JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS Vol. 51, No. 5, Oct. 2016, pp. 1491–1520
COPYRIGHT 2016, MICHAEL G. FOSTER SCHOOL OF BUSINESS, UNIVERSITY OF WASHINGTON, SEATTLE, WA 98195
doi:10.1017/S0022109016000624

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

Blockholder Heterogeneity, CEO Compensation, and Firm Performance

Christopher P. Clifford and Laura Lindsey*

Abstract

This paper examines heterogeneity in blockholder monitoring across investor types. We document which blockholder types (e.g., mutual funds, hedge funds) are more likely to be associated with active monitoring and show that firms targeted by such blockholders are more likely to increase the equity portion of chief executive officer (CEO) pay. Further, using market-wide and exogenous shocks to liquidity to identify differences in efficacy across blockholder types, we observe greater operating-performance improvements in actively monitored firms when passive monitoring is less effective, suggesting causal impact. We propose differences in compensation arrangements across blockholder types as a mechanism underlying blockholders' heterogeneous role.

I. Introduction

Understanding the extent to which blockholders address agency costs that arise from the separation of ownership and control is of central importance in corporate finance. Although there is some evidence of a positive influence from particular blockholder types, such as individual investors or hedge funds, evidence on the efficacy of active monitoring and blockholders more generally remains mixed.[1] Because investors may engage in different forms of governance, failing to recognize heterogeneity across blockholders can mask important effects (Edmans (2014)).

In this paper, we examine executive compensation and performance for firms targeted by blockholders likely to be active monitors. Our approach studies multiple blockholder types simultaneously, including mutual funds, hedge funds,

*Clifford (corresponding author), chris.clifford@uky.edu, Gatton College of Business and Economics, University of Kentucky; Lindsey, laura.lindsey@asu.edu, W. P. Carey School of Business, Arizona State University. We are grateful to an anonymous reviewer and Paul Malatesta (the editor) for constructive comments. The authors thank Sreedhar Bharath, Jeffrey Coles, Alex Edmans, Joseph Gerakos, Dirk Jenter, Laura Starks, and colleagues at Arizona State University and the University of Kentucky for helpful suggestions.

[1]See Brav, Jiang, Partnoy, and Thomas (2008), Clifford (2008), Klein and Zur (2009), Strickland, Wiles, and Zenner (1996), and Becker, Cronqvist, and Fahlenbrach (2011).

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

and private equity groups, while recognizing heterogeneity in determining an active approach. Our work contributes to the growing literature on blockholders and monitoring. Most existing studies examining blockholders focus on performance of a single shareholder type, such as hedge funds or individuals, and do not consider effects on the structure of chief executive officer (CEO) compensation or differences across institutions that may determine a monitoring role. Moreover, the wave of recent papers examining passive monitoring through the threat of exit largely ignores the role of institutions in setting compensation policy, instead taking it as given.

We begin by examining which blockholder types are more likely to be active monitors. We manually identify investor type for each blockholder listed in the proxy statements of Standard & Poor's (S&P) 1,500 firms from 1996 to 2005. Our focus is on outside shareholders, who are less likely to be subject to entrenchment concerns (Morck, Shleifer, and Vishny (1988), McConnell and Servaes (1990), Himmelberg, Hubbard, and Palia (1999), and Demsetz and Villalonga (2001)). Upon crossing the 5% threshold, a blockholder must publicly disclose ownership and intent. Blockholders that acquire the block for investment purposes only and attest that they have no intentions of influencing the firm or its management file a Schedule 13G with the U.S. Securities and Exchange Commission (SEC). Investors who have specific plans to affect the firm file a Schedule 13D with the SEC. As measured by their filing choice with the SEC (13D vs. 13G), we find that hedge funds, corporations, private equity, venture capital, and professional investors are more likely to disclose active intentions relative to financial corporations, pension funds, mutual funds, or investment advisors.

Next, we examine changes in executive compensation and performance associated with these active investor types. We find that heterogeneity of blockholder type is associated with changes to the structure of CEO pay. Specifically, active types target firms with a higher proportion of salaried compensation. For these firms, we observe an increase in the performance-related component of managerial pay associated with active blockholder presence. For example, there is an increase of approximately 2 percentage points in the portion of annual compensation from equity in the presence of an active investor type, 1.75 times larger than the average change in equity compensation for an average firm in our sample. Focusing on the size of the block, in addition to its presence, we further find that the proportion of performance-related compensation is increasing in block size for active investor types. There is no measurable effect when considering all external blockholders as a group, however. In terms of the level of CEO pay, we find that, if anything, total pay increases in the presence of an active block, perhaps to compensate the manager for risk imposed by greater equity compensation. Our evidence is consistent with the notion that target firm CEOs are underincentivized but not necessarily overpaid.

To further assess the role of blockholder heterogeneity and the efficacy of monitoring, we use two approaches to examine changes in firm performance. First, for the subset of blocks for which we observe timely disclosure (through 13D filings), we examine announcement returns around the block's initial disclosure. Within these active *filings*, we test for differences in announcement returns between active *types* and other blockholders also filing a 13D. As in previous

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

literature on block formation, we find positive excess returns around the disclosure of a block (Mikkelson and Ruback (1985), Shome and Singh (1995)). For organizational types more often associated with active disclosure (13D), announcement returns are higher upon disclosure of the 13D block. For example, excess returns in the 21-day window surrounding disclosure are approximately 4.2% for active investor types, whereas excess returns for other types of 13D filers over the same window are 2.3%. These results suggest that the market anticipates greater performance improvements from these investor types.

Second, we study changes in firm operating performance and find evidence that active-type block presence enhances the firm's industry-adjusted return on assets (ROA). To address selection and other identification concerns, we follow Bharath, Jayaraman, and Nagar (2013) and use market-wide liquidity measures and financial crises as exogenous shocks to better identify the effects of block presence and active monitoring.[2] In the passive-monitoring literature (Admati and Pfleiderer (2009), Edmans (2009)), liquidity enhances the threat of exit, but liquidity is less crucial for active shareholders conditional on a block being formed (Edmans, Fang, and Zur (2013)). In times of relative illiquidity, active monitors, if effective, should improve the performance of target firms relative to those monitored solely through the threat of exit. We observe that following market-wide liquidity shocks, firms with active investor types experience better performance relative to firms with blockholders more generally.[3] The estimated effect is sizeable at roughly a 6% differential in performance changes. Importantly, this causal interpretation of blockholder efficacy is substantially weakened when classifying blockholders by filing type. In particular, effects for the crisis events are statistically insignificant when we instead use measures of either the presence or percentage holdings of 13D filers, as well as when using the percentage holdings of 13D filers for the market-wide liquidity specification.[4]

Although investor types may differ along many dimensions, such as regulatory environment, investment restrictions, and business ties, we note that each of the active investor types has typical compensation arrangements that include carry or, in the case of professional investors, capture 100% of the investment returns. Because many blockholder types are themselves agents for their own investors, incentive compensation may affect a blockholder's willingness to engage in active monitoring or attract employees who are better at monitoring.[5]

[2] Specifically, we use the Russian debt crisis of 1998 and the Asian currency crises of 1997. These shocks originated in foreign financial markets rather than from a shock to fundamentals of U.S. firms.

[3] Insofar as these blocks may also have CEOs with less performance-sensitive compensation, performance may tend to remain higher due to a smaller reduction in passive monitoring independent of active block presence. As such, we verify that performance results are robust to controlling for CEO compensation characteristics.

[4] Moreover, it appears that investor type may account for unobservable monitoring effort not captured by the blockholder's observable filing type. In a specification using separate indicators for active filers and active types, it is the active-type indicator that is statistically significant in predicting changes in the proportion of equity compensation, contributing further to the notion that active-type investors filing 13Gs affect the firm or that passive types are less effective.

[5] In interpreting results, we do not distinguish between the various channels through which higher pay for performance sensitivity could impact performance (Lazear (1986)).

To investigate more directly the extent to which blockholder incentives may affect monitoring, we examine these same effects by variation in compensation structure for mutual funds and investment advisors, which must publicly disclose such information and face similar organizational restrictions. Although it is not the most common form of remuneration, we identify which advisors or fund families (due to the aggregation of blockholder filings at the family level) accept performance-sensitive compensation. We find similar patterns for the composition of CEO pay associated with performance-sensitive compensation within investor type; the magnitude is similar to the full sample as well, with an estimated 2-percentage-point change. Our findings suggest that a relevant feature of effective blockholder monitoring relates to their own compensation structure, at least for mutual funds and investment advisors, the category with the most variation in fees.

As a matter of robustness, we consider alternative blockholder groupings proposed by prior literature as an explanation of our findings. For example, the literature on conflicts of interest among institutional shareholders beginning with Brickley, Lease, and Smith (1988) splits 13F institutions into pressure-sensitive and pressure-resistant institution types based on Thomson (Spectrum) categorizations. Further, withdrawal pressure from the end investor may hamper the ability for an institution to engage in activism (Clifford (2008), Dasgupta and Piacentino (2015)). We group blockholders according to whether they are pressure sensitive or pressure resistant, as well as their ability to restrict withdrawals. We find no differential effects on changes to the composition of compensation or operating performance in times of crisis for these different blockholder types.

Our paper is the first to classify blockholders according to their association with activism. Our results underscore the importance of recognizing blockholder heterogeneity in empirical tests and may help to reconcile the mixed effectiveness of blockholder monitoring and activism often found in the literature. Further, because CEO pay-for-performance sensitivity is the channel by which passive monitoring through the threat of exit operates, we also show that active monitors may take an important first step by targeting firms with underincentivized executives. Thus, active monitoring appears to influence the compensation contract in ways that also enhance passive monitoring.

Although our categorization of blockholders is new and unique to the literature, we are not the first to consider blockholder heterogeneity. Our study has ties to early work on shareholder activists by Bethel, Liebeskind, and Opler (1998), who compare public activists in Fortune 500 firms to blockholders with a financial or strategic role. Holderness and Sheehan (1988) study blockholdings by corporations versus individuals, and Barclay and Holderness (1989) examine differences across corporations, institutions, and individuals. Denis, Denis, and Sarin (1997) study management turnover in relation to inside versus outside block ownership. Gillan and Starks (2000) show differences across groups for the success of shareholder proposals, and Bhagat, Black, and Blair (2004) segment blockholders by holding period. Finally, Cronqvist and Fahlenbrach (2009) focus on differences in firm policies across blockholder types.[6]

[6]See also Black and Coffee (1994) and Banerjee, Leleux, and Vermaelen (1997).

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

II. Data

The data are compiled from several publicly available commercial databases, supplemented with hand-collected information from SEC filings. Our sample is an unbalanced panel of S&P 1500 firms from fiscal years 1996 to 2005. We obtain information on operating performance and other financial characteristics from Compustat. Information on CEO compensation is taken from ExecuComp. We obtain stock price information from the Center for Research in Security Prices (CRSP).

To obtain blockholding information, we hand-collect information on investors who hold more than 5% of the firms' equity from company proxy statements filed with the SEC, following the methodology of Dlugosz, Fahlenbrach, Gompers, and Metrick (2006). Following Dlugosz et al. (2006), our data are obtained from S&P's Compact Disclosure, which extends from 1996 through 2006. Comparing these data with officer and director (O&D) holdings in the same filing, we determine whether the 5% investor is a company insider. Because we are interested in the role of external blockholder monitors, we exclude inside shareholders from our analysis of blockholdings, although we control for the level of insider holdings throughout the analysis.[7]

For all blockholders, we determine the primary investor type from the identity of the filing entity and its stated type (corporation, individual, partnership, etc.). We group blockholders into the following categories: mutual funds, investment advisors, banks and other financial institutions (e.g., insurance or diversified financial), pensions, industrial corporations, professional individual investors, venture capital, private equity, and hedge funds.[8] For categorization of partnerships into private equity, venture capital, and hedge funds, we hand-check the names of the filing entity against the Venture Xpert database of the Securities Data Company (SDC) for private equity sources and the Lipper Trading Advisor Selection System (TASS) database for hedge funds, as well as publicly available sources such as company Web sites. Professional investors who are high-net-worth individuals may be counted as insiders in some cases but as outside blockholders elsewhere; for example, Bill Gates is classified as an insider for Microsoft but not for any other company in which he may own a 5% block (e.g., Nextel Partners).

Also from SEC filings, we observe the choice of disclosure. The Securities Exchange Act of 1934 requires any shareholder who accumulates more than 5% but less than 20% of a single security to disclose the blockholding via either Schedule 13G or 13D. An investor may file a Schedule 13G within 45 days after the end of the calendar year in which the threshold was crossed if the investor attests that the securities are passively held.[9] Blockholders with a stake greater than

[7]Further, we do not classify employee stock ownership plans (ESOPs) as external blocks, because they can be influenced by insiders (Gordon and Pound (1990)).

[8]There are also a few observations of blocks from government sovereign funds and endowments. Reported results categorize these as outside blocks, although results are robust to their exclusion.

[9]The wording is that the securities "are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect."

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

20% or that are unwilling to forgo influencing the firm must file a Schedule 13D filing within 10 days of crossing the 5% threshold. For 13D filers, we collect the date of the filing in addition to blockholder identity and the percentage holding in the firm.

Almost all of the firms in our sample have at least one outside blockholder; only 2.6% of firms and 14.2% of firm-years do not have an external 5% shareholder. The frequency of external blockholders by firm-year is shown in Table 1. In Panel A, we observe that although it is common for a firm to have more than one blockholder in a year, it is relatively uncommon for a firm to have more than one 13D filer. Just 1.7% of firm-years have more than one external blockholder disclosed by a Schedule 13D filing, and only 5.5% of firm-years have more than one blockholder that is an active investor type, as determined by the analysis in Section III. If gains from potential monitoring are fixed, and each monitoring blockholder incurs costly effort, it is natural to expect few actively monitoring blockholders in a given firm.

In Panel B of Table 1, we show the distribution of blockholders for our sample by filing type (13D vs. 13G) and investor type, both by firm and by firm-year. The dominant shareholder type consists of mutual funds and investment advisors, followed by financial institutions, and then hedge funds. The difference among the frequency of filing type (13D vs. 13G) across the groups is striking, although

TABLE 1

Frequency of External Blockholders by Firm-Year and Investor Type

Table 1 reports the frequency distribution of the external and active blocks for the sample of S&P 1500 firms from 1996 to 2005. We define external blocks as any 5% or more ownership stake in the firm by someone unaffiliated with the firm (i.e., we exclude officers, founders, or trusts related to an affiliated person). Blockholders filing a Schedule 13D with the SEC reveal their intentions to affect the firm or its management. A block is considered to be the active type if made by a hedge fund, professional investor, corporation, venture capital firm, or private equity fund. Panel A reports block frequency by firm-year. Panel B presents frequency of 13D versus other filers by firm, firm-year, and investor type. The first three columns report the number of external blockholders, number of active filers, and percentage of active filers for each firm over the entire sample period; the second three columns report the same information by firm-year.

Panel A. Blockholder Frequency by Firm-Year

	No. of Blocks					
	0	1	2	3	4	5 or More
ALL_EXTERNAL_BLOCKS	14.2%	21.7%	25.8%	19.0%	11.8%	7.5%
13D_FILERS	85.8%	12.5%	1.4%	0.2%	0.1%	0.0%
ACTIVE_TYPE	75.2%	19.3%	4.2%	0.9%	0.3%	0.1%

Panel B. Blockholder Type Frequency

	Firms vs. Firm-Years					
Blockholder Type	No. of Firms	No. of 13D_ FILERS	% of 13D_ FILERS	No. of Firm-Years	No. of 13D_ FILERS	% of 13D_ FILERS
NO_EXTERNAL_BLOCK	39	—	—	1,615	—	—
EXTERNAL_BLOCK	1,460	561	38.4%	9,765	1,614	16.5%
CORPORATION	296	156	52.7%	977	485	49.6%
FINANCIAL_INSTITUTION	990	107	10.8%	3,386	309	9.1%
MUTUAL_FUND or INVESTMENT_ADVISOR	1,420	81	5.7%	8,195	176	2.1%
PENSION	148	5	3.4%	373	13	3.5%
PROFESSIONAL_INVESTOR	100	49	49.0%	338	153	45.3%
VENTURE_CAPITAL	182	25	13.7%	447	61	13.6%
PRIVATE_EQUITY	166	62	37.3%	421	166	39.4%
HEDGE_FUND	482	209	43.4%	1,049	388	37.0%
OTHER_TYPE	1,441	180	12.5%	9,040	495	5.5%
ACTIVE_TYPE	829	439	53.0%	2,825	1,199	42.4%

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

perhaps not surprising. Approximately 2% of mutual fund firm-years are represented by 13D filings, whereas hedge funds, professional investors, and private equity group blocks are disclosed by 13Ds 35% to 50% of the time. Corporations have an even higher percentage of 13D holdings, which reflects the strategic nature of cross-corporate shareholdings (Allen and Phillips (2000)). Although the venture capitalist group has a low percentage of 13D filings, it should be noted that if the 5% shareholder was present in the firm at the time of the initial public offering (IPO), the shareholder is exempt from filing a 13D and instead files a 13G. Perhaps the most surprising feature of our data relative to impressions based on shareholder activism literature is the low incidence of observed pension fund 13D filings. It seems few pensions cross the 5% threshold, and many of those known for activist campaigns do not appear in our sample.[10]

We also note from Panel B of Table 1 that roughly 42% of block firm-year observations for what we define as active investor types are from 13D filings, relative to 5.5% for other blockholder types. The difference is statistically significant at over 99% confidence. Blockholder groups differ on several dimensions, including the compensation structure of the organization. For active investor types, we note that these institutions are either not intermediaries or are ones for which compensation through "carry" is common. This difference suggests that compensation may play a role in creating incentives for an outside shareholder to engage in monitoring activities, just as block size acts to provide a basis for monitoring (Shleifer and Vishny (1986), Fich, Harford, and Tran (2015)).

A. Variable Definitions

To examine which blockholder investor types engage in active monitoring and the effects that different blockholders may have on CEO pay and performance, our main variables of interest are measures for the presence of particular types of blockholders for a given firm in a given year. Specifically, we define EXTERNAL_BLOCK as equal to 1 if a company has any outside shareholder owning more than 5% of the firm's equity in a given year, and 0 otherwise. We create a group for investor types that are positively associated with 13D filings, as shown in Section III. This blockholder grouping consists of industrial corporations, professional individual investors, venture capital, private equity, and hedge funds. We define ACTIVE_TYPE as equal to 1 for firm-years with shareholdings by these investor types, and 0 otherwise. We also define continuous measures of these variables using the percentage stake in the firm, hand-checked following the Dlugosz et al. (2006) methodology.

We define several measures of executive compensation for use as dependent variables. We are interested in changes in the composition as well as the level of pay. We define equity compensation as the sum of the value of stock and option grants. We normalize this figure by total core compensation, defined as the sum

[10]For example, from 1994 to 2010, California Public Employees' Retirement System (CalPERS) filed 37 dissident proxies but held a total of only 6 blocks. In our sample of S&P 1500 firms, they hold 2 blocks: 1 filed with 13D and 1 with 13G. The distinction between activism as measured by proxy fights versus blockholder Schedule 13 filing type is an important one.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

of salary, bonus, and equity awards.[11] To better gauge how pay is shifting, we also compute the portion of salary that comprises total pay. For the level of compensation, we take the natural logarithm of annual core compensation. We construct changes in these measures from year-end $t-1$ to $t+1$ in order to allow time for any blockholder actions to take effect.

Our primary measure of firm performance is operating return on assets before depreciation, median-adjusted using Fama–French 30-industry classifications (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html). Barber and Lyon (1996) argue that this measure is the preferred measure of operating performance because it is unaffected by leverage, extraordinary items, discretionary expenditures, or depreciation policy. We construct changes in industry-adjusted operating performance from $t-1$ to $t+1$. We also compute excess returns around the dates of 13D filings.

We define a number of variables as controls. These measures are defined at year-end prior to the blockholding unless otherwise indicated. Naturally, there will be considerable overlap in our specifications: Factors that affect CEO compensation or incentives can potentially affect operating performance through the compensation channel, and factors relating to anticipated performance can influence the structure of CEO pay. Firm characteristics such as size, growth opportunities, and complexity have been shown to be positively related to levels of CEO compensation (Murphy (1999), Smith and Watts (1992)). Similarly, growth opportunities should be positively related to the portion of stock-dependent pay (Smith and Watts (1992), Agrawal and Nasser (2012)), whereas changes in stock-dependent pay tend to decline with firm size (Baker and Hall (2004)). We define firm size as the natural logarithm of the firms' market value of assets (market value of equity plus book value of debt), following Gabaix and Landier (2008). To measure growth opportunities, we include the market-to-book ratio and research and development (R&D). We calculate the market-to-book ratio as the market value of assets divided by total book value and R&D intensity as the prior 3-year average of R&D expenditures scaled by sales. Firm age also relates to growth options and complexity; we calculate age as the natural logarithm of the number of years the firm has been publicly traded, including year t.

CEO and top-management characteristics can affect an investor's ability to alter the compensation contract or otherwise influence performance; therefore, it may also influence a blockholder's decision to pursue active or passive strategies within a firm. To capture entrenchment and related concerns, we define CEO tenure as the number of years the current CEO has held the position. To control for incentives of other top managers, we define O&D ownership as the percentage of equity shares owned by the officers and directors of the firm as a group

[11] The last year of our sample requires calculations using 2006 data, the year of new reporting conventions for ExecuComp. To construct a consistent series, we use the sum of bonus, salary, stock, and options for each year, which has a correlation of over 0.99 with the total compensation variable in ExecuComp (TDC1). Our results are robust to using TDC1 data through 2005 or, alternatively, subtracting out the multiyear long-term incentive plan (LTIP) field used prior to 2006 and normalizing by TDC1. Not adjusting the data would cause a mechanical increase in both salary and equity as a percentage of total pay in the final year for some firms because multiyear incentive payouts are no longer included.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

excluding the CEO, taken from ExecuComp.[12] We also control for leverage because it may affect operating performance, act as disciplining device for the CEO (Jensen (1986), (1988)), or change the menu of available actions and ensuing stock profits to a monitoring block. Leverage is defined as the ratio of book leverage to total assets.

Given the importance of liquidity in both the theoretical and empirical blockholder literature, we include controls for liquidity as well as the number (percentage holdings) of blockholders in the specifications predicting the likelihood (percentage holdings) of active monitors. We define (il)liquidity as the square root of the ratio of the absolute value of daily stock returns to daily volume, multiplied by 1,000 (Amihud (2002)). Both Amihud (2002) and Goyenko, Holden, and Trzcinka (2009) provide evidence that this daily measure corresponds well to microstructure measures of illiquidity. Likewise, along with firm performance, the standard deviation of stock returns is thought to be an important determinant of stock-based pay (Aggarwal and Samwick (1999), Murphy (1999)). Therefore, in examining compensation, we include controls for the standard deviation of stock returns and industry-adjusted operating performance, calculated over year t. Regressions also include indicators for Fama–French 12-industry categories and year unless otherwise noted (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html).

B. Summary Statistics

Table 2 presents the number of observations, mean, median, and standard deviation of each of the variables for the sample. We also report the values for compensation variables, operating performance, and abnormal returns in year $t-1$. In addition, we report the difference in means across filing types (Schedule 13D minus Schedule 13G) and across investor type (active minus passive). We observe systematic differences for both of these groupings.

Both 13D filers and active investor types are associated with smaller firms, as measured by the market value of assets; firms with lower market-to-book ratios; and firms that are younger, more R&D intensive, less liquid, more volatile, and more highly levered. Non-CEO O&D ownership is lower in firms with active blocks, and these firms tend to have newer CEOs. Overall, our results are consistent with active shareholders investing in firms with systematically different characteristics (Bethel et al. (1998), Brav et al. (2008)).

Notably, active blocks of either definition are associated with negative subsequent changes in the salaried portion of CEO pay, but the increase in equity pay is not statistically different across groups in the univariate analysis. Further, only the active investor types are associated with positive changes in the overall level of CEO pay. In examining the prior levels of the proportion of equity pay, the proportion of salaried pay, and total compensation, both 13D filers and active investor types appear to target firms with a higher portion of pay coming from salary and a lower portion coming from equity awards. Total CEO pay is lower, which is consistent both with target firms being smaller and target firms having less entrenched CEOs. Moreover, active blocks tend to target

[12] Results are robust to including the prior total stock holdings of the CEO in this measure as well.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

TABLE 2
Firm Characteristics

Table 2 reports summary characteristics for the panel of S&P 1500 firms. The unit of observation is the firm-year. We define CEO equity pay (PROP_EQUITY) as the sum of the value of restricted stock grants and option awards and normalize by CEO compensation. CEO salary (PROP_SALARY) is the salary normalized by CEO compensation. CEO_COMP includes salary, bonus, and the value of restricted stock and option grants. IND_ADJ_ROA is calculated as the difference between firm ROA and median FF30 industry ROA (Barber and Lyon (1996)). Changes in these variables (ΔCEO_EQUITY, ΔCEO_SALARY, ΔCEO_COMP, and ΔIND_ADJ_ROA, respectively) are computed from year $t-1$ to year $t+1$. ABNORMAL_RETURN is the size- and industry-matched market-adjusted abnormal return over the calendar year. We define FIRM_SIZE as the natural logarithm of the market value of equity plus the book value of assets. MARKET_TO_BOOK is defined as the ratio of the market value of equity plus the book value of debt divided by the book value of total assets. FIRM_AGE is the natural logarithm of the number of years the firm has been publicly traded. R&D is the 3-year average R&D expense scaled by sales. LEVERAGE is defined as the ratio of book leverage to total assets. VOLATILITY is the standard deviation of stock returns over the calendar year. AMIHUD_(IL)LIQUIDITY is the square root of the absolute value of daily stock returns divided by daily volume, multiplied by 1,000 (Amihud (2002)). O&D_OWNERSHIP is the percentage of equity shares owned by the officers and directors of the firm as a group, excluding the CEO. CEO_TENURE is the number of years the CEO has been in the position at the firm. Unless otherwise indicated, reported values are for year $t-1$. The last two columns provide a test of whether the average firm characteristics for firms targeted by active versus passive blocks, as defined by filing or investor type, respectively, are different from one another. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable	No. of Obs.	Mean	Median	Std. Dev.	Difference in Active/13D vs. Passive/13G	Difference in Active Type vs. Passive Type
ΔCEO_EQUITY	9,221	0.0140	0.0000	0.3404	0.0139	0.0129
ΔCEO_SALARY	9,221	−0.0140	−0.0073	0.2765	−0.0220**	−0.0235***
ΔCEO_COMP	9,221	0.1337	0.1390	1.1169	0.0385	0.0889***
ΔIND_ADJ_ROA	10,816	−0.0067	−0.0026	0.1491	0.0148**	0.0095**
PROP_EQUITY	10,520	0.4491	0.4881	0.3084	−0.0281**	−0.0170**
PROP_SALARY	10,520	0.3547	0.2821	0.2650	0.0367***	0.0329***
CEO_COMP	10,520	7.6097	7.5679	1.1986	−0.2453***	−0.2412***
IND_ADJ_ROA	11,975	0.0255	0.0280	0.1362	−0.0438***	−0.0352***
ABNORMAL_RETURN	11,754	0.0919	−0.0060	0.6316	−0.0303*	−0.0018
FIRM_SIZE	11,979	7.4684	7.2702	1.5447	−0.5212***	−0.5689***
MARKET_TO_BOOK	11,979	2.3737	1.7254	1.9510	−0.3212***	−0.1717***
FIRM_AGE	11,990	2.6199	2.6800	1.0454	−0.1478***	−0.2984***
R&D	11,987	0.0813	0.0063	0.2827	0.0173***	0.0283***
LEVERAGE	11,940	0.2121	0.1977	0.1823	0.0458***	0.0340***
VOLATILITY	11,888	0.1356	0.1161	0.0751	0.0139***	0.0216***
AMIHUD_(IL)LIQUIDITY	11,191	0.1050	0.0624	0.1482	0.0601***	0.0613***
O&D_OWNERSHIP	11,251	1.5722	0.000	5.5051	−0.3527***	−0.2724**
CEO_TENURE	10,002	7.8586	6.0000	7.1277	−1.4245***	−1.3129***

underperforming firms as measured by prior return on assets and are associated with an increase in industry-adjusted ROA and positive abnormal returns. Interestingly, there is no statistical difference in prior-year abnormal stock returns for the active-investor group, suggesting that operating performance improvements are not anticipated.

III. Active Blockholder Monitoring

In this section, we examine the relation between investor type and the propensity for active filings (13D) in a regression setting. We take the decision to file Form 13D as a credible revelation of intention to actively monitor and ask which blockholder types are related to active monitoring. We expect investor types associated with performance pay through carried interest ("carry" fees) or that are not intermediaries to have the strongest incentives to monitor, although we acknowledge that investor types can differ on a number of dimensions in addition to pay structures.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

The most common form of compensation for mutual funds or investment advisors is based on a percentage of assets under management (Deli (2002), Golec (1992)). In contrast, hedge funds, private equity, and venture capital have a "carry" component to their compensation based on performance. A typical arrangement is approximately 20% of profits, with variation in thresholds for calculating profits (Gompers and Lerner (1999), Metrick and Yasuda (2010), and Goetzmann, Ingersoll, and Ross (2003)).[13] Industrial corporations and professional investors receive all of their profits because they are not managing assets on behalf of another party. Therefore, if remuneration at the blockholder organization matters for pursuing active strategies, we expect a positive and significant coefficient for the hedge fund, professional investor, private equity, venture capital, and corporate categories.[14]

Using the control variables described in Section II.A, we predict the presence and percentage holdings of 13D filers as a function of the various blockholder types present in the firm and, respectively, their level of holdings. Table 3 reports the results. Columns 1 and 2 are probit estimations predicting the *presence* of a 13D blockholder as a function of the presence of blockholders of a particular investor type (corporation, financial institution, mutual fund or investment advisor, pension, professional investor, venture capital, private equity, and hedge fund), the number of external blockholders, firm characteristics, and both industry and year indicators. Columns 3 and 4 report fractional logit estimations for the *percentage* of 13D-disclosed shares held by each investor type as a function of the total percentage held by each investor type, the percentage held by all external blockholders, and the same additional controls. Firm characteristics include firm size, market-to-book ratio, firm age, prior 3-year average R&D expenditures, firm leverage, illiquidity, O&D holdings as a percentage of shares outstanding, and CEO tenure. Standard errors are White (1980) heteroskedastic-consistent, clustered at the firm level. Columns 1 and 2 (columns 3 and 4) differ in the definition of the financial institution variable: In Column 2 (column 4), financial conglomerates (e.g., Goldman Sachs) are excluded from the financial institutions category because this category may include filings of a subsidiary hedge fund.

The signs on the firm characteristic variables across all specifications are largely consistent with the univariate tests from Table 2. Active (13D) filings are associated with smaller firms with lower O&D holdings, higher leverage, and newer CEOs. The illiquidity measure is associated with fewer 13D holdings in only one of the specifications, perhaps because the aggregate block number and percentage holdings variables capture similar effects. The one difference from the univariate tests is the coefficient on firm age, which indicates that older rather than younger firms are associated with active filings once other characteristics are held

[13] For example, it is common for buyout funds to charge carry fees after returning at least 8% on capital, whereas venture capital firms generally have no such benchmark. Hedge funds often must exceed the peak value of the fund (i.e., a "high-water mark") in calculating performance fees.

[14] Although corporations receive 100% of the gains from shareholdings, shares are often held for strategic reasons, such that maximization of the investee share value may not be the primary objective of the shareholder. Further, the CEO of an industrial corporation is an agent and may have varying degrees of pay-for-performance sensitivity. For all of our tests, we run robustness checks that change the categorization of corporations, and results are similar.

TABLE 3

Probability of Form 13D Filing by Investor Type and Firm Characteristics

Table 3 presents the results of probit and fractional logit regressions for the incidence of Form 13D filings. The unit of analysis is the firm-year. Columns 1 and 2 present the results of probit regressions, where the dependent variable takes a value of 1 if the firm has a 13D block filing, and 0 otherwise. In these columns, investor type variables are indicators. Columns 3 and 4 present the results for fractional logit regressions, where the dependent variable reflects the total percentage holdings of blockholders filing a 13D in a firm-year. In these columns, investor type variables are also percentage holdings. † in columns 2 and 4 indicates that we exclude financial conglomerates from the definition of financial institutions because such filings may reflect hedge fund activity. We define external blocks as any 5% or more ownership stake in the firm by someone unaffiliated with the firm (i.e., we exclude officers, founders, or trusts related to an affiliated person). Additional variable definitions are provided in Table 2. Standard errors are White (1980) heteroskedasticity-adjusted and are clustered for the same company (Rogers (1993)). We report *z*-scores in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable			
	Has 13D Block		Percentage 13D	
Variable	1	2	3	4
CORPORATION	1.5852***	1.4935***	0.5341***	0.0379***
	(13.47)	(12.68)	(4.72)	(3.95)
FINANCIAL_INSTITUTIONS	0.4517***	0.0134†	0.0420***	0.0028†
	(5.98)	(0.19)	(3.57)	(0.22)
MUTUAL_FUND or INVESTMENT_ADVISOR	−0.0909	−0.1786**	−0.0129	−0.0265***
	(−1.16)	(−2.31)	(−1.26)	(−3.36)
PENSION	0.0877	0.0407	0.0037	−0.0107
	(0.55)	(0.25)	(0.20)	(−0.59)
PROFESSIONAL_INVESTOR	1.3054***	1.2433***	0.0740***	0.0586***
	(6.88)	(6.61)	(6.80)	(6.82)
VENTURE_CAPITAL	0.3049*	0.2720	0.0391**	0.0256*
	(1.67)	(1.48)	(2.51)	(1.77)
PRIVATE_EQUITY	1.2241***	1.1511***	0.0644***	0.0494***
	(6.70)	(6.26)	(6.33)	(6.10)
HEDGE_FUND	1.0843***	0.9870***	0.0862***	0.0704***
	(11.74)	(10.64)	(6.97)	(6.54)
NUM or PCT_BLOCK	0.0644**	0.1247***	0.0236**	0.0411***
	(2.55)	(5.32)	(2.51)	(6.13)
AMIHUD_(IL)LIQUIDITY	0.2338	0.1620	−0.3712	−0.4097*
	(1.03)	(0.69)	(−1.62)	(−1.78)
FIRM_SIZE	−0.0975***	−0.0919***	−0.1930***	−0.1836***
	(−2.89)	(−2.86)	(−3.40)	(−3.30)
MARKET_TO_BOOK	−0.0125	−0.0178	−0.0083	−0.0257
	(0.67)	(−0.83)	(−0.22)	(0.68)
FIRM_AGE	0.0835*	0.1028**	0.1456*	0.2071**
	(1.68)	(2.00)	(1.72)	(2.24)
R&D	−0.0056	−0.0178	−0.0165	−0.0353
	(−0.05)	(−0.16)	(−0.13)	(−0.27)
LEVERAGE	0.4486***	0.4964**	−0.0325**	0.2526
	(2.28)	(2.50)	(−1.96)	(0.63)
O&D_OWNERSHIP	−0.0127	−0.0142	−0.0325**	−0.0396**
	(−1.41)	(−1.43)	(−1.96)	(−1.97)
CEO_TENURE	−0.0109**	−0.0124**	−0.0272*	−0.0336**
	(−1.96)	(−2.17)	(−1.77)	(−2.21)
Intercept	−1.1169***	−1.1373***	−4.0127***	−4.2937***
	(−3.63)	(−3.78)	(−7.53)	(−8.29)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
No. of obs.	9,184	9,184	9,184	9,184
Wald χ^2	573.40	516.58	762.13	778.35

constant. From Columns 1 and 2, we note that the coefficients on the corporate, private equity, professional investor, and hedge fund block types are positively associated with the presence of a 13D filer, consistent with the interpretation that these investors are more likely to actively monitor. The coefficient on the venture

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

capital indicator is positive and significant in only one of the two specifications, perhaps because these investors may not be required to file a 13D. The coefficient on financial institutions is positive and significant when financial conglomerates are included along with commercial banks, investment banks, and insurance companies but insignificant when this group is excluded.[15] Pension funds or mutual funds and investment advisors have no predictive power in determining the presence of an active blockholder, depending on the specification. If anything, the presence of a mutual fund or investment advisor is negatively associated with active 13D filings. In Columns 3 and 4 of Table 3, we turn to the fractional logit regressions that predict the percentage of shares disclosed by active filings as a function of the percentage holding of each group. Results are largely consistent with the probit estimations, although effects for the percentage of shares held by venture capital firms are strengthened. Our results are consistent with the idea that the compensation at the blockholding organization may affect incentives to monitor or views on the relative importance of incentive pay.

IV. Active Monitoring and CEO Pay

One of the ways active blockholders may engage in monitoring is to mind the compensation contract of the CEO. The traditional view in the literature is that blockholder monitoring helps to limit excessive CEO pay. For example, Core, Holthausen, and Larcker (1999) document that blockholder presence is associated with lower overall levels of compensation. Hartzell and Starks (2003) find similar effects for firms that have more concentrated institutional holdings, but they find that the level of institutional holdings is associated with increases in overall pay.[16]

The level of CEO pay should not be the sole concern, however. The structure of compensation is perhaps more important because it can better align CEO interests with those of shareholders, and this effect may be magnified through passive institutional monitoring. The importance of executive incentives in passive monitoring through the threat of exit suggests an observable role for active monitors in firms where executive incentives may be insufficiently aligned.[17] Yet, the composition of CEO pay has received relatively little attention in the context of active blockholder monitoring. An exception is Almazan, Hartzell, and Starks (2005), who propose a model wherein the likelihood of monitoring varies with monitoring costs among different institutional types, with mixed empirical support.

As performance-sensitive compensation increases relative to the fixed portion of compensation for the CEO, pay becomes riskier. Thus, overall levels of pay may be higher for CEOs receiving a greater portion of total pay from equity.

[15] Insofar as this difference may indicate that we misclassify some hedge funds as financial institutions in later analysis, results would be biased in our favor only if subsidiary hedge funds reduced equity compensation or negatively impacted performance relative to independent hedge funds.

[16] Two additional papers that consider blockholder monitoring of the compensation contract are those by Agrawal and Nasser (2012), which focuses on blockholder directors, and Cronqvist and Fahlenbrach (2013), which focuses on the compensation contract for private firms with private equity sponsors.

[17] A chief difficulty in studying shareholder activism based on activist events, for example, is likely the disproportionate selection of the most difficult cases after unobservable, private targeting efforts are exhausted (see, e.g., Butz (1994), Gillan and Starks (1998), Wahal (1996), and Karpoff (1999)).

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

Because we expect active monitors to potentially target both overpaid and under-incentivized CEOs (and influential CEOs would presumably have a preference for guaranteed components of pay), the equity-dependent portions of pay should increase in the presence of active monitoring, whereas the prediction for the overall level of pay is ambiguous.

We begin by presenting univariate statistics comparing firm-years prior to and following active-type block presence relative to firm-years with no active types. Table 4 presents a *t*-test of equality of means for the proportion of salary, bonus, and equity comprising CEO compensation. From Table 2, we know there are differences in the portion of pay coming from salary and equity in the year prior for active blocks. If active blockholders monitor incentives, we expect that they increase the relative portion of equity pay. A clear prediction for the direction of cash bonuses is more problematic. Although Jensen and Murphy (1990) argue that the pay-for-performance sensitivity and therefore the incentives provided from cash compensation are small, the presence of a monitoring block may change the nature of bonus payments, linking them more closely to performance. Also, during the sample period, there was a limit to deductibility of CEO pay above $1 million, with an exception for "qualified performance-based compensation." This had the effect of shifting guaranteed salary compensation into effectively guaranteed cash bonuses.[18] Thus, although it is clear that the entirety of bonus pay should not be regarded as dependent on performance, changes to bonus pay in the presence of active shareholder monitors are more ambiguous. Our focus in the reported regressions is on equity awards, which have a cleaner interpretation, but we show here that bonuses behave similar to equity in the presence of an active-type block.

As can be seen from Table 4, in the year prior to being targeted, the average firm targeted by an active-type block has a higher portion of CEO compensation from salary and a lower portion coming from bonus and equity awards. In the year following block presence, the composition of CEO pay appears to normalize, such that there are no statistical differences across categories for firms with and without active-type blockholders. These comparisons suggest that one channel through which effective blockholder monitors may achieve performance improvements is through better alignment of executive incentives. In particular, active blockholders

TABLE 4
Composition of CEO Pay

Table 4 presents the average proportion of total CEO compensation from salary, bonus, and equity for years prior and subsequent to active-type block presence relative to other firm-years. We segment firm-years by those with no active block (NO_ACTIVE) and those with active blocks (ACTIVE) and report results from a *t*-test of equality of means with unequal variances. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Year before Block Presence				Year after Block Presence			
	N	%SALARY	%BONUS	%EQUITY	*N*	%SALARY	%BONUS	%EQUITY
NO_ACTIVE	8,173	34.74%	19.97%	45.29%	7,874	33.61%	18.58%	46.54%
ACTIVE	2,347	38.03%	18.38%	43.59%	2,220	33.81%	18.00%	46.76%
Difference (ACTIVE – NO_ACTIVE)		3.29%***	−1.59%**	−1.70%**		0.20%	−0.58%	0.22%

[18] We thank the referee for bringing this point to our attention (see also Rose and Wolfram (2002)).

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

may target firms with a large salary component of CEO compensation and shift the compensation contract from fixed- to performance-based pay.[19]

We verify the intuition from these univariate tests in a regression framework. To allow for heterogeneous effects across blockholder types, we examine the effects for active investor types over and above effects for all external blocks. In Table 5, we report results from ordinary least squares (OLS) estimations of changes in the equity portion of CEO pay as a function of blockholder presence and, alternatively, percentage holdings. In Column 1, the independent variables of interest are indicator variables for the presence of an external block and whether any external blocks are active investor types. In Column 2, we substitute the percentage holdings for external and active-type investor blocks. As controls, we include firm size, the market-to-book ratio, prior 3-year average R&D expenditures, firm leverage, the standard deviation of stock returns, firm performance, O&D holdings excluding the CEO as a percentage of shares outstanding, and CEO tenure. We also include industry and year fixed effects. Standard errors are White (1980) heteroskedastic-consistent, clustered at the firm level.

In both specifications, we observe no statistical impact for changes in the proportion of equity pay associated with external blockholders, indicating that blockholders in general may have little effect on the structure of the compensation contract of the CEO. We find that the presence of active block types, however, is positively associated with an increase in the proportion of performance-sensitive pay. For example, the presence of an active-type investor increases the proportion of performance pay by approximately 2 percentage points relative to a sample average indistinguishable from 0. The signs on the coefficients of the control variable are intuitive as well, with better-performing firms, less volatile firms, and firms with lower leverage having positive increases in equity pay.

We next examine what effects active blockholder monitors may have on total compensation. In many frameworks of monitoring, it is thought that large shareholders temper excessive executive pay. When compensation shifts away from fixed components toward equity, it may be necessary to increase total compensation to avoid a decrease in the CEO's utility, particularly if the CEO's willingness to accept performance-sensitive pay is held constant. Because it may be difficult for even a large shareholder to reduce fixed components of pay, an increase in equity may necessitate an increase in the total compensation package.

In Columns 3 and 4 of Table 5, we examine changes in total annual CEO compensation. The dependent variable is the difference in the (ln) dollar value of CEO compensation from year $t-1$ to year $t+1$. Column 3 presents results with the presence of external and active-type blocks as the independent variables of interest, and Column 4 presents results for the level of shareholdings. Across specifications, firm size and volatility are negatively associated with changes in CEO pay, whereas performance is associated with larger increases in pay relative to the average. In Column 3, we observe a positive and significant relation between

[19]Inferences for targeting are similar in a regression framework. Using the same controls as in Table 4, active-investor presence is positively and significantly related to the initial proportion of salaried pay, suggesting that the observed univariate patterns are not driven by differences in firm size and other characteristics.

TABLE 5

External Blockholders and Changes in CEO Equity and Total Pay

Table 5 presents the results of OLS estimations of changes in the equity component of pay and total CEO pay as a function of blockholder ownership. The unit of analysis is the firm-year. We define ΔPROP_EQUITY as the difference in the ratio of the value of equity and stock awards from year +1 to year −1, where year 0 reflects the year of the blockholding. We define ΔTOTAL_COMPENSATION as the difference in the natural logarithm of the sum of salary, bonus, and the value of equity awards from year +1 to year −1, where year 0 reflects the year of the blockholding. We define external blocks as any 5% or more ownership stake in the firm by someone unaffiliated with the firm (i.e., we exclude officers, founders, or trusts related to an affiliated person). A block is considered to be an active type if held by a hedge fund, corporation, professional investor, venture capital firm, or private equity fund. In Columns 1 and 3, the EXTERNAL_BLOCK and ACTIVE_TYPE variables are based on blockholder presence; in Columns 2 and 4, the EXTERNAL_BLOCK and ACTIVE_TYPE variables are based on the percentage holdings. Additional variable definitions are provided in Table 2. Standard errors are White (1980) heteroskedasticity-adjusted and are clustered for the same company (Rogers (1993)). We report *t*-statistics in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable			
	ΔPROP_EQUITY		ΔTOTAL_COMPENSATION	
	Presence	Percentage Holdings	Presence	Percentage Holdings
Variable	1	2	3	4
ACTIVE_TYPE	0.0228**	0.0011**	0.0972***	0.0029**
	(2.44)	(2.48)	(2.89)	(2.12)
EXTERNAL_BLOCK	−0.0034	0.0000	−0.0029	0.0008
	(−0.34)	(0.12)	(−0.08)	(0.84)
FIRM_SIZE	0.0011	0.0009	−0.0174**	−0.0181**
	(0.45)	(0.37)	(−2.04)	(−2.06)
MARKET_TO_BOOK	0.0014	0.0014	0.0014	0.0016
	(0.45)	(0.45)	(0.10)	(0.11)
FIRM_AGE	0.0051	0.0056	0.0110	0.0111
	(1.18)	(1.29)	(0.81)	(0.82)
R&D	−0.0156	−0.0149	−0.0288	−0.0262
	(−0.87)	(−0.84)	(−0.49)	(−0.44)
O&D_OWNERSHIP	0.0011	0.0011	0.0029	0.0029
	(1.17)	(1.09)	(1.19)	(1.16)
LEVERAGE	−0.0326*	−0.0328	0.1231	0.1252
	(−1.50)	(−1.50)	(1.41)	(1.41)
VOLATILITY	−0.1284*	−0.1285*	−0.6699***	−0.6588**
	(−1.85)	(−1.84)	(−2.59)	(−2.55)
IND_ADJ_ROA	0.0960**	0.0955**	0.2613*	0.2556*
	(2.46)	(2.44)	(1.94)	(1.90)
CEO_TENURE	0.0003	0.0003	−0.0013	−0.0014
	(0.79)	(0.79)	(−1.10)	(−1.19)
Intercept	−0.0150	−0.0169	0.1902**	0.1838**
	(−0.47)	(−0.58)	(2.11)	(1.98)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
No. of obs.	8,327	8,327	8,327	8,327
F-statistic	6.97	6.98	5.45	5.19

the presence of an active investor type and changes in CEO pay, indicating almost a 9% increase in the expected change. The coefficient on the percentage holdings of active investor types in Column 4 is positive and significant as well. Here, too, there is no measurable association with the presence or percentage holdings of external blocks. These results are perhaps counterintuitive when positioned as traditional monitoring. They are instead consistent with the CEO being under-incentivized rather than overpaid, and, in unreported regressions, we observe no difference in the future levels of executive compensation associated with the level of holdings of active investor types.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

In untabulated tests, we verify that the changes in total compensation are driven by changes in equity pay rather than salary. In similar regressions with changes in salary levels as the dependent variable, the coefficient on the active investor type indicator is not statistically different from 0, whereas the coefficient remains positive and significant in a specification substituting changes in equity pay levels. We also confirm that these changes in equity compensation translate into changes in the total pay-for-performance sensitivity (delta) faced by the CEO. When we substitute the percentage change in delta as a dependent variable, the coefficients for both the presence and percentage holdings of active-type investors remain positive and statistically significant.

Further, we check that the shift toward equity compensation we observe is not a result of executive turnover. Although replacing the CEO may be one tool that monitoring blockholders have to improve governance and performance, initial compensation packages for an arriving CEO may include a large equity package that skews our results. When we exclude firm-years associated with CEO turnover, we continue to observe a positive relation between the presence and level of active-type holdings and changes to the equity portion of pay. However, it is possible that anticipated performance improvements over the subsequent year, whether or not they are caused by the active blockholder, result in a greater CEO willingness to accept equity pay. We move toward a causal interpretation for performance effects associated with active investor types in Section V, such that it is less likely that the compensation changes we document are merely coincident with active blockholder presence.

V. Active Monitoring and Performance

We next examine whether actively monitoring blockholders improve performance at the firm. First, we compute returns around the disclosure windows of 13D filings and examine differences for active investor types relative to other 13D filers. We observe greater returns for active-type filers, consistent with the notion that anticipated performance improvements are greater. We also examine differences in operating performance across blockholder groups. We use exogenous changes in liquidity that should differentially impact active and passive monitoring blocks for better identification. We find that performance improvements are larger during times when passive monitoring is less effective, suggesting causal effects on operating performance from active investor types.

A. Announcement Returns

In an efficient market, returns around the disclosure of the block should capture anticipated performance improvements. It is unlikely that selection can drive these effects because such short-term changes in stock price are difficult to anticipate.[20] If compensation differences across blockholders differentially allow for the provision of costly monitoring, returns should be higher for the disclosure of blocks accumulated by active-type investors, holding all else equal.

[20] Although abnormal returns might accrue through signaling the selection of an undervalued asset or price pressure, these alternative explanations are less likely for S&P 1500 firms.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

Brav et al. (2008) and Klein and Zur (2009) study the announcement returns for activist hedge funds that file a Schedule 13D and find positive cumulative abnormal returns (CARs) centered around the 13D filing. Clifford (2008) compares the 13D and 13G filings of activist hedge funds and finds that investors react more positively to the announcement of a 13D relative to a 13G hedge fund block. Because the precise date of blockholder entry is disclosed in a timely manner only for blockholders that file Schedule 13D with the SEC (filings are required within 10 days of an investor crossing the 5% holding threshold, rather than 45 days after the close of the calendar year required for 13Gs), we focus on the announcement returns for 13D filers and examine the relative reaction within this subset of active *filers* for blocks held by active *types*, that is, those that are more commonly associated with the 13D filing designation and typically receive a greater portion of their compensation through carry. We note that because we consider the response only to 13D (active) filings, the test could be considered a rather difficult one for investor types.

CARs for windows around the filing date are presented in Table 6. For the 684 initial filings by self-declared active shareholders, there is a positive mean and median abnormal return on the day of the filing $(-1,0)$, the 7-day window centered on the filing date $(-3,3)$, and the 21-day window centered on the filing date $(-10,10)$, similar to the findings of studies documenting the positive effects associated with block accumulation (Mikkelson and Ruback (1985), Shome and Singh (1995)).

Within the set of 13D filings, we test whether announcement effects are stronger for the active-type investors. We perform the comparison for the full sample of firms and for a subsample excluding small firms, defined as having market

TABLE 6
CARs around 13D Filings

Table 6 presents the CARs for firms with a blockholder who filed Schedule 13D, centered on the filing date with the SEC. ACTIVE_TYPE blockholders include hedge funds, corporations, professional investors, venture capital firms, and private equity funds. PASSIVE_TYPE blockholders include mutual funds and investment advisors, financial institutions, and pensions. CARs are calculated as the difference in the target firm's return and that of the CRSP value-weighted index. We test whether the median CAR is different from 0 using the Wilcoxon signed-rank test. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

		Mean			Median		
	N	(−1,0)	(−3,3)	(−10,10)	(−1,0)	(−3,3)	(−10,10)
Panel A. All Firms							
All Types	684	1.31%***	1.73%***	3.83%***	0.32%***	0.42%***	2.08%***
PASSIVE_TYPE	142	0.61%	1.79%*	2.33%	−0.09%	0.09%	0.73%
ACTIVE_TYPE (including corporations)	542	1.49%***	1.71%***	4.23%***	0.45%***	0.51%***	2.60%***
Difference		0.88%	−0.08%	1.90%	0.54%	0.42%	1.87%
PASSIVE_TYPE	141	0.61%	1.79%*	2.33%	−0.09%	0.09%	0.73%
ACTIVE_TYPE (excluding corporations)	320	2.14%***	3.23%***	5.91%***	1.21%***	2.24%***	4.27%***
Difference		1.53%**	1.44%	3.58%*	1.30%***	2.15%**	3.54%**
Panel B. Exclude Market Capitalization < $50 Million or Share Price < $5							
All Types	585	1.29%***	1.87%***	3.31%***	0.24%***	0.41%***	1.81%***
PASSIVE_TYPE	123	0.64%	1.34%*	1.32%	−0.10%	0.14%	0.61%
ACTIVE_TYPE (including corporations)	462	1.46%***	2.02%***	3.84%***	0.43%***	0.50%***	2.51%***
Difference		0.82%	0.68%	2.52%	0.53%	0.36%	1.90%
PASSIVE_TYPE	123	0.64%	1.34%*	1.32%	−0.10%	0.14%	0.61%
ACTIVE_TYPE (excluding corporations)	261	2.06%***	3.73%***	5.86%***	1.09%***	2.45%***	3.98%***
Difference		1.42%**	2.39%**	4.54%**	1.19%**	2.31%**	3.37%**

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

capitalizations under $50 million or a share price below $5. For the full sample of active-type blockholders, announcement returns are positive across all windows, whereas returns for the typically passive groups are generally not statistically different from 0. The magnitudes range from a mean (median) of 1.49% (0.45%) for the $(-1,0)$ announcement window to 4.32% (2.60%) for the $(-10,10)$ window.

Although the economic magnitude of the differences between the two groups is large, they are not different statistically. Excluding corporations, we see statistically larger median announcement returns for the active investor types, perhaps reflecting the ambiguous nature of strategic holdings. When we exclude corporations and small firms, we find that differences in mean and median returns for the two segments of active blockholders are statistically significant across each time window.[21] The difference in means (medians) ranges from 1.42% (1.19%) for the $(-1,0)$ window to 4.54% (3.37%) for the $(-10,10)$ window. Thus, although the market reacts favorably to activist filings in general, we find evidence that firms targeted by active types experience larger announcement returns upon public disclosure of the block, possibly reflecting the market's view that differing incentives among monitors are likely to affect the blockholders' efficacy.[22]

B. Operating Performance

Although the effect of blockholders on a firm's operations has been studied in prior literature, an empirical challenge in determining the effects of blockholder presence on firm operating performance is the endogenous nature of the decision to acquire a block.[23] Observed performance for some types of blockholders may reflect the attraction to a particular type of investment rather than effective or ineffective monitoring. In this section, we attempt to isolate causal effects by examining the differential impact for types of blockholders under different market liquidity regimes.

A large literature on institutional shareholders suggests that liquidity enhances the ability to accumulate a block and may also influence the likelihood of active monitoring, although the direction is unclear (see, e.g., Maug (1998), Kahn and Winton (1998), Bhide (1993), and Coffee (1991)).[24] Recent literature argues that liquidity enhances passive monitoring, whereby if liquidity is sufficiently high, institutional shareholders can sell more easily and exert pressure on management through the threat of exit (Admati and Pfleiderer (2009), Edmans (2009), Edmans and Manso (2011), and Parrino, Sias, and Starks (2003)). Active monitoring blocks tend to have longer investment horizons and rely less on the threat of exit as the sole monitoring mechanism. Amihud and Mendelson (1986) argue that investors with longer time horizons select more illiquid assets, and

[21] Because a large number of the active investor types are hedge funds (217 of 542), we ask to what extent activist hedge funds drive our results. We reestimate all regressions in the paper while excluding hedge funds from our analysis. In unreported results, we find that our inferences continue to hold after excluding hedge funds.

[22] These results also indicate at least some compensation for costly monitoring, although it is impossible to assess whether the blockholder is fully compensated, because monitoring costs are not observed.

[23] See, for example, Bethel et al. (1998), Brav et al. (2008), and Clifford (2008).

[24] See also Gantchev and Jotikasthira (2014), who provide empirical evidence that exit by other institutions encourages formation of interventionist blocks.

Edmans et al. (2013) show that, conditional on block formation, active blockholder monitors are associated with less liquid firms.

We expect, therefore, that active-type blockholders select more illiquid firms relative to other blockholders and, if engaging in direct activism, enact performance-improving changes in the firm even in relatively illiquid conditions. Passive monitors, in contrast, rely on the threat of exit, and firm performance may suffer when the threat of exit is less credible. Thus, we require changes in liquidity exogenous to firm performance. Fluctuations in market-wide liquidity are largely exogenous to blockholder selection and the industry-adjusted performance of a particular firm. To capture fluctuations in market-wide liquidity, we take a value-weighted average of the Amihud illiquidity ratio over the year of blockholder presence. Results are similar if we instead measure market liquidity prior to the year of the blockholding.

Additionally, following Bharath et al. (2013), we employ the Asian and Russian financial crises as quasi-natural experiments providing unanticipated shocks to liquidity. The Asian and Russian financial crises are clearly exogenous from the perspective of an individual firm. Although these events had substantial effects on liquidity, these shocks originated in foreign financial markets rather than from a shock to fundamentals of U.S. firms and are therefore unlikely to affect operating performance directly. The Asian crisis, which began in July 1997 following the devaluation of the Thai baht and spread to many neighboring countries, had its roots in excessive borrowing and artificial foreign exchange rates. The Russian crisis stemmed from a default on short-term sovereign debt announced Aug. 17, 1998. Similarly, declining fundamentals and overvaluation of the currency were contributing factors to the crisis. Numerous studies document a decrease in market liquidity following these events (see, e.g., Acharya and Pedersen (2005) and Chordia, Sarkar, and Subrahmanyam (2005)).

Although we cannot completely rule out a transmission of a shock to fundamentals through suppliers or competitors in affected countries, firms in our sample are sufficiently large and diversified that such effects should be negligible. Notably, Asian economies more closely integrated with the U.S. economy at the time, such as Singapore or Taiwan, were much less affected.[25] Insofar as declining fundamentals led to speculative currency attacks and devaluation, these fundamental effects would extend beyond the shorter crisis periods and largely be captured by year fixed effects.

Bharath et al. (2013) use crisis events to isolate the likely impact of the threat of exit. In times of market illiquidity, decreases in Tobin's Q increase with a firm's blockholdings, consistent with the notion that the threat of exit is less credible as a governance mechanism after a shock. Following Bharath et al. (2013), we take the time period from July to December of 1997 as marking the Asian currency crisis and August to December of 1998 as marking the Russian debt crisis. We define a crisis variable equal to 1 for any firm-year for which the proxy statement

[25] In addition to Russia, the countries most affected were Thailand, Malaysia, Indonesia, Korea, and the Philippines. Of these, Korea is probably the most significant for U.S. firms, although because of the relative concentration of Korea's domestic industries, only a handful of firms would potentially be affected.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

(when blocks are disclosed) was issued prior to the beginning of the crisis and the fiscal year-end occurs during a crisis. This assures that a given block was already present in the firm and allows for monitoring during the crisis to be reflected in the following year's operations.

We rely on these market-wide fluctuations and liquidity shocks to potentially show differential impact among blockholder groups. In particular, if certain blockholders are more actively engaged with management, decreasing the efficacy of governance through exit should affect target firms less than firms with blockholders who govern only passively.[26] In Table 7, we report results from OLS estimations of changes in firm operating performance. The dependent variable is industry-adjusted changes in ROA. As before, to allow for heterogeneous effects, we examine the effects for active-type investors over and above effects for all external blocks and add interactions with the liquidity measures. Controls are as defined in Section II.A and include firm size, market to book, R&D expenditures, firm age, leverage, O&D ownership excluding the CEO, and CEO tenure. Standard errors are White (1980) heteroskedastic-consistent, clustered at the firm level. Across specifications, performance improvements are positively associated with older firms and more highly levered firms, although they are negatively related to firms with higher prior market-to-book ratios. This result may reflect the difficulty of improving performance at firms that are already performing well.

In Column 1 of Table 7, we present a baseline specification for changes in industry-adjusted operating performance as a function of blockholder presence and type. Although we observe a larger increase in industry-adjusted ROA for firms targeted by active blockholders in the univariate tests of Table 2, we do not observe any measurable differences in industry-adjusted operating performance for firms targeted by external blocks or the active investor types in the regression setting. Although the naïve OLS modeling might lead one to conclude that the presence of external blockholders, regardless of likely monitoring, is unrelated to firm performance, such conclusions are premature. Active monitors tend to target underperforming firms, which could overestimate the relation between passive blocks and performance while underestimating the effect of active-type blocks.[27] If blockholder presence is endogenously chosen as part of a market equilibrium (and regressions adequately control for relevant factors), no measurable effect would be expected in an OLS framework (Demsetz and Lehn (1985)).

In Column 2 of Table 7, we add the market-wide Amihud illiquidity measure along with interaction terms between this measure and i) an indicator for the presence of an external blockholder and ii) an indicator for the presence of a blockholder that is an active investor type.[28] In Column 3, the liquidity measure

[26] Of course, the threat of exit may also enhance the ability of an active blockholder to effect change at the firm, which would serve to diminish differential effects (see, e.g., Levit (2014)).

[27] For example, if active monitors attempt to identify firms that will benefit from monitoring, they may not be successful at implementing desired changes at all firms. An alternative view is that there should be a positive conditional correlation between monitoring blockholders and changes in performance because underperforming firms have greater scope for improvement.

[28] We omit year fixed effects in reported regressions that employ the market-wide measure of liquidity so that its coefficient is not subsumed. Results for the interaction term coefficient are robust to including year indicators instead of the market-wide measure.

TABLE 7

External Blockholders and Operating Performance

Table 7 presents the results of OLS estimations of industry-adjusted changes in ROA (ΔIND_ADJ_ROA) as a function of blockholder ownership. The unit of analysis is the firm-year. In Columns 2 and 3, we add level effects and interaction terms for liquidity measures to allow for differential blockholder effects under different liquidity regimes. We define performance as industry-adjusted changes in ROA (i.e., the difference in the firm's industry-adjusted operating performance in year +1 less the firm's industry-adjusted operating performance in year −1, where year 0 reflects the year of the blockholding) (Barber and Lyon (1996)). MARKET_ILLIQUIDITY is a value-weighted average of the square root Amihud (2002) liquidity measure calculated for each firm-year. CRISIS is defined as an indicator variable for blocks present during the Russian and Asian financial crises. We define external blocks as any 5% or more ownership stake in the firm by someone unaffiliated with the firm (i.e., we exclude officers, founders, or trusts related to an affiliated person). A block is considered to be an active type if held by a hedge fund, corporation, professional investor, venture capital firm, or private equity fund. Additional variable definitions are provided in Table 2. Standard errors are White (1980) heteroskedasticity-adjusted and are clustered for the same company (Rogers (1993)). We report *t*-statistics in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: ΔIND_ADJ_ROA		
	Baseline	MARKET_ILLIQUIDITY	CRISIS
Variable	1	2	3
ACTIVE_TYPE × MARKET_ILLIQUIDITY/CRISIS		1.0044*** (2.69)	0.0595* (1.92)
EXTERNAL_BLOCK × MARKET_ILLIQUIDITY/CRISIS		−0.4642 (−1.07)	−0.0708*** (−2.78)
MARKET_ILLIQUIDITY/CRISIS		0.1895 (0.47)	0.0561*** (2.37)
ACTIVE_TYPE	−0.0024 (−0.06)	−0.0332** (−2.54)	−0.0011 (−0.28)
EXTERNAL_BLOCK	0.0004 (0.10)	0.0150 (0.97)	0.0020 (0.46)
MARKET_TO_BOOK	−0.0042** (−2.29)	−0.0049*** (−2.65)	−0.0042** (−2.25)
FIRM_SIZE	−0.0021* (−1.69)	−0.0019 (−1.50)	−0.0021 (−1.71)
FIRM_AGE	0.0069*** (3.77)	0.0075*** (4.02)	0.0070*** (3.82)
R&D	0.0073 (0.59)	0.0084 (0.67)	0.0071 (0.58)
O&D_OWNERSHIP	0.0001 (0.29)	0.0000 (0.01)	0.0001 (0.30)
LEVERAGE	0.0792*** (6.23)	0.0743*** (5.80)	0.0796*** (6.26)
CEO_TENURE	−0.0002 (−1.17)	−0.0001 (−0.63)	−0.0002 (−1.21)
Intercept	0.1255 (1.57)	0.1148 (1.53)	0.1244 (1.62)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	—	Yes
No. of obs.	8,332	8,332	8,332
F-statistic	7.65	5.47	7.25

is the financial crisis indicator, and the main independent variables of interest are interaction terms for the crisis indicator with each indicator for block presence.

We note that the sign on the coefficient for the crisis period variable itself is positive and significant. On its own, this would run counter to the many theoretical treatments linking liquidity to operating performance in which higher levels of liquidity contribute to more informative prices, thereby improving corporate decisions or relaxing financing constraints (see, e.g., Holmstrom and Tirole (1993), Subrahmanyam and Titman (2001)). However, the vast majority of firms in our sample have an external blockholder, so the total effect for the crisis period is better reflected by the sum of the coefficients on the crisis indicator and its

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

interaction with EXTERNAL_BLOCK. Together, the coefficients are negative but not statistically significant from 0, giving further evidence that firms were not visibly affected by the crisis. The coefficient on the indicator for EXTERNAL_BLOCK remains statistically indistinguishable from 0 across specifications, and the coefficients on the interaction terms are negative in each specification but only significantly so in the crisis specification (column 3 of Table 7). This is consistent with the notion that liquidity enhances monitoring through exit for external blocks overall.

When we examine the coefficients on investor types more likely to actively monitor interacted with market-wide illiquidity or the crisis indicator, we observe positive and significant effects in each of the specifications, indicating that operating performance for firms with such blockholders improves relatively during times of illiquidity.[29] The coefficient on the interaction term between indicators for the crisis period and active type in column 3 of Table 7, for example, indicates that active block presence is associated with almost a 6% differential in performance changes relative to firms with blockholders overall. Following exogenous decreases in liquidity, operating-performance changes are greater for firms with active-type investors, consistent with the view that the these types of blocks improve firm performance in ways that do not rely solely upon the threat of exit.[30] Although not tabulated in the interest of brevity, we observe similar results in specifications that substitute the percentage holdings for the blockholder presence measures, such that we can conclude that performance improvements are increasing in the percentage holdings of active-investor types.

A natural concern is that because CEO incentives for these firms may be initially misaligned, performance improvement differentials could result from a reduction in monitoring for passively monitored firms because firms targeted by the active monitors may not be sufficiently monitored ex ante. Results are similar if we include controls for prior CEO delta in the regressions, which suggests that reductions in passive monitoring related to incentives do not drive our results. In addition, the timing of the ROA improvements are concurrent with changes to executive compensation, such that they are likely not solely the result of improved incentive alignment. These results suggest that particular types of shareholders take action to improve firm performance.

VI. The Incentive Channel

Thus far, we have grouped blockholder types according to their propensity to file a Schedule 13D in disclosure of a block. We observe that compensation monitoring and enhanced performance appear to be driven primarily by blockholders who have more performance-sensitive pay themselves, that is, those who

[29] As with the crisis period indicator, the negative coefficient on the active-type indicator in column 2 of Table 7 must be summed with its interaction term to obtain average effects. Here, effects for active types are positive relative to firms with external blocks more generally.

[30] In unreported results, we verify that the performance differentials we observe are not driven by firms that later experience a takeover, as in the sample of firms targeted by activist hedge funds studied by Greenwood and Schor (2009). We repeat our analysis removing all firm-years for firms that were later acquired or merged using delisting codes from the CRSP (first digit of 2 (Mergers) or 3 (Exchanges)); our findings are robust to the removal of these firms.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

either have direct ownership or receive a carried-interest component of compensation. Blockholder types may differ on a number of dimensions in addition to typical compensation arrangements, however. Different regulatory regimes or other factors can affect the ability and/or willingness to monitor. For example, private equity funds can credibly threaten to launch a takeover if demands are not met, whereas mutual funds do not enjoy the same threat of (independent) takeover. In this section, we consider to what extent higher-powered incentives at the blockholder organization may be a mechanism for our findings.

Although the most common form of compensation for mutual funds or investment advisors is a percentage of assets under management (Deli (2002), Golec (1992)), many have a performance-sensitive component in pay separate from growth in assets. These fees are often "fulcrum" fees, meaning that the percentage management fee applied to assets under management increases according to a schedule if fund performance exceeds a benchmark. Although the increases are often small, changes in pay can be significant. For a \$100M fund, a fulcrum increase of 50 basis points (bps) translates to \$500,000 in additional compensation, comparable to 20% carry on an excess return of 2.5%. We repeat our analysis on a subsample of firm-years having only mutual fund and independent investment advisor blockholders. For these investor types, characteristics are relatively uniform, and more detailed compensation data are available.

For each of the investment advisors in our sample, we use the Investment Advisors Public Disclosure database available through the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system to collect information on performance-based compensation (Item 5 of Part 1A on the disclosure form). For each of the mutual funds in our sample, we collect whether the fund takes performance-based compensation using semiannual N-SAR filings (Q51), also available through EDGAR. Because the Form 13D/13G filings are typically made at the fund-family level rather than the level of the individual fund, it is not generally possible to directly link the filing block with the fund compensation information. Therefore, we define an indicator for performance compensation at the fund-family level, but we cannot determine what percentage of holdings is subject to performance fees.[31]

Results from our analysis of changes in the composition of executive pay and performance within this subsample are reported in Table 8. Because all of the firm-years in this subsample have an external blockholder, we omit the indicator for external block. In Column 1, we present results for changes in the proportion of equity pay. The independent variable of interest is an indicator for whether the blockholder fund family takes performance fees. We observe a positive and significant coefficient on the performance fee indicator at 90% confidence. The magnitude of the effect is an increase of approximately 2 percentage points in the proportion of equity, similar to the estimates from the full sample. Of the control variables, only performance is measurably associated with the change in

[31] While only 7% of the 138 unique fund families in our analysis take performance fees, the very largest fund families comprise most mutual fund blocks, and these firms disproportionately take performance compensation. Our full-sample results are robust to classifying the presence of mutual fund or investment advisor firm-years with fund families that take performance fees as active investor types.

TABLE 8
Mutual Fund Subsample

Table 8 presents the results of OLS estimations of both changes in the equity component of CEO pay and industry-adjusted changes in ROA within the sample of mutual fund blockholders only. PERFORMANCE_FEE is an indicator variable equal to 1 if the fund family takes a fulcrum fee, and 0 otherwise. The unit of analysis is the firm-year. As in Table 5, in Column 1 we define ΔPROP_EQUITY as the difference in ratio of the value of equity and stock awards from year +1 to year −1, where year 0 reflects the year of the blockholding. As in Table 7, in Columns 2 and 3 we define performance as industry-adjusted changes in ROA. We add level effects and interaction terms for liquidity to allow for differential blockholder effects under different liquidity regimes. MARKET_ILLIQUIDITY is a value-weighted average of the square root Amihud (2002) liquidity measure calculated for each firm-year. CRISIS is defined as an indicator variable for blocks present during the Russian and Asian financial crises. We define external blocks as any 5% or more ownership stake in the firm by someone unaffiliated with the firm (i.e., we exclude officers, founders, or trusts related to an affiliated person). Additional variable definitions are provided in Table 2. Standard errors are White (1980) heteroskedasticity-adjusted and are clustered for the same company (Rogers (1993)). We report *t*-statistics in parentheses.

	Dependent Variable		
	ΔPROP_EQUITY	ΔIND_ADJ_ROA	
		MARKET_ILLIQUIDITY	CRISIS
Variable	1	2	3
PERFORMANCE_FEE × MARKET_ILLIQUIDITY/CRISIS		1.1987**	0.0251
		(2.51)	(0.89)
MARKET_ILLIQUIDITY/CRISIS		−0.1417***	−0.0265
		(−3.27)	(−1.01)
PERFORMANCE_FEE	0.0193*	−0.0314**	0.0050
	(1.65)	(−2.09)	(1.06)
MARKET_TO_BOOK	−0.0033	−0.0046**	−0.0039**
	(−0.66)	(−2.40)	(−2.01)
FIRM_SIZE	0.0010	0.0023	0.0016
	(0.21)	(1.18)	(0.80)
FIRM_AGE	−0.0029	0.0062**	0.0064**
	(−0.35)	(2.13)	(2.21)
R&D	−0.0543	0.0076	0.0073
	(−1.75)	(0.26)	(0.24)
O&D_OWNERSHIP	0.0004	−0.0003	−0.0002
	(0.25)	(−0.65)	(−0.53)
LEVERAGE	−0.0220	0.0292	0.0333*
	(−0.47)	(1.61)	(1.86)
VOLATILITY	−0.1251		
	(−1.05)		
IND_ADJ_ROA	0.1704***		
	(2.62)		
CEO_TENURE	−0.0001	0.0002	0.0001
	(−0.10)	(0.82)	(0.56)
Intercept	−0.0931*	−0.0482**	−0.0765***
	(−1.84)	(−2.15)	(−3.57)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	—	Yes
No. of obs.	3,068	3,068	3,068
F-statistic	13.18	3.48	9.79

equity pay and, as before, bears a positive relation. These results demonstrate that prior results are not dependent on special institutional characteristics possessed by hedge funds or private equity firms. Indeed, within the most common blockholder group, we find that a noisy measure of performance-based pay is associated with changes in the composition of executive compensation, arguably for blockholders for which effective active monitoring might be least expected.

Turning to firm performance, we calculate CARs for the 13D filings made by investment advisors or mutual funds and compare those that take performance fees to those that do not (untabulated). We note that of the blocks disclosed by 13D, over two-thirds are made by fund families that disclose performance fees,

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

suggesting that compensation arrangements are relevant in determining an active monitoring role. Average announcement returns for the performance fee group are higher across all windows, at close to 2%, although results are not statistically different from baseline results that range from an average of 0 over the 2-day $(-1,0)$ filing window to 1.2% over the 7-day $(-3,3)$ window for this small subsample of 13D filings.

Results for operating performance under different liquidity regimes are suggestive as well. In Column 2 of Table 8, we present results for an OLS regression that includes the performance fee indicator interacted with market-wide illiquidity, along with its level effect and the same control variables as in Table 7. The result for the interaction coefficient is similar in magnitude to the one from the full sample and is significant at 95% confidence. The effect for illiquidity itself is negative, which is in line with theoretical predictions from the literature. Although the coefficient on the performance fee indicator is negative and significant, one must sum this coefficient with the interaction term to obtain total effects. Together, the overall average effect is insignificant, just as it was for active types in the full sample baseline model. As in the full panel, we observe that in times of relative illiquidity, operating performance improves disproportionately for firms with blockholders with a greater dependence on performance-sensitive compensation. In Column 3, we present the results for the specification substituting the crisis indicator and interaction term. Here, the sign on the coefficient is positive, although not statistically significant. In both specifications, signs on controls are consistent with the full-sample results.

Overall, the evidence suggests that performance fee compensation at the fund-family level is associated with changes in the structure of executive pay, as in the full sample when grouping by investor type. On balance, there appear to be performance effects as well, with higher expected changes in value indicated from the point estimates on the CARs and mixed evidence that operating-performance improvements are greater when there are changes to liquidity. Taken together, the evidence suggests that blockholder compensation is relevant for active monitoring, although one must be cautious in interpreting subsample results for the differences observed in the full sample.

Because investor types differ across dimensions other than incentive fees, we explore alternative explanations that may drive the difference in monitoring outcomes. Two potential explanations in the literature are conflicts of interest and variation in vulnerability to withdrawals, which can affect the ability to monitor. To ensure that our results are distinct from the literature focusing on conflicts of interest of institutional shareholders and cannot be explained by withdrawal pressure, we consider the same patterns in compensation and performance using these alternative shareholder groupings. Previous research emphasizes that conflicts of interest among some large shareholders, such as banks, trusts, and insurance companies, impede the ability to effectively monitor, whereas pension funds, mutual funds, and investment advisors are regarded as independent (Brickley et al. (1988), Chen, Harford, and Li (2007), Cornett, Marcus, Saunders, and Tehranian (2007), and Borokhovich, Brunarski, Harman, and Parrino (2006)). In addition, withdrawal pressure from the end investor may impede the ability to effectively monitor. Clifford (2008) argues that unpredictable withdrawals may

require institutions to maintain greater liquidity, discouraging monitoring, whereas Dasgupta and Piacentino (2015) focus on career concerns to arrive at similar conclusions. We group blockholders accordingly, categorizing pension funds, insurance companies, industrial corporations, professional investors, private equity, and venture capital as groups having low withdrawal pressure. Mutual funds and investment advisors, hedge funds, commercial and investment banks, and diversified financial institutions tend to face greater pressure from unpredictable withdrawals.[32]

We isolate blocks less subject to withdrawal pressure, along with those that are traditionally "pressure resistant," and compare patterns for each to firm-years without such blocks. In untabulated results, we observe that these alternate groupings do not simultaneously explain changes to the structure of CEO compensation and improvements to performance. The inference is similar if we instead check for differential effects for pressure-sensitive or withdrawal-sensitive blocks. Instead, the data are most consistent with an incentive explanation in determining propensity to actively monitor. Our results highlight the notion that shareholders with higher-powered incentives are effective active monitors, particularly when incentive alignment of the CEO may be important.

VII. Conclusion

In this paper, we examine monitoring by external blockholders, recognizing heterogeneity among block types. We demonstrate a link between investor type and declared activism and show that active types are associated with a shift in CEO compensation away from the salaried component of pay toward equity pay. Further, we show that investor types associated with higher pay-for-performance sensitivity enjoy larger announcement returns upon the disclosure of an active block and present evidence that these blocks are likely to provide monitoring that improves operating performance.

Our results are robust to the exclusion of hedge funds and professional investors and also to confining corporations to the external category given the strategic nature of holdings. Our work suggests that investor type is a reliable indicator for active monitoring and that heterogeneity in compensation arrangements across blockholders is important in determining their role.

References

Acharya, V. V., and L. H. Pedersen. "Asset Pricing with Liquidity Risk." *Journal of Financial Economics*, 77 (2005), 375–410.

Admati, A. R., and P. Pfleiderer. "The 'Wall Street Walk' and Shareholder Activism: Exit as a Form of Voice." *Review of Financial Studies*, 22 (2009), 2645–2685.

Aggarwal, R. K., and A. A. Samwick. "Executive Compensation, Strategic Competition, and Relative Performance Evaluation: Theory and Evidence." *Journal of Finance*, 54 (1999), 1999–2043.

Agrawal, A., and T. Nasser. "Blockholders on Boards and CEO Compensation, Turnover and Firm Valuation." Working Paper, University of Alabama (2012).

[32] Hedge funds and investment advisors often have agreements in place so that they are not subject to *daily* withdrawal pressure, but arrangements such as a 30-day notice period would still be sufficiently short term to inhibit active monitoring. Hedge funds do have other tools available to limit withdrawals used in times of crisis (see Aiken, Clifford, and Ellis (2015)).

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

Aiken, A. L.; C. P. Clifford; and J. A. Ellis. "Hedge Funds and Discretionary Liquidity Restrictions." *Journal of Financial Economics*, 116 (2015), 197–218.
Allen, J. W., and G. M. Phillips. "Corporate Equity Ownership, Strategic Alliances, and Product Market Relationships." *Journal of Finance*, 55 (2000), 2791–2815.
Almazan, A.; J. C. Hartzell; and L. T. Starks. "Active Institutional Shareholders and Costs of Monitoring: Evidence from Executive Compensation." *Financial Management*, 34 (2005), 5–34.
Amihud, Y. "Illiquidity and Stock Returns: Cross-Section and Time-Series Effects." *Journal of Financial Markets*, 5 (2002), 31–56.
Amihud, Y., and H. Mendelson. "Asset Pricing and the Bid-Ask Spread." *Journal of Financial Economics*, 17 (1986), 223–249.
Baker, G., and B. Hall. "CEO Incentives and Firm Size." *Journal of Labor Economics*, 22 (2004), 767–798.
Banerjee, S.; B. Leleux; and T. Vermaelen. "Large Shareholdings and Corporate Control: An Analysis of Stake Purchases by French Holding Companies." *European Financial Management*, 3 (1997), 23–43.
Barber, B. M., and J. D. Lyon. "Detecting Abnormal Operating Performance: The Empirical Power and Specification of Test Statistics." *Journal of Financial Economics*, 41 (1996), 359–399.
Barclay, M. J., and C. G. Holderness. "Private Benefits from Control of Public Corporations." *Journal of Financial Economics*, 25 (1989), 371–395.
Becker, B.; H. Cronqvist; and R. Fahlenbrach. "Estimating the Effects of Large Shareholders Using a Geographic Instrument." *Journal of Financial and Quantitative Analysis*, 46 (2011), 907–942.
Bethel, J. E.; J. P. Liebeskind; and T. Opler. "Block Share Purchases and Corporate Performance." *Journal of Finance*, 53 (1998), 605–634.
Bhagat, S.; B. Black; and M. Blair. "Relational Investing and Firm Performance." *Journal of Financial Research*, 27 (2004), 1–30.
Bharath, S. T.; S. Jayaraman; and V. Nagar. "Exit as Governance: An Empirical Analysis." *Journal of Finance*, 68 (2013), 2515–2547.
Bhide, A. "The Hidden Costs of Stock Market Liquidity." *Journal of Financial Economics*, 34 (1993), 31–51.
Black, B. S., and J. C. Coffee. "Hail Britannia? Institutional Investor Behavior under Limited Regulation." *Michigan Law Review*, 92 (1994), 1997–2087.
Borokhovich, K. A.; K. Brunarski; Y. S. Harman; and R. Parrino. "Variation in the Monitoring Incentives of Outside Stockholders." *Journal of Law and Economics*, 49 (2006), 651–680.
Brav, A.; W. Jiang; F. Partnoy; and R. Thomas. "Hedge Fund Activism, Corporate Governance, and Firm Performance." *Journal of Finance*, 63 (2008), 1729–1775.
Brickley, J. A.; R. C. Lease; and C. W. Smith. "Ownership Structure and Voting on Antitakeover Amendments." *Journal of Financial Economics*, 20 (1988), 267–291.
Butz, D. A. "How Do Large Minority Shareholders Wield Control?" *Managerial and Decision Economics*, 15 (1994), 291–298.
Chen, X.; J. Harford; and K. Li. "Monitoring: Which Institutions Matter?" *Journal of Financial Economics*, 86 (2007), 279–305.
Chordia, T.; A. Sarkar; and A. Subrahmanyam. "An Empirical Analysis of Stock and Bond Market Liquidity." *Review of Financial Studies*, 18 (2005), 85–129.
Clifford, C. P. "Value Creation or Destruction? Hedge Funds as Shareholder Activists." *Journal of Corporate Finance*, 14 (2008), 323–336.
Coffee, J. C. "Liquidity versus Control: The Institutional Investor as Corporate Monitor." *Columbia Law Review*, 91 (1991), 1277–1368.
Core, J. E.; R. W. Holthausen; and D. F. Larcker. "Corporate Governance, Chief Executive Officer Compensation, and Firm Performance." *Journal of Financial Economics*, 51 (1999), 371–406.
Cornett, M. M.; A. J. Marcus; A. Saunders; and H. Tehranian. "The Impact of Institutional Ownership on Corporate Operating Performance." *Journal of Banking and Finance*, 31 (2007), 1771–1794.
Cronqvist, H., and R. Fahlenbrach. "Large Shareholders and Corporate Policies." *Review of Financial Studies*, 22 (2009), 3941–3976.
Cronqvist, H., and R. Fahlenbrach. "CEO Contract Design: How Do Strong Principals Do It?" *Journal of Financial Economics*, 108 (2013), 659–674.
Dasgupta, A., and G. Piacentino. "The Wall Street Walk When Blockholders Compete for Flows." *Journal of Finance*, 70 (2015), 2853–2896.
Deli, D. N. "Mutual Fund Advisory Contracts: An Empirical Investigation." *Journal of Finance*, 57 (2002), 109–133.
Demsetz, H., and K. Lehn. "The Structure of Corporate Ownership: Causes and Consequences." *Journal of Political Economy*, 93 (1985), 1155–1177.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

Demsetz, H., and B. Villalonga. "Ownership Structure and Corporate Performance." *Journal of Corporate Finance*, 7 (2001), 209–233.
Denis, D. J.; D. K. Denis; and A. Sarin. "Ownership Structure and Top Executive Turnover." *Journal of Financial Economics*, 45 (1997), 193–221.
Dlugosz, J.; R. Fahlenbrach; P. Gompers; and A. Metrick. "Large Blocks of Stock: Prevalence, Size, and Measurement." *Journal of Corporate Finance*, 12 (2006), 594–618.
Edmans, A. "Blockholder Trading, Market Efficiency, and Managerial Myopia." *Journal of Finance*, 64 (2009), 2481–2513.
Edmans, A. "Blockholders and Corporate Governance." *Annual Review of Financial Economics*, 6 (2014), 23–50.
Edmans, A.; V. W. Fang; and E. Zur. "The Effect of Liquidity on Governance." *Review of Financial Studies*, 26 (2013), 1443–1482.
Edmans, A., and G. Manso. "Governance through Trading and Intervention: A Theory of Multiple Blockholders." *Review of Financial Studies*, 24 (2011), 2395–2428.
Fich, E.; J. Harford; and A. Tran. "Motivated Monitors: The Importance of Institutional Investors' Portfolio Weights." *Journal of Financial Economics*, 118 (2015), 21–48.
Gabaix, X., and A. Landier. "Why Has CEO Pay Increased So Much?" *Quarterly Journal of Economics*, 123 (2008), 49–100.
Gantchev, N., and C. Jotikasthira. "Hedge Fund Activists: Do They Take Cues from Institutional Exit?" Working Paper, University of North Carolina (2014).
Gillan, S. L., and L. T. Starks. "A Survey of Shareholder Activism: Motivation and Empirical Evidence." *Contemporary Finance Digest*, 2 (1998), 10–34.
Gillan, S. L., and L. T. Starks. "Corporate Governance Proposals and Shareholder Activism: The Role of Institutional Investors." *Journal of Financial Economics*, 57 (2000), 275–305.
Goetzmann, W. N.; J. E. Ingersoll; and S. A. Ross. "High-Water Marks and Hedge Fund Management Contracts." *Journal of Finance*, 58 (2003), 1685–1718.
Golec, J. H. "Empirical Tests of a Principal–Agent Model of the Investor–Investment Advisor Relationship." *Journal of Financial and Quantitative Analysis*, 27 (1992), 81–95.
Gompers, P., and J. Lerner. "An Analysis of Compensation in the U.S. Venture Capital Partnership." *Journal of Financial Economics*, 51 (1999), 3–44.
Gordon, L. A., and J. Pound. "ESOPs and Corporate Control." *Journal of Financial Economics*, 27 (1990), 525–555.
Goyenko, R. Y.; C. W. Holden; and C. A. Trzcinka. "Do Liquidity Measures Measure Liquidity?" *Journal of Financial Economics*, 92 (2009), 153–181.
Greenwood, R., and M. Schor. "Investor Activism and Takeovers." *Journal of Financial Economics*, 92 (2009), 362–375.
Hartzell, J. C., and L. T. Starks. "Institutional Investors and Executive Compensation." *Journal of Finance*, 58 (2003), 2351–2374.
Himmelberg, C. P.; R. G. Hubbard; and D. Palia. "Understanding the Determinants of Managerial Ownership and the Link between Ownership and Performance." *Journal of Financial Economics*, 53 (1999), 353–384.
Holderness, C. G., and D. P. Sheehan. "The Role of Majority Shareholders in Publicly Held Corporations: An Exploratory Analysis." *Journal of Financial Economics*, 20 (1988), 317–346.
Holmstrom, B., and J. Tirole. "Market Liquidity and Performance Monitoring." *Journal of Political Economy*, 101 (1993), 678–709.
Jensen, M. C. "Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers." *American Economic Review*, 76 (1986), 323–329.
Jensen, M. C. "Takeovers: Their Causes and Consequences." *Journal of Economic Perspectives*, 2 (1988), 21–48.
Jensen, M. C., and K. J. Murphy. "Performance Pay and Top-Management Incentives." *Journal of Political Economy*, 98 (1990), 225–264.
Kahn, C., and A. Winton. "Ownership Structure, Speculation, and Shareholder Intervention." *Journal of Finance*, 53 (1998), 99–129.
Karpoff, J. "Corporate Finance and Corporate Control: An Empirical Research Agenda." *Journal of Institutional and Theoretical Economics*, 155 (1999), 239–246.
Klein, A., and E. Zur. "Entrepreneurial Shareholder Activism: Hedge Funds and Other Private Investors." *Journal of Finance*, 64 (2009), 187–230.
Lazear, E. "Salaries and Piece Rates." *Journal of Business*, 59 (1986), 405–431.
Levit, D. "Soft Shareholder Activism." Working Paper, University of Pennsylvania (2014).
Maug, E. "Large Shareholders as Monitors: Is There a Trade-Off between Liquidity and Control?" *Journal of Finance*, 53 (1998), 65–98.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press

McConnell, J. J., and H. Servaes. "Additional Evidence on Equity Ownership and Corporate Value." *Journal of Financial Economics*, 27 (1990), 595–612.
Metrick, A., and A. Yasuda. "The Economics of Private Equity Funds." *Review of Financial Studies*, 23 (2010), 2303–2341.
Mikkelson, W. H., and R. S. Ruback. "An Empirical Analysis of the Interfirm Equity Investment Process." *Journal of Financial Economics*, 14 (1985), 523–553.
Morck, R.; A. Shleifer; and R. W. Vishny. "Management Ownership and Market Valuation: An Empirical Analysis." *Journal of Financial Economics*, 20 (1988), 293–315.
Murphy, K. J. "Executive Compensation." In *Handbook of Labor Economics*, Vol. 3, O. Ashenfelter and D. Card, eds. Amsterdam: Elsevier (1999).
Parrino, R.; R. W. Sias; and L. T. Starks. "Voting with Their Feet: Institutional Ownership Changes around Forced CEO Turnover." *Journal of Financial Economics*, 68 (2003), 3–46.
Rogers, W. "Regression Standard Errors in Clustered Samples." *Stata Technical Bulletin*, 13 (1993), 19–23.
Rose, N. L., and C. Wolfram. "Regulating Executive Pay: Using the Tax Code to Influence Chief Executive Officer Compensation." *Journal of Labor Economics*, 20 (2002), S138–S175.
Shleifer, A., and R. W. Vishny. "Large Shareholders and Corporate Control." *Journal of Political Economy*, 94 (1986), 461–488.
Shome, D., and S. Singh. "Firm Value and External Blockholdings." *Financial Management*, 24 (1995), 3–14.
Smith, C., and R. Watts. "The Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies." *Journal of Financial Economics*, 32 (1992), 263–292.
Strickland, D.; K. Wiles; and M. Zenner. "A Requiem for the USA: Is Small Shareholder Monitoring Effective?" *Journal of Financial Economics*, 40 (1996), 319–338.
Subrahmanyam, A., and S. Titman. "Feedback from Stock Prices to Cash Flows." *Journal of Finance*, 56 (2001), 2389–2413.
Wahal, S. "Pension Fund Activism and Firm Performance." *Journal of Financial and Quantitative Analysis*, 31 (1996), 1–23.
White, H. "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity." *Econometrica*, 48 (1980), 817–830.

https://doi.org/10.1017/S0022109016000624 Published online by Cambridge University Press