corporate governance and compensation contracts are chosen to maximize firm value. We follow prior studies of shareholder activism and use the following measures that characterize a board of directors: *BoardSize* (total number of directors on the board), *BoardInd%* (percentage of independent directors), and *Duality* (an indicator variable equal to 1 if the board's chairman is also the CEO, and 0 otherwise). Prior studies document that a board is less effective when it is large and when the CEO also chairs the board (Core et al., 1999; Jensen, 1993; Yermack, 1996). Boards that are more independent have been shown to be more responsive to shareholders' proposals (Ertimar et al., 2011). *Entrench* is the entrenchment index, a measure of CEO entrenchment or shareholder rights developed by Bebchuk, Cohen, and Ferrell (2009)[6]. A high entrenchment index is correlated with low shareholder rights, high CEO entrenchment, and low firm value. Following Cai and Walkling (2011), we

[6] Bebchuk et al. (2009) form a score, the entrenchment index, based on six governance provisions that limit shareholder voting power and protect firms from hostile takeovers. This score ranges from 0 to 6. The index scores are available until 2006. Because the corporate governance provisions are quite sticky over time, we use the 2006 index scores in our tests.

employ two proxies for the ownership structure: *CEOOwn* (percentage of outstanding shares held by the CEO) and *InstOwn* (percentage of outstanding shares owned by independent institutions).

Shareholders cast their say-on-pay vote and frequency vote at the same annual meeting. The firms file the results of both votes on Form 8-K immediately after the annual meetings. To control for the confounding effect of the say-on-pay vote on the frequency vote, we include *ForComp* (the percentage of shareholders' votes in favor of the firm's current executive compensation practices.) in equation (2). Regardless of the effectiveness of current corporate governance, we expect that shareholders are less likely to demand a frequent evaluation of executive compensation packages when they are more in favor of such packages. Therefore, we predict a negative association between *ForComp* and the dependent variable *VoteAnnual*.

4. RESEARCH RESULTS AND DISCUSSION

Table 1a presents the descriptive statistics for the variables used in the analysis. On the one hand, excess CEO equity pay is positive, on average, indicating that CEOs at these sample firms are awarded more equity-based grants, relative to an empirically predicted level. On the other hand, both excess total pay and excess cash pay are negative, on average. Therefore, CEOs of the sample firms are underpaid in terms of total and cash compensation. Ninety-one percent of the sample firms received majority approval from their shareholders for annual voting on executive compensation. Meanwhile, around 61% of the sample firms recommended an annual vote. Table 1b shows the Pearson correlations between the variables used in the multivariate tests.

Table 1a. Descriptive statistics of the main sample

Variable	*N*	*Mean*	*S.D.*	*0.25*	*Median*	*0.75*
Compensation						
ExcessCEOtotal	1079	-0.020	1.060	-0.290	0.050	0.380
ExcessCEOcash	1079	-0.060	1.010	-0.230	-0.050	0.160
ExcessCEOequity	1079	0.060	3.410	-3.300	1.740	3.110
Firm characteristics						
TotalAssets($000,000)	1079	20958	110000	1002	3007	9554
IndAdjRet	1079	0.040	0.850	-0.110	0.000	0.110
IndAdjROA	1079	0.010	0.060	-0.020	0.000	0.020
BM	1079	0.690	0.240	0.510	0.710	0.890
LagIndAdjRet	1079	0.030	0.970	-0.170	0.000	0.160
LagIndAdjROA	1079	0.010	0.070	-0.020	0.000	0.020
LagBM	1079	0.720	0.250	0.540	0.740	0.930
SP500	1079	0.350	0.480	0.000	0.000	1.000
Governance measures						
Entrench	735	2.551	1.251	2.000	3.000	4.000
CEOTenure	1079	8.090	7.170	3.000	6.000	10.000
BoardSize	1079	9.460	2.430	8.000	9.000	11.000
Duality	1079	0.520	0.500	0.000	1.000	1.000
BoardInd%	1079	0.790	0.110	0.710	0.800	0.890
OutsideDirOwn	1079	0.013	0.041	0.001	0.004	0.009
CEOOwn	1079	0.026	0.061	0.003	0.008	0.021
InstOwn	1079	0.833	0.153	0.731	0.862	0.975
ForComp	1079	0.890	0.120	0.860	0.950	0.980
Shareholders' frequency votes						
VoteAnnual	1079	0.912				
VoteBiennial	1079	0.002				
VoteTriennial	1079	0.077				
NonMajority	1079	0.009				
Board recommendations						
ReccAnnual	1079	0.613				
ReccBiennial	1079	0.021				
ReccTriennial	1079	0.335				
NoRecc	1079	0.031				

Notes: The sample is restricted to observations at the firm level with available data to calculate all the variables. Variables are defined in the Appendix.

Table 1b. Correlation matrix (Part 1)

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	ExcessCEOtotal														
(2)	ExcessCEOcash	0.7450*													
(3)	ExcessCEOequity	0.2159*	0.0653*												
(4)	LnTotalAssets	-0.0595	-0.1186*	-0.0224											
(5)	IndAdjRet	-0.0111	-0.0119	-0.036	-0.049										
(6)	IndAdjROA	-0.1010*	-0.0930*	-0.0475	-0.0087	-0.0141									
(7)	BM	0.0231	0.0846*	-0.1370*	0.3134*	-0.0251	-0.3496*								
(8)	LnCEOTenure	-0.0246	-0.0331	-0.0051	-0.0672*	-0.0316	0.037	-0.0208							
(9)	BoardInd%	0.0419	-0.0191	0.0755*	0.2367*	0.0009	-0.0112	0.0168	-0.1106*						
(10)	Entrench	0.1669*	0.1477*	0.0349	-0.1001*	0.0331	-0.062	0.0789*	-0.0391	0.0694					
(11)	BoardSize	0.0153	-0.0085	-0.0014	0.5959*	-0.0769*	-0.021	0.2376*	-0.0757*	0.1739*	0.0848*				
(12)	OutsideDirOwn	-0.0125	-0.0002	-0.0054	-0.1194*	0.0072	-0.0514	-0.0186	-0.019	0.0236	0.0057	-0.0264			
(13)	CEOOwn	-0.0438	-0.0339	-0.0315	-0.2278*	0.0357	0.0286	-0.0802*	0.3566*	-0.2611*	-0.0831*	-0.1933*	0.0574		
(14)	Duality	0.0673*	0.0475	0.0299	0.1644*	-0.0359	0.0156	0.000	0.3372*	0.1614*	-0.0084	0.0663*	-0.0477	0.1397*	
(15)	BoardIndep	0.0287	-0.0157	0.0303	0.6002*	-0.0656*	-0.0214	0.1996*	-0.1160*	0.5858*	0.0980*	0.8916*	-0.0125	-0.2670*	0.1301*
(16)	InstOwn	0.0732*	0.0293	0.0875*	-0.2028*	0.0437	0.0184	-0.1434*	-0.0139	0.0756*	0.0112	-0.2308*	-0.0255	-0.1178*	-0.0826*
(17)	ForComp	-0.1870*	-0.1217*	-0.0565	-0.0969*	0.0572	0.0663*	-0.1611*	-0.0239	-0.1001*	-0.0794*	-0.0124	0.0671*	0.0628*	-0.0539
(18)	ReccAnnual	-0.031	-0.0682*	0.0304	0.1036*	-0.0312	-0.0653*	0.0757*	-0.0755*	0.0918*	-0.0246	0.0473	-0.0568	-0.0381	0.0015
(19)	ReccBiennial	-0.0265	-0.0017	0.0227	0.0163	-0.0189	-0.014	-0.0137	0.0034	0.0633*	-0.0244	0.0409	0.1056*	-0.0295	0.0251
(20)	ReccTrienniall	0.037	0.0606*	-0.0414	-0.1235*	0.0428	0.0542	-0.053	0.0693*	-0.1047*	0.0419	-0.0673*	0.0388	0.0502	-0.014
(21)	Annual	0.006	-0.0468	0.0247	0.0529	-0.0318	-0.0323	0.0325	-0.0881*	0.1894*	-0.0266	0.0124	-0.1230*	-0.1338*	-0.0263
(22)	Biennial	-0.0245	0.01	0.0132	0.0037	-0.0141	-0.0038	-0.0035	-0.0159	0.0092	-0.0014	0.0235	0.1616*	-0.0435	0.0188
(23)	Triennial	-0.0004	0.0437	-0.0285	-0.0587	0.0366	0.0344	-0.0341	0.0978*	-0.1986*	0.0283	-0.0219	0.0782*	0.1514*	0.0226
(24)	VoteAnnual	0.0366	-0.0038	0.001	0.0600*	0.0005	0.0063	0.0115	-0.0646*	0.2413*	-0.0304	0.0337	-0.1121*	-0.1756*	-0.0051
(25)	VoteBiennial	-0.0135	0.0029	-0.0024	0.029	-0.0021	-0.0028	0.0252	-0.0177	-0.0483	0.000	0.0096	0.0487	-0.0163	-0.002
(26)	VoteTriennial	-0.0369	0.0042	-0.0125	-0.0633*	0.0013	-0.0118	-0.013	0.0544	-0.2520*	0.019	-0.0256	0.0648*	0.1953*	-0.0102

Table 1b. Correlation matrix (Part 2)

		(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
(15)	BoardIndep												
(16)	InstOwn	-0.1610*											
(17)	ForComp	-0.0531	-0.0837*										
(18)	ReccAnnual	0.0753*	0.0052	-0.0263									
(19)	ReccBiennial	0.0679*	0.0147	-0.02	-0.1852*								
(20)	ReccTriennianl	-0.1002*	-0.0144	0.0355	-0.8918*	-0.1049*							
(21)	Annual	0.0895*	0.1452*	-0.0964*	0.7375*	-0.1299*	-0.7135*						
(22)	Biennial	0.0312	-0.0246	0.0451	-0.2086*	0.7413*	-0.0449	-0.2324*					
(23)	Triennial	-0.1037*	-0.1410*	0.0873*	-0.6984*	-0.0839*	0.7478*	-0.9584*	-0.0525				
(24)	VoteAnnual	0.1321*	0.1567*	-0.1334*	0.3810*	-0.0454	-0.3860*	0.7468*	-0.1296*	-0.7284*			
(25)	VoteBiennial	-0.0093	0.0133	0.0348	-0.0541	0.2920*	-0.0306	-0.1471*	0.6822*	-0.048	-0.1395*		
(26)	VoteTriennial	-0.1331*	-0.1571*	0.1205*	-0.3552*	-0.0426	0.3842*	-0.7166*	-0.0281	0.7440*	-0.9345*	-0.0124	

*Notes: * denote significance at the 5% (two-sided) level.*

Table 2 depicts the relation between the market reaction to the results of the frequency vote and each component of the excess CEO compensation. It suggests that firms in the second quintile of excess CEO cash pay and the first quintile of excess CEO equity pay earned the highest negative abnormal returns of -0.24% and -0.34%, respectively, on the date the results of the frequency vote became public. These negative abnormal returns are significant at the 5% level. Results for the three-day cumulative abnormal returns (*CAR*) are similar. Further, stock price reactions at firms with higher excess CEO equity pay are stronger. The event date abnormal return of the top quintile of excess CEO equity pay is significantly higher than that of the bottom quintile.

Table 2. Market reaction to frequency vote by excess CEO compensation

Panel A: By excess CEO total compensation						
	N	***Excess CEO total compensation ($000s)***	***Event date abnormal returns (%)***	***t-statistic***	***CAR (%)***	***t-statistic***
Low	209	-2614.97	-0.12	-0.86	-0.10	-0.49
2	209	-977.09	-0.16	-1.03	-0.23	-1.07
3	208	373.84	-0.01	-0.12	-0.13	-0.64
4	209	1747.49	0.14	1.15	-0.01	-0.08
High	208	6838.89	-0.07	-0.71	-0.18	-0.89
H-L			0.05		-0.07	
t_{H-L}			0.30		-0.26	
Panel B: By excess CEO cash compensation						
	N	***Excess CEO cash compensation ($000s)***	***Event date abnormal returns (%)***	***t-statistic***	***CAR (%)***	***t-statistic***
Low	209	-477.81	-0.11	-0.88	-0.27	-1.43
2	209	-170.11	-0.24**	-2.11	-0.44**	-2.34
3	208	-38.89	0.21	1.46	0.29	1.29
4	209	99.95	0.02	0.17	0.07	0.42
High	208	1234.64	-0.09	-0.74	-0.31	-1.40
H-L			-0.02		0.03	
t_{H-L}			-0.08		0.13	
Panel C: By excess CEO equity compensation						
	N	***Excess CEO equity compensation ($000s)***	***Event date abnormal returns (%)***	***t-statistic***	***CAR (%)***	***t-statistic***
Low	209	-0.66	-0.34**	-2.47	-0.49**	-2.52
2	209	0	-0.09	-0.81	0.05	0.23
3	208	883.99	-0.06	-0.50	-0.26	-1.32
4	209	1800.00	0.05	0.52	0.15	0.82
High	208	3174.88	0.22	1.56	-0.11	-0.51
H-L			0.59**		0.38	
t_{H-L}			2.84		1.28	

*Notes: The sample consists of 1,079 firms described in Table 1a and Table 1b. We sort the sample firms into quintiles based upon their average excess CEO total compensation, cash compensation, and equity compensation. Variables are defined in the Appendix. We follow the methodology in Larcker et al. (2011) to examine how investors respond to the results of the frequency vote. For each firm, we calculate the event date abnormal returns relative to the CRSP value-weighted market index. CAR is the sum of the abnormal returns over the three-day window around the event date. ***, **, and * denote significance at the 1%, 5%, and 10% (two-sided) levels, respectively.*

In Table 3, we show the market reaction to the frequency vote for firms categorized by the relation between shareholders' preferences and the boards' recommendations. Panel A shows that on the event date, investors' responses to the results are not significantly different between firms where shareholders' preferences are consistent with boards' recommendations and those where shareholders choose a different frequency from the boards' recommendations. Similarly, in Panel B, we partition the sample firms based on whether shareholders prefer a more frequent say-on-pay vote than the firm's recommendation. The results show that abnormal returns on the event date are not statistically significant in either group of firms. However, in both Panel A and Panel B, the *CARs* are significantly negative at firms where shareholders vote along with the firms' recommendations and where shareholders don't correct the firms' recommendations with a choice of more frequent votes. The magnitudes of the negative reactions are both 0.22% and are statistically significant at the 5% levels.

Table 3. Market reaction to frequency vote by results

Panel A: Whether shareholders' preference is consistent with the board's recommendation					
	N	***Event date abnormal returns (%)***	***t-statistic***	***CAR (%)***	***t-statistic***
Inconsistent (1)	323	0.05	0.58	0.07	0.45
Consistent (2)	720	-0.08	-1.25	-0.22**	-2.03
Difference (1)-(2)		0.13		0.29	
t-statistic		1.15		1.51	
Panel B: Whether shareholders prefer more frequent votes than the board's recommendations					
	N	***Event date abnormal returns (%)***	***t-statistic***	***CAR (%)***	***t-statistic***
Frequent (1)	316	0.05	0.60	0.07	0.48
Other (2)	727	-0.09	-1.25	-0.22**	-2.04
Difference (1)-(2)		0.14		0.29	
t-statistic		1.17		1.53	

*Notes: The sample consists of 1,079 firms described in Table 1a and Table 1b. We sort the sample firms into quintiles based upon the relation between shareholders' frequency vote and the firm's recommendation. Variables are defined in the Appendix. We follow the methodology in Larcker et al. (2011) to examine how investors respond to the results of the frequency vote. For each firm, we calculate the event date abnormal returns relative to the CRSP value-weighted market index. CAR is the sum of the abnormal returns over the three-day window around the event date. ***, **, and * denote significance at the 1%, 5%, and 10% (two-sided) levels, respectively.*

Table 4 shows the multivariate regressions of equation (1) explaining the abnormal returns on the day of or over the three-day window of the release of the frequency vote results. The dependent variables are the abnormal returns on the event date (*AbnRet*) and the three-day cumulative abnormal returns (*CAR*). To mitigate the bias in the OLS standard errors resulting from the cross-sectional correlation of the abnormal returns, we calculate t-statistics based on the robust standard errors and control for industry-fixed effects. Taken together, the results in Table 4 suggest that the outside directors' stock holdings have a significant positive effect on market reaction to the release of the frequency vote results. In addition, the excess CEO equity pay has a consistently positive effect on investors' response to the same event.

Table 4. Market reaction — Multivariate regressions

	Control for excess CEO total pay					***Control for excess CEO equity pay***					***Control for excess CEO cash pay***			
	(1)	***(2)***	***(3)***	***(4)***		***(5)***	***(6)***	***(7)***	***(8)***		***(9)***	***(10)***	***(11)***	***(12)***
	AbnRet	***CAR***	***AbnRet***	***CAR***		***AbnRet***	***CAR***	***AbnRet***	***CAR***		***AbnRet***	***CAR***	***AbnRet***	***CAR***
ExcessCEO total	0.000	-0.001	0.000	-0.001	*Excess CEO equity*	0.001***	0.000	0.001***	0.000	*Excess CEO cash*	0.000	-0.000	0.001	0.000
	(1.178)	(-0.940)	(1.056)	(-0.865)		(2.759)	(1.611)	(2.619)	(1.017)		(1.061)	(-0.565)	(1.162)	(0.264)
Entrench	-0.000	0.000				-0.000	0.000				-0.000	0.000		
	(-0.269)	(0.548)				(-0.261)	(0.397)				(-0.233)	(0.501)		
LnTotal Assets	-0.001	-0.001	-0.001	-0.001		-0.001	-0.001	-0.001	-0.000		-0.001	-0.001	-0.000	-0.000
	(-1.089)	(-0.963)	(-1.009)	(-0.721)		(-1.135)	(-0.863)	(-1.083)	(-0.657)		(-1.055)	(-0.950)	(-0.910)	(-0.601)
BM	-0.004	0.001	-0.002	0.002		-0.003	0.002	-0.001	0.002		-0.004	0.001	-0.002	0.002
	(-1.315)	(0.183)	(-0.649)	(0.455)		(-1.014)	(0.314)	(-0.288)	(0.543)		(-1.337)	(0.191)	(-0.730)	(0.389)
BoardSize	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000
	(1.090)	(0.447)	(1.280)	(0.297)		(1.024)	(0.342)	(1.233)	(0.200)		(1.086)	(0.438)	(1.265)	(0.218)
BoardInd%	-0.000	0.003	0.005	0.005		-0.001	0.002	0.005	0.005		-0.000	0.003	0.006	0.005
	(-0.047)	(0.283)	(0.983)	(0.570)		(-0.178)	(0.189)	(0.866)	(0.509)		(-0.022)	(0.258)	(1.006)	(0.557)
InstOwn	-0.002	0.001	-0.001	0.008		-0.003	0.000	-0.001	0.007		-0.002	0.001	-0.000	0.008
	(-0.422)	(0.161)	(-0.136)	(1.329)		(-0.608)	(0.014)	(-0.269)	(1.207)		(-0.398)	(0.136)	(-0.116)	(1.266)
OutDirOwn	0.021	0.038	0.013	0.028*		0.019	0.036	0.013	0.029*		0.021	0.038	0.013	0.028*
	(1.485)	(1.566)	(1.158)	(1.683)		(1.356)	(1.479)	(1.218)	(1.725)		(1.488)	(1.559)	(1.156)	(1.711)
Duality	0.000	-0.001	-0.001	-0.002		0.000	-0.002	-0.001	-0.002		0.000	-0.001	-0.001	-0.002
	(0.319)	(-0.537)	(-1.162)	(-0.998)		(0.291)	(-0.704)	(-1.190)	(-1.108)		(0.336)	(-0.568)	(-1.197)	(-1.095)
Industry FE	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Obs.	724	724	1,048	1,048		724	724	1,048	1,048		724	724	1,048	1,048
R-squared	0.012	0.008	0.007	0.007		0.021	0.010	0.013	0.007		0.011	0.007	0.007	0.006

Notes: This table reports the results of cross-sectional variation in the market's reaction to the release of results of the frequency vote. We examine whether the abnormal returns on the date of Form 8-K are associated with excess CEO pay, board structure, and institutional ownership. We estimate the following cross-sectional regression for each firm event:

$$AbnRet = \alpha + \beta_1 ExcessCEOPay_i + \beta_2 BoardInd\%_i + \beta_3 BoardSize + \beta_4 OutDirOwn_i + \beta_5 Duality_i + \delta Controls + \varepsilon_i \quad (1)$$

*To mitigate the bias in the OLS standard errors resulting from the cross-sectional correlation of the abnormal returns, we calculate t-statistics based upon the robust standard errors and control for industry-fixed effects. We estimate this model for each excess CEO pay component cross-sectionally. Coefficient t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% (two-sided) levels, respectively. Variables are defined in the Appendix.*

Overall, the results show that stock price reactions are significantly negative at firms with overpaid CEOs and shareholders that follow the boards' recommendations. In the multivariate regressions, when the percentage of a firm's total number of common shares owned by outside directors is higher, the market reacts more positively to the results of the frequency vote.

Table 5 presents boards' recommendations for the frequency vote, and the results of shareholders' frequency vote and the say-on-pay vote for firms categorized by different corporate governance measures. These governance measures are from equation (2). Panel A shows that firms with less independent boards receive a higher percentage of shareholder approval of their executive compensation packages. Firms at the first quintile of board independence receive 2.16% more support from their shareholders than those in the fifth quintile, which is statistically significant at the 5% level. Boards at firms in the lowest quintile are less likely to recommend an annual vote. The probability of recommending an annual vote increases by 12.10% from the lowest to the highest quintile firms. This increase is statistically significant at the 5% level. Shareholders are more likely to choose an annual say-on-pay vote at firms with higher board independence. The likelihood of an annual vote increases from 71.31% at firms in the lowest quintile to 79.17% in the highest quintile. This increase is statistically significant at the 1% level.

In Panel B of Table 5, firms are ranked based on the percentage of the CEO's stock holdings. A CEO is more likely to be entrenched when he or she has a larger percentage of ownership of a firm (Berger, Ofek, & Yermack, 1997). In fact, prior research documents that CEO equity ownership is positively related to the level of compensation (Cyert, Kang, & Kumar, 2002). Members of the board have the incentive to acquiesce to the entrenched CEO's proposals (Bebchuk & Fried, 2004). Therefore, higher CEO ownership indicates less effective corporate governance. Consistent with this prediction, Panel B shows that firms with the highest CEO stock ownership are 9.47% less likely to recommend an annual vote than firms with the lowest CEO stock ownership. Shareholders at firms in the top quintile of CEO stock holdings are 3.45% less likely to vote for an annual vote. These results suggest CEO ownership measures show how powerful the CEO is.

When a firm's CEO is powerful, the board is more likely to follow his or her preferences. The untabulated results show that firms in the highest quintile of CEO ownership are more likely to have their CEOs also chairing the boards. The probability increases from 43% in the lowest quintile to 68% in the highest, which is statistically significant at the 1% level (the t-statistic = 5.45). Therefore, shareholders are more likely to go along with the boards' recommendations at firms with higher CEO ownership.

Institutional ownership also affects shareholders' votes. Panel C of Table 5 shows that shareholders at firms in the bottom quintile are more likely to approve executive compensation packages. Shareholders at firms in the top quintile of institutional ownership are more likely to vote for an annual say-on-pay vote.

Table 5. Results of shareholders' say-on-pay vote and frequency vote by corporate governance

Panel A: By percent of board independence					
		Say-on-pay vote	***Recommendation***	***Frequency vote***	
	N	***% of approval***	***% for annual***	***% for annual***	***% for triennial***
Low	225	91.91	55.55	71.31	27.22
2	240	89.73	58.75	76.58	22.01
3	191	88.46	59.16	77.2	20.42
4	253	87.72	65.61	79.51	19.03
High	170	89.75	67.65	79.17	18.65
L-H		2.16**	-12.10**	-7.74***	8.57***
t_{L-H}		1.94	-2.45	-3.78	4.21
Panel B: By percent of CEO ownership					
		Say-on-pay vote	***Recommendation***	***Frequency vote***	
	N	***% of approval***	***% for annual***	***% for annual***	***% for triennial***
Low	216	89.46	66.21	76.43	21.51
2	216	90.22	70.37	80.54	17.89
3	216	89.23	57.87	76.94	21.10
4	216	89.32	54.63	79.51	21.97
High	215	89.24	56.74	72.98	25.50
L-H		0.20	9.47**	3.45*	-3.99**
t_{L-H}		0.17	2.02	1.74	-2.06
Panel C: By percent of institutional ownership					
		Say-on-pay vote	***Recommendation***	***Frequency vote***	
	N	***% of approval***	***% for annual***	***% for annual***	***% for triennial***
Low	216	91.85	60.18	71.47	26.79
2	216	88.95	57.87	74.96	22.85
3	216	88.86	70.83	81.73	16.75
4	195	88.46	62.05	81.03	17.66
High	236	89.27	55.51	74.84	23.34
L-H		2.58**	4.67	-3.37*	3.45*
t_{L-H}		2.26	1.00	-1.71	1.77

*Notes: The sample consists of 1,079 firms described in Table 1a and Table 1b. We sort the sample firms into quintiles based upon the corporate governance measures included in equation (2). Within each quintile, we calculate the average percentage of the favorable say-on-pay vote, firms' recommendation for the annual vote, and shareholders' choice of the frequency vote. Variables are defined in the Appendix. ***, **, and * denote significance at the 1%, 5%, and 10% (two-sided) levels, respectively.*

In Table 6, we report the multivariate regressions based on equation (2) explaining the relation between shareholders' votes and existing corporate governance. We include the entrenchment index to control for the overall governance provisions limiting shareholder rights. For each compensation component, we estimate equation (2) with and without the pay-for-performance sensitivities (*PPS_ROA* and *PPS_Ret*). The results show that the probability of shareholders choosing an annual vote increases with institutional ownership and board independence, but decreases with CEO duality. For example, in column (1), a 1% increase in institutional ownership will increase the probability of shareholders choosing an annual vote by 2.03%. Similarly, a 1% increase in board independence increases the probability of an annual vote by 2.64%. The magnitudes of the coefficients are comparable across different model specifications. The levels of statistical significance of these coefficients are all more than 5%. The coefficients of *Entrench* are negative, with a considerably large t-statistic (although not statistically significant at the conventional level in the two-tailed test). This indicates that shareholders at firms with less entrenched CEOs are more likely to select an annual vote. The coefficients of *ForComp* are negative and statistically significant across the table. This suggests that the likelihood of shareholders demanding a more frequent evaluation of CEO compensation decreases approval of executive compensation packages. This is reasonable and as expected. If shareholders are satisfied with the pay practice, they are less likely to demand a frequent check on the same issue. These results are consistent with the "complement" hypothesis: shareholders are more likely to vote for an annual say-on-pay vote at firms with stronger governance.

Table 6. Shareholders frequency vote and corporate governance dependent variable = VoteAnnual

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Entrench	-0.080	-0.077	-0.085	-0.075	-0.081	-0.076
	(-1.143)	(-1.115)	(-1.205)	(-1.085)	(-1.168)	(-1.106)
InstOwn	2.030***	1.991***	1.978***	2.005***	1.984***	2.000***
	(3.754)	(3.708)	(3.621)	(3.754)	(3.692)	(3.732)
Duality	-0.484**	-0.485**	-0.509**	-0.485**	-0.503**	-0.484**
	(-2.482)	(-2.498)	(-2.554)	(-2.494)	(-2.562)	(-2.494)
CEOOwn	-1.597	-1.681	-1.426	-1.690	-1.389	-1.690
	(-1.048)	(-1.103)	(-0.935)	(-1.115)	(-0.910)	(-1.111)
BoardSize	0.023	0.013	0.011	0.013	0.020	0.013
	(0.453)	(0.261)	(0.223)	(0.257)	(0.387)	(0.256)
BoardInd%	2.462***	2.558***	2.536***	2.545***	2.583***	2.560***
	(2.895)	(3.028)	(2.938)	(3.007)	(3.037)	(3.026)
ForComp	-3.088**	-3.085**	-3.749***	-3.186**	-3.241**	-3.119**
	(-2.390)	(-2.418)	(-2.635)	(-2.466)	(-2.499)	(-2.479)
ExcessCEOtotal	0.019	0.017				
	(0.169)	(0.145)				
PPS_ROA_total	-0.128					
	(-1.329)					
PPS_Ret_total	-4.902					
	(-0.958)					
ExcessCEOcash			-0.034	-0.050		
			(-0.194)	(-0.255)		
PPS_ROA_cash			0.612			
			(1.108)			
PPS_Ret_cash			-29.205**			
			(-2.321)			
ExcessCEOequity					0.002	0.000
					(0.082)	(0.011)
PPS_ROA_equity					-0.014	
					(-0.831)	
PPS_Ret_equity					-0.710	
					(-0.737)	
LnTotalAssets	0.127	0.130*	0.145*	0.128*	0.129*	0.130*
	(1.630)	(1.675)	(1.795)	(1.646)	(1.652)	(1.682)
BM	-0.432	-0.427	-0.387	-0.405	-0.397	-0.423
	(-1.010)	(-1.004)	(-0.900)	(-0.944)	(-0.921)	(-0.994)
IndAdjRet	-0.104	-0.066	-0.086	-0.066	-0.068	-0.063
	(-0.279)	(-0.178)	(-0.228)	(-0.178)	(-0.184)	(-0.171)
IndAdjROA	-1.213	-1.211	-1.132	-1.205	-1.148	-1.220
	(-0.707)	(-0.708)	(-0.657)	(-0.710)	(-0.668)	(-0.714)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	735	735	735	735	735	735
Pseudo R-squared	0.191	0.185	0.209	0.185	0.188	0.185

Notes: This table reports an analysis of the relation between shareholders' voting on the frequency of say-on-pay and the firms' existing corporate governance. The table reports the results of the following probit regression for the fiscal year 2010:

$$VoteAnnual_i = \gamma_0 + \gamma_1 ExcessCEOPay_i + \gamma_2 PPS_i + \gamma_3 Size_i + \gamma_4 BM_i + \gamma_5 IndAdjRet_i + \gamma_6 IndAdjROA_i + \gamma_7 Entrench_i + \gamma_8 ForComp_i + \\ + \gamma_9 Duality_i + \gamma_{10} CEOOwn_i + \gamma_{11} BoardSize_i + \gamma_{12} BoardInd\%_i + \gamma_{13} InstOwn_i + IndFixedEff + \varepsilon_i \quad (2)$$

*Industry fixed effects are included for each model but not tabulated. We estimate each model cross-sectionally. Coefficient t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% (two-sided) levels, respectively. Variables are defined in the Appendix.*

Overall, our results provide important evidence for the effects of say-on-pay legislation. This is the first study to examine stock price reactions to the results of shareholders' frequency vote filed by qualified U.S. firms and how such frequency vote is related to corporate governance. Our work supports the relation between shareholders' activism and corporate governance. Shareholders tend to use say-on-pay to complement effective corporate governance, rather than as a substitute for governance environment.

5. CONCLUSION

This paper investigates the market reaction to the release of the frequency vote, and the relation between a firm's corporate governance and shareholders' frequency vote. Starting from the first annual meeting held after January 21, 2011, qualified U.S. firms have been required to hold an advisory and non-binding vote on executive compensation known as "say-on-pay," and make recommendations to shareholders on the frequency of such vote. Shareholders are given the opportunity to vote on the frequency they prefer. Firms are required to file the results of these votes in their Form 8-K immediately after the annual meeting. Using the standard event study methodologies, we find that the three-day cumulative abnormal returns are significantly positive for firms with excess CEO equity pay, especially on the date of the 8-K filing. We also find that cumulative abnormal returns are significantly positive when the boards' recommendations on the frequency of the say-on-pay vote are consistent with shareholders' preferences. When the boards' recommendations on the frequency of the say-on-pay vote and shareholders' vote on the frequency are inconsistent, the market reacts more strongly for firms whose shareholders prefer a more frequent vote on executive compensation than the boards' recommendations.

We empirically examine the relation between shareholders' frequency vote and firms' corporate

governance. Using a sample of public U.S. firms which had filed the results of their frequency votes by the end of 2011, we find that shareholders are more likely to vote for an annual vote on executive compensation when the firm's corporate governance is more effective. They do not seem to be concerned about the level of excess CEO pay in most cases or the firm's performance relative to its industry peers. When we control for the level of shareholders' approval for the current year's executive compensation and the board of directors' recommendations for the frequency vote, the inferences of the results remain unchanged.

Inferences from the results of this paper have some limitations. It is inherently difficult to identify the effects of any government regulation changes because of identification challenges (Iliev & Vitanova, 2019). Although say-on-pay regulation is about empowering shareholders to have a say on CEO pay, we do not find CEO compensation to play a significant role in both the market reaction test and corporate governance test. Some factors may potentially affect the dependent variables in our models other than CEO compensation (e.g., innate firm characteristics or macroeconomic factors), but we are not able to identify and control for them because our sample data is limited to the first frequency vote results available in 2011. Future research could address this identification challenge by finding a control group that has similar firm-level and economic exposures to the treatment group and comparing the two groups on the outcome variables (e.g., using propensity score matching technique).

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APPENDIX: Variable description

Variable	*Description*
Annual	Percentage of shareholders' votes for an annual vote.
AbnRet	Event date market-adjusted returns. We follow the methodology in Larcker et al. (2011) to examine how investors respond to the results of the frequency vote. For each firm, we calculate the event date abnormal returns relative to the CRSP value-weighted market index.
BM	The book-to-market ratio is calculated as (book value of assets)/(book value of liabilities + market value of equity).
BoardInd%	Percentage of the directors who are independent.
BoardSize	A total number of directors on the board.
CAR	The sum of the abnormal returns over the three-day window around the event date.
CEOOwn	CEO ownership is calculated as the percentage of the firm's total common shares owned by the CEO.
Duality	Indicator variable equals 1 if the CEO is also the Chairman of the board, 0 otherwise.
Entrench	Entrenchment index scores from Bebchuk et al. (2009). The index is based upon six corporate governance provisions: provisions: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments. It ranges from zero to six. These index scores are available only until 2006. Because corporate governance provisions are quite sticky over time, we use the data for 2006 in the tests.
ExcessCEOtotal	Excess CEO total compensation defined in Section 3.
ExcessCEOcash	Excess CEO cash pays defined in Section 3.
ExcessCEOequity	Excess CEO equity compensation defined in Section 3.
ForComp	Indicator variable equals 1 if the shareholders approved the executive compensation packages for the current fiscal year, 0 otherwise.
IndAdjRet	Individual firm's annual stock returns adjusted for the industry median stock returns.
IndAdjROA	Individual firm's annual ROA adjusted for the industry median ROA. ROA is calculated as net income before extraordinary items divided by average total assets.
InstOwn	Percentage of firm's shares outstanding owned by the independent institutional shareholders who own at least 5% of the total outstanding shares.
LnTotalAssets	Natural logarithm of total assets at the fiscal year end.
LnCEOTenure	Natural logarithm of years an executive serves as CEO.
OutsideDirOwn	Outside director ownership is calculated as the percentage of firm's total common shares owned by the outside directors.
PPS_ROA_(total, cash, and equity) and PPS_Ret_(total, cash, and equity)	Following prior studies (Lambert & Larcker, 1988; Core, 2002), pay for performance sensitivities are estimated from the following time-series regression over 2001 to 2010 for each firm: $\Delta \ln(Comp)_{it} = \alpha + \beta_1 Returns_{it} + \beta_2 \Delta ROA_{it} + \varepsilon_{it}$ *Comp* is the CEO compensation taking three forms: total, cash, and equity compensation. *PPS_Ret* and *PPS_ROA* are the coefficients for stock returns (β_1) and the change of ROA (β_2) in the above regression respectively divided by 100.
ReccAnnual	Indicator variable equals 1 if a firm's board of directors recommends annual voting, 0 otherwise. *ReccBiennial* (*ReccTriennial*) is defined in the same way for a biennial (triennial) vote.