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New Active Blockholders and Adjustment of CEO relative incentive ratios

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New Active Blockholders and Adjustment of CEO relative incentive ratios*

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Abstract

We study the emergence of blockholders as an important mechanism that corrects deviations from target CEO relative debt-to-equity incentive ratios. We find that a new active blockholder more likely emerges when a firm deviates from target; deviations fall during the period the blockholder owns shares; and deviations fall more when the blockholder appoints a director to the firm. When a firm is above (below) target, blockholders are associated with less (more) inside debt and more (no change in) inside equity, implying there is no "one-size-fits-all" compensation change for blockholders. Outside debt and equity increase for both above and below target firms.

JEL Classification: G14, G23, G32, G34, M12
Keywords: Blockholders, CEO compensation, Inside debt

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1 Introduction

Since Wei and Yermack (2011) it has been understood that the level of CEO inside debt holdings has an impact on debt, equity and firm values. Wei and Yermack (2011) find that disclosures by firms of high levels of inside debt is associated with increases in debtholder values and declines in both shareholder and firm values. Recently, Campbell et al. (2016) use firm and CEO characteristics to estimate the optimal ratio of CEO inside leverage and firm leverage, the firm's CEO relative incentive ratio (Edmans and Liu (2011)), showing that both shareholders and debtholders benefit from the firm moving towards its optimal. However, we do not yet understand the mechanisms that lead firms to move toward the optimal relative incentive ratio. In this paper, we show that blockholders act as one important mechanism.

We establish the following facts to argue that blockholders correct CEO relative incentive ratios. First, a new active blockholder is more likely to emerge when a firm deviates from the optimal relative incentive ratio.[1] Second, during the period the new active blockholder owns shares, deviations from optimal CEO relative incentive ratios fall. Third, the deviations from optimal CEO relative incentive ratios fall more when the blockholder appoints a director to the firm.[2] This third fact is important, as it suggests that blockholders affect firm policies rather than simply buying those firms in which compensation will naturally revert to optimal levels.

Optimal compensation from shareholders' perspective involves a trade-off. Shareholders may wish to commit to protecting bondholder interests *ex ante*. Edmans and Liu (2011) use this idea to motivate an optimal contract involving inside debt—in essence, shareholders use inside debt to compensate managers for working hard while the firm is in distress.

[1] An investor must file a form 13D when he/she comes to own more than five percent of a company's outstanding equities with the intention of affecting that company's management or control.

[2] We determine that a director is appointed by an active blockholder if any of the following criteria applies: (i) the active blockholder discloses in a form 13D or 13D/A that it has nominated this director; (ii) the director is a fund manager of the active blockholder; or (iii) the director is a close relative (i.e. spouse, sibling, or child) of an active blockholder's fund manager.

This inside debt compensation is costly to shareholders, but reduces the cost of debt, so shareholders are willing to grant inside debt to the manager. However, once the firm has raised debt, shareholders have incentives to re-contract with the manager to transfer wealth from bondholders to shareholders. Even though we see relative incentive ratios moving the correct direction on average, we still do not know whether the adjustments blockholders make benefit shareholders at the expense of bondholders. In general, the literature on blockholders shows evidence of both firm value and equity-only maximization. Empirical evidence finds support for active blockholders pursuing corporate changes that increase both equity and debt values (see Shleifer and Vishny (1986), Maug (1998), Brav et al. (2008), Boyson and Mooradian (2011), Sunder et al. (2014), Bebchuk et al. (2015), and Bebchuk et al. (2020)) while also pursuing corporate changes that transfer wealth from debtholders to shareholders (see Bhojraj and Sengupta (2003), Cremers et al. (2007), Klein and Zur (2011), Jory et al. (2017), Dahiya et al. (2020)).[3] Whether the actions of new active blockholders represent *ex ante* optimal contracting for firm value or *ex post* re-contracting for equity value is thus a fundamentally important question in our setting.

We follow Campbell et al. (2016) and separate the deviations from target relative incentive ratios into those that are debt-biased (inside debt incentives are above optimal) and equity-biased (inside debt ratios are below optimal). If blockholders are transferring wealth from debtholders, we expect to see our results hold mainly in the set of firms above their target relative incentive ratios. This is because blockholders will find those firms too aligned with bondholders and reduce their alignment. If blockholders are pursuing firm optimal compensation, we will see results of adjustments in both firms above their target and below

[3]In fact, concentrated owners needn't even move incentives toward an equity-value maximizing level. Literature predicts that blockholders could take advantage of their large voting rights to engage in actions that benefit themselves at the expense of other stakeholders, e.g. minor shareholders and debtholders (Lease et al. (1983), Barclay and Holderness (1989), Barclay et al. (1993), Dyck and Zingales (2004)). Transferring wealth from debtholders to shareholders by increasing firm's risks might benefit the blockholders in the short run, but is detrimental to the dispersed shareholders in the long-run because of costly debt financing (Jensen and Meckling (1976), Myers (1977)).

their target. Consistent with Campbell et al. (2016) we show that active blockholders arise and adjust CEO relative incentive ratios when the deviations are caused by either too much inside debt or too much inside equity. Stock and bond returns both increase significantly as active blockholders adjust adjust equity. Bond returns do not fall, and stock returns significantly rise when debt is adjusted. These findings suggest that the gains to shareholders do not come from the losses to debtholders.

Finally, we note that relative incentive ratios consist of four different inputs blockholders could choose to adjust: 1) inside debt, 2) inside equity, 3) outside debt, and 4) outside equity. Prior work shows new active blockholders adjust firm (outside) leverage and dividend payments (Klein and Zur (2011), Brav et al. (2008)). Brav et al. (2008) further show decreases (increases) in the proportions of fixed payments (equity-based payments) among the targeted firms after active blockholder intervene, as compared to the industry-matched non-targeted firms, with Clifford and Lindsey (2016) showing proportions of equity-based payments and the dollar value of total compensation increasing in the presence of active blockholders. Under our story, active blockholders cannot simply use the same strategies in all circumstances. The actions taken depend on whether the current relative incentive ratio is above or below the target relative incentive ratio.

We show that blockholders' strategies differ according to the deviation from target relative incentive ratio. When a firm is above the optimal relative incentive ratio, new active blockholders are associated with less inside debt and more inside equity. Both outside debt and outside equity increase by roughly the same magnitude. This has the overall effect of decreasing the relative incentive ratio. When a firm is below the optimal relative incentive ratio, new active blockholders are associated with more inside debt and (insignificantly) less inside equity. Both outside equity and debt increase, but outside debt increases less than outside equity. Overall, these actions increase the relative incentive ratio.

If blockholders lead to CEO turnover, then pensions and other components of insdie

debt with change regardless of whether compensation was the goal of the turnover event. We show that even when an active blockholder does not lead to CEO turnover, blockholders appear to adjust compensation. Most importantly, new active blockholders are associated with less inside debt both in firms with CEO turnover and without CEO turnover and not just changes to firm leverage or CEO equity. This is also important because it shows that blockholders are actively changing inside debt use, not simply firing CEOs.

2 Hypothesis development

Jensen and Meckling (1976) argue that equity-biased compensation incentivizes a CEO to increase shareholders' value by taking sub-optimal risks at debtholders' expense. Rational debtholders, anticipating this risk-shifting problem, would require higher returns for their loans. The authors propose that a CEO should be paid in both debt-like compensation (a.k.a. "inside debt") and equity-like compensation (a.k.a. "inside equity"). They also argue that the ratio between these two components, the inside debt-equity ratio, should exactly mimic the firm's capital structure. Since a part of the CEO's wealth now resembles a debt-like obligation and can be lost in the bankruptcy state, the CEO has no incentive to shift risks from shareholders to debtholders.

Edmans and Liu (2011) show that the inside debt-equity ratio should perfectly mimic the capital structure, as suggested by Jensen and Meckling (1976), if compensation structure only affects a CEO's choice of risks. However, Edmans and Liu suggest that compensation structure can also affect a CEOs' choice of efforts. More specifically, they suggest that inside debt and inside equity encourage CEO's efforts in two different states. Inside debt encourages the CEO's efforts to protect the liquidation value in distress. On the other hand, inside equity encourages the CEO's efforts to increase equity value outside of distress. Overall, a CEO who is paid in relatively more inside debt (inside equity) tends to prefer safe (risky) projects,

and work harder while the firm is in distress (not in distress). Edmans and Liu conclude that the optimal inside debt-equity ratio should depend on other characteristics, such as asset structure, and investment opportunities, in addition to the capital structure.

Campbell et al. (2016) estimate the optimal relative incentive ratio based on firm and CEO characteristics which are consistent with the theories in Jensen and Meckling (1976) and Edmans and Liu (2011). More specifically, they regress the relative incentive ratios on those characteristics and use the predicted values to proxy for the optimal ratios. They validate their measure of optimal ratios by showing positive stock and bond price reactions to the releases of proxy statements which disclose movements towards the optimal ratios. Freund et al. (2018) also use Campbell et al.'s model to estimate the optimal relative incentive ratio, showing that the cost of debt, measured by the offering bond yield spreads, is the lowest when CEO compensation is set at the optimum. Akins et al. (2019) show that creditors raise the relative incentive ratios above the optimal levels which are also estimated by using Campbell et al. (2016)'s model when these creditors take control of the companies after covenant violations.

Most empirical papers conclude that large CEO inside debt is associated with more conservative firm policies: less investment spending (Cassell et al. (2012)), higher cash accumulation (Liu et al. (2014)), reduced risks and risk-taking incentives (Sundaram and Yermack (2007), Wei and Yermack (2011), Phan (2014), Brisker and Wang (2017)). Large CEO inside debt also helps firms raise new debt at a lower cost, either by including fewer covenants (Han (2011), Anantharaman et al. (2013)) or by offering lower yield spreads (Dang and Phan (2016), Freund et al. (2018)).

However, some papers argue that inside debt aligns CEOs' and debtholders' interests only when inside debt is unfunded and unsecured like junior debt (Anantharaman et al. (2013), Colonnello et al. (2017)). When CEOs are insured against the losses of their inside debt holdings in the bankruptcy state, the incentive-alignment role of this compensation is

weakened (Bebchuk and Fried (2004), Gerakos (2010)).

2.1 Do New Active Blockholders Adjust Incentives to Optimal?

We examine new active blockholders as a mechanism to reduce deviations between a firm's current relative incentive ratio and the optimal relative incentive ratio. We proceed by asking four questions: 1) Do blockholders target firms with sub-optimal incentives, 2) Do incentives move toward optimal when a new blockholder arises, 3) Are blockholders affecting the relative incentive ratio or just purchasing firms they believe will correct the relative incentive ratio on their own, and 4) What adjustments do blockholders make when moving incentives toward the optimum? Because blockholders may have incentives to expropriate wealth from bondholders to shareholders, we also separate firms with above-target relative incentive ratios from those with below-target relative incentive ratios, as in Campbell et al. (2016). New active blockholders never have incentive to increase relative incentive ratios from below—an action that aligns managers with bondholders—when they are expropriating from bondholders. Thus, evaluating those separately gives some insight as to whether blockholders are expropriating bondholders by changing incentives *ex post*.

Many theoretical papers after Shleifer and Vishny (1986) show that the monitoring incentive of blockholders increases with the fraction of equity holdings (Maug (1998), Bolton and Von Thadden (1998)). Kahn and Winton (1998) suggest that the monitoring blockholder also gain by purchasing stocks of the companies where market least expects improvements, taking actions to improve firm value, and then selling the stocks at higher prices. These ideas lead to our first hypotheses:

Hypothesis H1: *The incidence of new active blockholders is positively correlated with lagged deviations from the target CEO relative incentive ratios.*

Hypothesis H1a: *The incidence of new active blockholders increases as the lagged CEO relative incentive ratio falls below the target.*

More recent empirical papers focus on the influence of active blockholders on firm value. These investors file form 13D once their holdings cross the five-percent threshold to notify that they have accumulated shares to affect the targeted firms' management. Empirical studies show that active blockholders often target poorly performing companies (see Brav et al. (2015b) for a comprehensive review). There is also evidence which suggests that CEOs of these targeted firms are extracting rents before active blockholders arise because a large proportion of their compensation comes from fixed payment (Brav et al. (2008), Clifford and Lindsey (2016)). This evidence suggests the following hypotheses:

Hypothesis H2: *The presence of new active blockholders is associated with decreases in deviations from the target CEO relative incentive ratios.*

Hypothesis H2a: *The presence of new active blockholders is associated with increases in CEO relative incentive ratio for firms with less than target CEO relative incentive ratios.*

Finally, the literature identifies many actions taken by blockholders that will naturally affect the relative incentive ratio. For example, blockholders change firm (outside) leverage and equity compensation to managers (Brav et al. (2008), Bebchuk et al. (2015), Clifford and Lindsey (2016)). Blockholders also replace CEOs which affects vesting and the value of pensions—a major component of inside debt (Brav et al. (2015a)). Any of these actions could also, spuriously, change the relative incentive ratio. We therefore focus on changes to the inside debt component of the relative incentive ratio.

Hypothesis H3: *Firms increase inside debt when the relative incentive ratio is below optimum and decrease inside debt when the relative incentive ratio is above optimum.*

Hypothesis H3a: *Firms increase inside debt when the relative incentive ratio is below optimum and decrease inside debt when the relative incentive ratio is above optimum in firms for which the CEO remains throughout the blockholder's involvement.*

One difficult issue in dealing with institutional investors is understanding whether they are informed investors (they pick stocks that are about to have relatively good performance)

or they are influential investors (they buy shares and influence firm policies). We address this question by separating cases in which the blockholder influences the board of directors from those in which the blockholder does not influence the board. We test the following hypothesis:

Hypothesis H4: *Firms adjust their relative incentive ratios toward the optimum more strongly when blockholders appoint a director to the board than when blockholders do not appoint a director to the board.*

3 Variable construction and data description

3.1 CEO relative incentive ratio

We search on SEC EDGAR for all the proxy statements that are filed during the calendar years from 2006 to 2018, and collect the data about the CEOs and their compensation packages. The data about the CEOs contain their age and the year when they became CEOs.[4] The data on CEO compensation for the main analysis are collected from three tables in the proxy statements as described below. This is an important innovation in the literature on inside debt because we are not focusing on firms in the S&P 1500 as is the case with studies that only use Execucomp data.

We merge the compensation data collected from SEC with financial data from Compustat. The companies in the final sample must have non-missing financial data for at least three consecutive years. For each firm-year observation, the company must also have trading stock prices (from CRSP) over the last two years. The final sample contains 41,373 firm-year observations, which covers 5,849 U.S. public companies from the fiscal years 2006 to 2017.

In estimating the CEO relative incentive ratio we follow Wei and Yermack (2011) and

[4]When the proxy statements do not provide information on CEO age and the year of becoming CEO, we manually search for this information from online articles.

Campbell et al. (2016) and measure CEO inside debt incentive as the sum of the present value of defined-benefit pensions (*Pension_value*) and total balances of non-qualified deferred compensations (*Defer_balance*).[5] We obtain these two values from the "Pension Benefits" and "Non-Qualified Deferred Compensations" proxy statements tables, respectively.[6] Where a company separates the qualified pension benefits from the supplemental non-qualified ones, we only include the non-qualified benefits in the inside debt measure. Unlike the qualified component, supplemental non-qualified pension benefits are unfunded and unsecured like a firm's junior debt, so only the non-qualified pensions, but not the qualified component, should match the theoretical criteria of inside debt (Edmans and Liu (2011), Anantharaman et al. (2013)).[7]

We measure CEO inside equity incentives as the delta of the CEO's shares of stock (which equals the number of shares owned) plus the delta of CEO's option holdings. We collect the number of shares and the number of unexercised options with their corresponding exercise prices and expiration dates from the "Outstanding Equity Awards" proxy statement table. We calculate the delta for each tranche of options by using the Black-Scholes formula and sum

[5]In earlier versions of the paper, we used the CEO relative leverage ratio. That measure is simply inside debt to equity divided by outside debt to equity. The two measures are equivalent for a CEO with no options. In our sample, the two variables have an 80% correlation. More importantly, the deviations implied by the two measures have a 90% correlation (and the histograms are nearly indistinguishable) so our results are very similar using either measure. See also (Campbell et al., 2016, footnote 7, p 339).

[6]CEO salary might feature a coupon bond as the CEO first invests his human capital in the firm and then receives salary as the periodic coupon payment. Edmans and Liu (2011) argue that salary is often forfeited in case of bankruptcy so salary does not qualify as debt-like compensation. Most empirical papers do not include salary in the calculation of inside debt. In practice, most CEOs might still receive their salaries even in bankruptcy. However, almost certain payment under bankruptcy also disqualifies salary as inside debt because such a payment will not encourage effort. In robustness check, we include present value of salary in the calculation of inside debt, following Cassell et al. (2012). Our results are qualitatively similar.

[7]CEOs defer receiving inside debt payments until they retire, and are not taxed for this income until the money is distributed. Inside debt payments are generally not secured by the firms' assets so CEOs may lose part of or all this payment in case of bankruptcy. Under the Bankruptcy Abuse Prevention and Consumer Protection Act ("BAPCPA") enacted in 2005, the company undergoing Chapter 11 bankruptcy proceedings can reject any executory contracts. The assumption of any executory contracts must be approved by the creditors' committee and the bankruptcy court. For example, when Dana Corp. filed for Chapter 11 in 2006, only 60% of the CEO's retirement benefits were assumed, while the remaining 40% became general unsecured claims.

over the tranches in a firm year.[8] The ratio of the inside debt incentives to the inside equity incentives is the CEO inside debt-equity incentive ratio. The firm's debt-equity incentive ratio is calculated in a similar way with total long-term debt, shares outstanding and the estimated delta of any options outstanding. The CEO relative incentive ratio (CEO_RIR) is the CEO inside debt-equity incentive ratio divided by the firm's debt-equity incentive ratio. Following the literature,we use the natural logarithm of the CEO relative incentive ratio (ln_CEO_RIR). By construction, this measure of CEO relative incentive ratios excludes observations with no outstanding equity awards. Where the CEO has no inside debt, we follow Campbell et al. (2016) and replace this observation with the log of the smallest non-zero ratio in the sample (0.0000312).

3.2 Target CEO relative incentive ratio

We use the median regression in Campbell et al. (2016) to estimate the *target* CEO relative incentive ratio (*Target_CEO_RIR*). Specifically, *Target_CEO_RIR* is the predicted value from the following regression where the dependent variable is the natural log of the CEO i's relative incentive ratio in period t, $ln\_CEO\_RIR_{i,t}$:

[8]Stock price and option time-to-maturity is at the end of the previous fiscal year. Risk-free rate is one-month Treasury Bill rate. Dividend yield equals cash dividend (including dividend on preferred stocks) divided by total equity value (including value of preferred stocks). Stock volatility is the standard deviation of daily stock returns over the year before fiscal year end date.

$$
\begin{aligned}
ln\_CEO\_RIR_{i,t} = \beta_0 &+ \beta_1 * Ln(Firm\_DE_{i,t}) + \beta_2 * Book\_Leverage_{i,t} + \beta_3 * Idiosyn\_Risks_{i,t} \\
&+ \beta_4 * 1\_(Investment\_Grade_{i,t}) + \beta_5 * Ln(Assets_{i,t}) + \beta_6 * Fixed\_Assets_{i,t} \\
&+ \beta_7 * \text{Market-to-Book}_{i,t} + \beta_8 * R\&D\_Expenditures_{i,t} \\
&+ \beta_9 * 1\_(Liquidity\_Constraint_{i,t}) + \beta_{10} * 1\_(\text{Tax-loss-carried-forward}_{i,t}) \\
&+ \beta_{11} * CEO\_Age_{i,t} + \beta_{12} CEO\_Tenure_{i,t} + \gamma * FF17_i + \epsilon_{i,t}
\end{aligned}
\tag{1}
$$

The explanatory variables include a firm's debt-equity ratio measured as the natural log of long-term debt over market value of common equity (*Ln(Firm_DE)*), book leverage measured as long-term debt over total assets ratio (*Book_Leverage*), idiosyncratic risk, where idiosyncratic risk is measured as thenatural log of the standard deviation of residuals from a market model estimated over the prior 24 months using monthly returns (*Idiosyncratic_Risks*), an indicator of *1_(Investment_Grade)* debt, natural log of total assets *Ln(Assets)*, fixed assets measured as the ratio of net property, plant, and equipment (PPE) over total assets *Fixed_Assets*, market-to-book ratio *Market-to-Book*, research and development over sales *R&D_Expenditure*, an indicator variable for liquidity-constrained firms that is equal to one if the firm had negative operating income *1_(Liquidity_Constraint)*, an indicator variable equal to one if the firm had a tax-loss carry-forward *1_(Tax-loss-carried-forward)*, *CEO_Age*, *CEO_Tenure* and *industry fixed effects* (based on Fama&French 17 industries). Details on how to construct these variables are provided in Appendix A1. The result of this regression is not the focus of this paper, and is therefore reported in the internet appendix.

3.3 Deviations from the *target* CEO relative incentive ratios

We measure how much current compensation structure deviates from its *target* structure by using the absolute value of the difference between current natural log of the CEO relative incentive ratio (*ln_CEO_RIR*) and the predicted value (*Target_ln_CEO_RIR*) from regression (1):

$$Deviation\_fr\_Target_{i,t} = \left| ln\_CEO\_RIR\_i, t - Target\_ln\_CEO\_RIR\_i, t \right| \qquad (2)$$

A large value of this deviation measure indicates that the current compensation structure differs very much from the level required to properly address the agency problems. One drawback of this deviation measure is that it cannot capture the sign of the deviation. We separately examine positive and negative deviations in our tests.

In Figure 2, we plot Tobin's Q, adjusted for stock price reactions to new proxy statement releases, against the raw differences between CEO relative incentive ratios and their *target* levels. The inverted U-shape relation also suggests that either too high or too low compensation structures compared with the *target* levels are detrimental to firm value. In short, the deviation measure can capture how much inappropriate the current compensation structures are to maximize firm value.[9]

[Figure 2 goes here]

It is important to note that because we use an empirical measure of target incentives, we

[9]In untabulated results we conduct an additional test to verify that deviation from the *target* structure can be a fair proxy for an improperly calibrated CEO pay structure. We relate stock and bond abnormal returns around proxy statement releases with the deviations that are disclosed in these proxy statements. We also control for changes in the newly granted compensation and for some other types of information that are also disclosed in the proxy statements which might contaminate the interpretation of price reactions. These types of information include: (i) CEO retirement, (ii) requirement of (super)majority voting, (iii) classification of board, (iv) election of new independent directors, (v) election of new executive directors, and (vi) proposals for issues other than director election, executive compensation, and auditing/accounting company choice. Stock and bond prices both react negatively to disclosures of large deviations from *target*. This result suggests that total firm value decreases when the current CEO compensation structures largely deviate from the *target* levels.

are subject to noise in the estimates. Some of the deviation from target is deviation from optimal incentives, and some is simply sampling variation. In the early period, around 2006, firms were likely away from optimal because monitoring the inside debt part of incentives was more difficult. After 2006, inside debt disclosure is mandatory. Campbell et al. (2016) argue that because of the newly available information, we are likely to see more true adjustment to optimal in the period immediately following the new disclosure requirement. This is important for them because they have no other way to condition on whether a deviation is a "true" deviation or noise. Our implicit assumption is that some of the deviation from target is a true deviation from optimal and blockholders respond to that part of the deviation from target, if it exists. Thus, even if there is more noise in the deviations as time goes on, we will still find the adjustments toward the true optimum.

We also take the deviation from target as given. Because we use an empirical model, the deviation from target is driven either by a pre-existing deviation from target, a change in compensation, or a change in firm characteristics. It is plausible, perhaps even likely, that the largest pre-existing deviations are removed quickly following the disclosure requirement in 2006. However, if re-contracting is costly, there will be firms through time that have small deviations, then on occasion changes in characteristics will move the target sufficiently that re-contracting is valuable enough to offset the cost. Documenting the drivers of changes in deviation from target incentives is important to the literature as a whole. Nonetheless, the exact reason for the deviation from target does not affect our interpretations. We ask if a given deviation from target draws blockholder interest and if, given the blockholder interest, the deviation from target falls.[10]

[10] We fit our main specification using above and below median changes in assets or leverage to examine whether large changes in firm characteristics drive our main result. However, the results hold in all sub-samples. The results are available in the internet appendix.

3.4 New active blockholders

New active blockholders are identified by 13D filings from 2007 to 2018 from SEC EDGAR. [11] One company can be the subject of multiple forms 13D filed by different investors. For each company, we only count the earliest filing in the sample period. If multiple filings occur in the same year, we only count the 13D investor who stays as an active blockholder for the longest period of time. For example, UBS AG and Noonday Asset Management LP both filed form 13D and became active blockholders in Alliance Data Systems Corp in fiscal year 2007. Noonday Asset Management LP left in fiscal year 2008, while UBS AG remained active until 2013. We only inlude UBS AG. This filtering process leaves 1,186 unique companies that were targeted by new active blockholders between the fiscal years of 2007 and 2016. For the main analysis, we only consider the impact of these new active blockholders who entered the targeted firms after the fiscal year 2007. For robustness check, the main result does not qualitatively change when we include any active blockholders entering any time during 1995 - 2017.

3.5 Descriptive statistics

The full sample is an unbalanced panel of 5,824 U.S. public companies from the fiscal years of 2006 to 2017, which contains 41,373 firm-year observations. We use the full sample to estimate the *target* CEO relative incentive ratio in section 3.3. However, the main regressions use difference variables or lagged values, leaving us with 35,549 observations of 5,775 firms from the fiscal years of 2007 to 2017 in the main analyses. A new institution buys into a firm in 291 cases; of these, 255 are 13D investors.

In Figure 1, we show the full distribution of our main variable of interest, the deviation from target relative incentive ratio. The deviation from target is a regression residual, and

[11] We follow the literature and refer to the 13G filers as passive blockholders.

so it is on zero on average. Figure 1 shows that the distribution is roughly normal, with half of observations above target and half below. More than 70% of firm-years are between -2.5 and 2.5.

[Figure 1 goes here]

Table 1 summarizes characteristics of the companies that are included in the main analyses. In general, our CEOs differ from those reported in prior work because we include non-S&P 1500 firms (about 2/3 of our sample). Thus, we have many more "neglected" firms in our sample. The average CEO in our sample has a smaller (in dollar value) compensation package than that reported in Cassell et al. (2012). The average CEO in our sample holds US$ 2.74 million in inside debt and US$ 15.27 million in inside equity, whereas Cassell et al. (2012) report US$ 7 million and US$ 60 million respectively for the average S&P 1500 CEO. The mean and median values of the CEO relative incentive ratio are 4.2467 and 0.1734, respectively. Brisker and Wang (2017) and Freund et al. (2018) report the mean (median) value for this ratio of 1.503 (0.0295) and 1.403 (0.365), respectively, for S&P 1500 firms over a similar time period. This large difference occurs mainly because more than 45% of the CEOs in our sample do not have inside debt[12] compared with only 30% in the S&P 1500 sample (Edmans and Liu (2011)). The logarithm transformation partially addresses the skewness, as the mean and median values of the inside debt-equity ratio are -1.2248 and -1.7504, respectively.

[Table 1 goes here]

Table 2 compares characteristics of companies targeted by new active blockholders with non-targeted firms in the same industries. The characteristics are measured one year before the new active blockholders arise. The targeted companies are smaller, thus offering smaller

[12]This does not mean that these companies do not offer defined-benefit pensions or non-qualified deferred compensation to their other named executive officers.

compensation packages to their CEOs, than the average non-targeted firms in the same industries. Compared with the non-targeted firms, the targeted firms also have lower market-to-book ratios, higher idiosyncratic risks, and lower dividend yields. The difference in firm characteristics between targeted and non-targeted companies in our sample is consistent with what is documented in previous studies.[13] Specifically, the targeted firms have significantly larger deviations from the *target* CEO relative incentive ratios the those of the non-targeted firms before new active blockholders emerge.

[Table 2 goes here]

To investigate whether the variables used as control variables in our analysis are likely to be subject to collinearity problems in our later regression analysis, we examine the correlations between these variables. We see that most variables are not highly correlated with each other, with some notable exceptions. In particular, the correlation between book and market leverage is 0.63; market leverage and the market-to-book ratio is -0.52; ROA and R&D expenditure is -60; and ROA and liquidity constraint is -0.73. We report these results in the internet appendix.

4 Results

In this section, we provide answers to our four main questions. This evidence together suggests that blockholders do acquire firms' shares in part to adjust sub-optimal relative incentive ratios. Moreover, blockholder actions appear to move firms closer to the firm optimal relative incentive ratio rather than expropriating wealth from bondholders.

[13] See Brav et al. (2008), Boyson and Mooradian (2011), Bebchuk et al. (2015), Brav et al. (2015b)

4.1 Deviations from the *target* CEO relative incentive ratios and the incidence of new active blockholders

We examine the incidence of 13D filings on lagged deviations from the *target* CEO relative incentive ratios by fitting the following Probit model:

$$\begin{aligned} Pr\left[New\_Active\_Block_{i,t}\right] = \alpha + \beta * Deviation\_fr\_Target_{i,t-1} + \theta * X_{i,t-1} \\ + \delta * Year\_FE_t + \gamma * Industry\_FE_i + \epsilon_{i,t} \end{aligned} \tag{3}$$

New_Active_Block is a dummy variable which equals one if the firm has a new 13D investor in a given fiscal year, and equals zero if otherwise. By construction, the incidence of new active blockholders is not double counted and only occurs in 1,186 unique firm-year observations (as described in section 3.4). *Deviation_fr_Target* is the deviation from the *target* CEO relative incentive ratio as constructed in equation (2). We check that forms 10K and proxy statements of the previous fiscal years are publicly available when 13D investors acquire the block holdings.[14] For control variables (X), we include the popular explanatory variables that have been used in prior works to predict the rise of active blockholders: natural logarithm of assets (*Ln(Assets)*), market-to-book ratio (*Market-to-Book*), sales growth rate (*Sale_Growth*), return on assets (*Returns_on_Assets*), long-term debt over assets (*Book_Leverage*), R&D expenses over sales (*R&D_Expenditures*), dividend yield (*Dividend_Yield*), analyst coverage (*Ln (1 + N_Analysts)*), Herfindahl index of sales in two-digit SIC code industries (*Sales_HHI*).[15] Edmans et al. (2013) show that high stock liquidity facilitates block formation, hence we also include their measure of stock liquidity (*Stock_Liquidity*).[16] Details on how to construct these variables are provided in Appendix A1. Industry and year fixed effects are also included. The regression contains 31,731 firm-

[14] In the cases where financial and executive compensation data of the fiscal years "t-1" are not publicly available at block acquisitions, we use the data of the fiscal years "t-2".

[15] See Clifford (2008), Brav et al. (2015b), Edmans et al. (2013)

[16] This measure of stock liquidity is essentially the negative of Amihud (2002)'s il-liquidity measure.

year observations between the fiscal years 2007 and 2016.

[Table 3 goes here]

The result of regression (3) is reported in Table 3. The coefficient of *Deviation_fr_Target* equals 0.0127, and is significant at 5% level (column 1). The marginal effect of this main explanatory variable is 0.0009, when control variables are kept at their mean values. When the deviation measure moves from the second quartile (2.59) to the third quartile (4.10), the probability of attracting new active blockholders increases by 0.14 percentage points (= [4.10 - 2.59]*0.0009). Given that new active blockholders only arise in 1,186 out of 31,731 observations, this 0.14 percentage point change corresponds to a 5 fold increase in the unconditional probability. This positive correlation suggests that active blockholders often arise in companies whose CEO pay structures are not properly set to maximize firm value.

Controlling for the presence and the ownership concentration of other institutional investors, we also find some weak evidence that active blockholders arise in companies with low institutional ownership concentration. This finding is indicative of the correlation between weak governance by institutional investors and improper CEO pay structures, which has been found in prior studies (Hartzell and Starks (2003), Almazan et al. (2005), Ertimur et al. (2010)). The finding also suggests that new active blockholders can arise in companies where the inappropriate compensation structures are hard to fix due to weak internal governance, hence the necessity of interventions from external investors. However, previously established institutional holdings do not seem to deter blockholders from acquiring firms with sub-optimal compensation, as the coefficient on *Deviation_fr_Target* in column 2 changes very little from column 1 (0.0124, and is significant at 5% level).

In columns 3 and 4 we include indicator variables for above and below target, *1_(Above target* equals one if CEO relative incentive ratio exceeds the *target* level, and equals zero if

otherwise and *1_(Below target)* equals one if CEO relative incentive ratio is below the *target* level, and equals zero if otherwise. We see that new active blockholders appear to arise regardless of the sign of the deviation from target relative incentive ratios. If blockholders simply wanted to expropriate bondholders, we would more likely see evidence of new active blockholders when the relative incentive ratio exceeds the target. In those cases, blockholders could break the alignment between managers and bondholders, then influence managers to take actions that harm bondholders. However, when managers already are not aligned with bondholders, there is less room for blockholders to adjust compensation to encourage expropriation of bondholders. The fact that blockholders appear interested in both types of deviations is therefore suggestive evidence that the simple expropriation idea is not the whole story.

The coefficients of the control variables are consistent with existing findings in the literature. Active blockholders are more likely to emerge in smaller firms with lower market-to-book ratios, higher book leverages, and lower dividend yields.[17] Overall, the results in Table 3 are consistent with the explanation that active blockholders target companies that have bad performances and inappropriate CEO compensation structures.

4.2 New active blockholders' presence and the adjustments of CEO relative incentive ratios

First, we estimate how much the CEO relative incentive ratio has moved towards or away from its *target* level based on the change in the deviation measure:

$$Deviation\_Decrease_{i,t} = -\left[\, Deviation\_fr\_Target_{i,t} - Deviation\_fr\_Target_{i,t-1} \,\right] \quad (4)$$

[17] See Brav et al. (2008), Boyson and Mooradian (2011), Brav et al. (2015b), Clifford and Lindsey (2016)

We take the negative value of the change to ease the interpretation. A positive value of *Deviation_Decrease* means the CEO compensation structure has been adjusted closer to the *target* level, and vice versa.

Next, we track the subsequent changes in the block holdings and in the filing statuses of the new active blockholders whose filing decisions are studied in section 4.1. We collect all the forms 13D/A[18], 13G, 13G/A and 13F filed by these investors. We follow Boyson and Mooradian (2011) and consider that an active blockholder exits when whichever of the following events happens first: (1) the active blockholder discloses below five percent equity ownership by filing form 13D/A or 13F, (2) the active blockholder switches to a passive block holding by filing form 13G, (3) the targeted firm is delisted, or (4) December 31, 2018. Active blockholders often exit in the third years from their initial 13D filings, hence they normally restructure compensation in three years, including the years of emergence. For example, WPM LP filed a form 13D and became an active blockholder in Fidelity National Information Services Inc in October 9, 2009 (fiscal year 2009). This investor exited after it filed a form 13D/A in March 13, 2013 (fiscal year 2013), announcing an ownership of below 1%. For this targeted company, the active blockholder is present in the fiscal years from 2009 to 2012 inclusively.

Finally, we relate the changes in deviations from the *target* CEO relative incentive ratios with the presence of new active blockholders by running the following regression:

$$\begin{aligned} Deviation\_Decrease_{i,t} = \alpha + \beta * Active\_Block_{i,t} + \theta * X_{i,t} \\ + \delta * Year\_FE_t + \gamma * Firm\_FE_i + \epsilon_{i,t} \end{aligned} \tag{5}$$

Active_Block is a dummy variable that equals one if a company has an active blockholder in a given fiscal year, and equals zero if otherwise. Notice that the active blockholder

[18] Any changes to the investor's ownership larger than 1% of firm's equities must be updated via form 13D/A within 10 days of the changes.

often holds a position in the firm for multiple years. So in the analysis, we follow changes in the deviation from target relative incentive ratios over the entire time period an active blockholder holds a position. This is important because terms of compensation contracts are typically multi-year, so renegotiating them takes time.

We also include a dummy variable, *After_Active_Block*, to capture the changes after new active blockholders exit. Following the above example of WPM LP which emerged in 2009 and exited in 2013, *After_Active_Block* equals one for the fiscal years from 2013 to 2017, and equals zero for any other fiscal years. Control variables (X) include the firm and CEO characteristics that are normally used in the CEO relative incentive ratio literature. Continuous control variables include: change in firm capital structure (Δ *Ln(Firm_DE)*), change in debt-over-assets ratio (Δ *Book_Leverage*), change in idiosyncratic risks (Δ *Idiosyncratic_Risks*), change in total assets (Δ *Ln(Assets)*), change in fixed assets ratio (Δ *Fixed_Assets*), change in market-to-book ratio (Δ *Market-to-Book*), change in R&D expenditures over sales (Δ *R&D_Expenditures*). Dummy control variables and CEO characteristics include: indicator of liquidity constraint (*1_(Liquidity_Constraint)*), indicator of tax-loss-carried-forward (*1_(Tax-loss-carried-forward)*), indicator of investment grade (*1_(Investment_Grade)*), CEO age (*CEO_Age*) and CEO tenure (*CEO_Tenure*). We also include firm and year fixed effects to account for any unobserved characteristics that might affect the adjustments of CEO compensation structures.

[Table 4 goes here]

The result of regression (5) is reported in Table 4. The coefficient of *Active_Block* equals 0.3350 and is significant at 1% level (column 1). The positive coefficient suggests that the adjustments towards the *target* CEO relative incentive ratios are significantly stronger in the presence of active blockholders. This result implies firms with a new active blockholder move toward their target relative incentive ratio on average.[19] We find that ownership

[19]We utilize the fact that many investors choose to become active blockholders in some firms (the 13D

concentration by other institutional investors also facilitates the adjustments towards the *target* compensation structures (column 2). However, as with our prior results, the other institutional investors do not seem to affect the new active blockholder. The impact of the new active blockholders decreases very little after we control for institutional ownership concentration as 0.3319 is still significant at 5% level (column 2). This finding is consistent with the conclusion in Hartzell and Starks (2003). Time-varying industry conditions seem to affect new active blockholders' strategies to a small degree with the coefficient increasing a small amount in column 3.

We could see the results above even if blockholders only reduce the relative incentive ratio in firms with ratios above the target. This would, again, be consistent with the idea that blockholders want to reduce the alignment between managers and bondholders to expropriate wealth. In Table 4, columns 4 and 5, we show that new active blockholders are associated with adjustments toward target relative incentive ratios that are too high as well as too low. If the goal of a new active blockholder was expropriating bondholders, we would not see those blockholders strengthening the alignment between managers and bondholders. Thus, we see strong evidence that new active blockholders are concerned with a firm optimal relative incentive ratio rather than an equity-centric one.

After new active blockholders exit, the adjustments towards the *target* pay structures are not significantly different between the (previously) targeted firms and the firms which never attract any new active blockholders. The coefficient of *After_Active_Block* is negative but insignificant. Since the significantly strong compensation adjustments start when new active blockholders emerge and end when these investors exit, we infer a strong association between the blockholder ownership and the adjustments.[20]

firms), but become passive blockholders in other firms (the 13G firms) and re-run regression (5) including only 13D and 13G companies that simultaneously have the same blockholders. We find that CEO relative incentive ratios are adjusted to the target levels faster in the 13D firms than in the 13G firms that attract the same blockholders. We report the results in the internet appendix.

[20]In examining if adjustments to CEO relative incentive ratios are associated with higher total firm value

4.3 New active blockholders presence and changes in CEO inside and firm leverage

The CEO relative incentive ratio is defined as the CEO inside debt-equity incentive ratio divided by the firm's debt-equity incentive ratio (Wei and Yermack (2011)) where inside debt-equity incentive is a function of the level of both inside debt and equity. While the firm's debt-equity incentive ratio is a function of the level of both the firm's debt and equity. It follows that active blockholders can change the CEO relative incentive ratio by changing any or all of these four inputs. In fact, prior research already suggests that active blockholders change some of these policies. Our goal here is really understanding whether new active blockholders are associated with changes to inside debt or whether blockholders are changing other inputs to the relative incentive ratio that incidentally move toward the target.

For each of the inputs—CEO inside debt, CEO inside equity, firm debt and firm equity—we estimate the effect of blockholders on those inputs by modifying regression (5) as follows:

$$\begin{aligned} Y_{i,t} = \alpha &+ \beta_1 * Active\_Block_{i,t} * 1\_(\text{Above target}_{i,entry}) \\ &+ \beta_2 * Active\_Block_{i,t} * 1\_(\text{Below target}_{i,entry}) \\ &+ \theta * X_{i,t} + \delta * Year\_FE_t + \gamma * Firm\_FE_i + \epsilon_{i,t} \end{aligned} \tag{6}$$

where $Y_{i,t}$ is an outcome variable. The outcome variables in our analysis are changes in inside debt, inside equity, firm long-term debt and firm equity, all normalized by total assets (Δ *Ln(Inside D/Assets)*, Δ *Ln(Inside E/Assets)*, Δ *Ln(Firm D/Assets)* and Δ *Ln(Firm E/Assets)*).

or are associated with only higher equity value. We follow Campbell et al. (2016) and regress the stock and bond cumulative abnormal returns on the changes in the deviations from target over the active block holding period. We obtain similar empirical results to those reported by Campbell et al. (2016). We report these results in the internet appendix.

[Table 5 goes here]

The result of regression (6) is reported in Table 5. In both debt-biased pay structures and equity-biased pay structures the active blockholder in moving the CEO relative incentive ratio towards its *target* ratio adjust all four mechanisms: CEO inside debt, CEO inside equity, firm debt and firm equity.

Our main interest is in column 1, the change in inside debt, as it is clearly the input least examined in the literature and the most direct control on the relative incentive ratio. Consistent with our adjustment story, when the starting relative incentive ratio is above the target, inside debt decreases. However, when the starting relative incentive ratio is below the target, inside debt increases. This is important, as it shows that blockholders do not arise and uniformly increase or uniformly decrease inside debt; the changes are consistent with bringing relative incentive ratios in line with the target.

Column 2 shows the change in inside equity. Some work on blockholders shows blockholders increase equity-based compensation to improve incentives. We see that the increase in equity-based compensation only occurs when the starting relative incentive ratio is above target. When the relative incentive ratio is below target, new active blockholders do not seem to increase the equity-based compensation. This is interesting with respect to the extant literature, since it again shows there is no "one-size-fits-all" action for blockholders.

Columns 3 and 4 show that firm leverage is less affected by the contracting concerns. There is some evidence in column 3 that firms are unwilling (or unable) to increase debt as much when their relative incentive ratios are too low (see also Freund et al. (2018)). Overall, however, it appears that the adjustments we see toward the target relative incentive ratio represent changes to inside debt and inside equity.

Active blockholders can also replace CEOs. The replacement provides an easy opportunity to adjust compensation contracts. But turnovers will also affect inside debt purely through the turnover process. For example, if a firm changes its pension plan, current CEOs

are often grandfathered in. The change in CEO will therefore change inside debt even if the goal of a blockholder is simply removing a bad CEO. So it is not clear in a turnover event if changing inside debt is the main motivation of the blockholder. We therefore examine whether our results are driven by CEO turnovers.

In Table 6, we provide separate estimates of the effect of new active blockholders on firm policies depending on whether the CEO turns over during the blockholder ownership. When the CEO turns over, components of the compensation contract—especially pensions that drive inside debt—will change regardless of whether the blockholder considers compensation or not. Our main interest is in the events without an associated turnover because those changes in compensation are clearly purposefully adjusted.

We see evidence that, even when there is no turnover, new blockholders appear to reduce inside debt in firms with too-high relative incentive ratios and increase inside debt in firms with too-low relative incentive ratios. Thus, while CEO turnovers obviously give an opportunity to recontract, blockholders are also making adjustments to compensation without turning over the manager.[21]

[Table 6 goes here]

4.4 Are New Active Blockholders Informed or Influential?

Executive compensation is solely determined by the board of directors. Hence, an effective channel for active blockholders to affect CEO pay is to appoint their favored directors into the boards of the targeted firms. Bebchuk et al. (2020) argue that appointing directors is also an efficient channel since this solution can save face for the targeted firms' management, hence triggering less resistance. Agrawal and Nasser (2019) find strong monitoring impact on CEO compensation when the board of directors contain blockholders.

[21] This is not to say that the threat of turnover is irrelevant. It could well be that blockholders offer a take-it-or-leave-it new contract that CEOs accept. However, the threat of turnover will not automatically change inside debt the way an actual turnover can.

When a new active blockholder appoints a director, they give themselves more opportunities to change the firm. A new active blockholder that is simply informed about upcoming changes does not need such opportunity to change the firm. This is not to say that a blockholder who does not have board influence cannot influence corporate policies and is necessarily a passive investor. Rather, we argue here that if there are informed rather than influential blockholders, they are more likely in the group that does not obtain board representation.

We examine whether new active blockholders adjust CEO compensation to the *target* structures by appointing their favored directors into the boards. First, we obtain a sample of newly appointed directors from Boardex. Next, we determine that a director is appointed by an active blockholders if one of the following conditions applies: (i) the active blockholder claims to nominate the director in a form 13D or 13D/A, (ii) the director is also the fund manager of the active blockholder, (iii) the director is a close relative (i.e. spouse, child, or sibling) of the the active blockholder's fund manager.

[Table 7 goes here]

We provide separate estimates of the decrease in deviation for blockholders who appoint directors and those that do not appoint directors. Column 1 shows that new active blockholders are associated with a decrease in the deviation from target relative incentive ratios (coefficient is 5.6214, significant at the 10% level). Again, we do not know whether this is influence or just skill at picking stocks. Those active blockholders who also appoint a director see a much larger effect of active blockholding on the decrease in deviation from target relative incentive ratios (an additional 2.2275, with the difference significant at the 5% level).

The effect of appointing directors on compensation adjustments might vary across the committees into which the directors are appointed. We replace the indicator of director

appointment with several indicators, each of which equals one if active blockholders appoint directors into a particular committee, and equals zero if otherwise. The result is reported in Table 7, column 2. The impact of active blochkolders is the strongest when they can appoint directors into the Compensation committees (coefficient equals 5.0452, significant at 1%), followed by the Governance committees (coefficient equals 2.3746, significant at 5%). Appointing directors into the Nominating committees can also give the blockholders some advantages in adjusting CEO compensation (coefficient equals 0.7879, significant at 1%). If the active blockholders can only appoint directors into the Auditing or any other committees, their impact on CEO compensation does not significantly differ from that of the blockholders which do not appoint directors.

4.5 Placebo tests

The deviations from the *target* inside debt-equity ratios might follow a mean-reverting process. In this case, large deviations would certainly be followed by strong declines, even without the presence of active blockholders. To test this possibility, we run a placebo test similar to that in Brav et al. (2015a). We identify a sample of matched firms that have the same industries and compensation adjustements as those of the targeted firms during two years before active blockholders arise. If a targeted firm has higher (lower) inside debt-equity ratio than the *target* ratio, then so does its matched firm. The matching process requires that the targeted firms have three consecutive years of compensation data before active blockholders arise. We assume that new active blockholders arise in the matched firms, but not in the truly targeted firms.

[Table 8 goes here]

Columns 1 and 2 in Table 8 report the estimates of regressions conducted on the true-event and pseudo-event samples, respectively. In the pseudo-event sample, pseudo active

blockholders' presence equals 0.0612 but is insignificant. The difference between the estimate in the true-event sample and that in the pseudo-event sample is significant at 1% level (column 3).

It is also possible that some firm characteristics co-determine the presence of active blockholders and the adjustments of CEO compensation. Hence, we conduct another placebo test in which the matched firms are assigned based on industries and the propensities to attract new active blockholders. The propensity scores are estimated by using the Probit regression that is specified in section 4.1. The results for this placebo test is reported in Table 8, columns 4 to 6. The main coefficient in the placebo test equals -0.0428 but is insignificant. The difference between the estimate in the true-event sample and that in the pseudo-event sample is significant at 1% level (column 6)

The estimated impact of active blockholders' presence on reduced deviations is significantly lower in the pseudo-event sample than in the true-event sample in both tests., suggesting that it is unlikely that the adjustment in CEO compensation would occur in the targeted firms without active blockholders' presence.

5 Conclusion

We provide evidence that new active blockholders emerge to help align CEO compensation with a compensation scheme that benefits shareholders without harming bondholders. These new active blockholders act as a force for change in correcting both debt and equity biases in executive compensation. Moreover, we show that those blockholders do more than fire CEOs and reset compensation. Thus, we see that inside debt is not a "set it and forget it" result of CEO pension plans. Rather, inside debt can be—and is—adjusted along with inside equity.

Though we show that the average adjustment by new active blockholders appears to

maximize firm value, we also know that the literature on blockholders identifies actions that benefit shareholders at the expense of bondholders.

Our focus is on blockholder effect on inside debt. But more generally, the impact of active blockholders on firm value has been the topic of heated debate, both from academic works[22] and from media coverage[23]. Our study finds evidence that active blockholders restructure CEO compensation to benefit both shareholders and debtholders, thus increasing total firm value. Hence, it provides a positive angle to evaluate the impact of these increasingly powerful investors on the performance U.S. public companies. While we focus on the fact that blockholders appear beneficial on average, there are some important patterns. If moving toward the optimal relative incentive ratio increases firm value on average, those blockholders that move away from the optimal relative incentive ratio destroy both debt and equity value on average. So why would a blockholder appear and then enact a compensation policy that destroys their own value? Who do these blockholders work for? Our approach provides a way to identify blockholders that behave in an apparently sub-optimal way, which suggests our approach could help in addressing questions such as these. We leave those to future research.

[22]See review papers by Brav et al. (2010), Edmans (2014)

[23]See, Roger L. Martin, *Activist Hedge Funds Aren't Good for Companies or Investors, So Why Do They Exist?*, Harvard Business Review, August 20, 2018; see also Yuliya Ponomareva, *Shareholder Activism Is On The Rise: Caution Required*, Forbes, December 20, 2018; see also Dominik Breitinger and Sophie Hardach, *Activist investors are more powerful than ever. Here's what that means for the economy*, World Economic Forum, September 5, 2018.

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Figure 1: **Distribution of Differences from *Target* CEO Relative Incentive Ratios**

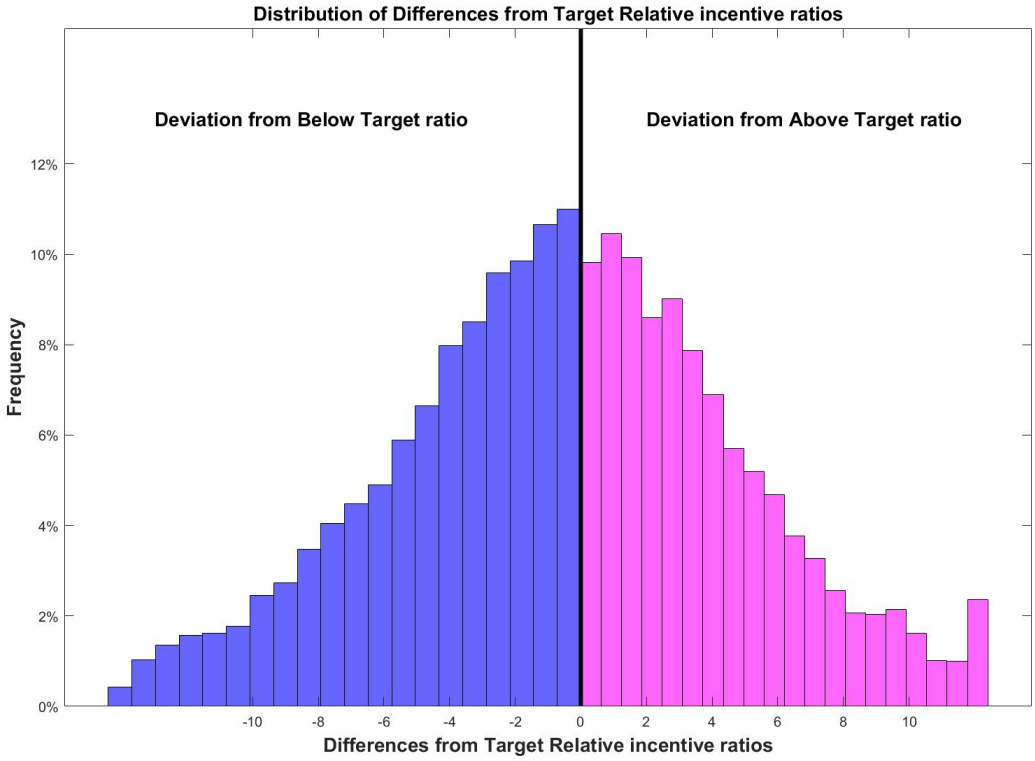

Figure 2: **Deviations from *Target* CEO Relative Incentive Ratios and Tobin's Q around Proxy Statement releases**

The observed Tobin's Q (the blue dots) is calculated by using stock prices one day after proxy releases. Deviation from *target* CEO relative incentive ratios are calculated from the information disclosed from these newly released proxy statements. The red solid line plots the predicted values of the following OLS regression: $Y = \alpha + \beta * X + \gamma * X^2$; where Y is Tobin's Q, and X is the differences between CEO relative incentive ratios and their *target* levels. The shaded area represents the 99% prediction interval of the above-mentioned regression.

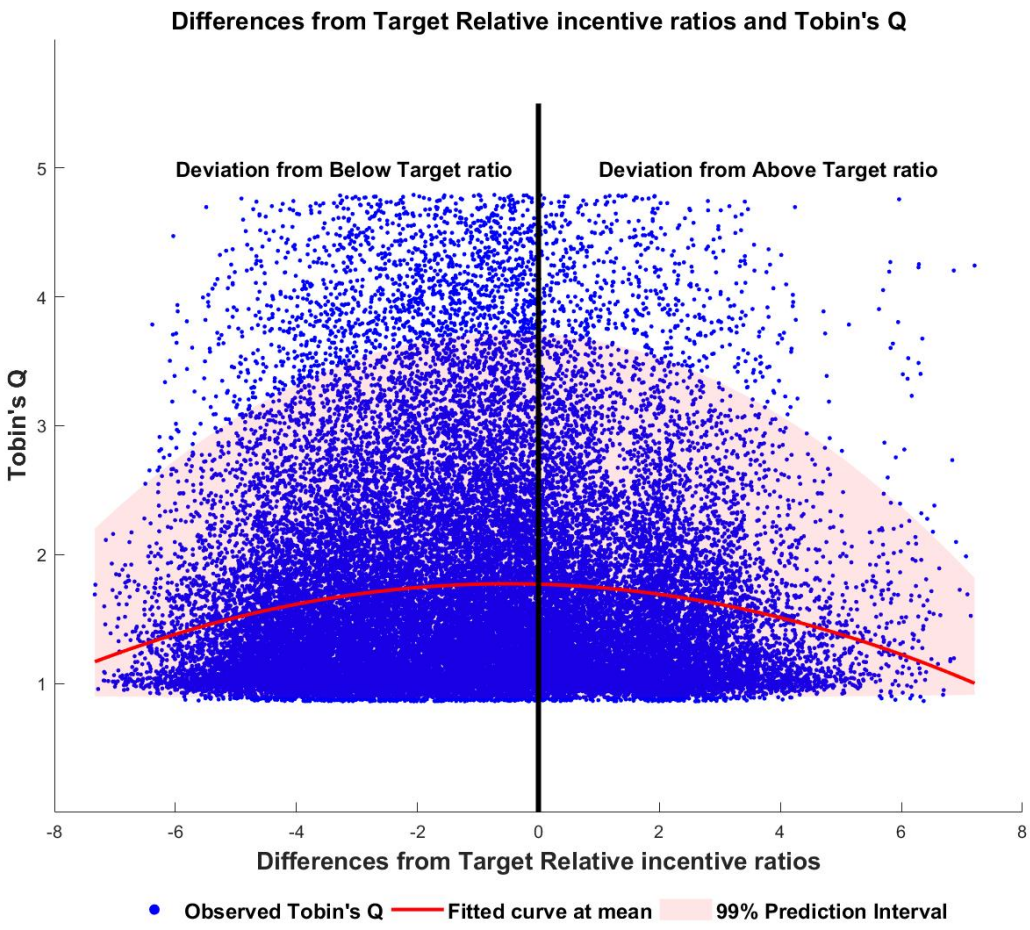

Table 1: **Descriptive Statistics**

This table reports the descriptive statistics of variables used in the main regressions. Details on how to construct these variables are given in Appendix A1. Continuous variables are winsorized at 1% and 99% levels.

	Mean	SD	Q25	Q50	Q75	N
CEO characteristics:						
Inside debt (US$ million)	2.7436	8.9714	0.0000	0.0073	0.7233	35549
Inside equity (US$ million)	15.2766	34.2394	0.7636	3.7009	13.4381	35549
CEO relative incentive ratio	4.2467	7.0472	0.0090	0.1734	3.9387	35549
ln CEO relative incentive ratio	-1.2248	4.2559	-4.7050	-1.7504	1.3721	35549
Deviation_fr_Target	2.8294	1.8629	1.2634	2.5865	4.0978	35549
CEO_Age	55.3863	7.9521	51.0000	55.0000	60.0000	35549
CEO_Tenure	6.8575	5.7941	3.0000	6.0000	9.0000	35549
Firm characteristics:						
Ln(Assets)	6.6864	2.1139	5.2046	6.7304	8.1310	35549
Market-to-Book	1.9592	1.5780	1.0548	1.4080	2.1676	35549
Book_Leverage	0.2230	0.2268	0.0268	0.1639	0.3480	35549
Ln(Firm_DE)	-1.4791	2.0081	-2.2378	-1.1616	-0.2670	35549
Fixed_Assets	0.1922	0.2315	0.0227	0.0942	0.2711	35549
R&D_Expenditures	0.4510	2.6060	0.0000	0.0000	0.0551	35549
Idiosyncratic_Risks	-2.3744	0.5798	-2.8023	-2.3819	-1.9755	35549
1_(Liquidity_Constraint)	0.3179	0.4657	0.0000	0.0000	1.0000	35549
1_(Tax-loss-carried-forward)	0.5316	0.4990	0.0000	1.0000	1.0000	35549
1_(Investment_Grade)	0.0499	0.2177	0.0000	0.0000	0.0000	35549
Change variables:						
Deviation_Decrease	0.0465	3.9865	-0.5845	0.0301	0.6450	35549
Δ Ln(Assets)	0.0541	0.1542	-0.0164	0.0592	0.1020	35549
Δ Market-to-Book	-0.0313	0.4093	-0.1090	-0.0381	0.1053	35549
Δ Book_Leverage	0.0059	0.0469	-0.0112	0.0020	0.0100	35549
Δ Ln(Firm_DE)	0.0686	0.6264	-0.1852	0.0762	0.1808	35549
Δ Fixed_Assets	0.0009	0.0203	-0.0047	0.0012	0.0045	35549
Δ R&D_Expenditures	-0.0016	0.0094	-0.0074	0.0000	0.0000	35549
Δ Idiosyncratic_Risks	0.0153	0.2283	-0.1096	0.0185	0.1191	35549

Table 2: **Characteristics of Companies Targeted by New Active Blockholders**
This table compares companies targeted by new active blockholders (*13D targeted companies*) with those in the same industries that never attract any new active blockholders (*Non-targeted companies*). Characteristics are measured one year before active blockholders arise. Values in column (5) equal values in column (1) minus those in column (3). Details on how to construct variables are given in Appendix A1. Continuous variables are winsorized at 1% and 99% levels. Industries are categorized based on two-digit SIC code. *, **, *** indicate significance at 10%, 5%, and 1% levels.

	13D targeted firms		**Non-targeted firms**		**Difference**	
	Mean (1)	**SD (2)**	**Mean (3)**	**SD (4)**	**Diff. (5)**	**t-stat (6)**
CEO characteristics:						
Inside debt (US$ million)	1.8220	7.8140	3.5380	1.4480	-1.7160***	-3.1733
Inside equity (US$ million)	10.8500	28.1400	19.1551	5.3640	-3.1900***	-3.8888
CEO relative incentive ratio	-1.8584	3.1314	-1.2402	2.7531	-0.6182***	-3.5576
Deviation_fr_Target	4.4255	2.2718	2.1229	1.8441	2.3026***	6.0296
CEO_Age	54.3629	9.0310	55.3691	1.0609	-1.0062***	-3.8134
CEO_Tenure	6.8918	5.9861	6.7201	0.6282	0.1717	0.9858
Firm characteristics:						
Ln(Assets)	6.2520	1.8070	6.4294	0.9159	-0.1774***	-3.4627
Market-to-Book	1.8044	1.3879	2.1044	0.6377	-0.3000***	-7.7522
Book_Leverage	0.2185	0.2293	0.2165	0.0402	0.0020	0.2957
Ln(Firm_DE)	-3.8173	5.2734	-3.8235	1.7432	0.0062	0.0673
Fixed_Assets	0.2005	0.2392	0.1852	0.1487	0.0153***	2.8527
Idiosyncratic_Risks	-2.3093	0.5111	-2.3574	0.2696	0.0481***	3.5478
Dividend_Yield	0.0104	0.0237	0.0139	0.0082	-0.0035***	-3.9935

Table 3: **Deviations from Target Ratios and Emergence of New Active Blockholders**

This table reports estimates of the regression that relates the incidence of new active blockholders with lagged deviations from *target* CEO relative incentive ratios. *New_Active_Block*, equals one if the firm is a subject of form 13D, and equals zero if otherwise. *Deviation_fr_Target* is the absolute difference between actual CEO relative incentive ratio and *target* ratio. *1_(Above target* equals one if CEO relative incentive ratio exceeds the *target* level, and equals zero if otherwise. *1_(Below target)* equals one if CEO relative incentive ratio is below the *target* level, and equals zero if otherwise. Details on how to construct the control variables are given in Appendix A1. Continuous variables are winsorized at 1% and 99% levels. t-statistics are given in the parentheses. Marginal effects of main regressors, where other control variables are kept at their mean values, are reported in the square brackets. Industries are categorized based on two-digit SIC code. Standard errors are robust. *, **, *** indicate significance at 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)
Dependent variable: New_Active_Block$_t$ = 1 if 13D filing in year t; 0 if otherwise				
Deviation_fr_Target$_{t-1}$	**0.0127****	**0.0124****		
	(2.0555)	**(2.0057)**		
	[**0.000937**]	[**0.000915**]		
Deviation_fr_Target$_{t-1}$ × 1_(Above target)$_{t-1}$			**0.0122****	**0.0121****
			(2.0014)	**(1.9894)**
			[**0.000894**]	[**0.000887**]
Deviation_fr_Target$_{t-1}$ × 1_(Below target)$_{t-1}$			**0.0235*****	**0.0225*****
			(3.0866)	**(2.9509)**
			[**0.001724**]	[**0.001649**]
Control variables (measured at fiscal year end t-1):				
Ln(Assets)	-0.1627***	-0.1615***	-0.1438***	-0.1415***
	(-5.3674)	(-5.0588)	(-4.5866)	(-4.1979)
Market-to-Book	-0.1090***	-0.1087***	-0.1051***	-0.1042***
	(-7.3420)	(-7.3054)	(-8.1367)	(-8.0595)
Sales_Growth	-0.0211	-0.0190	-0.0261	-0.0262
	(-0.6334)	(-0.5715)	(-0.8568)	(-0.8589)
ROA	0.0652	0.0556	0.0726	0.0710
	(0.8276)	(0.7039)	(1.0989)	(1.0769)
Leverage	0.3672***	0.3660***	0.3288***	0.3251***
	(5.8034)	(5.7679)	(5.6556)	(5.5818)
R&D Exp.	-0.0386	-0.0346	-0.0270	-0.0315
	(-0.2490)	(-0.2220)	(-0.2054)	(-0.2390)
Dividend_Yield	-2.1553***	-2.1287***	-1.7847***	-1.7711***
	(-3.1016)	(-3.0578)	(-2.7999)	(-2.7803)
Sales HHI	-0.0604	-0.0537	-0.0873	-0.0938
	(-0.8987)	(-0.7881)	(-1.3858)	(-1.4701)
Stock_Liquidity	-0.2797	-0.3291	-0.2830	-0.3428
	(-0.7896)	(-0.9272)	(-0.8534)	(-1.0332)
Ln(1 + N_Analyst)	0.2330***	0.2308***	0.2163***	0.2188***
	(14.5925)	(14.2968)	(14.2463)	(14.4152)
Ln(1 + N_Institutions)		0.0061		-0.0144
		(0.4310)		(-1.0957)
Inst. Own. HHI		-0.1264*		-0.1415**
		(-1.8585)		(-2.1644)
Ln(1 + N_Blocks)		0.0621		0.0755
Year FE	Yes	Yes	Yes	Yes
Ind FE	Yes	Yes	Yes	Yes
N	31,731	31,731	31,731	31,731
Pseudo R^2	0.048	0.048	0.043	0.043

Table 4: **New Active Blockholders Presence and Reduced Deviations from Target Ratios**

This table reports estimates of the regression that relates annual reductions in deviations from *target* CEO relative incentive ratios with the presence of active blockholders. *Deviation_Decrease* is the negative of the change in deviation from *target* CEO relative incentive ratio over it lagged value. *Active_Block* equals one if an active blockholder is still present at fiscal year end, and equals zero if otherwise. *1_(Above target)$_{entry}$* equals one if CEO relative incentive ratio exceeds the *target* level when active blockholders arise, and equals zero if otherwise. *1_(Below target)$_{entry}$* equals one if CEO relative incentive ratio is below the *target* level when active blockholders arise, and equals zero if otherwise. Details on how to construct the control variables are given in Appendix A1. Continuous variables are winsorized at 1% and 99% levels. t-statistics are given in the parentheses. Industries are categorized based on two-digit SIC code. Standard errors are robust. *, **, *** indicate significance at 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)	(5)
Dependent variable:	**Deviation_Decrease$_t$ = − [Deviation_fr_Target$_t$ − Deviation_fr_Target$_{t-1}$]**				
Active_Block$_t$	**0.3350****	**0.3319****	**0.4368****		
	(2.2483)	**(2.2281)**	**(2.4619)**		
Active_Block$_t$				**0.2628***	**0.2600***
× 1_(Above target)$_{entry}$				**(1.7429)**	**(1.7245)**
Active_Block$_t$				**0.3857****	**0.3828****
× 1_(Below target)$_{entry}$				**(2.5436)**	**(2.5246)**
Control variables (measured at fiscal year end t):					
After_Active_Block	-0.0254	-0.0316	-0.0458	-0.0257	-0.0319
	(-0.3474)	(-0.4319)	(-0.6144)	(-0.3525)	(-0.4368)
Δ Ln(Assets)	-0.1372***	-0.1397***	-0.1411***	-0.1399***	-0.1423***
	(-2.5872)	(-2.6335)	(-2.6143)	(-2.6361)	(-2.6824)
Δ Leverage	1.5839***	1.5853***	1.6259***	1.5843***	1.5858***
	(4.7271)	(4.7385)	(4.8249)	(4.7305)	(4.7421)
Δ Idiosyncratic_Risks	0.0218	0.0243	0.0227	0.0219	0.0244
	(0.6368)	(0.7094)	(0.6532)	(0.6409)	(0.7136)
Δ Market-to-Book	0.0343*	0.0338*	0.0357**	0.0341*	0.0336*
	(1.9275)	(1.8992)	(1.9710)	(1.9172)	(1.8886)
Δ R&D Exp.	0.4656	0.4885	0.4038	0.4641	0.4870
	(0.8679)	(0.9108)	(0.7467)	(0.8653)	(0.9081)
Δ Fixed_Assets	0.5369	0.5420	0.7022*	0.5299	0.5350
	(1.5141)	(1.5284)	(1.9403)	(1.4944)	(1.5086)
1_(Liq. Constraint)	0.0263	0.0252	0.0224	0.0259	0.0247
	(0.7218)	(0.6900)	(0.5901)	(0.7095)	(0.6781)
1_(Tax-loss)	0.0049	0.0045	0.0208	0.0054	0.0050
	(0.1470)	(0.1355)	(0.6083)	(0.1623)	(0.1505)
1_(Inv-graded bond)	-0.5414	-0.5333	-28.7472	-0.5382	-0.5302
	(-0.5312)	(-0.5234)	(-1.2805)	(-0.5281)	(-0.5203)
CEO_Age	-0.0044**	-0.0044**	-0.0046**	-0.0045**	-0.0045**
	(-2.4091)	(-2.4010)	(-2.4697)	(-2.4319)	(-2.4232)
CEO_Tenure	-0.0020	-0.0020	-0.0026	-0.0019	-0.0020
	(-0.8262)	(-0.8347)	(-1.0553)	(-0.8158)	(-0.8243)
Ln(1 + N_Institution)		-0.0038			-0.0037
		(-0.3827)			(-0.3741)
Inst. Own. HHI		0.2797***			0.2798***
		(3.6438)			(3.6456)
Ln(1+ N_Blocks)		0.0130			0.0121
		(0.3857)			(0.3579)
Year FE	Yes	Yes	No	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Ind x Year FE	No	No	Yes	No	No
N	35,549	35,549	35,549	35,549	35,549
Adj. R^2	0.374	0.373	0.363	0.371	0.370

Table 5: **New Active Blockholders Presence and Changes in CEO Compensation and Firm Leverage**

This table reports estimates of the regression that relates the presence of active blockholders with changes in CEO compensation components and with changes in firms' capital structures. *Active_Block* equals one if an active blockholder is still present at fiscal year end, and equals zero if otherwise. *1_(Above target)*$_{entry}$ equals one if Relative incentive ratio exceeds the *target* level when active blockholders arise, and equals zero if otherwise. *1_(Below target)*$_{entry}$ equals one if Relative incentive ratio is below the *target* level when active blockholders arise, and equals zero if otherwise. Details on how to construct the control variables are given in Appendix A1. Continuous variables are winsorized at 1% and 99% levels. t-statistics are given in the parentheses. Industries are categorized based on two-digit SIC code. Standard errors are robust. *, **, *** indicate significance at 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)
Dependent variables:	**Δ Ln(Inside D/Assets)**	**Δ Ln(Inside E/Assets)**	**Δ Ln(Firm D/Assets)**	**Δ Ln(Firm E/Assets)**
Active_Block$_t$	**-0.2163*** **	**0.2014*** **	**0.2217*** **	**0.2188*** **
× 1_(Above target)$_{entry}$	**(-6.0274)**	**(4.6943)**	**(3.9249)**	**(3.3594)**
Active_Block$_t$	**0.2267*** **	**-0.0585**	**0.1128*** **	**0.1737** **
× 1_(Below target)$_{entry}$	**(4.4452)**	**(-0.8108)**	**(3.2527)**	**(2.5166)**
Control varibles (measured at fiscal year end t):				
After_Active_Block	-0.0002	-0.0519	-0.1012	0.0562
	(-0.0020)	(-0.7101)	(-0.8166)	(0.8570)
Δ Ln(Assets)	-0.7306***	-0.9625***	-0.0119	-0.0756**
	(-10.0539)	(-24.5477)	(-0.1797)	(-2.1606)
Δ Idiosyncratic_Risks	-0.0297	0.0477	0.0024	-0.0314
	(-1.0038)	(1.1060)	(0.2075)	(-0.6256)
Δ Market-to-Book	-0.0162***	0.0678**	0.0120	0.0534**
	(-3.0456)	(2.3421)	(1.0613)	(2.3578)
Δ R&D/Sales	-0.0046	0.0142	0.0053	0.0059
	(-0.2583)	(0.1107)	(0.3448)	(1.3603)
Δ Fixed_Assets	-0.5252	-0.2498	-0.2316	-0.0059*
	(-1.4449)	(-1.0832)	(-0.5927)	(-1.8697)
1_(Liq. constraint)	-0.0355	-0.0954***	0.0248	-0.1487**
	(-0.6578)	(-2.6367)	(0.7609)	(-2.4259)
1_(Tax-loss)	0.0004	-0.0309	-0.0026	-0.0061
	(0.0086)	(-0.8817)	(-0.3051)	(-0.1942)
1_(Inv-graded bond)	-0.0432	-0.0787	-0.0749	-0.0870
	(-0.6578)	(-1.0228)	(-0.5746)	(-1.2959)
CEO_Age	-0.0027	-0.0013	0.0003	0.0001
	(-1.1071)	(-0.9335)	(0.5850)	(0.1663)
CEO_Tenure	-0.0009*	0.0052**	0.0053	-0.0008
	(-1.8238)	(2.4820)	(1.5006)	(-0.4168)
Ln(1 + NInstitution)	0.0099	-0.0124	-0.0161	0.0033
	(0.8840)	(-1.3290)	(-1.0150)	(0.3888)
Inst. Own. HHI	-0.0084*	0.1855***	0.2948***	0.0146
	(-1.8657)	(4.5169)	(4.2353)	(0.3997)
Ln(1+ NBlocks)	-0.0126	0.0268	0.0261	0.0056
	(-0.3303)	(0.8490)	(0.4892)	(0.2003)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	35549	35549	35549	35549
Adj. R^2	0.395	0.333	0.325	0.366

Table 6: **New Active Blockholders Presence and CEO Turnover with Changes in CEO Compensation and Firm Leverage**

This table reports estimates of the regression that relates the presence of active blockholders with changes in CEO compensation components and with changes in firms' capital structures. *Active_Block* equals one if an active blockholder is still present at fiscal year end, and equals zero if otherwise. *1_(Above target)*$_{entry}$ equals one if Relative incentive ratio exceeds the *target* level when active blockholders arise, and equals zero if otherwise. *1_(Below target)*$_{entry}$ equals one if Relative incentive ratio is below the *target* level when active blockholders arise, and equals zero if otherwise. *CEO_turnover* equals one if CEO changes at least once during active block holding period, and equals zero if otherwise. *No_CEO_turnover* equals one if CEO never changes during active block holding period, and equals zero if otherwise. Details on how to construct the control variables are given in Appendix A1. Continuous variables are winsorized at 1% and 99% levels. t-statistics are given in the parentheses. Industries are categorized based on two-digit SIC code. Standard errors are robust. *, **, *** indicate significance at 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)
Dependent variables:	**Δ Ln(Inside D/Assets)**	**Δ Ln(Inside E/Assets)**	**Δ Ln(Firm D/Assets)**	**Δ Ln(Firm E/Assets)**
Active_Block$_t$ **× CEO_turnover**	**-0.2402*** **	**0.1323** **	**0.2224*** **	**0.2358*** **
× 1_(Above target)$_{entry}$	**(-4.0247)**	**(2.3842)**	**(3.1473)**	**(3.0155)**
Active_Block$_t$ **× No_CEO_turnover**	**-0.1553** **	**0.2573*** **	**0.2189*** **	**0.2056*** **
× 1_(Above target)$_{entry}$	**(-2.2780)**	**(6.5798)**	**(3.6066)**	**(3.0668)**
Active_Block$_t$ **× CEO_turnover**	**0.0966**	**-0.0132**	**0.1886**	**0.1124*** **
× 1_(Below target)$_{entry}$	**(1.0538)**	**(-1.0219)**	**(1.5788)**	**(3.0367)**
Active_Block$_t$ **× No_CEO_turnover**	**0.2514*** **	**-0.0666**	**0.1082*** **	**0.1824*** **
× 1_(Below target)$_{entry}$	**(4.1132)**	**(-0.5180)**	**(3.4591)**	**(3.4106)**
Control varibles (measured at fiscal year end t):				
After_Active_Block	0.0006	-0.0497	-0.0975	0.0552
	(0.0055)	(-0.6795)	(-0.7867)	(0.8405)
Δ Ln(Assets)	-0.7307***	-0.9633***	-0.0134	-0.0752**
	(-10.0564)	(-24.5705)	(-0.2021)	(-2.1493)
Δ Idiosyncratic_Risks	-0.0296	0.0497	0.0024	-0.0312
	(-1.0012)	(1.1524)	(0.2123)	(-0.6224)
Δ Market-to-Book	-0.0161***	0.0678**	0.0111	0.0534**
	(-3.0292)	(2.3331)	(0.5782)	(2.3458)
Δ R&D Exp./Sales	-0.0046	0.0122	0.0054	0.0059
	(-0.2591)	(0.0948)	(0.3449)	(1.3597)
Δ Fixed_Assets	-0.5266	-0.2519	-0.2345	-0.0060*
	(-1.4489)	(-1.0922)	(-0.6002)	(-1.8633)
1_(Liq. constraint)	-0.0369	-0.0955***	0.0246	-0.1491**
	(-0.6843)	(-2.6379)	(0.7552)	(-2.4311)
1_(Tax-loss)	-0.0014	-0.0317	-0.0871	-0.0060
	(-0.0294)	(-0.9062)	(-1.4697)	(-0.1915)
1_(Inv-graded bond)	-0.0432	-0.0785	-0.0746	-0.0872
	(-0.6588)	(-1.0198)	(-0.5722)	(-1.2987)
CEO_Age	-0.0026	-0.0013	0.0003	0.0001
	(-1.0559)	(-0.9354)	(0.6068)	(0.1642)
CEO_Tenure	-0.0009*	0.0051**	0.0052	-0.0007
	(-1.8121)	(2.4430)	(1.4633)	(-0.3939)
Ln(1 + NInstitution)	0.0100	-0.0127	-0.0165	0.0033
	(0.8873)	(-1.3554)	(-1.0439)	(0.3977)
Inst. Own. HHI	-0.0866*	0.1838***	0.2913***	0.0148
	(-1.9217)	(4.4741)	(4.1858)	(0.4072)
Ln(1+ NBlocks)	-0.0115	0.0278	0.0278	0.0052
	(-0.3017)	(0.8813)	(0.5203)	(0.1856)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	35549	35549	35549	35549
Adj. R^2	0.359	0.391	0.385	0.335

Table 7: **Channels for New Active Blockholders to Reduce Deviations from *target* inside debt-equity ratios**

This table presents estimates of the regression that relates reduced deviations from target CEO relative incentive ratios with some active blockholders' actions or characteristics. *1_(appoint director)*$_{t-1}$ equals one if the active blockholders appoint their favored directors to the targeted firm boards of directors; and equals zero if otherwise. In addition, we include indicator variables for appointments to the Compensation committee, Governance committee, Nominating committee, Auditing committee and any other committee. t-statistics are given in the parentheses. Industries are categorized based on two-digit SIC code. Standard errors are robust. *, **, *** indicate significance at 10%, 5%, and 1% levels.

	(1)	(2)
Dependent variable: Deviation_Decrease$_t$		
Active_Block$_t$	**2.2275****	
1_(Appoint Directors)$_{t-1}$	**(2.6171)**	
Active_Block$_t$		**5.0452*****
× 1_(Appoint Dir. To Compensation Comm.)$_{t-1}$		**(3.1639)**
Active_Block$_t$		**2.3746****
× 1_(Appoint Dir. To Governance Comm.)$_{t-1}$		**(2.2225)**
Active_Block$_t$		**0.7879*****
× 1_(Appoint Dir. To Nominating Comm.)$_{t-1}$		**(2.7726)**
Active_Block$_t$		**-0.6294**
× 1_(Appoint Dir. To Audit Comm.)$_{t-1}$		**(-0.5778)**
Active_Block$_t$		**0.2707**
× 1_(Appoint Dir. To Other Comm.)$_{t-1}$		**(0.4566)**
Active_Block$_t$	**5.6214***	**5.6681***
	(1.8668)	**(1.6626)**
Control variables	Yes	Yes
Firm FE	Yes	Yes
Year Fe	Yes	Yes
N	35,549	35,549
Adj. R^2	0.314	0.371

Table 8: ***Reduced deviations* from *target* Relative incentive ratios *do not occur in Pseudo events***

This table compares estimates of regressions conducted on the true-event sample with those conducted on the pseudo-event samples. *Deviation_Decrease* is the negative of the change in deviation from *target* CEO relative incentive ratio over it lagged value. *(Pseudo) Active_Block* equals one if an (pseudo) active blockholder is still present at fiscal year end, and equals zero if otherwise. Details on how to construct the control variables are given in Appendix A1. In columns (1), (2), (4), and (5) t-statistics are given in the parentheses. In columns (3) and (6), χ^2 statistics for tests of different estimates are given in the parentheses. Industries are categorized based on two-digit SIC code. Standard errors are robust. *, **, *** indicate significance at 10%, 5%, and 1% levels.

	Pre-activism trend matched			**Propensity score matched**		
	(1)	(2)	(3)	(4)	(5)	(6)
	True events	**Pseudo events**	**Diff.**	**True events**	**Pseudo events**	**Diff.**
Dependent variable: Deviation_Decrease$_t$ = − [Deviation_fr_Target$_t$ − Deviation_fr_Target$_{t-1}$]						
(Pseudo) Active_Block	**0.3350****	**0.0612**	**0.2738*****	**0.3350****	**-0.0428**	**0.3778*****
	(2.2483)	**(1.4378)**	**(74.1572)**	**(2.2483)**	**(-1.0811)**	**(930.7894)**
Control varibles (measured at fiscal year end t):						
After_Active_Block	-0.0254	0.0026	-0.0280***	-0.0254	0.0489	-0.0743***
	(-0.3474)	(0.0362)	(16.9791)	(-0.3474)	(0.7583)	(17.448)
Δ Ln(Assets)	-0.1372***	-0.1365**	-0.0007	-0.1372***	-0.1375***	0.0003
	(-2.5872)	(-2.5729)	(0.0006)	(-2.5872)	(-2.5925)	(0.039)
Δ Leverage	1.5839***	1.5793***	0.0046	1.5839***	1.5798***	0.0041
	(10.7271)	(10.6958)	(0.5205)	(10.7271)	(10.6995)	(0.6144)
Δ Idiosyncratic_Risks	0.0218	0.0216	0.0002	0.0218	0.0219	-0.0001
	(0.6368)	(0.6322)	(2.6183)	(0.6368)	(0.6399)	(0.552)
Δ Market-to-Book	0.0343*	0.0343*	<0.0001	0.0343*	0.0346*	-0.0003
	(1.9275)	(1.9278)	(0.0361)	(1.9275)	(1.9412)	(0.4277)
Δ R&D Exp.	0.4656	0.6206	-0.1550	0.4656	0.6240	-0.1584
	(0.8679)	(1.1666)	(0.5184)	(0.8679)	(1.1731)	(0.0655)
Δ Fixed_Assets	0.5369	0.5272	0.0097	0.5369	0.5287	0.0082
	(1.5141)	(1.4867)	(0.0204)	(1.5141)	(1.4911)	(0.0238)
1_(Liq. Constraint)	0.0263	0.0259	0.0004	0.0263	0.0251	0.0012
	(0.7218)	(0.7098)	(1.0977)	(0.7218)	(0.6878)	(3.4764)
1_(Tax-loss)	0.0049	-0.0029	0.0078***	0.0049	-0.0035	0.0084***
	(0.1470)	(-0.0878)	(11.4767)	(0.1470)	(-0.1057)	(17.1726)
1_(Inv-graded bond)	0.5123	0.4320	0.0803	0.5123	0.4531	0.0592
	(0.5027)	(0.4239)	(0.3461)	(0.5027)	(0.4447)	(0.0351)
CEO_Age	-0.0044**	-0.0044**	<0.0001	-0.0044**	-0.0044**	<0.0001
	(-2.4091)	(-2.4178)	(0.0824)	(-2.4091)	(-2.4174)	(0.072)
CEO_Tenure	-0.0020	-0.0020	<0.0001	-0.0020	-0.0020	<0.0001
	(-0.8262)	(-0.8534)	(0.5022)	(-0.8262)	(-0.8216)	(1.6806)
Year FE	Yes	Yes	-	Yes	Yes	-
Firm FE	Yes	Yes	-	Yes	Yes	-
N	35,549	35,549	35,549	35,549	35,549	35,549

Appendix A1: **Variable construction**

Variable	**Variable construction**	**Data source**
CEO characteristics		
Inside debt	sum of the present value of defined-benefit pensions and total balances of non-qualified deferred compensations	SEC EDGAR
Inside equity	market value of stock and option awards	SEC EDGAR
Inside equity incentive	delta of the CEO shares of stock plus the delta of CEO option holdings	SEC EDGAR
CEO_RIR	CEO inside debt-equity incentive ratio divided by the firm's debt-equity incentive ratio	SEC EDGAR
ln_CEO_RIR	natural logarithm of the CEO relative incentive ratio	
Target_CEO_RIR	predicted value of ln_CEO_RIR	Campbell et al. (2016)
Deviation_fr_Target	absolute value of the difference between ln_CEO_RIR and Target_CEO_RIR	
Deviation_Decrease	Deviation_fr_Target$_{i,t}$ - Deviation_fr_Target$_{i,t-1}$	
1_(Above target	1 if CEO relative incentive ratio exceeds the target; 0 if otherwise	
1_(Below target)	1 if CEO relative incentive ratio is below the target; 0 if otherwise	
1_(Above target)$_{entry}$	1 if CEO relative incentive ratio exceeds the target level when active blockholders arise; 0 if otherwise.	
1_(Below target)$_{entry}$	1 if CEO relative incentive ratio below the target level when active blockholders arise; 0 if otherwise.	
CEO_Age	CEO age in a given fiscal year	SEC EDGAR
CEO_Tenure	years since becoming CEO	SEC EDGAR
CEO_turnover	1 if CEO changes at least once during active block holding period; 0 if otherwise	SEC EDGAR
No_CEO_turnover	1 if CEO never changes during active block holding period; 0 if otherwise	SEC EDGAR
Firm characteristics		
Ln(Assets)	natural log of total assets (at)	Compustat
Fixed_Assets	net PP&E (ppent) over total assets (at)	Compustat
Market-to-book ratio	market capitalization over book value of shareholder equities (ceq); market capitalization = stock price (prcc_f) × shares outstanding (csho)	Compustat
Ln(Firm_DE)	natural log of long-term debt over market capitalization; long-term debt = long-term debt (dlc) + long-term component in short-term debt (dltt)	Compustat
Book_Leverage	long-term debt over total assets ;	Compustat
R&D_Expenditures	R&D expenditure (xrd) over sales (sale)	Compustat

Appendix A1: **Variable construction (continued)**

Variable	**Variable construction**	**Data source**
Idiosyncratic_Risks	Natural log of standard deviation of residuals from regressing firm returns on CRSP value-weighted returns over 24 months before fiscal year end date (ϵ)	CRSP
1_(Liquidity_Constraint)	1 if operating income before depreciation (oibdp) is negative; 0 if otherwise	Compustat
1_(Tax-loss-carry-forward)	1 if tax loss carry forward (tlcf) is positive; 0 if otherwise	Compustat
1_(Investment_Grade)	1 if the firm has investment-grade bond; 0 if no investment-grade bond	FISD
Dividend_Yield	total dividend over market capitalization plus preferred equity; total dividend = common dividend (dvc) plus preferred dividend (dvp); preferred equity = first non-missing value of redemption value (pstkrv) or liquidating value (pstkl), or carrying value (pstk)	Compustat
Sales_Growth	Sale minus lagged sale over lagged sale	Compustat
Return-on-assets	oibdp / at ; operating income before depreciation (oibdp), total assets (at)	Compustat
Stock_Liquidity	$-Ln(1 + \frac{1}{D}\sum_{t=1}^{D}\left\lvert\frac{ret_t}{vol_t}\right\rvert * 1000)$; daily stock return (ret), daily trading volume (vol), number of trading days(D)	CRSP
Sales_HHI	Herfindahl index of sales (sale) in two-digit SIC code industry	Compustat
N_Analyst	Number of analysts covering firms over 365 days before fiscal year end date	IBES
N_Inst_Investors	Number of institutional investors at fiscal year end date	Thompson Reuter 13F
Inst_Own_HHI	Herfindahl index of institutional ownership percentage at the fiscal year end date	Thompson Reuter 13F
N_Block	Number of institutional blockholders at fiscal year end date	Thompson Reuter 13F
Change varaibles		
Δ Ln(Assets)	change in total assets	
Δ Fixed_Assets	change in fixed assets	
Δ Market-to-Book	change in market-to-book ratio	
Δ Ln(Firm_DE)	change in firm capital structure	
Δ Book_Leverage	change in debt-over-assets ratio	
Δ R&D_Expenditures	change in R&D expenditures over sales	

Appendix A1: **Variable construction (continued)**

Variable	**Variable construction**	**Data source**
Δ Idiosyncratic_Risks	change in idiosyncratic risks	
Δ Ln(Inside D/Assets)	change in natural log of inside debt over total assets	
Δ Ln(Inside E/Assets)	change in natural log of inside equity over total assets	
Δ Ln(Firm D/Assets)	change in natural log of inside debt over total assets	
Δ Ln(Firm E/Assets)	change in natural log of inside debt over total assets	
Blockholder characteristics		
New_Active_Block	1 if the firm has a new 13D investor in a given fiscal year; 0 if otherwise	Thompson Reuter 13D
Active_Block	1 if an active blockholder is still present at fiscal year end; 0 if otherwise	Thompson Reuter 13D
After_Active_Block	1 in fiscal years following exit of an active blockholder; 0 if otherwise	Thompson Reuter 13D
(Pseudo)_Active_Block	1 if an (pseudo) active blockholder is still present at fiscal year end; 0 if otherwise	
1_(appoint director)$_{t-1}$	1 if the active blockholders appoint their favored directors to the targeted firm boards of directors; 0 if otherwise	Boardex Thompson Reuter 13D and 13D/A
1_(Appoint Dir. To $_{t-1}$ Compensation Comm)	1 if the active blockholders appoint their favored directors to the Compensation committee; 0 if otherwise	Boardex Thompson Reuter 13D and 13D/A
1_(Appoint Dir. To $_{t-1}$ Governance Comm)	1 if the active blockholders appoint their favored directors to the Governance committee; 0 if otherwise	Boardex Thompson Reuter 13D and 13D/A
1_(Appoint Dir. To $_{t-1}$ Nominating Comm)	1 if the active blockholders appoint their favored directors to the Nominating committee; 0 if otherwise	Boardex Thompson Reuter 13D and 13D/A
1_(Appoint Dir. To $_{t-1}$ Audit Comm)	1 if the active blockholders appoint their favored directors to the Auditing committee; 0 if otherwise	Boardex Thompson Reuter 13D and 13D/A
1_(Appoint Dir. To $_{t-1}$ Other Comm)	1 if the active blockholders appoint their favored directors to any other committee; 0 if otherwise	Boardex Thompson Reuter 13D and 13D/A

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