THE EFFECT OF LIQUIDITY ON GOVERNANCE

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ABSTRACT

This paper studies the effect of stock liquidity on blockholders' choice of governance mechanisms. We focus on hedge funds as they are unconstrained by legal restrictions and business ties, and thus have all governance channels at their disposal. Since the threat of governance, not just actual governance, can discipline managers, we use Section 13 filings to measure governance intent rather than only studying instances of actual governance. We find that liquidity increases the likelihood that a hedge fund acquires a block in a firm. Conditional upon acquiring a stake, liquidity reduces the likelihood that a blockholder governs through voice (intervention) – as evidenced by the greater propensity to file Schedule 13Gs (passive investment) rather than 13Ds (active investment). Liquidity is more likely to lead to a 13G filing if the manager's wealth is sensitive to the stock price, consistent with governance through exit (trading). A 13G filing leads to positive announcement returns, especially in liquid firms. These two results suggest that liquidity does not dissuade blockholders from governing altogether, but instead encourages them to govern through exit rather than voice. We use decimalization as an exogenous shock to liquidity to identify causal effects.

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This paper studies the effect of stock liquidity on an investor's decision to acquire a block in a firm, and her choice of how to govern the firm thereafter. The theoretical literature yields conflicting predictions regarding the effect of liquidity on governance. The traditional view is that investors govern through intervening in a firm's operations (also known as "voice"), for example by firing a shirking manager or blocking a pet project. Under this view, liquidity weakens governance because it provides the blockholder with the option of selling her stake in a troubled firm rather than bearing the cost of intervening to fix it (Coffee (1991); Bhide (1993)), or trading on inside information rather than monitoring (Maug (2002)). However, this view has been recently challenged along two fronts. First, even when considering voice as the only governance mechanism, Maug (1998) shows that liquidity encourages blockholders to intervene as they can buy additional shares at a price that does not incorporate the gains from intervention. Kyle and Vila (1991), Maug (1998), and Kahn and Winton (1998) demonstrate that liquidity facilitates block formation in the first place. Faure-Grimaud and Gromb (2004) show that liquidity encourages intervention as it increases stock price informativeness. Thus, if the activist is forced to sell prematurely due to a liquidity shock, the price she receives will partially reflect the gains from intervention. Second, Admati and Pfleiderer (2009), Edmans (2009), and Edmans and Manso (2011) demonstrate that the act of selling one's shares (also known as engaging in "exit", following the "Wall Street Rule", or taking the "Wall Street Walk") can be a governance mechanism in itself.[1] By gathering and trading on private information, blockholders cause the stock price to more closely reflect the firm's fundamental value. If the manager is compensated according to the stock price, the threat of exit induces him to maximize fundamental value – for example, by exerting effort and investing efficiently. Liquidity increases the threat of exit in two

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[1] While it is the *threat* of exit that induces superior managerial actions ex ante, we follow the literature by referring to this governance mechanism as "exit" for brevity.

ways: it induces blockholders to gather information (Edmans (2009); Edmans and Manso (2011)), and it encourages investors to acquire a larger block to begin with (Edmans (2009)). Thus, even if liquidity discourages intervention, it may not reduce governance overall but instead cause the blockholder to govern through exit rather than voice.

Despite the rich theoretical literature analyzing the effect of stock liquidity on governance choices, there are very few papers that address this debate empirically. This likely results from a number of empirical challenges. First, many blockholders do not have the governance mechanism of voice at their disposal to begin with. Mutual funds have diversification requirements that prevent them from acquiring the large positions necessary to exercise control,[2] and pension funds are subject to "prudent man" rules that hinder them from acquiring stakes in troubled firms that may be particularly in need of intervention (Del Guercio (1996)). Even if not legally restricted, certain blockholders may choose not to engage in activism due to conflicts of interest: suppliers and customers may risk losing supply-chain relationships, and mutual funds may have business ties through managing a firm's pension plan.[3] Del Guercio and Hawkins (1999) find that pension fund activism has little effect on stock or accounting performance; more generally, the survey by Yermack (2010) concludes that "the success of institutional investor activism to date appears limited." Thus, liquidity may not affect the choice between exit and voice, since many blockholders do not engage in voice to begin with. Moreover, even if they do use voice, certain blockholders may have little motivation to make the optimal governance

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[2] Most mutual funds prefer to designate themselves as "diversified". Under the Investment Company Act of 1940, such a fund, with respect to 75% of its portfolio, can have no more than 5% of it invested in any one security and can own no more than 10% of the voting rights in one company.

[3] Davis and Kim (2007) show that mutual funds with more business ties in aggregate are more likely to vote with management in general, although at the individual firm level they are no more likely to vote with management of client firms than of non-clients.

choice in response to liquidity (e.g. due to weak financial incentives), or pursue objectives other than shareholder value maximization (Agrawal (2011)).

Second, while many existing papers study actual exit (e.g., Parrino, Sias, and Starks (2003)) or actual voice (e.g., Norli, Ostergaard and Schindele (2009)), the *threat* of exit or threat of voice also exerts governance. The absence of instances of exit or voice does not mean the blockholder is failing to govern – on the contrary, it may suggest that the blockholder is governing effectively, inducing the manager to maximize firm value and so actual exit or voice is not needed (cf. Becht et al. (2009), Klein and Zur (2009), and Fos (2011)). Third, liquidity and governance may be jointly determined by a firm's unobservable characteristics, or the causality may run from governance to liquidity.[4]

This paper aims to study the effect of liquidity on governance while addressing the three above challenges. We address the first challenge by focusing on activist hedge funds. Hedge funds have few business ties or regulatory constraints that would hinder voice: they have no diversification requirement, and they have few disclosure needs, allowing them to act with greater secrecy and flexibility (Yermack (2010)). McCahery, Sautner, and Starks (2011) find that hedge funds are more willing to engage in activism than other institutions. Hedge funds thus have the full "menu" of governance mechanisms to choose from, and liquidity may drive their selection from this menu. Indeed, over half (69 out of 101) of the funds in our sample engage in both passive and active monitoring. They also have high performance-based fees which induce them to make the optimal choice from this menu. Clifford and Lindsey (2011) show that

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[4] Chung, Elder, and Kim (2010) show that superior governance improves liquidity, potentially due to improved transparency and thus reduced informational asymmetries. Gallagher, Gardner and Swan (2011) demonstrate that governance through exit enhances stock liquidity. By contrast, Cohen (2011) shows that a Schedule 13 filing by hedge funds, particularly those close to the target company, leads to a decrease in liquidity, potentially because investors fear trading against an informed investor.

blockholders with greater incentive pay, such as hedge funds, govern more effectively; those without incentive pay are unlikely to choose voice to begin with.[5] While Yermack (2010) concludes that activism in general leads to little improvement in performance, Brav et al. (2008), Klein and Zur (2009), Clifford and Lindsey (2011), and Boyson and Mooradian (2011a) document significant gains to hedge fund activism, and so hedge fund activism is particularly important from a policy perspective. Kahan and Rock (2007) argue that "hedge fund activism is strategic and ex ante", whereas "mutual fund and public pension fund activism, if it occurs, tends to be incidental and ex post." Thus, hedge funds' decision to acquire a block and their choice of filing is more likely to be driven by governance (cf. Brav et al., 2008), whereas mutual funds typically acquire a block for other reasons, e.g., undervaluation.

We note that, while all hedge funds have the option of engaging in voice, several never do so – for example, some funds focus entirely on trading as this is their core skill. We thus focus on activist hedge funds as they both have the ability and willingness to engage in intervention. We identify activist hedge funds as those who have ever engaged in activism with any of their investments; however, such funds may choose to govern through trading for their other holdings.

We find that activist hedge funds are more likely to acquire a block (a stake of at least 5%) in firms that exhibit high stock liquidity, measured using the proxy of either Amihud (2002) or Fong, Holden, and Trzcinka (2011). This result supports the voice theories of Kyle and Vila (1991) and Kahn and Winton (1998), and the exit model of Edmans (2009). Consistent with the exit mechanism in particular, the effect of liquidity is stronger in firms with high managerial sensitivity to the stock price.

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[5]They, like us, posit a link between liquidity and block formation by using liquidity as an instrument for blockholdings. They similarly find that liquidity encourages block formation, but reduces the likelihood of activism conditional upon block formation.

Having established that liquidity stimulates the entry of hedge fund blockholders, we next examine how it affects their choice of monitoring strategy once they have decided to acquire a block. We address the second challenge – that the threat of governance also matters in addition to actual governance – by using the blockholder's choice of filing to measure her intent, rather than studying only instances of actual exit and voice. Blockholders who intend to engage in activism are required to file Schedule 13D upon acquiring a block in a public firm and state their activist intentions.[6] Blockholders who intend to remain passive are able to file 13G. They will take advantage of this option due to the costs of filing a 13D, described later in Section 1. A separate advantage of using 13D filings is that they are not limited to a specific type of monitoring variable. Norli, Ostergaard and Schindele (2009) examine voice in the form of contested proxy solicitations and shareholder proposals. While these are important instances of activism, relying on two specific vehicles could potentially omit other channels of voice.

We find, among the targeted firms, a strong negative relation between stock liquidity and the likelihood of a hedge fund blockholder filing a 13D. This finding is consistent with the view that liquidity weakens governance as it deters the blockholder from engaging in voice (Coffee (1991); Bhide (1993); Maug (2002)). However, it is also consistent with the argument that trading is itself a governance mechanism (Admati and Pfleiderer (2009); Edmans (2009); Edmans and Manso (2011)) and so liquidity merely causes a blockholder to employ a different governance channel, i.e., move from "voice" to "exit" rather than from "voice" to "no governance". To support the "exit" view over the "no governance" view, we undertake two additional tests. First, we show that liquidity has a particularly large effect in inducing a

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[6] Examples of activists' stated intentions filed in a 13D include: change the CEO or board, pursue strategic alternatives, oppose or induce a merger, increase the dividend, induce a buyback, and change the firm's corporate governance.

blockholder to file 13G rather than 13D for firms with high managerial sensitivity to the stock price. Second, we find a significantly positive market reaction to a 13G filing, and that this reaction is particularly strong for firms with above-median liquidity.

The above results show that, while liquidity increases the likelihood of a block acquisition, it decreases the likelihood that a 13D is filed conditional upon block acquisition. We show that the first effect outweighs the second, i.e. that liquidity increases the unconditional probability of a 13D being filed. Since liquidity increases the incidence of voice as well as exit, it has an overall positive effect on governance.

Finally, we address the third empirical challenge – that liquidity is endogenous – in two ways. First, since we study a governance *event* (a Section 13 filing) rather than governance characteristics, a regression of a Section 13 filing on lagged liquidity is unlikely to be driven by reverse causality from the future event to past liquidity. Second, we use decimalization as a natural experiment to provide an exogenous source of variation in liquidity. Between August 2000 and April 2001, the stock markets in the U.S. converted to the decimal-pricing system and reduced the minimum tick size from 1/16 dollar to one cent. Bid-ask spreads fell substantially across all market capitalization groups (Bessembinder (2003); Furfine (2003)). Thus, decimalization can instrument for liquidity as it led to an increase in liquidity, but was unlikely to affect a hedge fund's governance strategy other than through liquidity. All of our results remain robust to using this instrument. We also show that decimalization has a stronger effect on governance in firms with low stock prices, for which a change in tick size has a greater impact on liquidity.

This study contributes to two main literatures. First, we build on recent research studying the effect of liquidity on firm outcomes. Fang, Noe, and Tice (2009) identify a causal impact of

liquidity on firm performance.[7]   Bharath, Jayaraman, and Nagar (2010) show that the effect is stronger for firms with higher block ownership, which supports the exit governance mechanism, although they do not study the choice between exit and voice or the effect of liquidity on block acquisition.   Like Bharath, Jayaraman, and Nagar (2010), our paper documents a potential mechanism to explain the positive effect of liquidity on firm value found by Fang, Noe, and Tice (2009) – the effect of liquidity on governance.   Other papers study the effect of liquidity on voice, but do not consider exit.   Heflin and Shaw (2000) document a negative correlation between block ownership and stock liquidity.   This is consistent with liquidity hindering blockholder activism, although it could also suggest that block ownership reduces liquidity.   In contrast, Norli, Ostergaard, and Schindele (2009) find a strong positive relation between stock liquidity and actual voice.   Gerken (2009) finds that liquidity has no effect on governance choices, contrary to our findings that it causes blockholders to choose exit over voice.   Our focus on hedge funds, which have both governance mechanisms at their disposal, may account for the difference in results.   In addition, while we study the initial ex ante filing decision of a blockholder (13D or 13G), Gerken considers the subsample of 13G filers and investigates whether liquidity causes them to switch ex-post to a 13D.   Such switches are much rarer (in our sample there are 42 switches from 13G to 13D out of the 1,112 initial 13G filings, and 31 out of 645 after adding controls), and this reduced power may account for the insignificant results. Kelly and Ljungqvist (2011) show that shocks to liquidity risk, caused by increases in information asymmetry resulting from exogenous broker closures, augment a stock's required returns and thus reduce its price.

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[7] On the other hand, Fang, Tian, and Tice (2011) document a potential disadvantage of stock liquidity, that it may attract transient investors who impose short-term pressures on managers and impede firm innovation. In contrast, Kim and Kang show that liquidity leads to a less negative relationship between R&D and the probability of CEO firing, consistent with the idea that liquidity causes the benefits of R&D to be more closely incorporated into prices.

Second, the paper contributes to research on the role of hedge funds in corporate governance. Brav et al. (2008), Clifford (2008), Greenwood and Schor (2009), Klein and Zur (2009, 2011), and Boyson and Mooradian (2011a, 2011b) study the effect of hedge fund activism on firm outcomes. While the existing research typically focuses on activism alone, we examine the choice between exit and voice.[8]

The rest of the paper is organized as follows. Section 1 develops our hypotheses, Section 2 describes the data, Section 3 presents the results, and Section 4 concludes.

1. Hypothesis development and theoretical framework

This section lays out our empirical hypotheses and the theoretical framework that underpins them. Our first hypothesis is as follows.

H1: Liquidity increases the likelihood that a hedge fund acquires a block.

This hypothesis is supported by both voice theories (Kyle and Vila (1991), Kahn and Winton (1998), and Maug (1998)) and exit theories (Edmans (2009)). In contrast, if block acquisition was motivated by undervaluation rather than governance concerns, liquidity should reduce its likelihood as liquidity increases efficiency (Chordia, Roll, and Subrahmanyam (2008)). The governance theories of voice and exit ascribe different roles to governance. Exit involves blockholder trades affecting the stock price, and thus requires the manager to be sensitive to the price to be effective. The effect of liquidity on block formation should therefore be stronger in

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[8] Clifford (2008) studies the value effect of a hedge fund filing a 13D versus a 13G, but not what determines this filing choice in the first place.

firms where the manager's wealth is sensitive to the stock price.[9] In contrast, in voice theories, managerial incentives have no effect on the role of liquidity.[10] This leads to our second hypothesis.

H2: The effect of liquidity on the probability of block acquisition is stronger in firms with higher managerial incentives.

The next hypothesis concerns the schedule filed by the blockholder upon acquisition of her stake.

H3: Conditional upon acquiring a block, liquidity increases the likelihood that the blockholder files 13G rather than 13D.

Once an investor has decided to acquire a block, liquidity then affects whether and how the blockholder will choose to govern the firm. There are three choices at her disposal: "voice", "exit", and "no governance". In the third option, the blockholder does not intend to monitor the firm at all: while she may subsequently increase or decrease her stake, such trading decisions are not based on private information and thus do not impound information into the stock price.[11] If the blockholder intends to engage in "voice", she will file Schedule 13D. A 13G filing is

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[9] In practice, managerial sensitivity to the stock price can also arise through the threat of dismissal, but this is difficult to measure at the individual firm level.

[10] Voice theories typically do not consider managerial incentives. An extension of these theories to incorporate managerial incentives would predict that high incentives reduce agency problems and thus the need for blockholder governance in general, but have no effect on how governance depends on liquidity.

[11] An investor may acquire a block in a firm even if she does not intend to exert governance, for example if the block was sold cheaply in a fire-sale by a distressed seller.

consistent with both "exit" and "no governance", and so we will have to conduct further tests to distinguish between these two scenarios.

As outlined in the introduction, the "voice" theories of Coffee (1991), Bhide (1993), and Maug (2002) predict that liquidity will encourage a blockholder to choose "no governance" over "voice" and be more likely to file a 13G, consistent with *H3*. In contrast, the "voice" theories of Maug (1998) and Faure-Grimaud and Gromb (2004) argue that liquidity encourages intervention and so would be supported by evidence *against H3*. The "exit" models of Admati and Pfleiderer (2009), Edmans (2009), and Edmans and Manso (2011) show that blockholder trading can be a governance mechanism in itself, and one that is enhanced by liquidity. If the two governance mechanisms are substitutes, and the positive effect of liquidity on exit exceeds any positive effect on voice, this will cause the blockholder to change from voice to exit and file 13G.[12] Therefore, exit theories are also consistent with *H3* but for different reasons from Coffee (1991), Bhide (1993), and Maug (2002): liquidity causes blockholders to move from "voice" to "exit", rather than to "no governance".

We use Schedule 13D (13G) filings to identify blockholders who intend to engage in voice (exit). The choice of filing is an accurate measure of actual intent. A blockholder who intends to engage in activism will not file a 13G as this legally prohibits her from engaging in activism; by contrast, a 13D allows her to pursue the specific form of activism stated in the 13D. Even if a

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[12] If exit and voice are mutually exclusive, it is automatic that an increase in the effectiveness of exit (due to liquidity) will cause the blockholder to choose not to employ voice and thus file a 13G. However, they may not be mutually exclusive: the blockholder may choose to pursue both simultaneously (as modeled by Edmans and Manso (2011) and documented empirically by McCahery, Sautner, and Starks (2011)). Thus, even if liquidity causes the blockholder to increase her use of exit and has no impact on the effectiveness of voice, it may be that she continues to engage in voice in addition and thus still files 13D to preserve this option. However, if the two governance mechanisms are substitutes, the blockholder will choose the most cost-effective one. Since the act of actual intervention itself is costly (e.g. launching a proxy fight), and even stating an activist intent via a 13D filing is costly (as discussed below), a blockholder will take advantage of increased liquidity by increasing her usage of exit at the expense of voice, rather than pursuing voice to the same degree as before.

13G filer subsequently amends the filing to a 13D before engaging in activism, she might still be sued for fraudulently stating her intentions in the initial filing, as per the Delaware Court of Chancery's decision in the case of NACCO Industries Inc. v. Applica Inc. Conversely, it is unlikely that a blockholder who intends to remain passive will file a 13D. First, the filing requirements for a 13D are significantly more onerous and hinder her ability to engage in "exit". A 13D filer must subsequently re-file within 10 days upon a change in stake of 1%, which alerts the market to changes in her position and moves the price against her.[13] In contrast, a 13G filer only needs to re-file for a change in stake of at least 5%, and the re-filing deadline is 45 days after the end of the calendar year (for qualified investors listed under Rule 13d-1(b)(1)). Second, the filing of a 13D typically causes the target firm to become hostile to the blockholder, for example by restricting access to management. Third, it typically leads to credit downgrades (Klein and Zur (2011)), higher bank loan spreads, and shorter bank loan maturities (both Li and Xu (2009)). These effects harm the firm and thus the value of the blockholder's stake. Fourth, the blockholder suffers reputational loss from filing a 13D if she subsequently does not engage in activism. Filing a 13D signals that the blockholder believes that the target is underperforming and that intervention will create value. Thus, if target performance does not improve and she fails to intervene, she loses reputation among her own investors. All of these costs render it unlikely that a blockholder will file 13D unless she genuinely intends to engage in activism.[14]

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[13] For example, if a 13D filer wishes to sell her entire block of 5%, it is unlikely that she will be able to do so within a short period of time (she does not have to sell within 10 days) due to price impact. This is because, after she has sold the first 1%, she must file a 13D within 10 days. Such a filing will lower the price at which she can sell her remaining 4%.

[14] Even if a blockholder does not intend to engage in voice, it has the option of filing a 13D and stating its purpose as "investment only." Out of our 490 13D filings, 53 are marked as such. For the core analysis, we classify these blockholders as intending to engage in voice, since it is easier to change the stated purpose of a 13D from investment to activism than to switch from a 13G to a 13D: the former requires changing a single line, the latter requires a complete re-filing. If we reclassify these 53 as 13Gs, our results for Tables 4-6 are unchanged and the results for Table 7 become stronger.

In addition to *H3*, the exit theories also predict that liquidity will encourage the choice of exit over voice particularly in firms with high managerial incentives. Our fourth hypothesis is analogous to *H2*:

H4: The effect of liquidity on the probability of filing 13G rather than 13D is stronger in firms with higher managerial incentives.

If *H1* and *H3* are supported, then liquidity has two conflicting effects on the likelihood of voice. On the one hand, the blockholder is more likely to acquire a stake to begin with; on the other hand, conditional upon acquiring a stake, the blockholder is less likely to choose voice. Our fifth hypothesis studies whether the first effect outweighs the second:

H5: Liquidity increases the likelihood that a hedge fund files Schedule 13D.

We noted above that finding support for *H3* is consistent with liquidity encouraging either "exit" or "no governance". Evidence in favor of *H2* and *H4* will support the former view over the latter. Moreover, we can provide additional evidence to distinguish these explanations:

H6: The market reaction to a 13G filing is significantly positive, particularly among firms with high liquidity.

If a 13G filer intends to govern through exit, there should be a positive return to the filing as the market anticipates the governance benefits. However, a positive reaction may also be

consistent with "no governance", as the filing could signal that the new blockholder has private information that the stock is undervalued. Thus, we provide an additional test by examining if the return is particularly strong for firms with high liquidity. If liquidity is high, the blockholder will be gathering more information, increasing the threat of exit. Under the undervaluation story, the announcement return should be decreasing in liquidity for two reasons. First, liquidity increases price efficiency (see, e.g., Chordia, Roll and Subrahmanyam (2008)) and reduces undervaluation. Thus the market should attribute the purchase less to undervaluation, reducing the return.[15] Second, since illiquidity increases the cost of both acquiring a block and selling it after the undervaluation is corrected, a hedge fund will only acquire a block if the undervaluation is so large that it outweighs the cost. Hence, the acquisition of a block in an illiquid firm is a stronger sign of undervaluation than for a liquid firm, and again the announcement return should be decreasing in liquidity.

2. Sample construction, variable measurement, and descriptive statistics

2.1. Sample construction and variable measurement

We start by assembling a comprehensive list of hedge funds that engaged in block acquisitions between January 1, 1995 and December 31, 2010. To do so, we follow Brav et al. (2008) and conduct an exhaustive search on Factiva for activist hedge funds. We first search using the key words "activism" and "activist", and then within this sample search for "hedge fund" and

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[15] The announcement return is unlikely due to the direct price pressure resulting from the blockholder's purchase, as a 13G does not need to be filed until 45 days after the end of the calendar year in which the block was acquired (for blockholders that fall under Rule 13d-1(b)(1) or 10 days after block acquisition (for other blockholders). (The majority of hedge funds in our sample are not registered with the SEC and so do not fall under Rule 13d-1(b)(1)). Even if it is due to price pressure, the effect should be smaller for firms with higher liquidity.

"hedge", to yield 223 funds.[16] For each hedge fund on this list, we use the SEC's EDGAR database to collect all 13D or 13G schedules that the fund filed upon initial acquisition of a block. We then manually retrieve the filing date and the target company's PERMNO; the latter leads to a loss of observations for pink-sheet or other small firms not covered by CRSP. For each firm, we only retain the first Section 13 filing by an activist hedge fund, since subsequent filings could be influenced by the initial filing (e.g. be a "copycat") rather than liquidity, or the first filing could jointly drive both liquidity and a subsequent filing. These steps lead to a dataset of 709 initial Schedule 13Ds and 1,112 initial Schedule 13Gs filed by 101 hedge funds.[17]

To capture the block acquisition by a hedge fund, we merge this hedge fund dataset with the universe of Compustat firms and define a dummy variable *BLOCK*. This variable equals one if a hedge fund files an initial 13D or 13G for a firm-year observation and zero otherwise. We define the dummy variable *13DFILING* to indicate hedge fund activism, which equals one if a hedge fund files an initial 13D and zero otherwise. We then, within the hedge fund dataset, construct a dummy variable *13Dvs13G* to denote a hedge fund blockholder's choice of governance mechanism. This variable equals one if a hedge fund blockholder files an initial 13D for a firm-year observation, and zero if a 13G is filed instead.

Next, we obtain the daily trading information (return and volume) from the Center for Research in Security Prices (CRSP) daily stock files to compute the liquidity measures. Given

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[16] Following the recent hedge fund literature (e.g. Brav et al. (2008); Klein and Zur (2009)), we define "hedge fund" as an investment vehicle that is not registered under the Securities Act of 1933 or Investment Act of 1940. Also, to maintain its exemption from securities and mutual fund registration, a fund is limited to having 99 "accredited" investors or 499 "qualified" investors.

[17] A hedge fund beneficially owning 5% or more of a stock can file Schedule 13G as long as it does not acquire the stock with the purpose of changing or influencing the control of the issuer. However, the SEC mandates that any investor who holds 20% or more needs to file Schedule 13D regardless of the intent. Therefore, for Schedule 13D filers with 20% or more ownership, we carefully check the Item 4 "Purpose of the Transaction" of the filing to properly classify it as active (and thus include it within the 13D filers) or passive (and thus include it within the 13G filers).

our large sample size (all firms in the intersection of Compustat and CRSP), computational feasibility requires us to use liquidity measures based on daily, rather than intra-day, data. Conceptually, liquidity measures the cost of trading. This cost can be calculated relative to either the volume being traded or the price of the stock being traded. There are thus two categories of liquidity measures; for each category, we choose the liquidity measure that prior literature has arguably shown to be the most accurate. Our first measure is the Amihud (2002) illiquidity ratio, a cost-per-volume measure that aims to capture the marginal transaction cost per dollar of trading volume. Goyenko, Holden, and Trzcinka (2009) evaluate 12 low-frequency proxies that can be constructed using daily (rather than intra-day) data and find that this measure most accurately captures price impact. We compute the Amihud illiquidity ratio, $AMRATIO_{i,t}$, as the daily ratio of absolute value of stock returns divided by dollar volume, averaged over firm i's fiscal year t:

$$AMRATIO_{i,t} = \frac{1}{D_{i,t}} \times \sum_{d=1}^{D} \frac{|RET_{i,d}|}{|VOLUME_{i.d}|}$$

where $RET_{i,d}$ and $VOLUME_{i,d}$ are, respectively, the returns and dollar trading volume on day d for firm i, and $D_{i,t}$ is the number of trading days in fiscal year t for firm i.[18]

Our second measure of stock liquidity stems from Fong, Holden, and Trzcinka (2011, "FHT").[19] The FHT measure is a percent-cost proxy that aims to capture the cost of trading as a percentage of the price. Fong, Holden, and Trzcinka (2011) show that their low-frequency measure is highly correlated with the percent-cost benchmarks computed from high-frequency

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[18] We test the robustness of our results by requiring a firm to have at least 200 trading days available and an end-of-year stock price greater than $5 in fiscal year *t-1* to be included in the sample as in Amihud (2002). Our results are virtually the same, albeit resulting in a smaller sample.

[19] We are grateful to Charles Trzcinka for providing the code to calculate this measure.

(intraday) data such as percent effective spread and percent quoted spread. We calculate the FHT measure using the following formula:

$$FHT_{i,t} = 2 \times Sigma \times Probit(\frac{1 + Zeros\%}{2})$$

where *Sigma* is the standard deviation of the daily returns calculated over firm *i*'s fiscal year *t* and *Zeros%* is the proportion of zero returns, calculated as the number of zero-return days divided by the number of total trading days for firm *i*'s fiscal year *t*.

The distributions of $AMRATIO_{i,t}$ and $FHT_{i,t}$ are highly positively skewed so we take the natural logarithm of (one plus) each measure, and multiply it by -1 to facilitate interpretation: a high value corresponds to high liquidity. We define -ln($AMRATIO_{i,t}$) as $LIQAM_{i,t}$ and -ln($FHT_{i,t}$) as $LIQFHT_{i,t}$, and use these two measures throughout our empirical analysis.

We measure the manager's sensitivity to the stock price using the scaled wealth-performance sensitivity measure of Edmans, Gabaix, and Landier (2009) (*WPS*). This measure is the dollar change in the CEO's wealth for a 100 percentage point change in the stock price, scaled by annual pay. The advantage of this measure is that it is independent of firm size and thus comparable across firms of different size. The sensitivity of the CEO's previously granted options are calculated using the algorithm of Core and Guay (2002).[20] We also use Eventus to calculate market-adjusted abnormal returns to 13G filings (*CAR (-1, +1)*), with date 0 being the filing date of a 13G.

Finally, to identify appropriate control variables that may jointly affect both liquidity and hedge funds' targeting and monitoring strategies, we follow Brav, Jiang, and Kim (2009) and control for the target's log market equity (*MV*), market-to-book ratio (*Q*), one year sales growth

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[20] Even if the CEO has large equity holdings, he will not be sensitive to the current stock price if his securities have very long vesting periods. However, vesting periods are typically short in practice (see, e.g., Kole (1997)).

(*SGR*), return-on-assets ratio (*ROA*), debt-to-assets ratio (*LEV*), dividend yield (*DIVYIELD*), R&D intensity (*RDTA*), Herfindahl index of sales in different business segments (*HINDEX*), and the log of one plus the number of analysts covering the firm (*NANLYST*).[21] Firm-year financial information is from Compustat and analyst coverage data is from the Institutional Brokers' Estimate System (I/B/E/S) database. We also add year fixed effects and Fama-French 12 industry fixed effects to control for the inter-temporal and industry variation in stock liquidity and hedge fund targeting. For example, the 2008 financial crisis reduced stock liquidity and may have also imposed financial constraints on hedge funds, hindering them from acquiring blocks.

One remaining concern is that liquidity is endogenous due to reverse causality from governance to liquidity, or omitted variables. Note that reverse causality is less likely to be a concern in our setting as we study a governance *event* (the filing of a 13D or a 13G) rather than a firm's governance *characteristics*. While regressing governance characteristics on contemporaneous liquidity would be consistent with causality in either direction, we regress a Schedule 13 filing on lagged liquidity.[22] Since the filing has not yet occurred at the time liquidity is measured, the potential change in governance is unlikely to affect the lagged liquidity. A reverse causality explanation would require the market to anticipate the hedge fund's block acquisition in advance and trade accordingly; if such anticipation drives up the stock price, the fund has little incentive to follow through with the acquisition. We address omitted variables with the long list of control variables described above, as well as year and

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[21] As a robustness check, we also include the G-index developed by Gompers, Ishii, and Metrick (2003) as an additional control variable. This leads to approximately a 75% reduction in sample size in Tables 2, 4, and 6 and a 28% reduction in sample size in Tables 3 and 5. However, our inferences remain intact, with the results remaining significant using at least one liquidity measure in every table.

[22] By contrast, a study of governance characteristics may be consistent with reverse causality even if current governance is regressed on lagged liquidity. Lagged governance may cause lagged liquidity, and also be correlated with current governance since governance is sticky. Here, we are studying governance events, and a past Schedule 13 event is unlikely to be correlated with a current Schedule 13 event.

industry fixed effects. As a robustness check, we re-run our results using an exogenous shock to liquidity – decimalization of minimum tick size in 2001.[23] We define a dummy variable *DECIMAL* to indicate whether a block acquisition takes place post decimalization. Specifically, when examining a hedge fund's block acquisition decision in fiscal year *t+1*, *DECIMAL* equals one if fiscal year *t* ends after January 31, 2001 for firms traded on the NYSE and the AMEX stock exchange, after April 9, 2001 for firms traded on the Nasdaq stock exchange, and zero otherwise. When studying a hedge fund's choice between 13D and 13G, we have a specific filing date which allows us to define *DECIMAL* more finely. It equals one if the filing occurs after January 31, 2001 or April 9, 2001 (depending on the exchange) and zero otherwise. To avoid multicollinearity issues, we drop the year fixed effects for 2001 and 2002 but retain them for all other years. Thus, this specification compares hedge funds' targeting and monitoring strategies pre- and post-decimalization, but includes fixed effects from 2003 onwards (in addition to from 1995-2000) to control for changes in governance in those years that are likely driven by factors other than the decimalization "event." Relatedly, note that the inclusion of year fixed effects for our specifications with *LIQAM* and *LIQFHT* is conservative as it means that we are identifying only on the variation on liquidity that is not driven by decimalization.

2.2. Descriptive Statistics

Panel A of Table 1 provides summary statistics of the variables used in this study.[24] Of the 88,742 firm-year observations we use to investigate the effect of stock liquidity on hedge funds' block acquisition, 1,135 firm-year observations have at least one initial 13D or 13G filed by a

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[23] Chordia, Roll, and Subrahmanyam (2008) also rely on decimalization as an exogenous shock to liquidity to address a different research question of the effect of liquidity on market efficiency.

[24] To minimize the effect of outliers, we winsorize all continuous variables at the 1% and the 99% level.

hedge fund. (This compares to the 1,821 filings in the original hedge fund sample before merging with the liquidity measures and controls). Of these 1,135 firm-year observations, 490 (645) represent 13D (13G) filings. Panel B provides summary statistics for the 1,135 firm-year observations that correspond to a hedge fund filing.

Our particular interest is whether stock liquidity plays a role in hedge funds' governance choices. Panel C of Table 1 presents the simple correlations between the block acquisition dummy *BLOCK*, the choice of filing dummy *13Dvs13G*, and two liquidity measures *LIQAM* and *LIQFHT*. Both liquidity measures are highly correlated, carrying a significant Pearson (Spearman) correlation of 0.750 (0.788). Moreover, *BLOCK* has significantly positive Pearson and Spearman correlations with both liquidity measures, suggesting that liquidity facilitates the entry of hedge fund blockholders. In addition, *13Dvs13G* has significantly negative Pearson correlations with both liquidity measures, suggesting that liquidity causes hedge funds to employ "voice" less frequently after acquiring a block.

We also calculate the correlation coefficients between liquidity in year *t* and *t-1*. For our hypotheses, it is important that liquidity be highly persistent so that stock liquidity at the time a hedge fund acquires a block (and thus makes the choice between a 13D and 13G) is a good predictor of liquidity in the future, when the hedge fund may end up engaging in exit and voice. Panel D shows that both liquidity measures are highly autocorrelated with Pearson and Spearman correlations between 0.85-0.94, significant at the 1% level.

To give a rough estimate of the economic significance of liquidity for governance through trading, we estimate the price impact of selling 1% of a firm's shares by calculating an Amihud (2002)-type measure. Specifically, we split stocks into quartiles based on the average *AMRATIO* and *FHT* measures over the previous calendar year, and calculate the average returns to stocks in

each quartile on days where 0.9-1.1% of the shares outstanding are traded. Firms in the third

quartile by *AMRATIO* experience a 0.9-1.1% return on such days (depending on whether we

exclude dividends from the measure of returns or subtract the market index), whereas firms in

the fourth quartile (the most illiquid firms) experience a 2.2-2.4% return. The corresponding

figures for *FHT* are 1.2-1.4% for the third quartile and 2.5-2.6% for the fourth quartile. Thus,

illiquidity imposes an economically significant hindrance on a blockholder's ability to exit from

a firm, which likely reduces her willingness to exit and her incentive to gather private

information in the first place.

We next turn to multivariate analyses to further examine how stock liquidity affects hedge

funds' block acquisition and monitoring strategies.

3. Empirical results

3.1. Does stock liquidity affect hedge funds' block acquisition decisions?

To test our first hypothesis (*H1*) that liquidity increases the likelihood of a firm being targeted by

a hedge fund, we run the following probit regression:

$$BLOCK_{i,t+1} = \alpha_0 + \alpha_1 LIQUIDITY_{i,t} + \alpha_2 CONTROL_{i,t} + \varepsilon_{i,t} \qquad (1)$$

where *BLOCK* is the likelihood of a hedge fund acquiring a block in fiscal year t+1, and

LIQUIDITY is measured by *LIQAM* or *LIQFHT*. *CONTROL* is a vector of the control variables

described in Section 2.1; we run the regression with and without controls. In all specifications

we add industry and fiscal-year dummies. Standard errors are adjusted for heteroskedasticity and

clustered at the firm level.

Table 2, Panel A shows that for both core measures of liquidity ($LIQAM$ and $LIQFHT$), both with and without controls, the coefficient on liquidity is positive and significant at the 1% level. This positive effect of liquidity on block formation is consistent with Gerken (2009), Brav, Jiang, and Kim (2009), and Clifford and Lindsey (2011). A one standard-deviation increase in liquidity as measured by $LIQAM$ ($LIQFHT$) increases the probability of a block acquisition by 0.47 (0.20) percentage point. This is economically significant compared with the unconditional probability of a hedge fund block acquisition of 1.3%. All control variables have the expected sign, and are consistent with Brav, Jiang, and Kim (2009). Hedge funds are less likely to target firms with larger market capitalization (MV_t) and growth firms with greater market-to-book ratio (Q_t), but more likely to target firms with a higher one-year sales growth (SGR_t), a higher debt-to-asset ratio (LEV_t), and more analyst coverage ($NANLYST_t$).

As stated earlier, endogeneity is unlikely to be a concern in our setting since we regress a governance event (the filing of a Schedule 13) on lagged liquidity, rather than regressing governance characteristics on liquidity. However, for robustness, we also rerun regression (1) using $DECIMAL$ to measure $LIQUIDITY$. The results remain significant at the 1% level both with and without controls. A potential concern is that other events happened around 2001, and $DECIMAL$ could be capturing these other changes rather than the decimalization event in particular. To provide further evidence that $DECIMAL$ is capturing the decimalization event in particular, we perform two further tests. First, a change in tick size from 1/16 to 1/100 should have a greater effect on liquidity (and thus governance) for firms with low stock prices. We thus create a dummy variable, $LOWPRC$, which equals one if a firm's closing price at the end of fiscal year t is below the median closing price for that year, and zero otherwise. We indeed find that the $LOWPRC=1$ subsample experiences a significantly higher increase in liquidity upon

decimalization than the *LOWPRC=0* subsample: *LIQAM* (*LIQFHT*) increases by 0.368 (0.024) in the *LOWPRC*=1 subsample compared to the 0.077 (0.007) increase in the *LOWPRC*=0 subsample; both differences are significant at the 1% level. Panel B reruns the regressions of Panel A splitting the sample by *LOWPRC*. The *DECIMAL* coefficient is significant only in the subsample for which *LOWPRC=1*, and that the difference in coefficients across the two subsamples is significant at the 1% level. Thus, *DECIMAL* indeed has a stronger effect on low-priced stocks, consistent with it capturing the effect of a change in tick size.[25]

Second, we rerun Panel A replacing *DECIMAL* with the change in liquidity in particular, to focus on the change that we are intending to capture with the *DECIMAL* dummy. We measure the change from the fiscal year before decimalization (year *t-1*) to the fiscal year after decimalization (year *t+1*) and drop all other years to hone in on the decimalization period. This specification follows Fang, Noe, and Tice (2009) and Fang, Tian, and Tice (2011). The implicit identifying assumption is either that the change in liquidity between these years was driven entirely by decimalization, or that even if part of the change in liquidity was due to factors other than decimalization, these factors are also uncorrelated with governance. Despite the significantly reduced sample size, the results remain significant for both measures of liquidity: the change in liquidity from *t-1* to *t+1* is significantly associated with the probability of block acquisition in *t+2*.

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[25] An alternative explanation is that *LOWPRC* may be capturing a size effect. It may be that hedge funds only acquire blocks in small firms in the first place, and thus *any* determinant of block acquisition will have a larger effect in a smaller firm. Thus, the result in Panel B that *DECIMAL* has a greater effect on firms with *LOWPRC=1* is not definitive proof that *DECIMAL* is capturing liquidity, as the result would hold if *DECIMAL* proxied for another determinant of block acquisition. We re-run the analysis splitting the sample by *MV*, and find no significant difference in the coefficients on *DECIMAL*. Thus, the difference in results across the two subsamples does not arise because *LOWPRC* proxies for size. Yet another interpretation for the insignificance of *DECIMAL* in the *LOWPRC=0* subsample is that hedge funds do not target firms with high stock prices (for whatever reason). We run the results of Panel A (using *LIQAM* and *LIQFHT* to measure liquidity) within the two *LOWPRC* groups and find that both liquidity measures are significantly positive in both subsamples, contrary to this interpretation.

The results of Table 2 support both voice and exit theories. To distinguish between the two theories, we study the hypothesis (*H2*) that the effect of liquidity on block acquisition is particularly strong in firms with high managerial incentives. We augment equation (1) by adding managerial incentives (*WPS)* and an interaction term between *LIQUIDITY* and *WPS*:

$$BLOCK_{i,t+1} = \alpha_0 + \alpha_1 LIQUIDITY_{i,t} + \alpha_2 LIQUIDITY_{i,t} \times WPS_{i,t} + \alpha_3 WPS_{i,t}$$

$$+ \alpha_4 CONTROL_{i,t} + \varepsilon_{i,t} \tag{2}$$

where *LIQUIDITY* is measured by the two continuous variables *LIQAM* and *LIQFHT*. The regression results are reported in Table 3. The interaction term is positive and significant in both specifications, consistent with the exit theory of Edmans (2009). The significant result is despite the reduced sample size, which arises since the sample contains only S&P 1500 firms covered by Execucomp.[26]

3.2. Does stock liquidity affect hedge funds' governance decisions?

We now investigate *H3* regarding the hedge fund's governance intent conditional upon acquiring a block. We run the following probit regression:

$$13Dvs13G_{i,t+1} = \alpha_0 + \alpha_1 LIQUIDITY_{i,t} + \alpha_2 CONTROL_{i,t} + \varepsilon_{i,t} \tag{3}$$

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[26] Ai and Norton (2003) argue that the coefficient on the interaction term in a nonlinear regression is not an accurate measure of the interaction effect, and propose their own measure of the interaction effect. However, there remains significant debate on this issue. Le (1998) and Kolasinski and Siegel (2010) argue that the coefficient on the interaction term is relevant even in a nonlinear regression: in particular, it is especially relevant to measure proportional rather than absolute marginal effects (e.g. if a marginal effect of 1% when the base probability is 1% is considered economically more significant than a marginal effect of 2% when the base probability is 50%). Nevertheless, we calculate the Ai and Norton (2003) interaction measure and find that it is also significant in both specifications. In addition, we run a linear probability model (as suggested by Angrist and Pischke (2008) for binary response models), and the interaction term is slightly stronger than in Table 3.

where the regressors are the same as in equation (1).

Table 4, Panel A presents the results. In all six specifications with and without controls, all three measures of liquidity are associated with a significantly lower probability of the hedge fund filing 13D (rather than 13G). A one standard deviation increase in *LIQAM* (*LIQFHT*) is associated with a 6.88 (4.97) percentage point decrease in the likelihood of filing 13D, compared to the 43.2% probability of such a filing conditional upon acquiring a block. These results suggest that liquidity encourages hedge funds to reduce their usage of "voice", but these results cannot distinguish whether liquidity causes the hedge funds to move towards "no governance" (Coffee (1991); Bhide (1993); Maug (2002)) or towards "exit" (Edmans (2009); Edmans and Manso (2011)). In other words, the choice may occur because liquidity hinders voice, or because it encourages exit. As with Table 2, we rerun the analysis stratifying the sample by the *LOWPRC* dummy. Panel B shows that the coefficient on *DECIMAL* is only significant in the subsample with *LOWPRC=1*, and that the difference in coefficients between the two subsamples is statistically significant.[27]

To investigate the "exit" channel in particular, we test *H4*. While the analysis of Section 3.1 considered all firms, this section considers only firms in which hedge funds have acquired a block. Given the substantially reduced sample size, we stratify firms into halves based on *WPS* and define a dummy variable *HIGHWPS* to denote whether a sample observation has a *WPS* equal to or above the median *WPS* within each year. We then run the modified probit regression

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[27] We are unable to run the analog of Table 2, Panel C, focusing only on the years surrounding decimalization and dropping all other years, due to low sample size. In Table 2, the sample includes all firms; in Table 4, the sample includes firms in which an activist hedge fund has acquired a block.

including the dummy variable *HIGHWPS* and the interaction term between *LIQUIDITY* and

HIGHWPS:

$$13Dvs13G_{i,t+1} = \alpha_0 + \alpha_1 LIQUIDITY_{i,t} + \alpha_2 LIQUIDITY_{i,t} \times HIGHWPS_{i,t} + \alpha_3 HIGHWPS_{i,t}$$

$$+ \alpha_4 CONTROL_{i,t} + \varepsilon_{i,t} \qquad (4)$$

Table 5 demonstrates that the coefficient estimates on the interaction term are negative and

statistically significant, but the coefficient on *LIQUIDITY* alone is insignificantly positive. In

other words, liquidity encourages the filing of a 13G rather than 13D only in the subsample of

firms with high managerial incentives. Given the dramatically reduced sample size (there are

only 322 hedge fund targeted firm-year observations for which we can calculate *WPS*), it is

notable that our results remain statistically significant, albeit at the 10% level. Overall, Table 5

provides evidence in favor of the "exit" channel and contradictory to the "no governance"

explanation. Clifford and Lindsey (2011) study the firm value implications of interacting exit

with managerial incentives, and find that passive governance has a more positive effect on value

in companies with high incentives.

While Table 2 provides support for *H1*, that liquidity increases the likelihood that a hedge

fund acquires a block, Table 3 supports *H3*, that liquidity reduces the likelihood that the hedge

fund has an activist intent, conditional upon acquiring a block. We now study which of these

effects dominates – i.e., the unconditional effect of liquidity on the likelihood that a firm is

targeted by an activist blockholder (*H5*). We run the following probit regression:

$$13DFILING_{i,t+1} = \alpha_0 + \alpha_1 LIQUIDITY_{i,t} + \alpha_2 CONTROL_{i,t} + \varepsilon_{i,t} \qquad (5)$$

Table 6 demonstrates that the unconditional effect is positive using all three measures of liquidity and significant at the 1% level. The results are consistent with Norli, Ostergaard and Schindele's (2009) finding that liquidity encourages contested proxy solicitations, a particular form of voice. This result is important for drawing conclusions about the overall effect of liquidity on governance. While liquidity encourages exit, the effect on overall governance would be ambiguous if it lowered the unconditional probability of voice. By contrast, Table 6 shows that liquidity increases the incidence of 13D as well as 13G filings. Since there are positive market reactions to both 13D filings (Brav et al., 2008) and 13G filings (see Section 3.3), liquidity has a positive effect on blockholder governance.

3.3. Does liquidity affect the announcement return to 13G filings?

Table 4 provides support for *H3*, that liquidity causes a hedge fund to file a 13G over a 13D. This is consistent with the hedge fund moving from "voice" to either "exit" or "no governance". Tables 3 and 5 show that liquidity has a greater effect on both block formation and the choice of governance mechanism in firms with higher managerial incentives, consistent with "exit" rather than "no governance". In addition, existing findings that liquidity has a positive causal effect on firm value (Fang, Noe, and Tice (2009)), particularly for firms with blockholders (Bharath, Jayaraman, and Nagar (2010)) are also supportive of the "exit" channel and inconsistent with "no governance". We now provide an additional test of the "exit" hypothesis by analyzing the event-study reaction to a 13G filing and how it depends on liquidity *(H6)*.

To test *H6*, we first divide the sample into halves based on the level of liquidity and report the mean 3-day abnormal announcement return surrounding the 13G filings (*CAR (-1, +1)*), for

both the full sample and the subsamples.[28] Table 7 Panel A illustrates the results. In the full sample, firms experience a 0.7% average abnormal return to a 13G filing. This positive market reaction is consistent with Clifford (2008). Moreover, the mean return is almost twice as high in subsample of firms with above-median liquidity as in the below-median subsample (0.9-1.0% versus 0.4-0.5%), and statistically significant only in the former.

We next test whether these results are robust to including the size and value characteristics previously shown to affect returns (e.g. Fama and French (1992)). We define the dummy variable *HIGHLIQAM* (*HIGHLIQFHT*) to denote whether an observation has *LIQAM* (*LIQFHT*) equal to or above the median *LIQAM* (*LIQFHT*) within each year and run the following regression:

$$CAR\ (-1,+1) = \alpha_0 + \alpha_1\ HIGHLIQAM_{i,t}(HIGHLIQFHT_{i,t}) + \alpha_2 CONTROL2_{i,t} + \varepsilon_{i,t} \quad (6)$$

where *CONTROL2* includes the log of the target's market value of equity (*MV2*), measured on the latest trading day at least two days prior to the filing date of the 13G and the target's market-to-book ratio (*Q2*), calculated as *MV2* divided by the book value of total assets measured at the end of the fiscal quarter immediately preceding the filing date. The results are presented in Table 7 Panel B.   The coefficient estimate on $HIGHLIQAM_{i,t}$ ($HIGHLIQFHT_{i,t}$) is positive and significant at the 5% (10%) level. In terms of economic significance, switching from the below-liquidity-median subsample to above-liquidity-median subsample, with liquidity measured using $LIQAM_{i,t}$ ($LIQFHT_{i,t}$) increases the average 3-day abnormal return by 1.5% (1.0%). Overall,

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[28] Results are very similar using the alternative windows of (0, +1), (0, +2), and (0, +3).

these results provide further evidence that liquidity causes blockholders to choose the governance mechanism of exit over voice, rather than abandon governance altogether.

4. Conclusions

This study investigates the effect of stock liquidity on an investor's decision to acquire a block and her choice of governance mechanism once she becomes a blockholder. Using a unique hand-collected dataset that captures both hedge funds' acquisition decisions and governance intent, we first show a positive relationship between stock liquidity and the likelihood that a hedge fund acquires a block; this relationship is particularly strong for firms with high managerial incentives. Conditional upon acquiring the block, liquidity deters the hedge fund from engaging in active monitoring, especially for firms with high managerial incentives. However, this reduction in "voice" is not because the blockholder is withdrawing from governance altogether, but instead employing the alternative governance mechanism of "exit". This is shown by the greater effect of liquidity on filing choices for firms with high managerial incentives, and the positive returns to 13G filings, particularly among firms with high liquidity. Moreover, even though liquidity deters active monitoring conditional upon a block being formed, this effect is outweighed by the greater probability of block formation in the first place, and so the unconditional effect of liquidity on active intervention is positive. Thus, liquidity increases the frequency of both voice and exit, and so improves blockholder governance overall.

More broadly, our findings provide evidence consistent with recent "exit" theories suggesting that trading by institutions, far from being an alternative to governance, is a governance mechanism in itself. They also have implications for the public policy debate on the desirability of liquidity for the overall economy. While the classical view argues that liquidity is harmful for

governance and advocate restrictions on liquidity, this paper shows that liquidity can be beneficial in attracting large shareholders to a firm, and enabling them to govern more effectively once they have acquired their stake.

Appendix A
Variables Definition

Variable	Definition
BLOCK	An indicator variable that equals one if hedge fund *j* files either 13D or 13G for its block holdings in target firm *i* and zero otherwise;
13Dvs13G	An indicator variable that equals one if hedge fund *j* files 13D for its block holdings in target firm *i* and zero if hedge fund *j* files 13G;
LIQAM	-1× (the natural logarithm of one plus target firm *i*'s Amihud illiquidity ratio), where Amihud illiquidity ratio is calculated as daily price response associated with one dollar of trading volume following Amihud (2002) and averaged over the fiscal year immediately preceding the initial 13D/13G filing date;
LIQFHT	-1× (the natural logarithm of one plus target firm *i*'s FHT measure), where FHT measure is calculated over the fiscal year immediately preceding the initial 13D/13G filing date. See Fong, Holden, and Trzcinka (2011) for a complete description of FHT measure;
MV	The natural logarithm of target firm *i*'s market value of equity (CSHO×PRCC_F) measured at the end of fiscal year immediately preceding the initial 13D/13G filing date;
Q	Target firm *i*'s market-to-book ratio measured at the end of fiscal year immediately preceding the initial 13D/13G filing date, calculated as [market value of equity plus book value of debt (AT-CEQ)] divided by book value of total assets (AT);
SGR	Target firm *i*'s one year sales growth rate measured at the end of fiscal year immediately preceding the initial 13D/13G filing date, calculated as [sales (SALE) minus lagged sales] divided by lagged sales;
ROA	Target firm *i*'s return-on-assets ratio measured at the end of fiscal year immediately preceding the initial 13D/13G filing date, calculated as operating income before depreciation (OIBDP) divided by lagged book value of total assets (AT);
LEV	Target firm *i*'s debt-to-assets ratio measured at the end of fiscal year immediately preceding the initial 13D/13G filing date, defined as book value of debt (AT-CEQ) divided by book value of total assets (AT);
DIVYIELD	Target firm *i*'s dividend yield measured at the end of fiscal year immediately preceding the initial 13D/13G filing date, calculated as [common dividend (DVC) plus preferred dividend (DVP)] divided by [market value of equity plus book value of preferred stock], where book value of preferred stock is defined as the first non-missing value of its redemption value (PSTKRV), or its liquidating value (PSTKL), or its carrying value (PSTK);
RDTA	Target firm *i*'s R&D intensity measured at the end of fiscal year immediately preceding the initial 13D/13G filing date, calculated as research and development expenditure (XRD) divided by lagged book

	value of total assets (AT) and set to zero if missing;
HINDEX	Herfindahl index of the Fama French 12 industry to which target firm *i* belongs, measured at the end of fiscal year immediately preceding the initial 13D/13G filing date;
NANLYST	The natural logarithm of one plus the number of analysts following target firm *i*, measured over the fiscal year immediately preceding the initial 13D/13G filing date;
DECIMAL	An indicator variable that equals one if an event occurs after decimalization went into effect and zero otherwise, where an event is defined as the lagged fiscal year end in Table 2 and the Section 13 filing date in Table 4;
WPS	Scaled wealth-performance sensitivity, calculated as the dollar change in CEO wealth for a 100 percentage point change in firm value, divided by annual flow compensation and measured at the end of fiscal year immediately preceding the initial 13D/13G filing date. See Edmans, Gabaix, and Landier (2009) for a complete description;
13DFILING	An indicator variable that equals one if hedge fund *j* files 13D for its block holdings in target firm *i* and zero if hedge fund *j* files 13G or there is no filing;
CAR(-1,+1)	3-day market-adjusted abnormal announcement return surrounding a 13G filing, where date 0 is the filing date of a Schedule 13G.

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Table 1

Panel A
Summary statistics for full sample

Variable	N	Mean	SD	5%	25%	Median	75%	95%
BLOCK	88,742	0.013	0.112	0.000	0.000	0.000	0.000	0.000
13Dvs13G	1,135	0.432	0.496	0.000	0.000	0.000	1.000	1.000
LIQAM	88,742	-0.618	1.040	-3.074	-0.776	-0.080	-0.006	0.000
LIQFHT	88,742	-0.014	0.019	-0.053	-0.018	-0.006	-0.002	0.000
MV	88,742	5.402	2.202	1.958	3.800	5.288	6.873	9.335
Q	88,742	2.007	1.822	0.806	1.048	1.360	2.162	5.442
SGR	88,742	0.255	0.779	-0.343	-0.022	0.100	0.279	1.187
ROA	88,742	0.059	0.266	-0.412	0.019	0.093	0.179	0.362
LEV	88,742	0.561	0.299	0.118	0.326	0.550	0.776	0.962
DIVYIELD	88,742	0.013	0.025	0.000	0.000	0.000	0.018	0.058
RDTA	88,742	0.055	0.127	0.000	0.000	0.000	0.048	0.296
HINDEX	88,742	0.022	0.014	0.009	0.012	0.019	0.026	0.053
NANLYST	88,742	1.327	1.073	0.000	0.000	1.386	2.197	3.091
DECIMAL	88,742	0.499	0.500	0.000	0.000	0.000	1.000	1.000
WPS	24,645	38.34	134.6	0.609	3.036	6.860	16.51	145.7
13DFILING	88,742	0.006	0.074	0.000	0.000	0.000	0.000	0.000
CAR(-1,+1)	630	0.007	0.062	-0.088	-0.027	0.001	0.033	0.121

Panel B
Summary statistics for subsample of firms targeted by hedge funds

Variable	N	Mean	SD	5%	25%	Median	75%	95%
LIQAM	1,135	-0.436	0.838	-2.374	-0.404	-0.056	-0.007	-0.001
LIQFHT	1,135	-0.011	0.016	-0.038	-0.014	-0.005	-0.002	0.000
MV	1,135	5.186	1.701	2.417	3.993	5.109	6.427	7.999
Q	1,135	1.868	1.604	0.735	1.032	1.344	2.036	5.089
SGR	1,135	0.276	0.935	-0.392	-0.045	0.078	0.256	1.528
ROA	1,135	0.047	0.264	-0.478	0.010	0.085	0.167	0.339
LEV	1,135	0.563	0.318	0.118	0.311	0.535	0.761	1.093
DIVYIELD	1,135	0.011	0.026	0.000	0.000	0.000	0.008	0.063
RDTA	1,135	0.058	0.125	0.000	0.000	0.000	0.066	0.269
HINDEX	1,135	0.023	0.014	0.011	0.014	0.020	0.026	0.059
NANLYST	1,135	1.350	0.979	0.000	0.693	1.386	2.197	2.890

Table 1 (Cont'd)

Panel C
Pearson and Spearman correlations between hedge funds' decisions and liquidity
This table reports Pearson and Spearman correlations between hedge funds' block acquisition decision ($BLOCK_{t+1}$), monitoring decision ($13Dvs13G_{t+1}$), and stock liquidity ($LIQAM_t$ and $LIQFHT_t$). Pearson (Spearman) correlations are reported above (below) the main diagonal. *** (**) (*) indicates significance level at 1% (5%) (10%) based on two-tailed t-tests.

Pearson / Spearman	$BLOCK_{t+1}$	$13Dvs13G_{t+1}$	$LIQAM_t$	$LIQFHT_t$
$BLOCK_{t+1}$			0.021***	0.022***
$13Dvs13G_{t+1}$			-0.102***	-0.049*
$LIQAM_t$	0.013***	-0.042		0.750***
$LIQFHT_t$	0.021***	-0.022	0.788***	

Panel D
Pearson and Spearman correlations between liquidity and lagged liquidity
This table reports Pearson and Spearman correlations between stock liquidity ($LIQAM_t$ and $LIQFHT_t$) and lagged stock liquidity ($LIQAM_{t-1}$ and $LIQFHT_{t-1}$). Pearson (Spearman) correlations are reported above (below) the main diagonal. *** (**) (*) indicates significance level at 1% (5%) (10%) based on two-tailed t-tests.

Pearson / Spearman	$LIQAM_t$	$LIQFHT_t$	$LIQAM_{t-1}$	$LIQFHT_{t-1}$
$LIQAM_t$		0.750***	0.859***	0.684***
$LIQFHT_t$	0.788***		0.661***	0.846***
$LIQAM_{t-1}$	0.944***	0.746***		0.760***
$LIQFHT_{t-1}$	0.759***	0.905***	0.786***	

Table 2: Does stock liquidity affect hedge funds' block acquisition decisions?

Panel A

This table reports the probit regression results on the relation between a firm's stock liquidity and the probability of a hedge fund acquiring a block ownership in the firm. Variable definitions are listed in Appendix A. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. For $LIQAM_t$, $LIQFHT_t$, and *DECIMAL,* the marginal effects (dF/dx) are displayed below the standard errors. Year fixed effects and Fama-French 12 industry effects are included in columns (2), (4), and (6) but the coefficient estimates are not reported. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variables	**BLOCK$_{t+1}$** *(=1 if 13D Filing or 13G Filing; 0 if no block acquisition)*					
$LIQAM_t$	**0.079*****	**0.171*****				
	(0.013)	(0.021)				
	[0.0026***]	[0.0045***]				
$LIQFHT_t$			**3.975*****	**3.902*****		
			(0.747)	(1.064)		
			[0.1295***]	[0.1062***]		
DECIMAL					**0.299*****	**0.544*****
					(0.024)	(0.064)
					[0.0094***]	[0.0158***]
MV_t		**-0.111*****		**-0.087*****		**-0.070*****
		(0.010)		(0.009)		(0.008)
Q_t		**-0.022****		**-0.020****		**-0.023*****
		(0.009)		(0.009)		(0.009)
SGR_t		**0.030***		**0.034****		**0.037****
		(0.016)		(0.016)		(0.016)
ROA_t		**0.038**		**0.011**		**0.028**
		(0.060)		(0.061)		(0.061)
LEV_t		**0.111*****		**0.102****		**0.082***
		(0.043)		(0.044)		(0.043)
$DIVYIELD_t$		**-0.608**		**-0.443**		**-0.396**
		(0.593)		(0.604)		(0.598)
$RDTA_t$		**-0.063**		**-0.038**		**-0.000**
		(0.132)		(0.132)		(0.131)
$HINDEX_t$		**1.208**		**2.032**		**1.576**
		(4.070)		(4.053)		(3.937)
$NANLYST_t$		**0.066*****		**0.092*****		**0.096*****
		(0.017)		(0.017)		(0.017)
INTERCEPT	**-2.190*****	**-2.197*****	**-2.184*****	**-2.414*****	**-2.406*****	**-2.512*****
	(0.012)	(0.147)	(0.014)	(0.149)	(0.019)	(0.131)
Year Fixed Effects		*Included*		*Included*		*Included*
Industry Fixed Effects		*Included*		*Included*		*Included*
Number of Obs. Used	88,742	88,742	88,742	88,742	88,742	88,742
Pseudo R^2	0.003	0.052	0.003	0.046	0.013	0.044

Table 2: Does stock liquidity affect hedge funds' block acquisition decisions? (Cont'd)

Panel B

This table reports the probit regression results on the effect of decimalization on the probability of a hedge fund acquiring a block ownership in a firm, conditional on the level of the firm's stock price. Variable definitions are listed in Appendix A. *LOWPRC$_t$* is an indicator variable that equals one if a firm's closing price at the end of fiscal year *t* is below the median closing price for that year and zero otherwise. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. Year fixed effects and Fama-French 12 industry effects are included in both columns but the coefficient estimates are not reported. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	(2)
Dependent Variables	**BLOCK$_{t+1}$** *(=1 if 13D Filing or 13G Filing; 0 if no block acquisition)*	
	LOWPRC=1	**LOWPRC=0**
DECIMAL	**0.551*****	**0.360**
	(0.083)	(0.281)
Coefficient Difference in DECIMAL between		
LOWPRC=1 and LOWPRICE=0		**0.191*****
[Two-tailed p-value]		[0.000]
MV$_t$	**0.006**	**-0.113*****
	(0.012)	(0.015)
Q$_t$	**-0.038*****	**-0.009**
	(0.014)	(0.014)
SGR$_t$	**0.013**	**0.070****
	(0.021)	(0.028)
ROA$_t$	**0.018**	**-0.101**
	(0.075)	(0.115)
LEV$_t$	**0.151*****	**0.058**
	(0.050)	(0.092)
DIVYIELD$_t$	**0.574**	**-3.270****
	(0.597)	(1.403)
RDTA$_t$	**0.006**	**-0.128**
	(0.157)	(0.245)
HINDEX$_t$	**1.574**	**-0.022**
	(5.059)	(5.962)
NANLYST$_t$	**0.099*****	**0.073*****
	(0.021)	(0.026)
INTERCEPT	**-2.723*****	**-2.035*****
	(0.170)	(0.200)
Year Fixed Effects	*Included*	*Included*
Industry Fixed Effects	*Included*	*Included*
Number of Obs. Used	44,454	44,288
Pseudo R^2	0.045	0.059

Table 2: Does stock liquidity affect hedge funds' block acquisition decisions? (Cont'd)

Panel C

This table reports the probit regression results on the relation between a firm's change in stock liquidity surrounding decimalization and the probability of a hedge fund acquiring a block ownership in the firm immediately post decimalization. Variable definitions are listed in Appendix A. Δ denotes the change in each variable from the fiscal year before decimalization (year *t-1*) to the fiscal year after decimalization (year *t+1*) with *t* indicating the year during which decimalization went into effect for the firm. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity. Fama-French 12 industry effects are included in both columns but the coefficient estimates are not reported. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

Dependent Variables	(1)	(2)
	$BLOCK_{t+2}$ *(=1 if 13D Filing or 13G Filing; 0 if no block acquisition)*	
$\Delta LIQAM$	**0.128****	
	(0.055)	
$\Delta LIQFHT$		**9.228*****
		(2.782)
ΔMV	**-0.151****	**-0.157****
	(0.068)	(0.066)
ΔQ	**-0.002**	**-0.009**
	(0.029)	(0.029)
ΔSGR	**0.011**	**0.002**
	(0.046)	(0.045)
ΔROA	**0.143**	**0.071**
	(0.172)	(0.168)
ΔLEV	**-0.011**	**-0.003**
	(0.246)	(0.238)
$\Delta DIVYIELD$	**-3.016***	**-2.821**
	(1.740)	(1.717)
$\Delta RDTA$	**0.229**	**0.143**
	(0.452)	(0.444)
$\Delta HINDEX$	**11.616**	**11.667**
	(12.745)	(12.684)
$\Delta NANLYST$	**-0.019**	**-0.012**
	(0.090)	(0.090)
INTERCEPT	**-1.935*****	**-2.042*****
	(0.171)	(0.176)
Industry Fixed Effects	*Included*	*Included*
Number of Obs. Used	4,576	4,576
Pseudo R^2	0.033	0.036

Table 3: Does stock liquidity affect hedge funds' block acquisition decisions? The effect of wealth-performance sensitivity

This table reports the probit regression results on the relation between a firm's stock liquidity and the probability of a hedge fund acquiring a block ownership in the firm and the effect of *WPS* on this relation. Variable definitions are listed in Appendix A. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. The coefficient estimates on WPS_t are multiplied by 1,000 for ease of presentation. Year fixed effects and Fama-French 12 industry effects are included in both columns but the coefficient estimates are not reported. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	(2)
Dependent Variables	**BLOCK$_{t+1}$** (=1 if 13D Filing or 13G Filing; 0 if no block acquisition)	
$LIQAM_t$	**0.180***	
	(0.101)	
$LIQAM_t \times WPS_t$	**0.019***	
	(0.010)	
$LIQFHT_t$		**8.326***
		(5.042)
$LIQFHT_t \times WPS_t$		**0.049****
		(0.021)
WPS_t	**0.002***	**0.020****
	(0.001)	(0.009)
MV_t	**-0.100****	**-0.112****
	(0.021)	(0.024)
Q_t	**-0.056****	**-0.054****
	(0.022)	(0.022)
SGR_t	**0.005**	**0.007**
	(0.061)	(0.060)
ROA_t	**-0.112**	**-0.138**
	(0.187)	(0.185)
LEV_t	**0.337****	**0.367****
	(0.100)	(0.103)
$DIVYIELD_t$	**-2.627**	**-2.476**
	(1.677)	(1.675)
$RDTA_t$	**-0.087**	**-0.062**
	(0.376)	(0.377)
$HINDEX_t$	**-2.819**	**-3.205**
	(5.399)	(5.488)
$NANLYST_t$	**-0.075****	**-0.056***
	(0.034)	(0.034)
$INTERCEPT$	**-1.486****	**-1.426****
	(0.190)	(0.208)
Year Fixed Effects	*Included*	*Included*
Industry Fixed Effects	*Included*	*Included*
Number of Obs. Used	24,645	24,645
Pseudo R^2	0.087	0.086

Table 4: Does stock liquidity affect hedge funds' governance decisions?

Panel A

This table reports the probit regression results on the relation between a firm's stock liquidity and its probability of being targeted by a hedge fund activist as opposed to being targeted by a hedge fund passivist. Variable definitions are listed in Appendix A. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. For $LIQAM_t$, $LIQFHT_t$, and $DECIMAL$, the marginal effects (dF/dx) are displayed below the standard errors. Year fixed effects and Fama-French 12 industry effects are included in columns (2), (4) and (6) but the coefficient estimates are not reported. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variables		**13Dvs13G$_{t+1}$** *(=1 if 13D Filing; 0 if 13G Filing)*				
$LIQAM_t$	-0.152***	-0.169***				
	(0.046)	(0.064)				
	[-0.0598***]	[-0.0662***]				
$LIQFHT_t$			-4.047*	-6.662**		
			(2.456)	(3.260)		
			[-1.5907*]	[-2.6138**]		
$DECIMAL$					-0.295***	-0.492**
					(0.084)	(0.236)
					[-0.1164***]	[-0.1936**]
MV_t		0.051		0.035		0.009
		(0.039)		(0.037)		(0.036)
Q_t		-0.099***		-0.087***		-0.093***
		(0.036)		(0.032)		(0.036)
SGR_t		-0.025		0.011		-0.032
		(0.045)		(0.044)		(0.045)
ROA_t		-0.207		-0.027		-0.153
		(0.197)		(0.181)		(0.196)
LEV_t		-0.290**		-0.294**		-0.277**
		(0.142)		(0.138)		(0.141)
$DIVYIELD_t$		-0.766		-0.403		-0.879
		(1.481)		(1.482)		(1.462)
$RDTA_t$		-1.045**		-0.729		-1.030**
		(0.466)		(0.453)		(0.465)
$HINDEX_t$		-2.054		2.677		0.088
		(14.704)		(14.195)		(14.327)
$NANLYST_t$		-0.006		-0.055		-0.031
		(0.058)		(0.056)		(0.057)
INTERCEPT	-0.239***	1.102**	-0.215***	0.274	0.040	0.952**
	(0.043)	(0.535)	(0.046)	(0.412)	(0.071)	(0.477)
Year Fixed Effects		*Included*		*Included*		*Included*
Industry Fixed Effects		*Included*		*Included*		*Included*
Number of Obs. Used	1,135	1,135	1,135	1,135	1,135	1,135
Pseudo R^2	0.007	0.096	0.002	0.092	0.008	0.087

Table 4: Does stock liquidity affect hedge funds' governance decisions? (Cont'd)

Panel B

This table reports the probit regression results on the effect of decimalization on a firm's probability of being targeted by a hedge fund activist as opposed to being targeted by a hedge fund passivist, conditional on the level of the firm's stock price. Variable definitions are listed in Appendix A. *LOWPRC$_t$* is an indicator variable that equals one if a firm's closing price at the end of fiscal year t is below the median closing price for that year and zero otherwise. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. Year fixed effects and Fama-French 12 industry effects are included in both columns but the coefficient estimates are not reported. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	(2)
Dependent Variables	**13Dvs13G$_{t+1}$** *(=1 if 13D Filing; 0 if 13G Filing)*	
	LOWPRC=1	**LOWPRC=0**
DECIMAL	**-1.213*****	**-0.165**
	(0.351)	(0.329)
Coefficient difference in DECIMAL between		
LOWPRC=1 and LOWPRICE=0		**-1.048*****
[Two-tailed p-value]		[0.002]
MV$_t$	**-0.034**	**-0.020**
	(0.060)	(0.058)
Q$_t$	**-0.095***	**-0.110****
	(0.054)	(0.051)
SGR$_t$	**0.012**	**-0.130**
	(0.063)	(0.094)
ROA$_t$	**-0.246**	**0.008**
	(0.305)	(0.295)
LEV$_t$	**-0.511*****	**0.121**
	(0.179)	(0.255)
DIVYIELD$_t$	**-2.320**	**0.076**
	(1.897)	(2.705)
RDTA$_t$	**-0.346**	**-1.787****
	(0.650)	(0.779)
HINDEX$_t$	**27.465**	**-19.618**
	(21.709)	(21.314)
NANLYST$_t$	**-0.018**	**0.012**
	(0.084)	(0.084)
INTERCEPT	**1.057**	**1.166**
	(0.702)	(0.747)
Year Fixed Effects	*Included*	*Included*
Industry Fixed Effects	*Included*	*Included*
Number of Obs. Used	567	568
Pseudo R^2	0.140	0.101

Table 5: Does stock liquidity affect hedge funds' monitoring decisions? The effect of wealth-performance sensitivity

This table reports the probit regression results on the relation between a firm's stock liquidity and its probability of being targeted by a hedge fund activist as opposed to being targeted by a hedge fund passivist and the effect of *WPS* on this relation. Variable definitions are listed in Appendix A. *HIGHWPS$_t$* is an indicator variable that equals one if *WPS$_t$* is equal to or above the median *WPS* within each year and zero otherwise. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. Year fixed effects and Fama-French 12 industry effects are included in both columns but the coefficient estimates are not reported. [***] (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	**(2)**
Dependent Variables	**13Dvs13G$_{t+1}$** *(=1 if 13D Filing; 0 if 13G Filing)*	
LIQAM$_t$	**0.722**	
	(0.927)	
LIQAM$_t$ ×HIGHWPS$_t$	**-2.390***	
	(1.298)	
LIQFHT$_t$		**7.337**
		(11.494)
LIQFHT$_t$ ×HIGHWPS$_t$		**-38.281***
		(22.928)
HIGHWPS$_t$	**0.017**	**-0.009**
	(0.171)	(0.188)
MV$_t$	**-0.008**	**0.001**
	(0.076)	(0.076)
Q$_t$	**0.174***	**0.177***
	(0.089)	(0.091)
SGR$_t$	**-0.296**	**-0.291**
	(0.208)	(0.210)
ROA$_t$	**-0.578**	**-0.633**
	(0.662)	(0.672)
LEV$_t$	**-0.184**	**-0.152**
	(0.308)	(0.300)
DIVYIELD$_t$	**-0.375**	**-0.919**
	(4.661)	(4.441)
RDTA$_t$	**-5.059****	**-4.937****
	(1.849)	(1.798)
HINDEX$_t$	**-66.840****	**-67.072****
	(33.529)	(33.851)
NANLYST$_t$	**0.249***	**0.205**
	(0.137)	(0.129)
INTERCEPT	**1.712**	**1.470**
	(1.267)	(1.286)
Year Fixed Effects	*Included*	*Included*
Industry Fixed Effects	*Included*	*Included*
Number of Obs. Used	322	322
Pseudo R^2	0.161	0.157

Table 6: Does stock liquidity affect targeting by hedge fund activists?

This table reports the probit regression results on the relation between a firm's stock liquidity and its unconditional probability of being targeted by a hedge fund activist as opposed to being targeted by a hedge fund passivist or not being targeted by hedge fund blockholders. Variable definitions are listed in Appendix A. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. For $LIQAM_t$, $LIQFHT_t$, and *DECIMAL,* the marginal effects (dF/dx) are displayed below the standard errors. Year fixed effects and Fama-French 12 industry effects are included in all columns but the coefficient estimates are not reported. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	(2)	(3)
Dependent Variables	**13DFILING$_{t+1}$** *(=1 if 13D Filing; 0 if 13G Filing or no block acquisition)*		
$LIQAM_t$	**0.103*****		
	(0.026)		
	[0.0013***]		
$LIQFHT_t$		**3.851*****	
		(1.435)	
		[0.0493***]	
DECIMAL			**0.309*****
			(0.088)
			[0.0041***]
MV_t	**-0.078*****	**-0.068*****	**-0.051*****
	(0.013)	(0.013)	(0.011)
Q_t	**-0.064*****	**-0.062*****	**-0.064*****
	(0.018)	(0.017)	(0.017)
SGR_t	**0.027**	**0.030**	**0.033**
	(0.024)	(0.024)	(0.024)
ROA_t	**-0.004**	**-0.033**	**-0.007**
	(0.088)	(0.089)	(0.089)
LEV_t	**0.010**	**0.008**	**-0.010**
	(0.063)	(0.064)	(0.063)
$DIVYIELD_t$	**-0.730**	**-0.663**	**-0.593**
	(0.830)	(0.851)	(0.837)
$RDTA_t$	**-0.340***	**-0.334***	**-0.292**
	(0.191)	(0.191)	(0.190)
$HINDEX_t$	**1.141**	**1.513**	**1.142**
	(5.586)	(5.574)	(5.481)
$NANLYST_t$	**0.043***	**0.057****	**0.060*****
	(0.022)	(0.022)	(0.022)
INTERCEPT	**-2.254*****	**-2.325*****	**-2.464*****
	(0.194)	(0.196)	(0.177)
Year Fixed Effects	*Included*	*Included*	*Included*
Industry Fixed Effects	*Included*	*Included*	*Included*
Number of Obs. Used	88,742	88,742	88,742
Pseudo R^2	0.040	0.038	0.036

Table 7: Does stock liquidity affect the announcement returns to 13G filings?

Panel A

This panel reports the mean 3-day market-adjusted abnormal announcement returns surrounding 13G filings, conditional on the level of stock liquidity. Each column tests whether the 3-day market-adjusted abnormal announcement returns are greater than zero, with the mean *CAR (-1, +1)* shown in bold and the standard errors displayed in parentheses below. Variable definitions are listed in Appendix A. The subsample *Low LIQAM* (*High LIQAM*) includes sample observations with *LIQAM* below (equal to or above) median *LIQAM* within each year. The subsample *Low LIQFHT* (*High LIQFHT*) includes sample observations with *LIQFHT* below (equal to or above) median *LIQFHT* within each year.

	(1) *Pooling*	(2) *Low LIQAM*	(3) *High LIQAM*	(4) *Low LIQFHT*	(5) *High LIQFHT*
Testing *CAR (-1, +1)*>0	**0.007*****	**0.004**	**0.010*****	**0.005**	**0.009*****
	(0.002)	(0.004)	(0.003)	(0.004)	(0.003)
Number of Obs. Used	630	315	315	315	315

Panel B

This panel reports the ordinary least squares (OLS) regressions of the 3-day market-adjusted abnormal announcement returns surrounding 13G filings on target firms' stock liquidity. Variable definitions are listed in Appendix A. $HIGHLIQAM_t$ ($HIGHLIQFHT_t$) is an indicator variable that equals one if $LIQAM_t$ ($LIQFHT_t$) is equal to or above the median $LIQAM_t$ ($LIQFHT_t$) within each year and zero otherwise. *MV2* is the natural logarithm of the market value of equity, measured on the latest trading day at least two days prior to the filing date of a 13G filing. *Q2* is the market-to-book ratio, calculated as *MV2* divided by the book value of total assets measured at the end of the fiscal quarter immediately preceding the filing date of a 13G filing. Coefficient estimates are shown in bold and their standard errors are displayed in parentheses below, adjusted for heteroskedasticity and clustered by firm. *** (**) (*) indicates significance at 1% (5%) (10%) two-tailed level, respectively.

	(1)	(2)
Dependent Variables	**CAR(-1, +1)** *(surrounding 13G Filings)*	
$HIGHLIQAM_t$	**0.015****	
	(0.007)	
$HIGHLIQFHT_t$		**0.010***
		(0.006)
MV2	**-0.005***	**-0.004**
	(0.003)	(0.003)
Q2	**0.002**	**0.002**
	(0.002)	(0.002)
INTERCEPT	**0.057***	**0.046**
	(0.031)	(0.029)
Number of Obs. Used	630	630
Adjusted R^2	0.014	0.010