The Disciplinary Effects of Proxy Contests[☆]

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Abstract

This paper studies the effect of potential proxy contests on corporate policies. I find that when the likelihood of a proxy contest increases, companies exhibit increases in leverage, dividends, and CEO turnover. In addition, companies decrease R&D, capital expenditures, stock repurchases, and executive compensation. Following these changes, there is an improvement in profitability. The evidence is provided using a hand-collected data set of proxy contests and an identification strategy which exploits exogenous changes in the legal environment, resulting from the 1992 proxy access reform and the second generation of state-level antitakeover laws in late 1980s. The study suggests that the existing proxy contest mechanism plays a disciplinary role despite the low frequency of materialized proxy contests.

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1. Introduction

The agency problem created by separation of ownership and control in public corporations is at the heart of the corporate governance literature, which studies mechanisms to discipline incumbents. One of those mechanisms is proxy contest. During a proxy contest shareholders vote to resolve a conflict between the firm's board of directors, referred to as 'incumbents', and a group of shareholders, referred to as 'dissidents'. The average number of proxy contests was 55 (80) per year during 1994-2008 (2006-2008) as compared to an average of 17 a year during 1979-1994 (see Figure 1 and Mulherin and Poulsen, 1998). In contrast, the frequency of hostile tender offers dropped sharply toward the end of 1980s. For example, the average number of hostile tender offers went from 60 per year in 1983-1987 to 5 per year in 2004-2008. Thus, the proxy contest has become the most common hostile mechanism to discipline an incumbent board and management.[1]

The consensus in the existing literature is that this mechanism is ineffective in disciplining an incumbent board and management for two reasons (Bebchuk, 2007). First, the frequency of materialized proxy contests is low. Second, targeted companies do not seem to change their corporate policies significantly after a proxy contest. Motivated by the existing evidence and the recent financial crisis, the SEC received authorization from the Dodd-Frank Act and adopted a significant proxy access reform in August 2010. This reform addresses concerns about the effectiveness of the proxy contest mechanism by facilitating the process of nominating directors by large long-term shareholders.

Should we conclude that the proxy contest mechanism is ineffective? The existing academic literature assumes that incumbents are passive and do not act until a potential contest materializes. There is an alternative view of the world – the theory of contestable markets – in which expectations of potential

[1] A partial list of prominent proxy contest events includes Hewlett-Packard (2001), Yahoo (2007), Motorola (2007), Office Depot (2008), American Express (2007, 2009), Target (2009), and Barnes & Noble (2010).

events affect corporate policies (Baumol et al., 1988). If expectations of potential events affect corporate policies, two empirical implications are straightforward. First, since companies change corporate policies in anticipation of a proxy contest, fewer companies are targeted ex post. Therefore, the low frequency of materialized proxy contests does not imply that the proxy contest plays a weak disciplinary role. Second, since changes in the corporate policies are implemented before a proxy contest materializes, it is very hard to detect these changes in the post-targeted period.

To correctly assess the effect of a proxy contest, I examine whether companies change their financial policies in *anticipation* of the proxy contest. Using a manually collected data set of all proxy contests from 1994 to 2008, I show that when the likelihood of a proxy contest increases, companies increase leverage, dividends, and CEO turnover. In addition, companies decrease investment in research and development, capital expenditures, stock repurchases, and executive compensation. Following these changes, there is an improvement in profitability.

The estimation procedure I apply confronts three issues. First, the likelihood of a proxy contest is a latent variable and therefore has to be estimated. Second, the likelihood of a proxy contest can be endogenously determined, i.e., it can be correlated with an unobserved component of corporate policies. Finally, the effect of the likelihood of a proxy contest cannot be estimated using the regular two-stage method that accounts for endogeneity because the likelihood of a proxy contest is a latent variable.

The estimation procedure developed by Heckman (1978) and Amemiya (1978) addresses the first and third concerns. This procedure is applied as follows. First, I estimate a binary choice model (e.g., probit), where the dependent variable is a dummy variable that equals one when the company is targeted in the proxy contest. Next, using estimated coefficients, I construct a consistent estimator of the likelihood of a proxy contest. Finally, I assess the effect of the estimated likelihood of a proxy contest on the corporate policies. Importantly, the estimated likelihood of a proxy contest has to be constructed

such that it includes at least one covariate that does not affect the corporate policies. That is, I have to impose an exclusion restriction, which resolves the endogeneity issue. I do this by using the Amihud (2002) measure of stock illiquidity as a source of exogenous variation in the likelihood of a proxy contest.

I show that the Amihud (2002) measure of stock illiquidity is very likely to satisfy the exclusion restriction. Theory suggests that liquid stock markets are generally beneficial for corporate governance. Kyle and Vila (1991), Bolton and von Thadden (1998), and Maug (1998) show that greater liquidity trading facilitates monitoring by reducing free-riding. The general idea behind these papers is that liquid stock markets make it easier for investors to accumulate large stakes without substantially affecting the stock price. Kyle's (1985) lambda, the price impact measure, is the measure of liquidity that naturally corresponds to this theoretical insight. The microstructure literature suggests that the best empirical counterpart to Kyle's lambda is the Amihud measure of stock illiquidity.[2]

A valid excluded variable has to satisfy two criteria. First, it should significantly affect the likelihood of a proxy contest. Second, it should affect the outcome variable only through the likelihood of a proxy contest channel. I show that the Amihud measure of stock illiquidity is very likely to satisfy these criteria. First, the Amihud measure of stock illiquidity significantly affects the likelihood of a proxy contest. Second, using a placebo test I show that the Amihud measure of stock illiquidity is very likely to affect the outcome variable only through the likelihood of a proxy contest channel.

The placebo test exploits the following changes in the legal environment. The costs of hostile tender offers increased significantly after the widespread adoption of antitakeover defenses and the second generation of state-level antitakeover laws in late 1980s. In addition, the 1992 proxy reform reduced the costs of the

[2]First, it is based on widely available data and can be calculated for a large number of stocks at a daily frequency. Second, Hasbrouck (2009) and Korajczyk and Sadka (2008) show that the Amihud measure is highly correlated with measures of liquidity that are based on intraday TAQ microstructure data. Recently, Goyenko et al. (2009) show that the Amihud measure does well measuring price impact.

proxy contest by relaxing constraints on communications among shareholders of public corporations (Bradley, Brav, Goldstein, and Jiang, 2010). As a result, the frequency of proxy contests increased significantly after 1992. Thus, the threat of either a hostile tender offer or a proxy contest was relatively weak between the late 1980s and 1992. Therefore, I expect the effect of liquidity on the outcome variables to be weak in the placebo sample.

The results of the placebo test show that stock liquidity did not affect *any* of the outcome variables during the placebo period (1988-1992). Thus, it is unlikely that an omitted variable drives the correlation between stock liquidity and the outcome variables in the non-placebo sample. Therefore, the likelihood of a proxy contest is the major channel through which stock liquidity affects corporate policies.

Having documented the effects of the likelihood of a proxy contest on the corporate polices, I show that companies experience positive and significant stock returns when a proxy contest materializes, without reversals in the long run. Hence shareholders of ex post targeted companies benefit from a proxy contest. In addition, I show that both materialized and potential proxy contests benefit shareholders by improving profitability.

I show that controlling for the likelihood of a proxy contest is crucial. Specifically, when companies are matched on the likelihood of a proxy contest (i.e., each targeted company is compared to a non-targeted company with similar likelihood of a proxy contest), significant improvements in the operating profitability of targeted companies are detected. In contrast, when companies are not matched on the likelihood of a proxy contest, I cannot detect significant improvements in the operating profitability of targeted companies.

The response to the threat of a proxy contest may be heterogeneous. Therefore, I conduct cross-sectional variation tests by exploring several sources of heterogeneity. First, consistent with the idea that it is hard to obtain control of a large company, I find that corporate policies in large companies are less sensitive to the likelihood of a proxy contest. Second, the effect of the likelihood of a proxy contest on corporate policies in companies with a high sales-to-asset

ratio is weak. Thus, if a company is managed efficiently, it is less concerned about the threat of a proxy contest. Finally, I explore the heterogeneity in the industry concentration and show that corporate policies in companies that belong to more concentrated industries are less sensitive to the likelihood of a proxy contest.

This paper contributes to the corporate governance literature. It shows that companies experience monitoring pressure even when no event is observed. The rare proxy contests that actually occur are sufficient to create a threat, which provides companies with monitoring pressure. Importantly, this pressure causes significant changes in corporate policies. It suggests that the term "contestable corporate governance" might be the best description of modern hostile corporate governance. The evidence has important implications for the ongoing policy debate about proxy access. It suggests that the existing proxy access mechanism significantly affects corporate policies in all companies despite infrequent fights between incumbent and dissident shareholders in which dissidents obtain control. The paper also contributes to the shareholder activism literature. Particularly, the evidence supports the possibility that private interventions take place and affect corporate policies without being publicly observable (see Becht et al., 2009, for a unique analysis of private engagements by an activist fund). That is, the threat of a public intervention is effective when stock markets are liquid and therefore helps activists to achieve their goals in private negotiations.

The rest of the paper is organized as follows. Section 2 provides a description of the data, along with an overview of the institutional background of proxy contests. The ex post effect of the proxy contest on major corporate policies is analyzed in Section 3. The empirical methodology that affords identification of the ex ante effect of the proxy contest is developed in Section 4. Section 5 presents evidence on the ex ante effect of the proxy contest on major corporate policies, profitability, and shareholder wealth. Finally, Section 6 concludes.

2. Institutional Background and Sample Description

2.1. Institutional Background

In this section I summarize the procedure of the contested solicitation of votes that was relevant during the 1994-2008 sample period. Rule 14a-8 of the Securities Exchange Act of 1934 gives the shareholder who meets certain threshold requirements the right to require management to include his proposal in management's proxy materials.[3] Management, however, may exclude an eligible proposal from the proxy materials if the proposal relates to an election for membership on the company's board of directors or the proposal directly conflicts with one of the company's own proposals.[4]

If the proposal is excluded from the proxy materials, the dissident shareholder can initiate the proxy contest by soliciting the proxies using his own proxy materials. During the proxy contest, dissidents and incumbents forward proxy solicitation materials to shareholders, who sign and return the proxy form of their preferred group. The agents for each group accumulate votes via the returned proxies and cast these votes at the shareholders' meeting.[5]

2.2. Sample Description

In the incident of contested solicitation of votes, the following forms are submitted to the SEC through EDGAR: preliminary proxy statement in connection with contested solicitations (PREC14A) and definitive proxy statement

[3]Rule 14a-8 is commonly referred to as the "shareholder proposal rule." It states that to be eligible to submit a proposal, a shareholder either must have continuously held at least $2,000 in market value or 1% of the company's securities for at least one year, or be a registered holder. In both circumstances, the shareholder must continue to hold those securities through the date of the annual meeting. In addition, the proposal itself must meet several requirements, including a five hundred word limit.

[4]On August 25, 2010 the SEC adopted rules that allow shareholders access to a company's proxy materials to include their nominees to the corporate board of directors. These rules permit a shareholder to submit nominees for up to 25% of the company's board for inclusion in the company's proxy statement. The shareholder must hold 3% of the voting power at the company's annual meeting and have held such minimum amount continuously for at least three years. This reform, however, does not affect this study, which covers 1994-2008 sample period.

[5]Gantchev (2009) estimates the cost of an average proxy contest and reports that it is more than $5 million.

in connection with contested solicitations (DEFC14A). I use submissions of these forms to identify the proxy contest events.[6]

The sample is constructed as follows. First, I identify 4,666 filings of either PREC14C or DEFC14A forms using an automatic searching script, which checks existence of either PREC14C or DEFC14A forms in EDGAR for each company in the Compustat universe. This method identifies *all* contested solicitations of votes in the universe of Compustat companies. Next, I check the sample of 4,666 filings *manually* and identify proxy contest events during 1994-2008. There are 5.9 filings of either PREC14C or DEFC14A forms during an average proxy contest. The final sample is the universe of all proxy contests during 1994-2008 and consists of 792 unique proxy contests.[7]

Figure 1 presents the time distribution of proxy contests and hostile tender offers. During the sample period, on average 55 unique proxy contests take place each year, which corresponds to 0.65% of the Compustat universe. The unconditional probability of the proxy contest increases from 0.2% in the early 1990s to 1.4% in 2007-2008. In contrast, the frequency of the hostile tender offers decreases to a very low level in recent years: 21 hostile tender offers take place during 2004-2008. The 1992 proxy reform is one potential explanation for both the increasing frequency of the proxy contest and the decreasing frequency of the hostile tender offers. This reform allowed independent shareholders to freely engage in communication without being monitored by the SEC.

I use two approaches to examine how the characteristics of companies targeted by proxy contests (hereafter "targets") compare to those of non-targeted companies. First, I compare the characteristics of targets with a set of size/book-to-market/industry/year matched firms (Table 2). Second, I use probit regressions to identify the partial effects of all covariates on the likelihood

[6] Alexander, Chen, Seppi, and Spatt (2010) and Norli, Ostergaard, and Schindele (2010) use a similar approach to identify proxy contests.

[7] This paper studies the proxy contest mechanism, which is a form of active monitoring. There are alternative channels for shareholder monitoring, including private negotiation (Becht et al., 2009), and "Wall Street Walk" (Edmans, 2009; Admati and Pfleiderer, 2009; Edmans and Manso, 2010).

of a proxy contest (Table 3).

A typical proxy contest target is a medium-size mature company with a healthy cash flow. It is under-investing in new projects and suffering from low market valuation and poor stock performance, which dissidents usually use when they criticize the incumbent management. In addition, these targets are characterized by high institutional ownership, high stock liquidity, and weaker shareholder rights.

The Amihud measure of stock illiquidity has the largest Average Partial Effect (APE) on the likelihood of a proxy contest (Table 3). Particularly, a one standard deviation increase in stock liquidity leads to an increase of 0.44% in the likelihood of a proxy contest in the full sample. Since the unconditional likelihood of a proxy contest is 0.65% in the full sample, the APE effect of the stock liquidity is of high economic significance.

3. The Ex Post Effect of a Proxy Contest

In this section I present evidence on the ex post effects of the proxy contest. Since most of the existing literature uses pre-1992 proxy reform data, I study the ex post effect on corporate policies using a manually collected data set of all proxy contests during the 1994-2008 sample period.[8] The following equation estimates the ex post effects of the proxy contest on corporate policies:

$$y_{it} = X_{it}\alpha_1 + \beta_1 PostTarget_{it} + \eta_t + \eta_i + \varepsilon_{it}, \tag{1}$$

where y_{it} is a outcome variable of interest, X_{it} is a vector of lagged covariates, $PostTarget_{it}$ is a dummy variable that equals to one if the company is targeted

[8]The effect of the proxy contest on stock returns has been widely studied (Dodd and Warner, 1983; DeAngelo and DeAngelo, 1989; Ikenberry and Lakonishok, 1993; Mulherin and Poulsen, 1998; Norli et al., 2010). Much less, however, is known about the effect of the proxy contest on the major corporate policies. Exceptions are DeAngelo and DeAngelo (1989), Mulherin and Poulsen (1998), and Bebchuk (2007), who study CEO turnover and show that targeted companies increase CEO turnover, and Ikenberry and Lakonishok (1993), who study dividend distributions and show that targeted companies decrease dividends. There is a paucity of literature about the effect of proxy contests on other corporate policies, such as leverage, repurchases, R&D expenditures, capital expenditures, and CEO compensation.

during years $(t-1, t-3)$, η_t are time fixed effects, and η_i are firm fixed effects. The coefficient β_1 measures the ex post effect of the proxy contest.[9]

Table 4 presents the results of the estimates in equation (1). The coefficients of the target dummy $PostTarget_{it}$ are insignificant in equations where the outcome variables are leverage, cash, repurchase ratio, R&D, CEO compensation, gross profit margin, return on assets, and cash flow. Dividend payout ratio, capital expenditures, and CEO turnover are corporate policies that are affected significantly. The untabulated evidence suggests that these changes are driven by events in which dissident shareholders win the proxy contest.

The insignificance of most coefficients is not affected by considering the fight outcomes, splitting the $PostTarget$ dummy into three year dummies, and augmenting equation (1) with a dummy variable that equals one if the company is targeted during years $(t+1, t+3)$. When I further explore the augmented specification and test whether corporate policies change around the event year, I find that only dividend payout ratio, capital expenditures, and CEO turnover change significantly when companies are targeted. When the company is targeted, dividend payout ratio and capital expenditures decrease and CEO turnover increases.

The negative effect of the proxy contest on divided payout ratio, which is also documented by Ikenberry and Lakonishok (1993), is not in line with the existing literature on shareholders activism. For example, Brav et al. (2005), Brav et al. (2008), Klein and Zur (2009), and Becht et al. (2009) show that activists usually request an increase in dividend payout ratio.

Confirming evidence in the existing literature, I find that the ex post effect of the proxy contest mechanism on the targeted companies is indeed weak. Thus, the minor ex post effects of the proxy contest on corporate policies is not a sample-specific phenomenon of the pre-1992 proxy reform sample period. The empirical methodology that assesses the impact of the threat of a proxy contest

[9] Following Barber and Lyon (1996), I include the lagged left-hand side variable in the vector of controls to match on lagged performance. This procedure controls for potential mean reversion in the left-hand side variable.

is presented in the next section.

4. Empirical Methodology

4.1. Structural Model

In this section I outline the model I use to identify the ex ante effects of the proxy contest. The structural model, which is detailed in the Appendix, goes as follows:

$$y_{it} = X_{it}\alpha_{11} + \gamma_1 PC^*_{it} + \eta_t + \eta_i + u_{1it} \quad (2)$$

$$PC^*_{it} = X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \zeta_t + u_{2it} \quad (3)$$

where y_{it} is an outcome variable of interest, PC^*_{it} is an unobserved latent-variable that captures the propensity of being the target of a proxy contest, X_{it} is a vector of covariates that affect y_{it} and PC^*_{it}, Z_{it} is a vector of covariates that affect PC^*_{it} only, η_t and ζ_t are time fixed effects, and η_i are firm fixed effects. While PC^*_{it} is never observed, it determines the occurrence of the proxy contest:

$$PC_{it} = \begin{cases} 1, & PC^*_{it} > 0 \\ 0, & otherwise \end{cases} \quad (4)$$

where PC_{it} is a dummy variable that equals one if the company is targeted.

The main goal of this paper is to identify and estimate the structural coefficient γ_1. If the incumbent management anticipates the proxy contest and takes actions to change the company's policies in order to preempt the proxy contest, I expect $\gamma_1 \neq 0$. For example, consider dividend payout ratio and CEO compensation. If incumbents increase dividend payout ratio and decrease CEO compensation when the threat of a proxy contest increases, I expect $\gamma_1 > 0$ in the dividend payout ratio equation and $\gamma_1 < 0$ in the CEO compensation equation.

4.2. Reduced Form Model

The reduced form model can be written as:

$$y_{it} = X_{it}\pi_{11} + Z_{it}\pi_{12} + \eta_i + \eta_t + v_{1it} \quad (5)$$

$$PC^*_{it} = X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \zeta_t + u_{2it} \quad (6)$$

where $\pi_{11} = \alpha_{11} + \alpha_{21}\gamma_1$, $\pi_{12} = \alpha_{22}\gamma_1$, and $v_{1it} = u_{1it} + \gamma_1 u_{2it}$.

4.3. Identification Strategy

To make a causal statement, the structural coefficient γ_1 in equation (2) has to be identified. Therefore, at least one exogenous variable needs to be excluded from the outcome equation (see Hausman, 1983). A valid excluded variable has to satisfy two criteria. First, it should significantly affect the likelihood of a proxy contest. Second, it should affect the outcome variable only through the likelihood of a proxy contest channel. I consider the Amihud (2002) measure of stock illiquidity as a candidate for the exclusion restriction.

Theory suggests that liquid stock markets are generally beneficial for corporate governance. Kyle and Vila (1991), Bolton and von Thadden (1998), and Maug (1998) show that greater liquidity trading facilitates control challenges by reducing free-riding. The premise is that liquid stock markets make it easier for investors to accumulate large stakes without substantially affecting the stock price. Kyle's (1985) lambda, the price impact measure, is the measure of liquidity that naturally corresponds to this theoretical insight.

The best empirical counterpart to Kyle's lambda is the Amihud measure of stock illiquidity. First, it is based on widely available data and can be calculated for a large number of stocks at a daily frequency. Second, Hasbrouck (2009) and Korajczyk and Sadka (2008) show that the Amihud measure is highly correlated with two measures of liquidity, which are based on intraday TAQ microstructure data. Recently, Goyenko et al. (2009) show that the Amihud measure does well measuring price impact.

The Amihud measure of stock illiquidity satisfies the first requirement. The full sample summary statistics and probit regressions, reported in Tables 2 and 3, suggest that targeted companies have significantly higher stock liquidity. Similar evidence is reported by Norli et al. (2010), who show that liquidity increases shareholders' incentive to monitor management. When I check for a potential weak effect of the Amihud measure of stock illiquidity on the likelihood of being a proxy contest target, I find no evident weakness of the excluded variable in the full sample (Stock and Yogo, 2002).[10]

Thus, the Amihud measure of stock illiquidity satisfies the first requirement because it significantly affects the likelihood of a proxy contest. The final and the most challenging step is to check whether this measure affects corporate policies only through the likelihood of a proxy contest channel.

I address this final concern by performing a placebo test, which exploits two changes in the legal environment. First, the cost of a hostile tender offer increases significantly after the widespread adoption of antitakeover defenses and the second generation of state-level antitakeover laws in late 1980s. Second, the 1992 proxy reform reduces the costs of communications among shareholders (Bradley et al., 2010, empirically demonstrate the effect of this reform on proxy contests by activist arbitrageurs). As a result, the frequency of proxy contests increases significantly. These two changes suggest that the threat of a control challenge is lower between late 1980s and 1992.

Table 5 reports the estimates of equation (5), which explore the reduced-form correlation of the instrument with the outcome variables in the 1992-2008 sample. The estimated coefficients of the Amihud measure of stock illiquidity are consistent with the hypothesis that liquidity is correlated with the outcome variables. Next, I estimate the reduced form equation in the 1988-1992 sample.[11]

If indeed the exclusion restriction is violated, we should observe significant

[10] However, the effect is weak in the Executive Compensation sample probably because the variation in liquidity is low in the sample of large companies, which are covered by the executive compensation database. Therefore, the evidence in this sub-sample should be taken with a grain of salt.

[11] The results are not affected if the placebo sample starts in 1989.

correlation between stock liquidity and the outcome variables in the placebo sample. The violation of the exclusion restriction will be consistent with either a direct effect of liquidity on the outcome variables, as well as an omitted variable that affects stock liquidity and the outcome variables. In contrast, if the stock liquidity affects the outcome variables only through the likelihood of a proxy contest channel and there is no omitted variable that affects both stock liquidity and the outcome variables, there should be a weaker correlation between stock liquidity and the outcome variables in the placebo sample because the likelihood of a control challenge is weak.

Table 6 suggests that stock liquidity did not affect *any* of the six outcome variables in the placebo sample.[12] Thus, it is unlikely that an omitted variable drives the correlation between the stock liquidity and the outcome variables. Moreover, it is unlikely that the stock liquidity directly effects the outcome variables. To address the possibility that relatively small sample size contributes to the absence of significance in the placebo sample, I report estimates in 1996-2000 and 2001-2005 sub-samples. The significance of the stock liquidity in these sub-samples rules out this concern.

To provide further support to the placebo test, I estimate the following regression in the 1988-2008 sample period:

$$y_{it} = X_{it}\pi_{11} + PRE1992 * X_{it}\pi_{12} + Z_{it}\pi_{13} + PRE1992 * Z_{it}\pi_{14} + \eta_i + \eta_t + v_{1it}, \quad (7)$$

where $PRE1992$ is a dummy variable that indicates the pre-1992 sample period. This specification tests whether the coefficient of the Amihud measure of stock illiquidity changed significantly around the 1992 proxy reform. The evidence in Table 7 is informative. First, it confirms that stock liquidity did not affect the outcome variables in the placebo sample: the hypothesis that $\pi_{13} + \pi_{14} = 0$ is not rejected. Second, the change in the effect of the Amihud measure of

[12] Since the Compustat Executive Compensation database is available only from 1992, it is impossible to perform the placebo test for the outcome variables from that database.

stock illiquidity on the outcome variables, π_{14}, is statistically significant for all outcome variables but dividend payout ratio. While the change in the effect of the Amihud measure of stock illiquidity on the dividend payout ratio is insignificant, the sign of the change corresponds to the evidence in Table 6.[13]

To summarize, both theory and empirical evidence suggest that the Amihud measure of stock illiquidity is not likely to violate the exclusion restriction. In section 5.3 I explore heterogeneity in the response to the threat of a proxy contest and conduct the cross-sectional variation test. These tests further support the validity of the exclusion restriction.

4.4. Estimation Procedure

The structural form equation (2) cannot be estimated using the regular two-stage method because equation (3) is only partially observed. Therefore, I follow Heckman (1978) and Amemiya (1978) and apply the following estimation procedure.[14] First, I estimate the reduced form equation (6) using a binary choice model and obtain a consistent estimator $\widehat{PC^*_{it}}$ of PC^*_{it}. Second, I estimate the structural form equation (2) using $\widehat{PC^*_{it}}$ to obtain consistent estimators of structural parameters, α_1 and γ_1. Finally, I derive the asymptotic variance-covariance matrix of the structural parameters that corrects the standard errors for the generated regressor problem. In the Appendix I show that the unadjusted standard errors estimate is consistent under the null of $\gamma_1 = 0$.

[13]The change in the effect of the Amihud measure of stock illiquidity on cash is insignificant in all specifications and is reported for completeness of the analysis.

[14]In Heckman's model a latent variable determines the occurrence of the discrete event and enters the equations as a right-hand-side variable. As an example, Heckman considers a model of the effect of antidiscrimination legislation on the status of African-Americans. He hypothesizes that the measured income in a state is affected not only by the presence of the antidiscrimination legislation for that state, but also by the population sentiment toward African-Americans in that state. Therefore, the objective is to study the effects of passage of the antidiscrimination legislation per se *after* allowing for the sentiment in favor of the antidiscrimination legislation.

5. Results

This section presents the main evidence. First, I show how the threat of a proxy contest affects several corporate policies. Then I examine the impact of the threat of a proxy contest on both the long-term profitability and the market value of targeted companies. Finally, I perform several robustness checks.

5.1. Corporate Policies

I analyze the effect of the threat of a proxy contest on the following corporate policies: the capital structure policy (leverage and cash reserves), the investment policy (R&D and capital expenditures), the payout policy (dividend payout and repurchase ratios), and the CEO compensation policy (CEO compensation and CEO turnover).

The results are reported in Tables 8 and 9, where each column corresponds to an outcome variable of interest. Table 8 reports the First Stage estimates (equation (3)), which are used to a construct consistent estimate of the likelihood of a proxy contest, $\widehat{PC^*}$. Table 9 reports the Second Stage estimates (equation (2)), where the dependent variable is an outcome variable of interest.

First, I consider the capital structure policy. The evidence in Table 9 suggests that when the likelihood of a proxy contest increases, companies increase leverage. Following one standard deviation increase in the likelihood of a proxy contest, companies increase leverage by 4%. While the changes in leverage are significant, the current specification fails to detect significant changes in the cash reserves.

Similar effects of the threat of a control challenge on the capital structure are documented in literature that studies the implications of the second-generation antitakeover legislation (see Garvey and Hanka, 1999; Bertrand and Mullainathan, 2003). Moreover, it has been shown that leverage increases in the aftermath of entrenchment-reducing shocks to managerial security (see Berger et al., 1997; Safieddine and Titman, 1999). The documented evidence is also supported by the theoretical literature, which predicts a positive effect of the

threat of a control challenge on leverage (see Grossman and Hart, 1982; Jensen, 1986; Harris and Raviv, 1988; Stulz, 1988, 1990; Hart and Moore, 1995; Zwiebel, 1996; Morellec, 2004).

As far as the investment policy is concerned, companies spend less on R&D and decrease capital expenditures when the likelihood of a proxy contest increases. Following one standard deviation increase in the likelihood of a proxy contest, companies decrease R&D expenditures by 8% and decrease the capital expenditures by 15%. Thus, the threat of a proxy contest is associated with a significantly lower level of investment.

These changes in the investment policy are consistent with evidence reported by Safieddine and Titman (1999) and Garvey and Hanka (1999), who document that when targets increase their leverage ratios to prevent the control challenge, they also reduce capital expenditures.[15] On the theoretical side, Jensen (1986) suggests that if the threat of a proxy contest alleviates the over-investment problem, it can reduce investments. Alternatively, Stein (1988) shows that the threat of a proxy contest can lead managers to sacrifice long-term interests in order to boost current profits.

The threat of a proxy contest significantly affects payout policy. Companies increase dividends and decrease repurchases when the likelihood of a proxy contest increases. Following one standard deviation increase in the likelihood of a proxy contest, companies increase dividend payout ratio by 5% and decrease repurchase ratio by 11%.

A survey by Allen and Michaely (2003) suggests that management can commit to pay out cash because of constant threat of some disciplinary action. For example, Zwiebel (1996) and Myers (2000) show that management has an incentive to pay dividends to prevent a control challenge. On the empirical side, the evidence is in line with the recent literature on shareholder activism, which suggests that activists often require companies to increase payouts to

[15] See also Becht et al. (2009), who show that activist shareholders often require more discipline in capital expenditures.

shareholders (see Brav et al., 2008; Klein and Zur, 2009; Becht et al., 2009).

Allen and Michaely (2003) provide a possible explanation for the opposite effect of the threat of a proxy contest on dividends and repurchases: the dividends can be a more effective mechanism than repurchases to impose discipline. Allen and Michaely suggest that the market strongly dislikes dividend reductions, and therefore management is reluctant to reduce dividends. Further empirical support to this conjecture is provided by Brav et al. (2005), who show that retail investors like dividends more than they like repurchases, and that there are fewer consequences to reducing repurchases.

Finally, I consider the CEO compensation policy. The evidence suggests that when the likelihood of a proxy contest increases, companies decrease CEO compensation and increase CEO turnover. Following one standard deviation increase in the likelihood of a proxy contest, companies decrease CEO compensation by more than 46% and increase CEO turnover by 35%.

The evidence finds support in the existing literature. First, the results are consistent with evidence provided by Borokhovich et al. (1997) and Bertrand and Mullainathan (1999), who explore changes in antitakeover legislation and show that CEOs of companies that face a lower threat of a control challenge are paid more than CEOs at similar firms that face a higher threat of a control challenge. Second, the recent shareholder activism literature documents similar changes in the CEO compensation policy (see Brav et al., 2008; Becht et al., 2009; Klein and Zur, 2009). Finally, the evidence is consistent with the idea that boards are more effective monitors when faced with the threat of a proxy contest. First, Core et al. (1999) show that CEOs earn lower compensation when governance structures are more effective. Second, Taylor (2010) implies that the threat of a proxy contest might reduce the perceived cost of the CEO turnover and lead to higher CEO turnover.

Taken together, the hypothesis that there is no ex ante effect of the proxy contest is rejected. The threat of a proxy contest is associated with significant changes in leverage, payout policy, investment policy, and CEO compensation. Thus, despite being a rare event, the proxy contest plays an active role in modern

corporate governance and significantly affects major corporate policies.

5.2. Stock Returns and Operating Performance

The evidence in the previous section suggests that the proxy contest mechanism significantly affects major corporate policies. The fundamental question for the proxy contest mechanism is whether it creates value for shareholders. To address this question, I examine stock market returns and operating performance. I first analyze the effect of the proxy contest mechanism on targets and then study the effect of the threat of a proxy contest on non-targets.

I begin by examining the ex post effect of the proxy contest on targets. I use short-term announcement event-day returns to show how the market perceives the effect of the proxy contest on shareholders. Figure 2 plots the average buy-and-hold return, in excess of the buy-and-hold return on the value-weighed NYSE/AMEX/NASDAQ index from CRSP, from 20 days prior to the proxy contest announcement date to 20 days afterward. There is a run-up of about 4.2% between 10 days to 1 day prior to announcement. The announcement day and the following day see a jump of about 3%. After that the abnormal return keeps trending up to a total of 10.2% over 20 days.

Figure 2 also includes the average abnormal share turnover during the event window. I measure "normal" turnover over the (-100,-40) window preceding the proxy material filing dates. The spike in abnormal trading volume, defined as the percentage increase in the share turnover rate, occurs not only on the filing day and the following day but also during the 10-day period before the filing.[16] Finally, Figure 2 highlights the importance of stocks being liquid. The abnormal share turnover and the run-up of stock returns suggest that dissidents benefit from stock liquidity. Consistent with the theory, liquid stocks permit the accumulation of large stakes without substantially affecting the stock price

[16]The spike during the 10-day period before the filing is consistent with the fact that in some cases Schedule 13D is filed simultaneously with the proxy contest initiation. See Brav et al. (2008) for further details.

and capitalization on governance-related activities.

One potential explanation for the high abnormal return is a temporary price impact caused by buying pressure. If the price impact is purely temporary and reflects a trading friction rather than information about prospective value changes, I should observe negative abnormal returns shortly after the event. In contrast with this scenario, Figure 2 shows no reversal after 20 days (when the abnormal turnover declines to close to zero). Moreover, the pattern persists if I extend the window for another 20 days. Finally, untabulated evidence from calendar-time portfolio regressions shows no evidence for possible mean reversion in prices.

While equity prices suggest that shareholders of targeted companies benefit from the proxy contest, I have not shown how the value is created. To provide the evidence, I consider the operating profitability, measured by return on assets (ROA).[17] Table 11 reports estimates of the following equation:

$$ROA_{it} = X_{it}\alpha_1 + \beta_1 \widehat{PC^*_{it}} + \sum_{\tau=k}^{3} \gamma_\tau D_{it+\tau} + \eta_t + \eta_i + \varepsilon_{it}, \tag{8}$$

Estimated coefficients of dummy variables from this equation, γ_τ, are plotted in Figure 3. The left plot presents the estimates from the unrestricted regression, which allows controlling for $\widehat{PC^*}$. The right plot presents the estimates from the restricted regression, $\beta_1 = 0$, in which controlling for $\widehat{PC^*}$ is not allowed. The gray bars correspond to the specification in which $k = -3$ while the black bars correspond to the specification in which $k = 1$.

Consider first the left plot in Figure 3, which presents the estimates from the unrestricted regression and controls for the likelihood of a proxy contest. It shows that after companies are targeted, there is a significant improvement in operating profitability. This evidence is consistent with the positive abnormal announcement return documented above. It is important to highlight that the reverse causality critique does not work in this case. If dissident shareholders did

[17] Similar results are obtained when I use cash flow instead of ROA.

not change companies but just identified those that are going to improve, they would save the enormous cost of a proxy contest by just buying stocks in these companies. Therefore, I conclude that the dissident shareholders indeed know how to improve both the valuation and the profitability of targeted companies.

The right plot in Figure 3 presents the estimates from the restricted regression, in which $\beta_1 = 0$, and therefore there is no controlling for the likelihood of a proxy contest. The sharp difference in the estimated coefficients in the post-targeted period highlights the importance of matching on the likelihood of a proxy contest. When two companies with a similar likelihood of a proxy contest are compared, the targeted company exhibits higher operating profitability than one that is not targeted.

Table 10 reports the results of regressions exploring the cross-sectional variation in market response to the proxy contest. The dependent variable is the abnormal return in the (-20,20) window around the proxy contest announcement. The negative coefficient of the Institutional Ownership Herfindahl Index (INSTHERFL) suggests that shareholders are more surprised when the proxy contest is announced in a company with more dispersed institutional ownership. A positive coefficient of the leverage suggests that potential expropriation of bondholders might be a source of shareholder gain.[18] A positive coefficient of cash reserves might also be explained by shareholders' belief that more value can be created in companies with high cash reserves, which possibly indicates an agency problem.

Consider the coefficient of the likelihood of a proxy contest, $\widehat{PC^*}$. The negative coefficient suggests that investors price the higher probability of a proxy contest. Importantly, the effect of the threat of a proxy contest on equity prices is positive: the more likely the proxy contest, the higher the value improvement priced.

An alternative story suggests that the effect of the threat of a proxy contest

[18] Untabulated evidence supports this hypothesis and shows a significant deterioration in the credit-worthiness of the debt, which is measured by the Altman (1968) Z-score.

on equity prices is negative because the threat destroys value in targeted companies. To differentiate between these alternative explanations, I consider the effect of the threat of a proxy contest on the operating profitability of ex post targeted companies during the pre-targeting period. Table 12 presents estimates of the main structural equations, where the outcome variable is $\triangle ROA_{t+1}$. Column (2) reports results in the full sample, column (3) reports results in the sample of ex post non-targeted companies, column (4) reports results in the sample ex post targeted companies, and (5) reports results in the sample ex post targeted companies cover pre-targeting years only.

Estimates in Table 12 suggest that the threat of a proxy contest is not associated with a decline in the operating profitability of ex post targets. In contrast, the positive and significant coefficient of the threat of a proxy contest indicates that the profitability of the targeted companies actually improves when the threat of a proxy contest increases. Thus, the overall evidence is consistent with the positive effect of the threat of a proxy contest on both the profitability and valuation of ex post targets.[19]

Finally, I consider the effect of the threat of a proxy contest on the profitability of ex post non-targets. Similar to the positive effect on ex post targets, the threat of a proxy contest benefits ex post non-targets. Therefore, the evidence suggests that the threat of a proxy contest is beneficial for profitability of both ex post targets and non-targets.[20]

To summarize, the proxy contest targets experience positive and significant stock returns when they are targeted. Importantly, there is no reversal in the long run. This implies that shareholders of targeted companies benefit from the proxy contest mechanism. Cross-sectional variation in returns suggests that ex post targeted companies that act in anticipation of the proxy contest create value for their shareholders. Similarly, the effect of the threat of a proxy contest

[19] To rule out a possibility that the improvement in the operating profitability is accompanied by an increase in riskiness, I considered changes in standard deviation of the operating profit. The unreported results suggest that there is no increase in the operating risk.

[20] Fang et al. (2009) show that firms with liquid stocks have better performance as measured by the firm market-to-book ratio.

on the profitability of ex post non-targets is positive.

5.3. Cross-Sectional Variation Test

In this section I explore heterogeneity in the response to the threat of a proxy contest and conduct the cross-sectional variation test. Particularly, I use heterogeneity in size (SALES), efficiency in managing assets (SALES-TO-ASSET), and industry concentration (HHISIC3) to conduct cross-sectional variation tests. Large companies are expected to be less sensitive to the threat of a proxy contest because it is harder to obtain control in a large company. Similarly, companies that manage their assets efficiently are expected to be less sensitive to the threat. Finally, companies in more concentrated industries are expected to be less concerned about the threat of a proxy contest.

The cross-sectional variation test is performed by estimating the following reduced form equation:

$$y_{it} = X_{it}\pi_{11} + Z_{it}\pi_{13} + I_{top30^{th}pctl} * Z_{it}\pi_{14} + \eta_i + \eta_t + v_{1it}, \tag{9}$$

where $I_{top30^{th}pctl}$ is a dummy variable that equals one if the company belongs to the top 30^{th} percentile in terms of either size, efficiency, or industry concentration.

The results are reported in Table 13. First, I consider the effect of stock liquidity on corporate policies in large companies (Panel A). The evidence suggests that the hypothesis $\pi_{13} + \pi_{14} = 0$ is not rejected when the following corporate policies are concerned: leverage, R&D expenditures, capital expenditures, dividend payout ratio, repurchase ratio, CEO compensation, and CEO turnover. Thus, the corporate policies of large companies are not sensitive to the threat of a proxy contest.[21]

[21] There is an exception, however. The effect of stock liquidity on cash reserves is positive and significant when large companies are concerned. In general, there is no clear prediction regarding the effect of the threat of a control challenge on cash reserves. For example, firms with poor corporate governance can dissipate cash quickly (Dittmar and Mahrt-Smith, 2007; Harford et al., 2008; Bates et al., 2009). Alternatively, such companies can build larger cash reserves (Jensen, 1986).

Next, I analyze the effect of stock liquidity on the corporate policies of companies with high assets turnover (Table 13, Panel B). I find that leverage and capital expenditures are less sensitive to the stock liquidity in companies with high asset turnover: π_{14} is statistically significant and its sign is opposite of sign of π_{13}. Moreover, the F-test suggests that R&D expenditures and dividend payout ratio are not sensitive to stock liquidity in companies with high assets turnover. Thus, the corporate policies of more efficient companies are less sensitive to stock liquidity.

Finally, I consider firms in more concentrated industries (Table 13, Panel C). All corporate policies but capital expenditures are less sensitive to stock liquidity. The sensitivity of capital expenditures is unaffected by the level of competition in this specification. Thus, the evidence supports the hypothesis that the effectiveness of the threat is decreasing in industry concentration.

To summarize, corporate policies of large companies in terms of sales, companies that manage assets efficiently, and companies that operate in highly concentrated industries, are less sensitive to the threat of a proxy contest.

5.4. Robustness

In this section I perform several robustness checks. First, I check whether estimates of the ex ante effect are affected by considering fight outcomes. Table 14 reports estimates of equation (2), which is augmented by adding two control variables: "POST DISSIDENT WIN" ("POST INCUMBENT WIN") is a dummy variable that equals one if the company is targeted during years $(t-1, t-3)$ and the dissident (incumbent) shareholder wins the contests. The evidence suggests that neither the statistical significance nor the economic magnitude of the ex ante effect is affected. The only exception is CEO turnover, which is affected positively but insignificantly by the threat of a proxy contest in this specification.

Table 14 provides an additional piece of evidence: whenever the coefficient on a post-targeted dummy is statistically significant, its sign is opposite to the one of the ex ante effect. This evidence is consistent with the following story.

Consider two companies that face the same likelihood of a proxy contest and change corporate policies to prevent the proxy contest. One company, however, implements more significant changes in the corporate policies. The evidence indicates that the company that ended up being not targeted is the one that implemented larger changes in the corporate policies. Thus, it is an additional manifestation of the ex ante effect: companies that implement smaller changes in the corporate policies are more likely to be targeted.

Second, I estimate the First Stage regression (3) in an out-of-sample manner. Particularly, for each year t I estimate the First Stage regression using a sample that ends in $t-1$ and then generate $\widehat{PC^*_{it}}$ for year t. Table 15 reports the results. All the results carry through in this specification except for the effect of the threat of a proxy contest on repurchase ratio, CEO turnover, and cash reserves. Particularly, the effect of the threat of a proxy contest on cash reserves becomes statistically significant and the effect of the threat of a proxy contest on the repurchase ratio and CEO turnover becomes statistically insignificant.

Third, I estimate the linear probability model in the First Stage regression to verify robustness to the First Stage specification. Table 16 reports the results. The evidence suggests that neither statistical significance nor the economic magnitude of the ex ante effect is affected. Thus, the estimation procedure is robust to the First Stage specification.

Fourth, I include firm fixed effects in the First Stage linear probability regression.[22] Table 17 reports the results. All the results carry through in this specification except for the effect of the threat of a proxy contest on the CEO turnover, which remains positive but statistically insignificant. Thus, the estimation procedure is robust to the inclusion of firm fixed effects in the First Stage specification. However, it comes at a cost: while the illiquidity is still statistically significant in the First Stage, t-statistics are lower. This is expected since firm fixed effects absorb part of illiquidity's explanatory power.

[22] I use the linear probability model with firm fixed effects because most nonlinear models, such as probit model, suffer from the incidental parameters problem.

For space reasons, I will summarize without directly reporting other robustness tests I perform. First, I check whether the main conclusions change if I perform the analysis on differences instead of levels. Particularly, I estimate the following Second Stage regression:

$$\triangle y_{it} = \triangle X_{it}\alpha_1 + \beta_1 \triangle \widehat{PC^*_{it}} + \triangle \eta_t + \triangle \varepsilon_{it}, \tag{10}$$

where $\triangle$ is the first difference operator. The results are unaffected except for both the effect of the threat of a proxy contest on the repurchase ratio. The effect of the threat of a proxy contest on these outcome variables is insignificant in this specification. Second, I use regular shareholder proposals instead of the proxy contest events to show that the threat of a less hostile event has a weaker effect on corporate policies. The evidence confirms the intuition: there is no significant effect on leverage, dividend payout ratio, and R&D. Third, I check whether the main conclusions change if I control for the post shareholder proposal period. Particularly, I include in the set of control variables a dummy variable that equals to one if a regular shareholder proposal was submitted during years $(t-1, t-3)$. I find that controlling for the post shareholder proposal period does not affect the estimated coefficients of the ex ante effect either statistically or economically. Fourth, I verify whether the results are driven solely by targeted companies. Particularly, I exclude targeted companies from the Second Stage regressions. As a result, neither the statistical nor the economic significance of results is affected. Fifth, I study the potential inconsistency problem induced by the inclusion of a lagged dependent variable in the Second Stage (see Arellano and Bond, 1991).[23] Particularly, I exclude lagged performance from the First and the Second Stage regressions. The results are unaffected except for the effect of the threat of a proxy contest on leverage,

[23] In general, inclusion of lagged left-hand side variable in the set of control variables involves the following tradeoff: it addresses the mean reversion concern (Barber and Lyon, 1996) but generates inconsistency in the estimated coefficients. See discussion in Angrist and Krueger (1999), page 1295.

which becomes statistically insignificant. However, when I apply the Arellano and Bond (1991) procedure, which uses lagged levels and the differences of the left-hand side variable as instruments, the coefficient of leverage is positive and significant. Finally, I augment the set of control variables. The basic specification includes the following control variables: firm fixed effects and lagged level of the performance measure (RHS variable), log market value of equity, sales, book-to-market, and institutional ownership. The augmented specification includes all controls from the basic specification and lagged levels of repurchases, R&D, capital expenditures, ROA, cash flow, and GPM. I find that this has no significant effect on the results: the effect of the threat of a proxy contest on most corporate policies remains significant. The only exception is R&D, which is affected negatively but insignificantly by the threat of a proxy contest in this specification.

6. Conclusion

Motivated by the theory of contestable markets and using a manually collected data set of all proxy contests from 1994 to 2008, I show that the threat of a proxy contest impacts major corporate policies including capital structure, investments, payout policy, and CEO compensation. Importantly, the effect of the threat of a proxy contest on the major corporate policies is causal. The identification strategy relies on the theoretical literature, which suggests that liquid stock markets are generally beneficial for corporate governance, and on empirical evidence, which supports the hypothesis that the Amihud (2002) measure of stock illiquidity affects corporate policies only through the threat of a proxy contest channel. The main empirical evidence that validates the identification strategy comes from a placebo test, which explores changes in the legal environment in the U.S.

I document that the proxy contest targets experience positive and significant stock returns when they are targeted, with no sign of reversal in the long run. This implies that shareholders of ex post targeted companies benefit

from the proxy contest mechanism. Positive stock reaction to the proxy contest announcement is followed by significant improvements in the operating profitability of targeted companies. Importantly, significant improvements in the operating profitability of targeted companies are detected only when the likelihood of a proxy contest is controlled for.

This paper opens a new avenue for future research. What is the optimal frequency of control challenges? What is the most efficient way to create a credible threat and discipline boards of directors? Do outcomes of materialized proxy contests play any role in creating a credible threat? Answers to these and other related questions will improve our understanding of contestable corporate governance.

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Appendix A. The Structural Model Construction

Consider a mixed structure model:

$$y_{it} = X_{it}\alpha_{11} + \gamma_1 PC^*_{it} + \delta_1 PC_{it} + \eta_t + \eta_i + u_{1it} \quad (A.1)$$

$$PC^*_{it} = X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \gamma_2 y_{it} + \delta_2 PC_{it} + \zeta_t + u_{2it} \quad (A.2)$$

where y_{it} is an outcome variable of interest, PC^*_{it} is a latent-variable that captures the propensity of being a proxy contest target, X_{it} is a vector of covariates that affect y_{it} and PC^*_{it}, η_t and ζ_t are time fixed effects, η_i are firm fixed effects, Z_{it} is a vector of covariates that affect PC^*_{it} only, and PC_{it} is a dummy variable that equals to one if the company is targeted:

$$PC_{it} = \begin{cases} 1, & PC^*_{it} > 0 \\ 0, & otherwise \end{cases} \quad (A.3)$$

The joint density of continuous random variables u_{1it} and u_{2it} is $g(u_{1it}, u_{2it})$, which is assumed to be a bivariate normal density.[24]

Consider a typical year, during which the proxy contest activity is observed. First, since the dissident shareholder who initiates the proxy contest during that year uses information available at the end of the previous year, I include lagged covariates in X_{it} and Z_{it} and impose $\gamma_2 = 0$. Second, since the ex post effect can be observed only *after* the company is targeted, I impose $\delta_1 = 0$. Note that X_{it} can include dummy variables that indicate post-targeting years. After imposing $\gamma_2 = 0$ and $\delta_1 = 0$, I obtain the following system of equations:

$$y_{it} = X_{it}\alpha_{11} + \gamma_1 PC^*_{it} + \eta_t + \eta_i + u_{1it} \quad (A.4)$$

$$PC^*_{it} = X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \delta_2 PC_{it} + \zeta_t + u_{2it} \quad (A.5)$$

[24] Firm fixed effects are excluded from equation (A.2) because they introduce the incidental parameter problem in this specification. In Section 5.4 I report estimates of the linear probability with firm fixed effects and show that results are robust to their inclusion.

Models of this kind, in which the latent variables as well as their dichotomous observations occur in different structural equations, need some restrictions on the coefficients to be logically consistent. To achieve the logical consistency, the coefficient on the observed dichotomous variable in the reduced form of the latent variable equation has to be zero (see Maddala, 1983). Therefore, the necessary and sufficient condition for logical consistency is $\delta_2 = 0$. After imposing this restriction, the logically consistent structural model is:

$$y_{it} = X_{it}\alpha_{11} + \gamma_1 PC^*_{it} + \eta_t + \eta_i + u_{1it} \quad \text{(A.6)}$$

$$PC^*_{it} = X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \zeta_t + u_{2it} \quad \text{(A.7)}$$

Dependence of PC^*_{it} and y_{it} on the shocks that take place during the calendar year t, i.e., $corr(u_{1it}, u_{2it}) \neq 0$, suggests estimating two structural equations as a system of equations. For instance, unexpected market fluctuations can prevent a dissident from initiating the proxy contest and *simultaneously* affect company's performance.

Appendix B. Asymptotic Properties of Estimated Coefficients

Consider a model:

$$y_{1it} = \beta_1' x_{1it} + \gamma_1 y^*_{2it} + u_{1it}$$
$$y^*_{2it} = \beta_{21}' x_{1it} + \beta_{22}' z_{it} + u_{2it}$$

where:

$$d_t = \begin{cases} 1, & y^*_{2it} > 0 \\ 0, & otherwise \end{cases}$$

An econometrician observes y_{1it} and d_t but does not observe y^*_{2it}. Assume $\{x_{1it}, z_{it}\}$ are known constants and $\{u_{1it}, u_{2it}\}$ are bivariate variables with $corr(u_{1it}, u_{2it}) = \rho_{12}$, $corr(u_{1it}, u_{1is}) = \rho_1$, $corr(u_{2it}, u_{2is}) = \rho_2$, and $corr(u_{1it}, u_{2is}) = \rho_{12}^{ts}$, $t \neq s$. The structural model in the vector notation

is:

$$\begin{aligned} Y_1 &= X_1\beta_1 + \gamma_1 Y_2^* + U_1 \\ Y_2^* &= X_1\beta_{21} + Z\beta_{22} + U_2 = X\beta_2 + U_2, \end{aligned}$$

where $X = [X_1 Z]$ and $\beta_2' = (\beta_{21}'\beta_{22}')$. Note that the second equation is both structural and reduced form equation. The reduced form of the first equation is:

$$\begin{aligned} Y_1 &= X_1\beta_1 + \gamma_1(X_1\beta_2 + Z\beta_{22} + U_2) + U_1 \\ &= X_1\pi_{11} + Z\pi_{12} + U_1 + \gamma_1 U = X\pi_1 + V_1, \end{aligned}$$

where $\pi_{11} = \beta_1 + \gamma_1\beta_2$, $\pi_{12} = \gamma_1\beta_{22}$, $\pi_1' = (\pi_{11}'\pi_{12}')$ and $V_1 = U_1 + \gamma_1 U_2$.

By inserting $Y_2^* = X\beta_2 + U_2$ into the structural form equation of Y_1 and using $V_1 = U_1 + \gamma_1 U_2$, I obtain:

$$\begin{aligned} Y_1 &= X_1\beta_1 + \gamma_1 X\beta_2 + V_1 \\ &= X_1\beta_1 + \gamma_1 X\widehat{\beta}_2 + V_1 - \gamma_1 X(\widehat{\beta}_2 - \beta_2) \\ &= X\widehat{H}\alpha_1 + W_1, \end{aligned}$$

where $W_1 \equiv V_1 - \gamma_1 X(\widehat{\beta}_2 - \beta_2)$, $\alpha' \equiv (\beta_1'\gamma_1)$, $J_1 X = X_1$, and $\widehat{H} \equiv (J_1, \widehat{\beta}_2)$. Heckman's (1978) estimator of α is defined as the least squares method applied to $Y_1 = X\widehat{H}\alpha_1 + W_1$:

$$\begin{aligned} \widehat{\alpha} &= (\widehat{H}'X'X\widehat{H})^{-1}\widehat{H}'X'Y_1 \\ &= \alpha_1 + (\widehat{H}'X'X\widehat{H})^{-1}\widehat{H}'X'(V_1 - \gamma_1 X(\widehat{\beta}_2 - \beta_2)) \\ &= \alpha_1 + (\widehat{H}'X'X\widehat{H})^{-1}\widehat{H}'X'W_1, \end{aligned}$$

Note that since $plim\widehat{\beta}_2 = \beta_2$ and $plim(X'V_1) = 0$, $plim\widehat{\alpha} = \alpha$. Thus, the

estimator is consistent. The asymptotic variance-covariance matrix of $\widehat{\alpha}$ is [25]:

$$\begin{aligned} AVar(\widehat{\alpha}) &= AE\{(\widehat{\alpha}-\alpha)(\widehat{\alpha}-\alpha)'\} \\ &= (\widehat{H}'X'X\widehat{H})^{-1}\widehat{H}'AE(X'W_1W_1'X)\widehat{H}(\widehat{H}'X'X\widehat{H})^{-1}. \end{aligned}$$

Observe:

$$\begin{aligned} X'W_1W_1'X &= (X'V_1-\gamma_1X'X(\widehat{\beta}_2-\beta_2))(V_1'X-(\widehat{\beta}_2-\beta_2)'X'X\gamma_1) \\ &= X'V_1V_1'X+\gamma_1^2X'X(\widehat{\beta}_2-\beta_2)(\widehat{\beta}_2-\beta_2)'X'X \\ &\quad -2\gamma_1X'X(\widehat{\beta}_2-\beta_2)V_1'X, \end{aligned}$$

By taking the expectation, I obtain:

$$\begin{aligned} AE(X'W_1W_1'X) &= AE(X'V_1V_1'X)+\gamma_1^2X'XAVar(\widehat{\beta}_2)X'X \\ &\quad -2\gamma_1X'XAE\{(\widehat{\beta}_2-\beta_2)V_1'X\}. \end{aligned}$$

Observe that if $\gamma_1=0$, I am back to the unadjusted standard errors:

$$\begin{aligned} AE(X'W_1W_1'X) &= AE(X'V_1V_1'X)=AE(X'U_1U_1'X) \\ AVar(\widehat{\alpha}) &= (X_1'X_1)^{-1}AE(X_1'U_1U_1'X_1)(X_1'X_1)^{-1}. \end{aligned}$$

Thus, the following result follows.

Lemma *The unadjusted standard errors estimate is consistent under the null of* $\gamma_1=0$.

[25] $AVar(x)$ is the asymptotic variance-covariance matrix of r.v. x and $AE(x)$ denotes the asymptotic mean (or the mean of the limit distribution) of r.v. x.

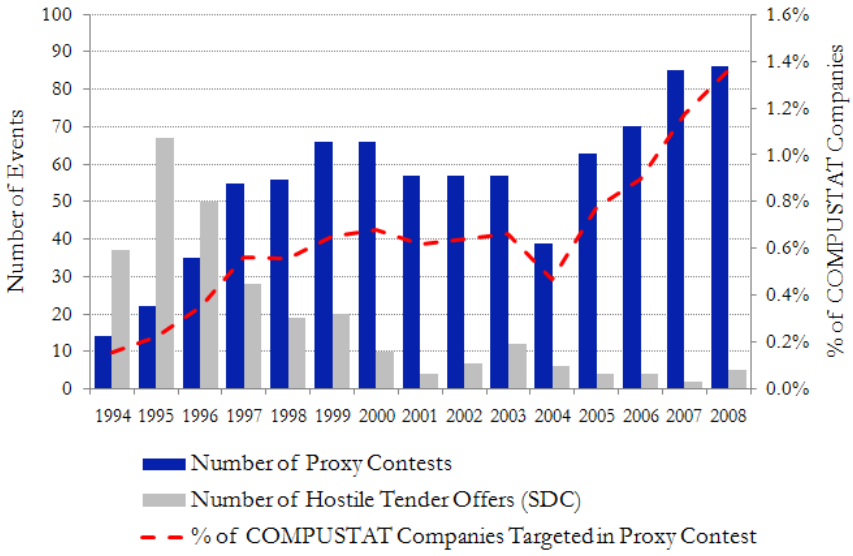


Figure 1: **Time Distribution of Proxy Contests.** The dark bars (left axis) plot the number of proxy contests initiated each year. The gray bars (left axis) plot the number of hostile tender offers initiated each year. The dashed line (right axis) plots the percentage of Compustat companies targeted in the proxy contest each year. The hostile tender offers data are from SDC database.

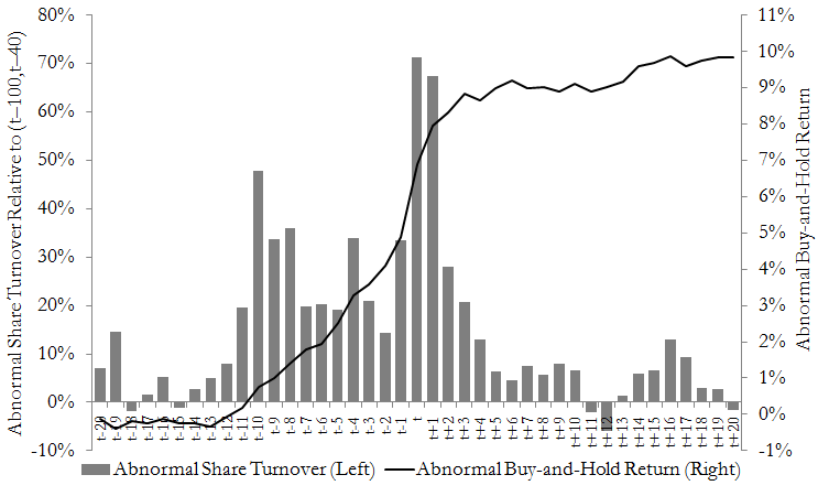
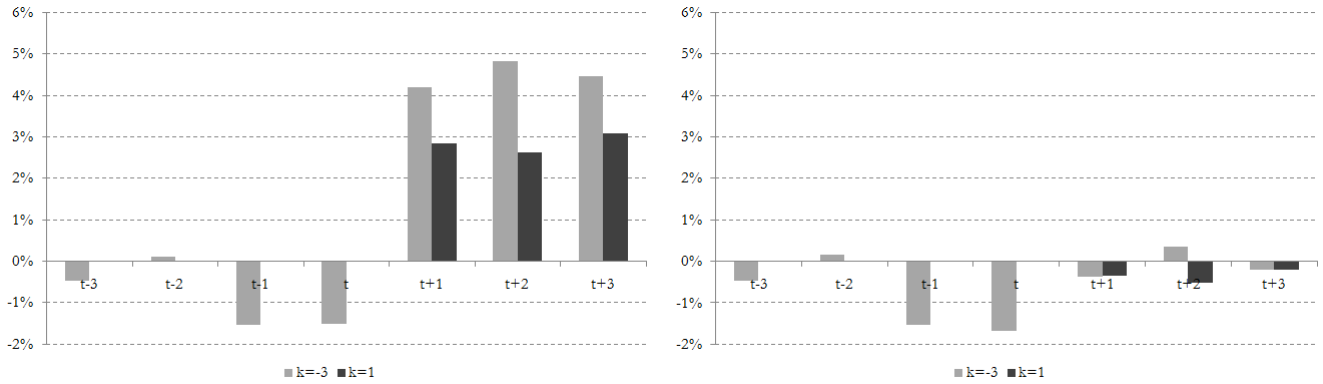


Figure 2: **Buy-and-Hold Abnormal Return around the Proxy Contest Announcement.** The solid line (right axis) plots the average buy-and-hold return around the proxy contest announcement, in excess of the buy-and-hold return of the value-weight market, from 20 days prior the announcement to 20 days afterwards. The bars (left axis) plot the increase (in percentage points) in the share trading turnover during the same time window compared to the average turnover rate during the preceding (-100, -40) event window.



(a) Matching on $\widehat{PC^*}$ is allowed.

(b) Matching on $\widehat{PC^*}$ is not allowed ($\beta_1 = 0$)

Figure 3: **Operating Profitability and Proxy Contest.** The gray (dark) bars plot the estimated coefficients γ_τ of the seven (three) dummy variables in equation (8): $ROA_{it} = X_{it}\alpha_1 + \beta_1 \widehat{PC^*_{it}} + \sum_{\tau=k}^{3} \gamma_\tau D_{it+\tau} + \eta_t + \eta_i + \varepsilon_{it}$, where X_{it} is a vector of lagged covariates, $\widehat{PC^*_{it}}$ is the estimated likelihood of a proxy contest, $D_{it+\tau}$ is a dummy variable equals to one if the distance from the event year is τ years, η_t are year fixed effects, and η_i are firm fixed effects. The estimates of the regression are reported in Table 11. The left plot presents the estimates from the unrestricted regression while the right plot presents the estimates from the restricted regression, in which $\beta_1 = 0$. The plotted coefficients can be interpreted as changes in ROA relative to the regression-based matched level of ROA.

Table 1: **Variable Definitions.**

Variable	Definition
MV	Market capitalization in millions of dollars.
CRSP AGE	The number of years since first appearance on CRSP.
B2M	The ratio of the market value of equity to the book value of equity.
STOCK RETURN	The 12 months buy-and-hold return.
INST	The proportion of shares held by institutions.
AMIHUD	Amihud (2002) illiquidity measure, defined as the yearly average (using daily data) of $1000\sqrt{\frac{\lvert Return\rvert}{DollarTradingVolume}}$.
BID-ASK-SPREAD	The quoted percentage spread, defined as the yearly average (using daily data) of $(Ask - Bid)/(0.5Ask + 0.5Bid)$.
LEVERAGE	The net book leverage ratio defined as (book value of debt - cash)/(book value of debt + book value of equity).
CASH	The ratio of total cash and cash equivalents to total assets.
R&D	Research and development expense scaled by lagged total assets.
CAPEX	The capital expenditures less the sale of PP&E divided by mean total assets.
DIVIDENDS	Dividend payout ratio, defined as the ratio of total dividend payments to net income before extraordinary items.
REPURCHASE RATIO	The ratio of net repurchases (see footnote 7 in Skinner, 2008, for futher details) to income before extraordinary items.
GPM	Gross profit margin, defined as (1-COGS/Sales).
ROA	Return on assets, defined as earnings before interest, taxes, depreciation, and amortization divided by lagged total assets.
CF	Net cash flow (net income + depreciation and amortization) divided by lagged total assets.
CEOPAY	The total CEO contracted pay including options valued at granting ("TDC1" from Compustat Executive Compensation database), divided by sales.
NEW CEO	A dummy variable equals to one if the current CEO is assigned to the firm for the first year.
GINDEX	The Gompers et al. (2003) governance index.
SALES-TO-ASSET	The ratio of net sales to total assets.
HHISIC3	the Herfindahl index of net sales among all firms in the same SIC 3-digit code.

Table 2: **Summary Statistics of Proxy Contest Targets.** This table reports the summary statistics of proxy contest targets and comparisons with a set of matched companies. All variables are as defined in Table 1. The first three columns report the mean, median, and standard deviation of the target firms' characteristics in the year before they are targeted. Columns 4 and 5 report the estimates of the following matching regression: $y_{it} = \alpha_0 + \alpha_1 Target_{it} + \alpha_2 log(MV_{it}) + \alpha_3 B2M_{it} + \eta_t + \eta_{sic3} + \varepsilon_{it}$, where y_{it} is the relevant characteristic (i.e. leverage), $Target_{it}$ is a dummy variable equals to one if the company is targeted in a proxy contest during the year, $log(MV_{it})$ is the natural logarithm of the market capitalization, $B2M_{it}$ is the book-to-market ratio as defined in Table 1, η_{sic3} are industry dummies, and η_t are year dummies. When I describe target firms by size (MV), the $log(MV)$ variable is dropped from the matching regression and when I describe target firms by book-to-market (B2M), the $B2M$ variable is dropped from the matching regression. Column 4 reports the estimated coefficient α_1, which is the difference in level of the relevant characteristic between the targeted company and a regression-based matched company, and column 5 reports its t-statistic. t-statistics are calculated using heteroscedasticity robust standard errors. The regression covers all Compustat firm-year observations from 1994 to 2008 and includes both event and non-event observations. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Firm Characteristic	Summary Statistics			Matching Regression	
	Mean (1)	Median (2)	Std. Dev. (3)	coefficient (4)	t-stat (5)
MV ($, millions)	1,650	148	5,258	-487.1**	-2.30
CRSP AGE	17.69	13.00	15.47	4.0070***	6.62
B2M	0.8235	0.6278	0.7358	0.1161***	4.05
STOCK RETURN (annual)	0.0394	0.0777	0.5445	0.0077	0.34
INST	0.4158	0.3821	0.3430	0.0239**	2.25
AMIHUD	0.4575	0.2202	0.6228	-0.1516***	-6.94
BID-ASK-SPREAD (%)	2.4250	1.2860	3.2022	-0.3423***	-3.04
LEVERAGE	0.1734	0.1051	0.2053	0.0030	0.37
CASH	0.1722	0.0688	0.2233	0.0125	1.55
R&D	0.0335	0.0000	0.0841	-0.0108***	-3.31
CAPEX	0.0534	0.0402	0.1222	-0.0250***	-4.41
DIVIDENDS	0.1476	0.0000	0.2686	0.0061	0.56
REPURCHASE RATIO	0.2446	0.0000	0.7279	0.0690**	2.14
GPM	0.2460	0.3547	1.2184	0.0602	1.08
ROA	0.0489	0.0628	0.1577	0.0038	0.61
CF	0.0097	0.0270	0.1702	0.0036	0.49
CEOPAY	0.0052	0.0021	0.0122	-0.0005	-0.51
NEW CEO	0.2000	0.0000	0.3140	0.0989***	3.20
GINDEX	9.51	9.00	2.57	0.5440***	3.44

Table 3: **Probit Analysis of Proxy Contests.** This table reports estimates of the probit regression: $Pr(PC_{it} = 1) = \Phi(X_{it}\alpha_{21} + \zeta_t + \varepsilon_{it})$, where the dependent variable PC_{it} is a dummy variable equals to one if the company is targeted in a proxy contest during the year, Φ is the cumulative normal distribution, X_{it} is a vector of lagged covariates, and ζ_t are time fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. All independent variables are as defined in Table 1. Since the variables from Compustat Executive Compensation database are only available for about one-third of firms on Compustat, the multivariate regressions with variables from the Compustat Executive Compensation database are reported separately. In each column, I report probit coefficients, average partial effects (APE), and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by industry (SIC3). APE corresponds to the change in the likelihood of a proxy contest due to a standard deviation change of a covariate. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Full Sample			ExecComp Sample		
	(1)	(2)	(3)	(4)	(5)	(6)
	coefficient	APE	t-stat	coefficient	APE	t-stat
MV	-0.0747***	-0.0028	-2.85	-0.0598	-0.0027	-1.55
CRSP AGE	0.0061***	0.0016	4.28	0.0042**	0.0013	2.08
BOOK-TO-MARKET	0.1545***	0.0016	3.63	0.0406	0.0005	0.44
STOCK RETURN	-0.1293***	-0.0015	-3.67	-0.2158**	-0.0031	-2.51
INST	0.2035**	0.0012	2.28	0.0697	0.0005	0.49
AMIHUD	-0.3009***	-0.0044	-4.23	-0.3230	-0.0059	-1.05
BID-ASK SPREAD	0.0123	0.0009	1.05	-0.0003	0.0000	-0.0
LEVERAGE	0.1977	0.0007	1.36	0.2628	0.0012	1.07
CASH	0.1436	0.0006	1.20	0.1559	0.0008	0.64
R&D	-0.1700	-0.0004	-0.74	-0.4676	-0.0014	-0.58
CAPEX	-0.1131	-0.0003	-0.78	0.1870	0.0007	0.70
DIVIDENDS	0.0293	0.0001	0.30	-0.1007	-0.0005	-0.55
REPURCHASE RATIO	0.0638**	0.0006	2.10	0.0713	0.0008	1.45
GPM	0.0400***	0.0012	3.72	0.1628	0.0059	0.88
ROA	-0.3701*	-0.0015	-1.76	-0.8141	-0.0040	-1.49
CF	0.3860*	0.0021	1.90	0.1290	0.0009	0.35
CEOPAY				-5.3437	-0.0014	-1.11
NEW CEO				-0.0373	-0.0002	-0.35
Constant	-2.1359***		-13.55	-1.8929***		-5.85
Observations	54,686			18,532		
Pseudo R^2	4.63%			4.48%		

Table 4: **The Ex Post Effect of the Proxy Contest.** This table reports estimates of equation (1): $y_{it} = X_{it}\alpha_1 + \beta_1 PostTarget_{it} + \eta_t + \eta_i + \varepsilon_{it}$, where y_{it} is a performance measure of interest, X_{it} is a vector of lagged covariates, $PostTarget_{it}$ is a dummy variable that equals to one if the company is targeted during years $(t-1, t-3)$, η_t are time fixed effects, and η_i are firm fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. lag PERFORMANCE is the lagged level of y_{it}. All other variables are as defined in Table 1. In each column, I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO	GMP	ROA	CF
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
POST TARGET	0.0001	0.0047	-0.0021	-0.0110**	-0.0176**	-0.0019	0.0002	0.0778**	-0.0539	-0.0025	0.0052
	[0.02]	[0.95]	[-0.78]	[-2.15]	[-2.07]	[-0.06]	[0.25]	[2.43]	[-1.12]	[-0.51]	[0.75]
lag PERFORMANCE	0.5396***	0.4272***	0.1532***	0.1301***	0.2026***	0.0307***	0.1238***	-0.1079***	0.3538***	0.4007***	0.1664***
	[68.61]	[58.08]	[13.75]	[14.03]	[22.09]	[3.71]	[5.04]	[-16.40]	[17.26]	[40.94]	[19.25]
lag log(MV)	0.0007	-0.0082***	-0.0107***	0.0137***	0.0105***	0.0454***	-0.0005***	0.0064	-0.0063	-0.0010	0.0147***
	[0.69]	[-8.29]	[-12.40]	[10.82]	[9.53]	[12.70]	[-2.58]	[1.34]	[-0.69]	[-0.77]	[6.54]
lag SALES	-0.0112***	0.0095***	0.0069***	0.0195***	-0.0049**	0.0152**	-0.0014***	-0.0071	0.0490***	0.0391***	0.0753***
	[-5.89]	[4.84]	[5.07]	[7.59]	[-2.35]	[2.41]	[-4.07]	[-0.74]	[3.89]	[15.19]	[16.96]
lag INST	-0.0003	-0.0007	-0.0125***	-0.0088**	-0.0196***	0.1030***	0.0001	-0.0268**	-0.0091	0.0042	0.0106**
	[-0.10]	[-0.25]	[-6.01]	[-2.25]	[-3.94]	[6.23]	[0.27]	[-1.96]	[-0.46]	[1.41]	[2.10]
lag B2M	0.0031*	-0.0073***	-0.0186***	-0.0289***	0.0012	0.0465***	-0.0015***	0.0614***	-0.0324***	-0.0156***	-0.0081**
	[1.86]	[-5.15]	[-16.71]	[-15.08]	[0.69]	[8.50]	[-5.70]	[5.81]	[-2.71]	[-9.13]	[-2.48]
Constant	0.0767***	0.1176***	0.1041***	-0.0339***	0.0514***	-0.1962***	0.0092***	0.0237	0.0984*	0.0143*	-0.1170***
	[11.97]	[18.97]	[21.53]	[-3.62]	[7.89]	[-9.48]	[4.89]	[0.51]	[1.84]	[1.86]	[-8.45]
Observations	76,710	76,704	76,225	57,699	76,464	76,646	21,864	22,446	75,693	76,080	75,303
R^2	28.60%	20.30%	6.50%	9.30%	5.20%	1.90%	3.40%	1.70%	13.50%	21.80%	8.20%

Table 5: **The Reduced Form Model.** This table reports estimates of equation (5): $y_{it} = X_{it}\pi_{11} + Z_{it}\pi_{12} + \eta_i + \eta_t + v_{1it}$, where y_{it} is a performance measure of interest, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud (2002) measure of stock illiquidity, η_t are time fixed effects, and η_i are firm fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. lag PERFORMANCE is the lagged level of the y_{it}. All other variables are as defined in Table 1. In each column, I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
lag AMIHUD	-0.0060***	-0.0009	0.0030***	0.0078***	-0.0032**	0.0200***	0.0042***	-0.0604*
	[-4.46]	[-0.68]	[3.18]	[4.60]	[-2.35]	[4.60]	[4.05]	[-1.94]
lag PERFORMANCE	0.5399***	0.4323***	0.1611***	0.1319***	0.2064***	0.0299***	0.1253***	-0.1076***
	[67.74]	[58.37]	[14.19]	[14.16]	[22.01]	[3.62]	[5.10]	[-16.24]
lag log(MV)	-0.0008	-0.0085***	-0.0101***	0.0160***	0.0099***	0.0524***	-0.0002	0.0017
	[-0.80]	[-8.12]	[-11.06]	[11.74]	[8.19]	[13.01]	[-1.00]	[0.31]
lag SALES	-0.0109***	0.0092***	0.0066***	0.0192***	-0.0052**	0.0155**	-0.0013***	-0.0070
	[-5.66]	[4.63]	[4.88]	[7.47]	[-2.41]	[2.43]	[-3.87]	[-0.71]
lag INST	-0.0001	-0.0007	-0.0121***	-0.0095**	-0.0208***	0.0989***	0.0003	-0.0318**
	[-0.03]	[-0.23]	[-5.87]	[-2.40]	[-4.10]	[5.86]	[0.71]	[-2.29]
lag B2M	0.0035**	-0.0075***	-0.0188***	-0.0293***	0.0015	0.0460***	-0.0015***	0.0617***
	[2.11]	[-5.33]	[-16.82]	[-15.19]	[0.88]	[8.33]	[-5.73]	[5.82]
Constant	0.0881***	0.1190***	0.0989***	-0.0496***	0.0580***	-0.2431***	0.0064***	0.0712
	[12.85]	[17.81]	[19.22]	[-5.03]	[7.91]	[-10.25]	[3.19]	[1.39]
Observations	75,795	75,789	75,315	57,662	75,550	75,731	21,827	22,400
R^2	28.50%	20.40%	6.80%	9.30%	5.30%	1.90%	3.60%	1.70%

Table 6: **Placebo Test.** This table reports estimated coefficient of the Amihud (2002) measure of stock illiquidity in equation (5): $y_{it} = X_{it}\pi_{11} + Z_{it}\pi_{12} + \eta_i + \eta_t + v_{1it}$, where y_{it} is a performance measure of interest, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud measure of stock illiquidity, η_t are time fixed effects, and η_i are firm fixed effects. The equation is estimated in four samples, as defined at the top of each column. These regressions include both event and non-event observations. All variables are as defined in Table 1. Coefficients of the control variables (lag PERFORMANCE, lag log(MV), lag SALES, lag INST, lag B2M, and constant) are not reported for space reasons. I report estimated coefficient π_{12} and its t-statistic, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Effective Sample			Placebo Sample
Sample Period	1994-2008	1996-2000	2001-2005	1988-1992
	(1)	(2)	(3)	(4)
CAPITAL STRUCTURE				
Leverage	-0.0060***	-0.0098***	-0.0042*	0.0018
	[-4.46]	[-3.58]	[-1.82]	[0.71]
Cash	-0.0009	0.0033	-0.0001	0.0029
	[-0.68]	[1.22]	[-0.05]	[1.44]
INVESTMENT POLICY				
R&D	0.0030***	0.0090*	0.0062**	0.0018
	[3.18]	[1.73]	[2.10]	[0.98]
CAPEX	0.0078***	0.0094**	0.0147***	0.0035
	[4.60]	[2.41]	[5.44]	[1.12]
PAYOUT POLICY				
Dividends	-0.0032**	-0.0038*	-0.0038*	-0.0013
	[-2.35]	[-1.90]	[-1.72]	[-0.47]
Repurchases	0.0200***	-0.0016	0.0224***	0.0077
	[4.60]	[-0.21]	[3.24]	[0.97]

Table 7: **Placebo Test: Pooled Regression.** This table reports estimates of equation (7): $y_{it} = X_{it}\pi_{11} + PRE1992 * X_{it}\pi_{12} + Z_{it}\pi_{13} + PRE1992 * Z_{it}\pi_{14} + \eta_i + \eta_t + v_{1it}$, where y_{it} is a performance measure of interest, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud measure of stock illiquidity, $PRE1992$ is a dummy variable that indicates the pre-1992 sample period, η_t are time fixed effects, and η_i are firm fixed effects. The equation is estimated in the 1988-2008 sample period. These regressions include both event and non-event observations. All variables are as defined in Table 1. Coefficients of the control variables (lag PERFORMANCE, lag log(MV), lag SALES, lag INST, lag B2M, and constant) are not reported for space reasons. In each column, I report estimated coefficients π_{13} and π_{14} and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. π_{13} is the effect of the illiquidity on the corporate policies in the full sample, π_{14} is the change in the effect of the illiquidity on the corporate policies in the pre-1992 sample relative to the full sample, and $\pi_{13} + \pi_{14}$ is the effect of the illiquidity on the corporate policies in the pre-1992 sample. The *F-test* tests the null of $\pi_{13} + \pi_{14} = 0$, i.e., no effect of the illiquidity on the outcome variables in the placebo sample. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO
	(1)	(2)	(3)	(4)	(5)	(6)
lag AMIHUD (π_{13})	-0.0040***	-0.0000	0.0013*	0.0057***	-0.0013	0.0221***
	[-3.37]	[-0.01]	[1.80]	[3.76]	[-1.05]	[6.25]
lag AMIHUD*PRE1992 (π_{14})	0.0045**	0.0012	-0.0021**	-0.0073***	0.0005	-0.0155***
	[2.47]	[0.75]	[-2.46]	[-3.38]	[0.22]	[-2.81]
F-test: $\pi_{13} + \pi_{14} = 0$						
Point estimate	0.0005	0.0012	-0.0008	-0.0016	-0.0005	0.0066
F-statistics	0.10	0.77	1.77	0.62	0.24	1.88
p-value	0.7510	0.3815	0.1835	0.4302	0.6234	0.1702

Table 8: **The Ex Ante Effect of the Proxy Contests - First Stage.** This table reports estimates of equation (3) using the probit model: $Pr(PC_{it} = 1) = \Phi(PC^*_{it}) = \Phi(X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \zeta_t + u_{2it})$, where the dependent variable PC_{it} is a dummy variable equals to one if the company is targeted in a proxy contest during the year, Φ is the cumulative normal distribution, PC^*_{it} is an unobserved latent-variable that captures the propensity of being the target of a proxy contest, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud (2002) measure of stock illiquidity, ζ_t are time fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. lag PERFORMANCE is the lagged level of a PERFORMANCE MEASURE, reported at the top of each column. All other variables are as defined in Table 1. In each column, I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by industry (SIC3). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
lag PERFORMANCE	0.1440	-0.0399	-0.3949**	-0.1826	0.1526**	0.0871***	-7.5212	-0.0098
	[1.24]	[-0.38]	[-2.54]	[-1.25]	[2.13]	[3.18]	[-1.47]	[-0.10]
lag log(MV)	-0.0473**	-0.0468**	-0.0507***	-0.0515**	-0.0523***	-0.0477**	-0.0747**	-0.0580*
	[-2.45]	[-2.39]	[-2.63]	[-2.42]	[-2.60]	[-2.47]	[-2.29]	[-1.78]
lag SALES	-0.0131	-0.0147	-0.0207	-0.0156	-0.0085	-0.0129	-0.0920*	-0.0646
	[-0.52]	[-0.55]	[-0.81]	[-0.58]	[-0.34]	[-0.54]	[-1.88]	[-1.51]
lag INST	0.1523**	0.1571**	0.1548*	0.1922**	0.1742**	0.1498*	0.0331	0.0314
	[1.98]	[2.01]	[1.94]	[2.52]	[2.17]	[1.92]	[0.26]	[0.25]
lag B2M	0.2403***	0.2410***	0.2252***	0.2220***	0.2415***	0.2427***	0.1758**	0.2144***
	[7.54]	[7.06]	[6.93]	[6.03]	[7.48]	[7.50]	[2.14]	[2.73]
lag AMIHUD	-0.2319***	-0.2302***	-0.2357***	-0.2193***	-0.2324***	-0.2289***	-0.6272	-0.6483
	[-5.58]	[-5.34]	[-5.52]	[-5.08]	[-5.46]	[-5.58]	[-1.49]	[-1.54]
Constant	-2.1532***	-2.1313***	-2.0765***	-2.1058***	-2.1440***	-2.1612***	-1.5690***	-1.7515***
	[-17.26]	[-15.78]	[-16.60]	[-15.68]	[-17.16]	[-17.78]	[-5.37]	[-6.34]
Observations	75,802	75,799	75,424	57,992	75,701	75,778	23,287	23,724
Pseudo R^2	3.73%	3.69%	3.81%	3.42%	3.77%	3.86%	3.33%	3.24%

Table 9: **The Ex Ante Effect of the Proxy Contests - Second Stage.** This table reports estimates of equation (2): $y_{it} = X_{it}\alpha_{11} + \gamma_1 \widehat{PC^*_{it}} + \eta_t + \eta_i + u_{1it}$, where y_{it} is a performance measure of interest, $\widehat{PC^*_{it}}$ is the First Stage estimate of the likelihood of a proxy contest (see Table 8), X_{it} is a vector of lagged covariates, η_t are time fixed effects, and η_i are firm fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. lag PERFORMANCE is the lagged level of y_{it}. All other variables are as defined in Table 1. In each column, I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. For $\widehat{PC^*_{it}}$ I also report the change in the outcome variable due to one standard deviation change of the likelihood of a proxy contest. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\widehat{PC^*}$	0.0256***	-0.0010	-0.0173***	-0.0457***	0.0230***	-0.0554***	-0.0092***	0.1130**
	[4.42]	[-0.18]	[-4.60]	[-5.72]	[3.85]	[-2.73]	[-4.76]	[1.97]
	4.54%	0.15%	8.24%	15.27%	5.27%	11.37%	46.44%	35.48%
lag PERFORMANCE	0.5364***	0.4324***	0.1541***	0.1240***	0.2028***	0.0346***	0.0629**	-0.1065***
	[67.10]	[58.29]	[13.43]	[13.41]	[21.37]	[4.07]	[2.25]	[-16.07]
lag log(MV)	0.0004	-0.0082***	-0.0107***	0.0141***	0.0106***	0.0475***	-0.0008***	0.0078
	[0.44]	[-8.37]	[-12.26]	[11.06]	[9.44]	[12.86]	[-3.76]	[1.58]
lag SALES	-0.0106***	0.0091***	0.0062***	0.0184***	-0.0049**	0.0152**	-0.0021***	0.0004
	[-5.47]	[4.58]	[4.54]	[7.13]	[-2.27]	[2.38]	[-5.57]	[0.04]
lag INST	-0.0040	-0.0006	-0.0096***	-0.0010	-0.0246***	0.1079***	0.0007	-0.0354**
	[-1.30]	[-0.20]	[-4.49]	[-0.24]	[-4.83]	[6.43]	[1.43]	[-2.50]
lag B2M	-0.0021	-0.0073***	-0.0153***	-0.0200***	-0.0035	0.0591***	0.0000	0.0394**
	[-1.05]	[-3.93]	[-12.09]	[-8.38]	[-1.64]	[8.39]	[0.02]	[2.50]
Constant	0.1564***	0.1140***	0.0512***	-0.1489***	0.1237***	-0.3759***	-0.0089**	0.2723**
	[8.30]	[5.96]	[4.10]	[-6.79]	[6.07]	[-5.48]	[-2.17]	[2.08]
Observations	75,795	75,789	75,315	57,662	75,550	75,731	21,827	22,400
R^2	28.50%	20.40%	6.90%	9.40%	5.30%	1.90%	3.70%	1.70%

Table 10: **Abnormal Return and Firm Characteristics.** This table reports estimates of OLS regression in which the dependent variable is the abnormal return, in excess of the buy-and-hold return of the value-weight market, from days prior the proxy contest announcement to days afterward. $\widehat{PC^*}$ is the predicted likelihood of a proxy contest, calculated using estimates reported in Table 3. INSTHERFL is the Herfindahl index of the institutional ownership. MARKET BETA is the factor loading on the market access return. All other variables are as defined in Table 1. I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

DEPENDENT VARIABLE:	ANNOUNCEMENT RETURN
$\widehat{PC^*}$	-0.0828**
	[-2.17]
INSTHERFL	-0.1727*
	[-1.95]
LEVERAGE	0.1918***
	[2.62]
CASH	0.0830*
	[1.66]
DIVIDENDS	0.0385
	[0.98]
REPURCHASE RATIO	-0.0134
	[-0.91]
R&D	0.0869
	[0.69]
CAPEX	-0.0352
	[-0.34]
MARKET BETA	-0.0231
	[-1.11]
log(MV)	0.0041
	[0.58]
B2M	0.0086
	[0.42]
CONSTANT	-0.1705*
	[-1.68]
Observations	313
R^2	6.80%

Table 11: **Ex Post Changes in Operating Profitability.** This table reports estimates of equation (8): $ROA_{it} = X_{it}\alpha_1 + \beta_1 \widehat{PC^*_{it}} + \sum_{\tau=k}^{3} \gamma_\tau D_{it+\tau} + \eta_t + \eta_i + \varepsilon_{it}$, where X_{it} is a vector of lagged covariates, $\widehat{PC^*_{it}}$ is the estimated likelihood of a proxy contest, $D_{it+\tau}$ is a dummy variable equals to one if the distance from the event year is τ years, η_t are year fixed effects, and η_i are firm fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. $\widehat{PC^*}$ is the First Stage estimate of the likelihood of a proxy contest. All other variables are as defined in Table 1. The First Stage estimates and coefficients of the control variables (lag ROA, lag log(MV), lag SALES, lag INST, lag B2M, and constant) are not reported for space reasons. In columns (1) and (2) I report estimates from the unrestricted regression, while in columns (3) and (4) I report estimates from the restricted regression, in which $\beta_1 = 0$. In each column, I report estimated coefficients γ_τ and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Unrestricted β_1		Restricted $\beta_1 = 0$	
	$k = 1$	$k = -3$	$k = 1$	$k = -3$
	(1)	(2)	(3)	(4)
D_{t-3}		-0.0048		-0.0047
		[-0.93]		[-0.93]
D_{t-2}		0.0011		0.0016
		[0.16]		[0.22]
D_{t-1}		-0.0154*		-0.0153*
		[-1.70]		[-1.68]
D_t		-0.0151		-0.0167*
		[-1.63]		[-1.80]
D_{t+1}	0.0284***	0.0420***	-0.0027	-0.0037
	[3.97]	[3.93]	[-0.49]	[-0.47]
D_{t+2}	0.0261***	0.0483***	-0.0050	0.0036
	[3.00]	[3.35]	[-0.63]	[0.27]
D_{t+3}	0.0309***	0.0445***	-0.0013	-0.0021
	[4.30]	[4.36]	[-0.24]	[-0.28]
$\widehat{PC^*}$	-0.0559***	-0.0686***		
	[-7.15]	[-6.51]		
Observations	54,504	32,066	54,540	32,088
R^2	21.70%	19.10%	21.50%	18.80%

Table 12: **Ex Ante Changes in Operating Profitability.** Column (1) reports estimates of the First Stage equation (3): $Pr(PC_{it} = 1) = \Phi(PC^*_{it}) = \Phi(X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \zeta_t + u_{2it})$, where the dependent variable PC_{it} is a dummy variable equals to one if the company is targeted in a proxy contest during the year, Φ is the cumulative normal distribution, PC^*_{it} is an unobserved latent-variable that captures the propensity of being the target of a proxy contest, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud (2002) measure of stock illiquidity, and ζ_t are time fixed effects. Columns (2)-(5) report estimates of the Second Stage equation (2): $\triangle ROA_{it+1} = X_{it}\alpha_{11} + \gamma_1 \widehat{PC^*_{it}} + \eta_t + \eta_i + u_{1it}$, where $\triangle ROA_{it+1} = ROA_{it+1} - ROA_{it}$, X_{it} is a vector of lagged covariates, $\widehat{PC^*_{it}}$ is the First Stage estimate of the likelihood of a proxy contest, η_t are time fixed effects, and η_i are firm fixed effects. Column (2) reports results in the full sample, column (3) reports results in the sample of ex post non-targeted companies, column (4) reports results in the sample of ex post targeted companies, and (5) reports results in the sample of ex post targeted companies cover pre-targeting years only. All variables are as defined in Table 1. In each column, I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered as specified in the table. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	First Stage	Second Stage			
		All Companies	Non-Targets	Targets	Future Targets
	(1)	(2)	(3)	(4)	(5)
$\widehat{PC^*}$		0.0336***	0.0317***	0.0675**	0.1219***
		[4.90]	[4.50]	[2.21]	[3.34]
lag PERFORMANCE	0.1065	-0.2548***	-0.2523***	-0.2941***	-0.3291***
	[1.27]	[-27.12]	[-25.89]	[-8.73]	[-13.60]
lag log(MV)	-0.0489**	-0.0050***	-0.0048***	-0.0074*	-0.0056
	[-2.49]	[-4.56]	[-4.21]	[-1.84]	[-1.14]
lag SALES	-0.0210	0.0009	0.0006	0.0062	0.0109
	[-0.78]	[0.38]	[0.25]	[0.74]	[1.09]
lag INST	0.1478*	-0.0005	-0.0002	-0.0019	-0.0121
	[1.87]	[-0.19]	[-0.08]	[-0.20]	[-0.69]
lag B2M	0.2415***	-0.0058***	-0.0053**	-0.0150**	-0.0228**
	[7.40]	[-2.91]	[-2.57]	[-2.03]	[-2.04]
lag AMIHUD	-0.2307***				
	[-5.55]				
Constant	-2.1205***	0.1069***	0.1008***	0.2677***	0.3516***
	[-16.50]	[5.72]	[5.23]	[2.82]	[3.61]
Observations	75,351	63,676	59,914	3,762	2,758
R^2	3.72%	7.20%	7.10%	9.40%	10.10%

Table 13: **Cross-Sectional Variation Test.** This table reports estimates of equation (9): $y_{it} = X_{it}\pi_{11} + Z_{it}\pi_{13} + I_{top30^{th}pctl} * Z_{it}\pi_{14} + \eta_i + \eta_t + v_{1it}$, where y_{it} is a performance measure of interest, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud (2002) measure of stock illiquidity, η_t are time fixed effects, and η_i are firm fixed effects. $I_{top30^{th}pctl}$ is a dummy variable equals to one if the company belongs to the top 30^{th} percentile in terms of either size (Panel A), efficiency (Panel B), or industry concentration (Panel C). These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. All other variables are as defined in Table 1. Coefficients of the control variables (lag PERFORMANCE, lag log(MV), lag SALES, lag INST, lag B2M, and constant) are not reported for space reasons. In each column, I report estimated coefficients π_{13} and π_{14} and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. The *F-test* tests the null of $\pi_{13} + \pi_{14} = 0$. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: *$I_{top30^{th}pctl}$ is a dummy variable equals to one if a company belongs to the top 30^{th} percentile in terms of sales*								
lag AMIHUD	-0.0060***	-0.0008	0.0030***	0.0079***	-0.0031**	0.0202***	0.0051***	-0.0601*
	[-4.52]	[-0.61]	[3.21]	[4.62]	[-2.32]	[4.65]	[4.47]	[-1.87]
lag AMIHUD*INTER	0.0146**	-0.0147***	-0.0047***	-0.0047	-0.0064	-0.0337*	-0.0071***	-0.0031
	[2.14]	[-3.78]	[-3.22]	[-0.55]	[-0.96]	[-1.87]	[-6.16]	[-0.07]
F-test								
Point estimate	0.0086	-0.0155	-0.0017	0.0032	-0.0095	-0.0135	-0.0020	-0.0632
F-statistics	1.54	14.66	1.04	0.14	2.00	0.54	2.70	1.75
p-value	0.2154	0.0001	0.3071	0.7107	0.1572	0.4622	0.1007	0.1866
Panel B: *$I_{top30^{th}pctl}$ is a dummy variable equals to one if a company belongs to the top 30^{th} percentile in terms of sales-to-assets ratio*								
lag AMIHUD	-0.0073***	-0.0002	0.0051***	0.0100***	-0.0044***	0.0217***	0.0050***	-0.0498
	[-4.90]	[-0.11]	[4.65]	[4.68]	[-2.81]	[4.33]	[4.35]	[-1.43]
lag AMIHUD*INTER	0.0029*	-0.0016	-0.0046***	-0.0043**	0.0026	-0.0036	-0.0016	-0.0219
	[1.75]	[-1.00]	[-4.76]	[-2.23]	[1.59]	[-0.71]	[-1.33]	[-0.56]
F-test								
Point estimate	-0.0044	-0.0018	0.0005	0.0057	-0.0018	0.0181	0.0034	-0.0717
F-statistics	7.07	1.38	0.26	10.20	1.25	12.91	7.87	3.42
p-value	0.0078	0.2407	0.6098	0.0014	0.2627	0.0003	0.0051	0.0645
Panel C: *$I_{top30^{th}pctl}$ is a dummy variable equals to one if a company belongs to the top 30^{th} percentile in terms of industry concentration (HHISIC3)*								
lag AMIHUD	-0.0067***	0.0000	0.0047***	0.0074***	-0.0044***	0.0217***	0.0050***	-0.0620*
	[-4.56]	[0.00]	[4.34]	[3.92]	[-3.09]	[4.90]	[3.64]	[-1.78]
lag AMIHUD*INTER	0.0021	-0.0026*	-0.0049***	0.0011	0.0034*	-0.0049	-0.0023*	0.0045
	[1.17]	[-1.66]	[-5.60]	[0.54]	[1.79]	[-0.90]	[-1.91]	[0.10]
F-test								
Point estimate	-0.0046	-0.0026	-0.0002	0.0085	-0.0010	0.0168	0.0027	-0.0575
F-statistics	6.88	2.53	0.08	17.03	0.23	7.70	11.51	1.84
p-value	0.0087	0.1114	0.7770	0.0000	0.6330	0.0055	0.0007	0.1749

Table 14: **The Ex Ante Effect of the Proxy Contests and Fight Outcomes.** This table reports estimates of equation (2): $y_{it} = X_{it}\alpha_{11} + \gamma_1 \widehat{PC^*_{it}} + \gamma_2 PDW + \gamma_3 PIW + \eta_t + \eta_i + u_{1it}$, where y_{it} is a performance measure of interest, X_{it} is a vector of lagged covariates, $\widehat{PC^*_{it}}$ is the First Stage estimate of the likelihood of a proxy contest, PDW (POST DISSIDENT WIN) is a dummy variable that equals to one if the company was targeted during years $(t-1, t-3)$ and the dissident shareholder won the contest, PIW (POST INCUMBENT WIN) is a dummy variable that equals to one if the company was targeted during years $(t-1, t-3)$ and the incumbent shareholder won the contest, η_t are time fixed effects, and η_i are firm fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. The First Stage estimates and coefficients of the control variables (lag PERFORMANCE, lag log(MV), lag SALES, lag INST, lag B2M, and constant) are not reported for space reasons. All other variables are as defined in Table 1. In each column, I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. For $\widehat{PC^*}$ I also report the change in the outcome variable due to one standard deviation change of the likelihood of a proxy contest. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\widehat{PC^*}$	0.0246***	-0.0006	-0.0128***	-0.0391***	0.0161***	-0.0695***	-0.0068***	0.0738
	[4.50]	[-0.11]	[-3.55]	[-5.25]	[2.83]	[-3.48]	[-4.09]	[1.36]
	4.36%	0.00%	5.82%	13.24%	3.69%	14.27%	30.96%	23.17%
POST DISSIDENT WIN	-0.0161**	0.0097	0.0063	0.0082	-0.0315***	0.0530	0.0059***	0.0516
	[-2.16]	[1.20]	[1.45]	[0.98]	[-2.81]	[1.27]	[3.52]	[0.82]
POST INCUMBENT WIN	-0.0154**	0.0005	0.0050	0.0246**	-0.0238*	0.0265	0.0046***	-0.0090
	[-2.09]	[0.07]	[1.46]	[2.56]	[-1.79]	[0.56]	[3.31]	[-0.14]
Observations	75,795	75,789	75,315	57,662	75,550	75,731	21,827	22,400
R^2	28.50%	20.40%	6.80%	9.30%	5.30%	1.90%	3.60%	1.80%

Table 15: **Year-by-Year Estimation of the First Stage.** This table reports estimates of equation (2): $y_{it} = X_{it}\alpha_{11} + \gamma_1 \widehat{PC^*_{it}} + \eta_t + \eta_i + u_{1it}$, where y_{it} is a performance measure of interest, X_{it} is a vector of lagged covariates, η_t are time fixed effects, and η_i are firm fixed effects. $\widehat{PC^*_{it}}$ is the First Stage estimate of the likelihood of a proxy contest (see Table 8), estimated at the end of each year using information available at the end of that year. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. The First Stage estimates are not reported for space reasons. lag PERFORMANCE is the lagged level of the PERFORMANCE MEASURE. All other variables are as defined in Table 1. In each column, I report estimated coefficients and their t-statistics, calculated using heteroscedasticity robust standard errors and within correlation clustered by firm. For $\widehat{PC^*}$ I also report the change in the outcome variable due to one standard deviation change of the likelihood of a proxy contest. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\widehat{PC^*}$	0.0465***	-0.0128**	-0.0195***	-0.0487***	0.0375***	-0.0423	-0.0039***	0.0138
	[8.36]	[-2.16]	[-3.48]	[-6.01]	[4.71]	[-1.53]	[-4.22]	[0.52]
	8.24%	1.85%	9.21%	16.29%	8.59%	8.69%	15.48%	4.33%
lag PERFORMANCE	0.5057***	0.4170***	0.1386***	0.1118***	0.1813***	0.0173*	0.0113	-0.1116***
	[55.07]	[50.48]	[10.49]	[11.61]	[17.57]	[1.93]	[0.32]	[-14.67]
lag log(MV)	-0.0008	-0.0087***	-0.0110***	0.0150***	0.0088***	0.0518***	-0.0004*	0.0050
	[-0.73]	[-8.02]	[-11.09]	[11.19]	[7.62]	[12.27]	[-1.68]	[0.94]
lag SALES	-0.0110***	0.0113***	0.0081***	0.0186***	-0.0063***	0.0225***	-0.0013***	-0.0129
	[-5.03]	[4.92]	[5.38]	[7.04]	[-2.76]	[3.04]	[-3.50]	[-1.19]
lag INST	-0.0012	0.0011	-0.0130***	-0.0070*	-0.0181***	0.1214***	0.0001	-0.0324**
	[-0.37]	[0.36]	[-5.70]	[-1.74]	[-3.39]	[6.56]	[0.22]	[-2.15]
lag B2M	-0.0075***	-0.0048**	-0.0151***	-0.0179***	-0.0071***	0.0632***	-0.0006*	0.0571***
	[-3.45]	[-2.41]	[-9.25]	[-7.30]	[-2.84]	[7.04]	[-1.82]	[4.26]
Constant	0.2198***	0.0991***	0.0557***	-0.1199***	0.1746***	-0.3365***	-0.0013	0.0833
	[12.10]	[5.29]	[3.27]	[-4.84]	[6.86]	[-3.73]	[-0.42]	[0.93]
Observations	64,418	64,412	64,093	53,189	64,194	64,360	18,960	19,470
R^2	26.40%	19.10%	6.70%	9.40%	4.40%	1.80%	4.40%	1.80%

Table 16: **Linear Probability Model in the First Stage.** Panel A reports estimates of the First Stage equation (3) using linear probability model: $Pr(PC_{it} = 1) = X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \zeta_t + u_{2it}$, where the dependent variable PC_{it} is a dummy variable equals to one if the company is targeted in a proxy contest during the year, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud (2002) measure of stock illiquidity, and ζ_t are time fixed effects. Panel B reports estimates of the Second Stage equation (2): $y_{it} = X_{it}\alpha_{11} + \gamma_1\widehat{PC^*_{it}} + \eta_t + \eta_i + u_{1it}$, where y_{it} is a performance measure of interest, $\widehat{PC^*_{it}}$ is the First Stage estimate of the likelihood of a proxy contest, X_{it} is a vector of lagged covariates, η_t are time fixed effects, and η_i are firm fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. All variables are as defined in Table 1. The control variables (lag PERFORMANCE, lag log(MV), lag SALES, lag INST, lag B2M, and constant) are not reported for space reasons. In each column, I report estimated coefficients α_{22} and γ_1 and their t-statistics. In Panel A (Panel B) t-statistics are calculated using heteroscedasticity robust standard errors and within correlation clustered by SIC3 (firm). For $\widehat{PC^*}$ I also report the change in the outcome variable due to one standard deviation change of the likelihood of a proxy contest. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: First Stage								
lag AMIHUD	-0.0028***	-0.0028***	-0.0028***	-0.0030***	-0.0028***	-0.0028***	-0.0099**	-0.0101**
	[-6.31]	[-5.97]	[-6.25]	[-5.77]	[-6.14]	[-6.28]	[-2.27]	[-2.38]
Observations	75,802	75,799	75,424	57,992	75,701	75,778	23,287	23,724
R^2	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
Panel B: Second Stage								
$\widehat{PC^*}$	1.9648***	-0.2148	-1.5518***	-3.3775***	2.1498***	-2.5949	-0.5622***	6.3171*
	[4.28]	[-0.45]	[-5.04]	[-5.89]	[4.34]	[-1.50]	[-4.90]	[1.83]
	4.72%	0.45%	10.20%	15.56%	6.68%	7.28%	39.36%	26.92%
Observations	75,795	75,789	75,315	57,662	75,550	75,731	21,827	22,400
R^2	28.50%	20.40%	6.90%	9.40%	5.30%	1.90%	3.70%	1.70%

Table 17: **Firm Fixed Effects in the First Stage.** Panel A reports estimates of the First Stage equation (3) using linear probability model: $Pr(PC_{it} = 1) = X_{it}\alpha_{21} + Z_{it}\alpha_{22} + \zeta_i + \zeta_t + u_{2it}$, where the dependent variable PC_{it} is a dummy variable equals to one if the company is targeted in a proxy contest during the year, X_{it} is a vector of lagged covariates, Z_{it} is the Amihud (2002) measure of stock illiquidity, ζ_i are firm fixed effects, and ζ_t are time fixed effects. Panel B reports estimates of the Second Stage equation (2): $y_{it} = X_{it}\alpha_{11} + \gamma_1\widehat{PC^*_{it}} + \eta_t + \eta_i + u_{1it}$, where y_{it} is a performance measure of interest, $\widehat{PC^*_{it}}$ is the First Stage estimate of the likelihood of a proxy contest, X_{it} is a vector of lagged covariates, η_t are time fixed effects, and η_i are firm fixed effects. These regressions cover all Compustat firm-year observations from 1994 to 2008 and include both event and non-event observations. All variables are as defined in Table 1. The control variables (lag PERFORMANCE, lag log(MV), lag SALES, lag INST, lag B2M, and constant) are not reported for space reasons. In each column, I report estimated coefficients α_{22} and γ_1 and their t-statistics. In Panel A (Panel B) t-statistics are calculated using heteroscedasticity robust standard errors and within correlation clustered by SIC3 (firm). For $\widehat{PC^*}$ I also report the change in the outcome variable due to one standard deviation change of the likelihood of a proxy contest. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

PERFORMANCE MEASURE	LEVERAGE	CASH	R&D	CAPEX	DIVIDENDS	REPURCHASE RATIO	CEOPAY	NEW CEO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: First Stage								
lag AMIHUD	-0.0020***	-0.0019***	-0.0019***	-0.0027***	-0.0019***	-0.0019***	-0.0187***	-0.0189***
	[-3.00]	[-2.92]	[-2.88]	[-3.40]	[-2.86]	[-2.94]	[-2.68]	[-2.90]
Observations	75,802	75,799	75,424	57,992	75,701	75,778	23,287	23,724
R^2	0.30%	0.30%	0.30%	0.40%	0.40%	0.30%	0.50%	0.50%
Panel B: Second Stage								
$\widehat{PC^*}$	2.6407***	-0.3572	-1.6313***	-2.8048***	3.0683***	-7.2974***	-0.2638***	2.6879
	[4.31]	[-0.57]	[-3.73]	[-4.63]	[3.76]	[-3.12]	[-4.50]	[1.52]
	6.35%	0.75%	10.73%	12.92%	9.54%	20.48%	18.42%	11.45%
Observations	75,795	75,789	75,315	57,662	75,550	75,731	21,827	22,400
R^2	28.50%	20.40%	6.90%	9.40%	5.30%	1.90%	3.70%	1.70%