ACCOUNTING QUALITY, CORPORATE ACQUISITION, AND FINANCING DECISIONS

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ABSTRACT

SANGWAN KIM: Accounting Quality, Corporate Acquisition, and Financing Decisions
(Under the direction of Jeffery S. Abarbanell)

This paper examines the extent to which the quality of financial accounting information disciplines manager interests to align with stockholder interests in corporate acquisition and financing decisions. I find that, after controlling for financing constraints, recent performance and payout policy, the tendency of firm managers to time the market is significantly constrained for firms with high-quality financial accounting information. Further, I find that the disciplining impact of accounting information is mostly driven by firms that bid for acquisitions financed with stock issuance. I also provide corroborating evidence by examining a similar disciplining role of financial accounting information in the seasoned public offering markets. I find no such effect for potential acquisitions financed through cash. The evidence suggests that high-quality accounting information allows stockholders to discipline firm managers that are motivated to take advantage of the misvaluation. Further, the results suggest the effectiveness of accounting information as a control mechanism is pronounced for firms that pursue more value-decreasing investment projects.

To Mom and Dad

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TABLE OF CONTENTS

LIST OF TABLES

Table

CHAPTER 1

ACCOUNTING QUALITY, CORPORATE ACQUISITION, AND FINANCING DECISIONS

1. Introduction

This paper examines the question of whether high-quality financial accounting information disciplines managerial market timing of corporate acquisitions. Specifically, I hypothesize that the presence of high-quality financial reporting mitigates the manager-stockholder conflict by enhancing monitoring and governance mechanisms over managerial opportunism. I test this hypothesis empirically in the context of corporate merger and acquisition decisions from the perspective of stockholders of acquiring firms. I provide evidence that the probability of acquisition decisions in response to equity overpricing is significantly attenuated for firms with high-quality financial accounting information. The disciplining effect of the quality of public accounting information is driven by firms attempting to bid based on stock issuance. I also provide corroborating evidence by examining a similar disciplining role of high-quality accounting information in the seasoned public offering markets.

Jensen (2005) argues that when stock prices are too high relative to fundamentals, managers are more likely to make poor takeover decisions when they run out of good investment projects. Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004) develop theoretical frameworks that explain managerial timing of market overvaluation of their firms. Dong, Hirshleifer, Richardson, and Teoh (2006) and Ang and Cheong (2006) find evidence consistent with this behavioral explanation for merger activity.

It has long been recognized in the literature that a divergence of interests exists between firm managers and stockholders where control over corporate economic resources is separated from outside stockholders (Jensen and Meckling 1976). Researchers, regulators, and practitioners have examined institutional arrangements that potentially mitigate this conflict and various factors that explain cross-sectional and time-series variation in these arrangements. Among the key determinants that affect the resolution of manager-stockholder conflict are corporate accounting and external reporting systems that produce a rich set of credible, objective firm-specific information which is verified by external audit process (Ball 2001; Bushman and Smith 2001, 2003). High-quality accounting information facilities corporate governance by informing stockholders and by enabling directors to reduce agency costs by "advising, ratifying, and policing managerial decisions and activities (Bushman and Smith 2003, p. 68)." This paper focuses on the extent to which the quality of financial accounting information disciplines these divergent management interests in the setting of corporate acquisition and financing decisions.

I propose a novel approach to testing the governance mechanism of financial accounting information when firm managers have private information that their stock price is overvalued (Myers and Majluf 1984). I argue that the main empirical challenge is to find firms whose observed equity prices are *ex ante* more likely to be overvalued relative to the fundamental values which are *not* directly observable.[1] The overvaluation identifier I employ

[1] For example, traditional measures of equity overvaluation include firm characteristics such as market-to-book ratios and past stock price performance. These firm characteristics suffer from endogenous relations because both market-to-book ratios and past returns are also correlated with other important determinants of investment decisions such as growth opportunities, financing constraints, or managerial tendency to pursue personal objectives (Baker, Ruback, and Wurgler 2007). In addition, prior research on accounting disclosures shows that firms with high-quality accounting information enjoy lower cost of capital resulting in a correlation between metrics of financial reporting quality and various measures of the equity multiple or realized stock returns

is an external *event*, rather than a set of firm *characteristics*, which is also used in a growing body of literature on friction-driven mispricing events (see Duffie (2010) for a recent development in the literature). The overvaluation identification is made through the use of trading information of mutual funds that hold a portfolio of individual stocks, not through the trading information of individual stocks (Coval and Stafford 2007). Because I use a construct based on inferred mutual fund flows which are mechanically induced by fund level clientele needs, it is unlikely to be directly correlated with firm characteristics or reporting qualities of individual stocks. Specifically, mutual fund clientele shifts are unlikely to be caused by individual investor trading on private information about future timing of corporate investment policies. While it is possible investors could trade on this information in mutual funds, they could instead trade directly in the specific stock in the equity markets (Edmans, Jiang, and Goldstein 2012).[2]

Prior studies also suggest that there is an important economic benefit associated with high-quality accounting information: an increased efficiency in a firm's investment decisions (Bushman and Smith 2001, 2003).[3] Unlike other studies focusing on components of corporate investments such as capital investment and R&D expenditure (Biddle and Hilary 2006) or total investments based on an accounting-based framework (Richardson 2006; Biddle, Hilary, and Verdi 2008), I choose to focus on corporate mergers because they

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(Botosan 1997; Francis, LaFond, Olsson, and Schipper 2005; Core, Guay, and Verdi 2008; Mashuwala and Mashuwala 2011).

[2] I exclude mutual funds specializing in specific industries from my sample to eliminate the possibility that mutual fund flows are influenced by industry-wide movements in takeover activities such as M&A wave.

[3] For example, Biddle and Hilary (2006) examine the effect of financial accounting quality on attenuating the investment-cash flow sensitivity as a measure of financing constraints. Biddle, Hilary, and Verdi (2008) show that high-quality financial accounting information reduces a firm's likelihood of under or overinvesting, as captured by firm characteristics such as cash holdings and leverage ratios and by an expected level of investment model indicated by investment opportunities.

provide a powerful empirical setting for the purpose of testing the corporate governance impact of accounting quality. This setting offers a unique empirical platform for three reasons. First, corporate decisions about mergers and acquisitions have the potential for a wide divergence of incentives between managers and stockholders on economically significant transactions (Jensen 2005). Second, they tend to be relatively large and visible corporate investment decisions that usually attract media attention. Third, each merger and acquisition attempt has a clear-cut announcement date when the bidder discloses the intent for takeover. In turn, this provides a clear, observable time frame for change in market perception and operating performance caused by a particular type of management decision.

To test the governance effect of financial reporting quality on opportunistic managerial merger and acquisition decisions, I use a sample of 3,909 attempted takeover bids made by U.S. public firms traded on the New York Stock Exchange (NYSE), American Stock Exchange (Amex), or NASDAQ during the period 1990-2009 (obtained from Securities Data Company (SDC)). This study uses two key measures to test the governance effect. These measures are introduced here and discussed in detail in the measurement section later. First, following Coval and Stafford (2007), I create a quarterly measure of fund flow pressure for each stock held in common by mutual funds by using the mutual funds' monthly total net assets and returns data (from CRSP Survivorship Bias-Free Mutual Fund) combined with the quarterly mutual fund holding data (from Thomson Financial Mutual Fund) over the period 1989-2008. The second measure is a proxy for financial accounting information quality. I use a measure of accruals quality in the spirit of Dechow and Dichev (2002) augmented by McNichols (2002) and Francis et al. (2005). In addition, I also employ

a measure of accounting quality used in McNichols and Stubben (2011), consistent with the direct cash flow forecasting model of Barth, Cram, and Nelson (2001).

I first show that firms influenced by fund flow pressure are more likely than other firms to bid for acquisitions. This finding is consistent with the argument that firm managers are aware that equity price temporarily deviates from its fully-informed value *and* time the market to exploit the overpricing (Shleifer and Vishny 2003). Short window stock return tests surrounding the bid announcements show that acquisitions by fund flow pressure firms are significantly more value decreasing. Specifically, bidders with fund flow pressure incrementally lose 72 basis points in stock price over a 3-day window around the bid announcement relative to other bidders without such pressure. Using a methodology of Healy, Palepu, and Ruback (1992) and Andrade, Mitchell, and Stafford (2001), I document a subsequent abnormal decline in operating performance of 3 percent for bidders with fund flow pressure. This finding is consistent with the value destruction documented in the returns-based test. Overall, the preliminary empirical evidence supports assumptions of the *behavioral* and agency cost explanations of takeover decisions (Jensen 2005) and is inconsistent with the neoclassical view (Jovanovic and Rousseau 2002).

In my primary test, I find that, after controlling for financing constraints, recent performance and payout policy, the tendency for firm managers to time the market is significantly attenuated for firms with high-quality financial accounting information. Further, I find that the disciplining effect of accounting information is mostly driven by firms that bid for acquisitions financed with stock issuance. I find no such effect for potential acquisitions financed through cash. My main findings are qualitatively similar after controlling for traditional measures of equity overpricing, such as market-to-book ratios and abnormal pre-

announcement returns, and idiosyncratic risk (Panousi and Papanikolaou 2012). These findings are also robust to alternative estimates of accruals quality. The evidence suggests that high-quality accounting information allows stockholders to discipline firm managers that are motivated to take advantage of the temporary overpricing. Further, the findings suggest that the effectiveness of accounting information as a control mechanism is pronounced for firms that pursue more value-decreasing investment projects (Travlos 1987; Loughran and Vijh 1997; Andrade, Mitchell, and Stafford 2001; Stein 2003). I find similar results using a sample of seasoned public equity offerings.

This study makes an important contribution to the extant literature on accounting information, corporate acquisition, and financing decisions. Specifically, the findings in the paper shed new light on the role of financial accounting information in ameliorating the manager-stockholder conflict concerning managerial corporate finance decisions by providing evidence on a direct underlying mechanism. This study makes a specific prediction about the impact of financial accounting quality on the core investment and financing policies using an *ex ante* approach. Then, the study highlights the mechanism through which the quality of financial accounting information is associated with an improvement in economic performance, namely from the effective monitoring over managerial short-term fixation.

The rest of the paper is organized as follows. Section 2 provides a literature review and specific predictions. Section 3 presents and discusses measurement of proxies and Section 4 describes the sample. In section 5, I discuss the main empirical results and Section 6 concludes.

2. Literature Review and Specific Predictions

2.1 Agency Costs, Information, and Corporate Investment and Financing Decisions

When stockholders and corporate boards delegate the right to manage corporate resources to internal managers, a potential divergence in interests between managers and stockholders exists because of likely information asymmetry (Jensen and Meckling 1976, Jensen and Ruback 1983). According to Jensen (2005), high equity valuation increases managerial discretion concerning corporate investment policies and makes it possible for managers to pursue bad acquisitions if stockholders imperfectly monitor and control the investment decisions. These investments are likely to be value-destroying (i.e., negative net present value projects) because they are driven by management desire to diversify the risk of their own investment portfolios, or to pursue other forms of personal benefits such as empire building. Managers also attempt to boost and maintain the inflated stock prices persistently and meet the growth expectations embedded in the prices by making successive suboptimal investment decisions. Moreover, availability of excess cash generated from the equity issuance when the stock is overpriced creates an agency problem of free cash flows similar to that in Jensen (1986). Namely, this excess cash creates conflict in determining optimal size and payout.

Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004) put forth models under which managers time merger activity in response to high stock market valuation. Both papers rely in part on the assumptions that managers of acquiring firms have private information that their stocks are overpriced relative to fundamental values, and that they wish to take advantage of the temporary mispricing. Dong, Hirshleifer, Richardson, and Teoh (2006) and Ang and Cheong (2006) use an accounting-based valuation framework to

estimate fundamental values and provide evidence suggesting that there is a positive correlation between value-to-book ratios and acquisition attempts, especially for those contemporaneously financed though stock issuance. Rhodes-Kropf, Robinson, and Viswanathan (2005) use a regression-based approach to decompose market-to-book ratios and similarly conclude that managerial timing of stock overvaluation explains the positive correlation between probability of merger bids and high valuation. In sum, studies of corporate takeover activities based on behavioral approaches collectively deliver explanations that have both intuitive appeal and substantial support in the data.

However, another viewpoint, the neoclassical perspective, motivates the same empirical pattern, but maintains the assumptions of efficient markets. The *neoclassical* perspective asserts that the positive relation between merger activity and high valuation exists because the acquisitions are beneficial for stockholders, leading to reallocation of assets among firms to the users with the highest value. Jovanovic and Rousseau (2002) provide a *q*-theory approach to merger and acquisition investment and argue that a firm's response to the *q*–ratio is stronger for investment related to takeover activities than for capital investment. Further, research drawing the neoclassical perspective suggests that firms are more likely to issue equity when they are highly valued because of benefits relating to flexibility in capital structures.[4] Thus, findings that corporate acquisition attempts are positively linked with abnormally high market valuation during a period leading up to the bid announcement is consistent not only with the behavioral explanations for managerial market timing incentives, but also with the neoclassical explanations. The results I present are

[4] This effect, however, will be observed only for firms that have a profitable investment opportunity set, but face the binding financing constraints (Lamont and Stein 2006; Bakke and Whited 2010).

consistent with the agency view of the correlation between high stock value and merger activity.

As pointed out in Baker, Ruback, and Wurgler (2007), the use of traditional measures of equity overvaluation such as high market-to-book ratios and high past abnormal returns is still controversial because these firm characteristics suffer from measurement error issues and endogenous relations with other important determinants of corporate investment and financing policies. Specifically, the market-to-book ratio is a ratio of market value of equity to fundamental value that is represented by accounting book value of equity. However, the reported book value of equity is affected by both historical cost accounting and (opportunistic) managerial discretionary accounting choices that may distort the description of true value of fundamentals. Moreover, the market-to-book ratio is a firm characteristic that, as prior research suggests, is correlated with distress costs, growth opportunities, financing constraints, or capital market incentives of managers. In a similar way, an accumulation of abnormal stock returns in a pre-merger period may not be a valid measure of stock overvaluation if the return represents future investment opportunities that are not reflected in accounting amounts. The research design I employ addresses the identification and measurement issues in prior research by using a mutual fund level (versus firm level) measure. This measure is discussed in detail in the measurement section of the paper.

2.2 The Governance Role of Accounting Information and Accrual Accounting

Prior research has extensively investigated various corporate governance factors that mitigate the potential manager-stockholder conflict in firms whose equity stake is diffusely held by investors. Among the key components of governance mechanisms are corporate financial accounting systems that provide a broad set of reliable firm-specific information

which is prepared according to Generally Accepted Accounting Principles (GAAP) and verified by the external audit regime. Even highly developed securities markets such as the U.S. capital markets devote extensive resources to design, implement, and maintain a credible financial reporting system that routinely provides audited quantitative data, reflecting a firm's financial position and operating performance (Bushman and Smith 2003). Specifically, financial accounting information serves this important governance function in two key ways. First, the information provides timely feedback about the fundamental value of investments to suppliers of capital and protects them from the risk of potential expropriation by corporate managers and insiders. Second, it offers a basis for stockholders and directors to exert pressure on management resource allocation decisions.

Although a firm's business operation itself is continuous, financial accounting system reports financial performance during fixed, periodic intervals dictated by accounting fiscal periods (i.e., annual, semiannual, or quarterly). In this case, cash flows for a given interval may introduce noise in assessing long-term values of corporations because cash receipts and disbursements do not necessarily occur in accordance with the timing of economic transactions and events (Dechow 1994). To adjust for the timing and matching problems, accrual accounting provides managers with accounting discretion in applying accounting principles when they recognize revenues and associated expenses. As a result, discretion allowed in reporting performance measures can facilitate timely incorporation of future economic events and, in turn, increase firm transparency.

Although accounting discretion was originally implemented to allow managers to more truthfully represent firm economic fundamentals over time, there is also a possibility that discretion is used by managers for opportunistic reasons (Dechow and Skinner 2000). In

fact, prior literature on corporate takeovers provides evidence of income-increasing earnings management on or just before making acquisition attempts and that the post-acquisition market and accounting performance results can be explained by reversals of the pre-announcement earnings management (e.g., Erickson and Wang 1999; Louis 2004; Gong, Louis, and Sun 2008). Other studies on accounting manipulations around corporate seasoned public offering practices show that firms offering seasoned securities conduct earnings management in the period before the event to overstate pre-issue stock prices (e.g., Teoh, Welch, and Wong 1998; Rangan 1998; Shivakumar 2000; Cohen and Zarowin 2010).

Evidence of accounting manipulations associated with capital market motives around these important economic events is well-established in the literature, but my paper differs in three important ways. First, my objective is to demonstrate the role of financial accounting quality in *attenuating* managerial market timing of corporate acquisition and financing policies, whereas prior studies focus on the role of earnings manipulations in accounting as well as return *performance* implications before, during, and after the events. Second, my paper adopts an *ex ante* approach and investigates whether the quality of financial accounting information plays a fundamental corporate governance role when there is an external shock caused by mutual fund flow pressure, whereas prior studies rely on an *ex post* approach and examine whether firm managers exercise discretion in producing accounting numbers for an event sample of completed acquisition deals and of seasoned equity issuers, respectively. Third, my measure of accounting information quality differs in that it is constructed over a rolling-window ending at least two years before the event and is predetermined at the time of and around the economic events, whereas prior studies estimate accounting earnings manipulations over two to four quarters just before and after the event.

There are several recent papers that consider accounting quality and corporate takeovers. Specifically, McNichols and Stubben (2011) and Raman, Shivakumar, and Tamayo (2008) employ a measure of accruals quality and find that high-quality financial reporting of *target* firms reduces uncertainty about valuation of targets in the corporate takeover market. These studies examine effects of the target's accounting information quality on return premium to both the acquiring and the target firms (McNichols and Stubben 2011) and on various merger-related decisions, including incidence of renegotiation, payment methods, and premium to target firm shareholders (Raman, Shivakumar, and Tamayo 2008). While these papers are directly related to corporate takeover which is the setting for my paper, my study differs from these papers on three key points. First, my paper focuses on the quality of financial accounting information of *acquiring* firms rather than that of target firms. Second, my paper studies the market timing of acquisition deals rather than the premium. Third, my study includes additional comprehensive analysis of incorporating both investment and financing decisions *conditional* on equity overpricing.[5]

2.3 Empirical Predictions

Recent developments in the literature on friction-based equity mispricing associated with mutual fund excess liquidity open up the possibility for future research to examine the market timing effect of stock overvaluation on corporate takeover and financing decisions (Duffie 2010). Following Coval and Stafford (2007), I use trading information of mutual

[5] A recent paper by Lee and Masulis (2009) examines whether accruals quality of seasoned equity offering firms is associated with flotation costs such as underwriting fees, announcement effects and probability of withdrawals. Similar to Lee and Masulis (2009), I find that accruals quality of issuing firms plays an important role in the public offering markets. However, this paper differs in the following ways. First, my paper approaches the study of accruals from a corporate governance perspective, whereas Lee and Masulis (2009) use the accruals quality as a proxy for determinants of the flotation costs. Second, I examine the role of accruals quality in the market *timing* hypothesis when stock price is overvalued rather than in determining the flotation *costs* when firms issue seasoned equity.

funds that hold a portfolio of individual stocks rather than trading information of individual stocks. Thus, my equity overvaluation identifier is an external shock to individual firms rather than direct reflections of firm characteristics.

By focusing on the behavior of mutual funds, I examine funds that are influenced by extreme liquidity in their fund flows. Fund managers are then more likely to expand their current holdings of individual stocks in order to immediately respond to demand shifts in clientele needs. Specifically, by combining information about stock holdings maintained by mutual fund managers at the beginning of each quarter with the transaction data of those funds concerning investment returns and total net asset changes during the quarter, I identify firms whose stock prices are *ex ante* more likely to be overvalued. This approach turns out to be very successful in predicting initial price movements in the direction of extreme fund flows, which is followed by a subsequent stock price reversal which may take several quarters (Coval and Stafford 2007).

Agency theory proposed in Jensen (2005) predicts that, when a firm's equity price deviates from fully-informed value because of non-fundamental reasons, management decisions on corporate investment and financing are more likely determined by opportunistic motives. The long-term value destruction from managerial self-interested behavior occurs when relevant information concerning a firm's business prospects is asymmetrically distributed between managers and stockholders, and the outcome of monitoring from stockholders is less than perfect under the existing securities laws.[6] I argue that financial accounting systems, which facilitate incorporation of changes in firm-specific economic

[6] It is also consistent with active investors lacking incentives to undertake costly monitoring because of free-rider problems.

fundamentals, enhance stockholders' ability to discipline managers in investment and financing decisions. Specifically, my first prediction is:

> **P1:** *High-quality financial accounting information reduces the probability of takeover bids by firms whose stock prices are ex ante more likely to be overpriced relative to fundamental values, as captured by mutual fund flow pressure.*

To directly implement an empirical test of the Jensen (2005) hypothesis, I isolate a setting where the economic interests between managers and stockholders are likely to diverge, and thus, the role of financial accounting information in the governance process is more likely to come into play. A number of prior empirical studies provide evidence that stock-financed acquisitions are typically more value-decreasing (Stein 2003). Furthermore, behavioral theories on corporate acquisitions predict that managers are more likely to bid stock-financed acquisitions in comparison to cash-financed acquisitions when the degree of overvaluation of bidding firms increases (Shleifer and Vishny 2003). Thus, my second prediction is:

> **P2:** *The disciplining role of publicly reported financial accounting information in takeover markets is stronger or largely driven by acquisition attempts being financed with stock issuance.*

Finally, as illustrated in section 2.2, accounting discretion is a double-edged sword (Dechow and Skinner 2000). On the one hand, it increases corporate transparency by reducing timing and matching problems embedded in cash flow realizations in a finite period. On the other hand, if it is abused by managers, it decreases credibility of financial accounting information, and misguide investors. That is, the quality of financial accounting information is also affected by management incentive to manage final accounting outcomes for opportunistic reasons. In addition, unintentional errors related to inherent difficulty in estimating accruals for firms characterized by volatile operating environments can deteriorate

the quality of financial accounting. I do not dismiss any of these possibilities suggested in the existing literature. Specifically, in a supplemental analysis, I show that inferences drawn in this paper are robust to inclusion of balance sheet overstatement as reflections of an accumulation of prior period income-increasing earnings management (Barton and Simko 2002). Furthermore, my inferences are insensitive to controls for difficulty and complexity embedded in accrual estimation process (McNichols 2002).[7]

3. Measurement

3.1 Measures of Mutual Fund Flow Pressure

I collect trading information of mutual funds from the intersection of two databases. First, I begin with the Thomson Reuters Mutual Fund Holding Database where information on quarterly mutual fund holding position is available. Specifically, mutual funds' purchases and sales of individual stocks are inferred from the change in holdings for each stock over the two consecutive quarters. I exclude trades by index, international, municipal bond funds, funds primarily investing bonds and preferred stocks, and sector funds from the analysis in order to focus on the behavior of the actively managed, diversified, domestic U.S. mutual fund population (Coval and Stafford 2007). Next, I combine the holding data from Thomson Reuters with the monthly total net asset and return data from the CRSP Survivorship Bias-Free Mutual Fund Database. Following the recommendations of prior research (Ali, Wei, and Zhou 2011), I use a link table "MFLINKS" provided by the Wharton Research Data Services (WRDS) to merge these two databases.

[7] The inference relating to the governance role of accounting information quality in corporate decisions is potentially limited if: (1) accounting information is mainly a set of backward looking and arbitrary information irrelevant for merger decisions (Bruner 2004, p. 248); and (2) there are sufficient amounts of competing information sources such as analyst reports and press releases that may preempt periodic accounting reports (Francis and Schipper 1999; Francis, Schipper, and Vincent 2002).

For each stock traded by mutual funds, a measure of mutual fund flow pressure is constructed according to the following two-step procedure. First, mutual fund flows are calculated as a percentage of beginning-of-period total net assets. Specifically, realized mutual fund flows are measured as the percentage change in total net assets over the calendar month period after taking into account capital gains and losses of the initial holdings. The monthly net *flow* of mutual fund *j* in month *m* is defined as follows.

$$\text{Fund Flow}_{j,m} = \frac{[\text{TNA}_{j,m} - \text{TNA}_{j,m-1} * (1+\text{R}_{j,m})]}{\text{TNA}_{j,m-1}} \quad (1)$$

where $\text{TNA}_{j,m}$ is the total net assets of fund *j* at the end of month *m*, and $\text{R}_{j,m}$ is the return of fund *j* at month *m*. Then, the monthly net flows, $\text{Fund Flow}_{j,m}$, are aggregated into the quarterly net fund flows, $\text{Fund Flow}_{j,q}$, for fund *j* in quarter *q* to be matched with the quarterly holding data.

Second, the trading pressure metric for stock *i* in quarter *q* is calculated as follows:

$$\text{Fund Flow Pressure}_{i,q} = [\sum_j (\max(0, \Delta\text{Holding}_{j,i,q}) \,|\text{Fund Flow}_{j,q} > 90th\ Pctl)$$

$$- \sum_j (\max(0, -\Delta\text{Holding}_{j,i,q}) \,|\text{Fund Flow}_{j,q} < 10th\ Pctl)]/\text{Shrout}_{i,q-1} \quad (2)$$

where $\Delta\text{Holding}_{j,i,q}$ is the quarterly change in fund *j*'s position of stock *i* at quarter *q*, 90th Pctl (10th Pctl) is the 90th (10th) percentile of $\text{Fund Flow}_{j,q}$ across the total mutual fund population, and $\text{Shrout}_{i,q-1}$ is the number of common shares outstanding for stock *i* at the end of quarter *q*-1. Intuitively, $\text{Fund Flow Pressure}_{i,q}$ is a stock-level summary construct that measures the extent of quarterly price impact that is associated with excess demand from mutual funds with extreme capital flows.

An important feature of my measure of overvalued equity is that it is not constructed using any of the firm-specific characteristics or actual stock returns, but instead uses inferred mutual fund trades mechanically induced by shifts in clientele demand. Specifically, mutual

funds face both restricted investment opportunity sets and diminishing marginal rate of returns from their investment (Khan, Kogan, and Serafeim 2012). These factors lead to substantial excess fund flows being channeled into a selected set of stocks that are held by these funds. I provide relevant statistics in support of this explanation in Section 4.2. Moreover, these fund flows are unlikely to be directly driven by investors' implicit prospects with respect to future timing of corporate acquisition and financing activities. Investors can always speculate on their views by directly trading common shares of individual firms, rather than indirectly trade mutual funds' shares (Edmans, Jiang, and Goldstein 2012).

3.2 Measures of the Quality of Financial Accounting Information

The measure of accounting quality employed in this paper is consistent with the Dechow and Dichev (2002) model. This measure is based on a relation between current-period working capital accruals and operating cash flows in the previous-, current-, and next-period.[8] The measure summarizes the extent accruals relate to past, current, and future cash flows, based on the notion that accruals are estimates of future cash flows realizations and accounting earnings are better predictors of future cash flows when there is a *lower* estimation error in the accrual process. Therefore, the extent to which accruals do not map into cash flows in the adjacent periods is an inverse measure of the quality of reported accounting numbers.

[8] Francis et al. (2004) characterize various proxies of accounting quality as either "accounting-based" or "market-based" and refer to the accruals quality metric from Dechow and Dichev (2002) as "accounting-based." Because the accruals quality takes the cash flow itself as a benchmark construct and employs accounting data only, I assume that the primary function of accounting earnings is to efficiently allocate cash flows over multiple reporting periods through the accruals estimation process. "Market-based" earnings attributes (e.g., value relevance or timely loss recognition), however, rely on the assumption that the main function of accounting system is to reflect economic earnings embedded in realized stock price changes, which may confound the inferences related to the impact of accounting quality on misvaluation-driven corporate investment and financing activities.

Specifically, Dechow and Dichev (2002) model an estimation error in anticipating future cash flow realizations by focusing on working capital accruals. They conceptualize cash flow realization (i.e., net of cash receipts and cash disbursements) in period *t* as the sum of three distinct components: cash flows realized in period *t* and accrued at period *t*-1 (CF_t^{t-1}), cash flows realized and recognized in period *t* (CF_t^t), and cash flows realized in period *t* and deferred to period *t*+1 (CF_t^{t+1}).[9] Thus, cash flows realized in period *t* is represented as follows.

$$CF_t = CF_t^{t-1} + CF_t^t + CF_t^{t+1} \quad (3)$$

Similarly, accounting accruals recognized in period *t* (ACC^t) can be modeled as follows.

$$ACC^t = CF_{t-1}^t - (CF_t^{t-1} + CF_t^{t+1}) + CF_{t+1}^t + e_{t+1}^t + e_t^{t-1} \quad (4)$$

That is, the amount of accruals recognized in period *t* (ACC^t) is the cash flows realized in period *t*-1 and deferred to period *t* (CF_{t-1}^t), minus the cash flows realized in period *t* and accrued at period *t*-1 (CF_t^{t-1}), minus the cash flows realized in period *t* and deferred to period *t*+1 (CF_t^{t+1}), plus the cash flows realized in period *t*+1 and accrued at period *t* (CF_{t+1}^t), plus two accrual estimation error terms. The first error term refers to the estimation error realized in period *t*+1 associated with accruals recognized in period *t* (e_{t+1}^t), and the second term refers the estimation error realized in *t* resulting from accruals recognized in period *t*-1 (e_t^{t-1}). These estimation errors exist whenever there is a difference between the amounts recognized and the amounts realized in a subsequent period. Thus, earnings or the accrual component of earnings in any period contain the opening error that will be realized in the next period and the closing error which is realized in the current period. The extent to which

[9] The subscripts refer to the period the cash receipts or cash disbursements are made, and the superscripts refer to the period the cash flows are recognized in the accrual system.

realized amounts (i.e., cash flows) differ from already recognized amounts (i.e., accruals) is an inverse measure of the precision in the accrual process.

Following McNichols (2002), I implement the Dechow and Dichev (2002) model, augmenting it with the inclusion of two fundamental descriptors of business models originally used in Jones (1991): the year-to-year change in revenue and the gross property, plant, and equipment.

$$ACC_{i,t-1} = \beta_0 + \beta_1 CF_{i,t-2} + \beta_2 CF_{i,t-1} + \beta_3 CF_{i,t} + \beta_4 \Delta Sales_{i,t-1} + \beta_5 PPE_{i,t-1} + \epsilon_{i,t-1} \quad (5)$$

where $ACC_{i,t}$ is the working capital accruals for firm *i* in year *t*, $CF_{i,t}$ is the cash flow from operations for firm *i* in year *t*, $\Delta Sales_{i,t}$ is the change in sales revenue (COMPUSTAT item *SALE*) for firm *i* from year *t*–1 to *t*, and $PPE_{i,t}$ is the gross property, plant, and equipment (COMPUSTAT item *PPEGT*) for firm *i* in year *t*. ACC is defined as the change in current assets (COMPUSTAT item *ACT*), minus current liabilities (COMPUSTAT item *LCT*), minus the change in cash and short-term investments (COMPUSTAT item *CHE*), plus the change in debt in current liabilities (COMPUSTAT item *DLC*). CF is calculated as the net income before extraordinary items (COMPUSTAT item *IB*) minus the total accruals (TACC).[10] All regression variables are deflated by the average total assets (COMPUSTAT item *AT*).

Following Francis et al. (2005), I estimate the accruals quality of Dechow and Dichev (2002) based on a yearly cross-section of firms partitioned by Fama and French (1997) 48 industry classification, requiring a minimum of twenty observations in each industry-year pair. The accruals quality, AQ_DD, is the standard deviation of firm-level residuals from the cross-sectional estimation of Dechow and Dichev (2002) model over a five-year rolling

[10] Total accruals (TACC) are defined as the change in current assets (COMPUSTAT item *ACT*), minus current liabilities (COMPUSTAT item *LCT*), minus the change in cash and short-term investments (COMPUSTAT item *CHE*), plus the change in debt in current liabilities (COMPUSTAT item *DLC*), minus the depreciation and amortization expense (COMPUSTAT item *DP*).

window and multiplied by negative one. To avoid the look-ahead bias caused by the use of future period's operating cash flows, the accruals quality for firm *i* in quarter *q* is estimated over the fiscal year period from *t*-5 to *t*-1 leading up to the end of quarter *q*-4.

I also employ a measure of accruals quality used in McNichols and Stubben (2011) based on the presumption that accounting information helps predict future cash flows and is directly useful for equity valuation purposes (Barth, Cram, and Nelson, 2001).

$$CF_{i,t} = \beta_0 + \beta_1 CF_{i,t-1} + \beta_2 TACC_{i,t-1} + \epsilon_{i,t} \quad (6)$$

where $TACC_{i,t}$ is the total accruals for firm *i* in year *t*, and $CF_{i,t}$ is the cash flow from operations for firm *i* in year *t*. All regression variables are deflated by the average total assets.

Similar to McNichols and Stubben (2011), I estimate the above equation each year for a cross-section of firms designated by Fama and French (1997) 48 industry classification, requiring at least twenty observations in each cross-section. The accruals quality, AQ_CF, is the standard deviation of firm-level residuals from the one-year-out cash flow forecasting model using a five-year rolling window from year *t*-4 to year *t* leading up to the end of quarter *q*–4 and multiplied by negative one.

4. Sample and Descriptive Evidence

4.1 Sample Criteria

I collect my sample from several data sources. I obtain daily as well as monthly stock returns and price data from Center for Research in Security Prices (CRSP), financial statement data necessary for the calculation of accruals quality and other determinants of the timing of corporate decisions from both the annual and quarterly COMPUSTAT databases, mutual fund holding (trading) and return data from the intersection of the Thomson Reuters and the CRSP Survivorship Bias-Free Mutual Fund Databases, and corporate acquisition bids

and seasoned equity offerings data from the Securities Data Company (SDC) database. In supplemental tests, I also use block institutional ownership data from the Thomas Financial Institutional Holdings (13F) database, insider ownership data from the Thomson Financial Insider (Forms 3, 4 and 5) database, and analyst following data from Institutional Brokers Estimates System (I/B/E/S).

Specifically, my sample includes all mergers and acquisitions announced during the period January 1, 1990-December 31, 2009, as recorded in the SDC Platinum Merger & Acquisition database. I select acquisition bids made by U.S. public firms that are listed in the New York Stock Exchange (NYSE), American Stock Exchange (Amex), or NASDAQ. Following prior research, I collect acquisition deals which meet the following selection criteria: (1) the ownership percentage sought by an acquirer is above 50 percent to ensure that the deal involves the majority shares of target company, (2) the deal is financed through either pure stock or pure cash, (3) the deal's transaction value is greater than $1 million; and (4) the attempted bids are completed or withdrawn subsequently.[11] I also construct a sample of seasoned equity offerings after requiring events to be primary or secondary common stock offerings made by U.S. public firms. I exclude units and warrants offerings.

The total event and non-event samples consist of an unbalanced panel of quarterly COMPUSTAT firms over the period from January 1990 to December 2009. Following Eckbo and Masulis (1992) and Chen, Jiang, and Goldstein (2007), I exclude observations that belong to financial industries (SIC code 6000-6999) and utilities industries (SIC code 4200) because of the difference in institutional and regulatory environments. My final sample

[11] Using only completed acquisition bids potentially introduces a bias in my tests of the control mechanisms performed by publicly reported financial accounting information on mergers. This relates to when distributional characteristics of completed/withdrawn bids are systematically associated with the quality of financial accounting information and/or the presence of mutual fund flow pressure. I discuss this issue in more detail in Section 5.4.2.

consists of 215,959 firm-quarter observations with 7,582 distinct firms, 3,909 attempted merger and acquisition bids (1,143 stock-financed and 2,766 cash-financed offers), and 1,905 seasoned equity offerings (SEOs).

4.2 Descriptive Statistics

When mutual funds are being influenced by excess inflows from the clientele demand shifts, *fund* managers are challenged to quickly find profitable investment opportunities to outperform their peers (Coval and Stafford 2007). Moreover, because these fund managers follow specialized investment strategies, mutual funds are less likely to invest excess fund flows in a wide universe of stocks such as an index portfolio. In addition, as illustrated in Khan, Kogan, and Serafeim (2012), mutual funds are likely to face (1) restricted investment opportunity sets and (2) diminishing marginal rate of returns from investment, both of which contribute to a substantial excess fund flow being channeled into a restricted set of stocks. Therefore, stocks held by mutual funds with extreme capital inflows are *ex ante* more likely to be affected by a temporary price pressure.

Panels A and B of Table 1 present summary descriptive statistics of the U.S. mutual funds over the period 1989-2008. The statistics include the average fund positions as well as fund returns across decile portfolios of fund-quarter observations based on the sign and magnitude of fund capital flows. Panel A of Table 1 shows that the average number of stocks held by mutual funds designated in the top flow decile is 95, which is smaller than the average stock holdings of all mutual funds within my sample period. In Panel B, the percentage of stock holdings that are *expanded* relative to the beginning holdings of stocks is strongly, positively associated with the ranking of quarterly mutual fund flows. Specifically, mutual funds ranked as the top decile of capital flows expand more than 50 percent of the

beginning-of-period positions, whereas mutual funds ranked as the bottom decile expand only 14 percent of the beginning-of-quarter holdings.

While the percentage of expansion is monotonically increasing with the rank of quarterly fund flows, the percentage of stock positions *reduced* relative to the beginning positions is monotonically decreasing with the ranks of fund flows. The top flow decile funds reduce only 9 percent of the beginning positions, but the bottom flow decile funds reduce more than 40 percent of the current stock holdings. These results are consistent with an explanation that mutual fund managers face both restricted investment opportunity sets and the diminishing marginal investment prospects. Overall, the tendency of mutual funds to expand as well as to reduce the current stock holdings in response to extreme capital inflows is broadly consistent with the pattern of mutual fund purchasing and selling behavior documented in Coval and Stafford (2007) and Ali, Wei, and Zhou (2011).

Table 2 shows summary statistics on firm characteristics and bid-specific characteristics. In Panel A of Table 2, I present sample descriptive statistics of the two measures of accruals quality and selected firm characteristics that are expected to be associated with corporate acquisition decisions such as financing constraints, recent performance and growth, and payout policy. The average Dechow and Dichev (2002) accruals quality and the average accruals quality metric based on the one-year ahead cash flow forecasting model are both negative (-0.05 and -0.11, respectively), which are consistent with the statistics reported in prior literature (Francis et al. 2005).

This paper considers several firm characteristic variables as proxies for financial flexibility and/or financing constraints. Excess cash is constructed using a quarterly model of

normal cash holding adapted from Harford (1999).[12] I take the regression residuals from the model as a proxy that represents how financially flexible is the firm. As proxies for financing constraints, I include leverage, firm age, and size. After a careful text examination of annual reports, Hadlock and Pierce (2010) conclude that firm age and size parsimoniously capture financial situations public firms actually face.

Because internally generated cash flows from recent performance and growth are expected to affect the likelihood of corporate takeover decisions, I include ROA, asset growth, and sales growth. Moreover, the agency theory discussed in Jensen (1986) predicts that managers are more likely to conduct myopic corporate investment and financing activities to sustain recent growth reflected in assets and sales.

Approximately 36 percent of the firms in my sample pay quarterly cash dividends (Skinner and Soltes 2011). Following the specification of Fama and French (2000), I include both an indicator variable, which is set to one if a firm pays cash dividends and zero otherwise, and the quarterly dividend deflated by book value of equity. I use two proxies for stock valuation and/or investment opportunities. First, I use the conventional market-to-book ratio, which is measured as a ratio of market value of equity to book value of equity at the end of quarter q-4. In addition, I include abnormal pre-bid announcement stock price

[12] Specifically, I estimate the following regression model each year to construct a quarterly version of excess cash variable. The mean yearly adjusted R^2 in my sample from 1990 to 2009 is 14.9 percent (not tabulated).

$$\text{Cash}_{i,q-4} = \beta_0 + \beta_1 \text{CF}_{i,q-4} + \beta_2 \Delta\text{CF}_{i,q-4} + \beta_3 \text{Mkt to Book}_{i,q-8} + \beta_4 \text{Cash Flow Vol}_{i,q-4} + \beta_5 \text{MV}_{i,q-8} + \beta_6 \text{Q2}_{i,q-4} + \beta_7 \text{Q3}_{i,q-4} + \beta_8 \text{Q4}_{i,q-4} + \epsilon_{i,t-4} \quad \text{(A1)}$$

where $\text{Cash}_{i,q-4}$ is the cash and short-term investments deflated by total assets for firm i in quarter q-4, $\text{CF}_{i,q-4}$ is the quarterly operating cash flow deflated by total assets for firm i in quarter q-4, $\Delta\text{CF}_{i,q-4}$ is the change in quarterly operating cash flows deflated by total assets for firm i from quarter q–8 to q-4, $\text{Mkt-to-Book}_{i,t-8}$ is the ratio of market value of equity to book value of equity for firm i at the end of quarter q-8, $\text{Cash Flow Vol}_{i,q-4}$ is the standard deviation of seasonal changes in quarterly operating cash flows deflated by total assets, over the twenty-quarter rolling window, for firm i at the end of quarter q-4, $\text{MV}_{i,q-8}$ is the natural logarithm of market value of equity for firm i at the end of quarter q-8, and $\text{Q2}_{i,q-4}$ ($\text{Q3}_{i,q-4}$) [$\text{Q4}_{i,q-4}$] is an indicator variable that is equal to one if the dependant variable belongs to the second (third) [fourth] fiscal quarter, and zero otherwise, for firm i in quarter q-4.

performance, which is calculated as a cumulative market-adjusted abnormal return over the twelve-month period leading up to the end of quarter *q*-1. Panousi and Papanikolaou (2012) argue that idiosyncratic risk prevents managers from investing in a positive net present value (NPV) project as a consequence on managerial risk aversion. For this reason, I include variables that represent both idiosyncratic and systematic return volatilities.

To capture a balance sheet overstatement potentially caused by prior period income-increasing earnings management, I include net operating assets, divided by sales over the trailing four quarter period at the end of quarter *q*-4. As a proxy for inherent difficulty in accrual estimation process, I incorporate four proxies that are indicative of complexity/volatility of a firm's operating environments. Prior studies use the volatility of sales and cash flows, the frequency of losses, and the length of operating cycles to describe the innate determinants of accruals quality (Dechow and Dichev 2002; McNichols 2002).[13]

In Panel B of Table 2, I show summary statistics on deal-specific characteristics and additional factors affecting a method of financing a proposed transaction. Number of bids is calculated as the total number of bidders for the same target over the period beginning 180-days prior to the bid announcement and ending 180-days subsequent to the announcement date. Presence of multiple bidders may indicate that the proposed transaction is value-increasing and/or an excess premium paid by the first bidder (Harford 1999). The average natural logarithm of deal value, which is a proxy for economic significance of proposed merger and acquisition attempts, is 4.03. Diversifying is an indicator variable which is set to one if a bid relates to a target outside the bidder's industry classification, represented by 2-

[13] Consistent with the finding in Francis et al. (2005), the average yearly adjusted R^2 from a regression of accruals quality on the estimated five innate factors (including firm size) in my sample over the period 1990-2009 is 41 percent (not tabulated). The results suggest that these factors explain a large portion of cross-sectional variation in accruals quality.

digit SIC figures. Morck, Shleifer, and Vishny (1990) show that diversifying mergers are more likely to be determined by managerial personal objectives and are likely to be value destroying.

Because stock-financed acquisitions involve both investment and stock issuance decisions, stock owners with significant shares prefer cash-based acquisitions. For this reason, I include percentage of shares held by block holders and insiders, separately, over the trailing four quarter period leading up to the end of quarter *q*-4. However, in many cases, firms bidding for cash-financed acquisitions need additional capital because the proposed deal value normally exceeds the cash reserves available. Thus, cash-financed acquisitions usually involve issuing debt (Martin 1996; Faccio and Masulis 2005). To capture factors determining debt versus equity financing decisions relating to takeover deals, I use excess cash, leverage, firm age, and size as proxies for financing constraints. Finally, a tax benefit associated with debt financing may incrementally affect the method of financing in acquisitions. I incorporate a proxy for marginal tax rates, which is estimated for firm *i* in the most recent fiscal year relative to the end of quarter *q*-4 following the bin approach proposed by Blouin, Core, and Guay (2010).

5. Empirical Results

5.1 Firms with Fund Flow Pressure and the Likelihood of a Bid

To establish a link between equity overpricing represented by fund flow pressure and acquisition decisions, I use a sample of attempted mergers and acquisitions financed through either pure stock or pure cash from January 1990 to December 2009. Based on the methodology of Harford (1999), I estimate a Logit equation to predict which firms become takeover bidders. Harford's (1999) model takes into account a fairly comprehensive set of

acquisition determinants suggested by the prior literature. Because I focus on the market timing hypothesis, I estimate a quarterly version of acquisition prediction while including additional control variables concerning managerial investment decisions in general. I add an indicator variable, FFP, which is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters (i.e., quarter q-4 to q-1) prior to the event quarter q, and zero otherwise (see Section 3.1. for details). The Logit estimation employs all firms in COMPUSTAT for which necessary data are available. The dependant variable in the model, M&A, is set to one if the firm makes a bid announcement (regardless of financing methods) in quarter q and zero otherwise. The remaining variables are defined in Appendix. I include industry and year fixed effects in all regression models and cluster heteroscedasticity-consistent standard errors at the firm level (Peterson 2009).

The results of the Logit estimations are presented in Table 3. The data requirements leave 215,959 firm-quarter observations and 3,909 takeover attempts made by public firms. As predicted by agency theory of overvaluation proposed by Jensen (2005), the probability of becoming a bidder increases with the presence of fund flow pressure. Specifically, firms which are influenced by mutual fund flow pressure are 0.38 percent more likely to become bidders than other firms. This is both statistically and economically significant given the unconditional probability of being a bidder is only 1.81 percent in my sample. More important, this result shows that in predicting merger activity, the effect of fund flow pressure is not simply a proxy for financing constraints, recent performance and growth, or payout policy. Note also that cash-rich, less levered, younger, and large firms are more likely to make acquisition bids. In addition, firms with higher operating performance and recent

growth in total assets and sales, and firms who do not pay dividends are more likely to become bidders.

The finding that the likelihood of being a bidder is increasing in mutual fund flow pressure is also consistent with Dong et al. (2006), Ang and Cheng (2006), and Rhodes-Kropf et al. (2005) who find that there is a positive correlation between merger decisions and high valuation using alternative approaches to capture equity overvaluation. The results presented in Columns (2) to (4) lend further support to the interpretation that the probability of bidding for acquisitions is incrementally increasing in fund flow pressure after controlling for market-to-book ratios and prior stock price performance. This result is also robust to controls including idiosyncratic and systematic risk proxies.

In this subsection, I establish that managers are more likely to bid for mergers and acquisitions when the stock price is *ex ante* more likely to be overstated, captured by fund flow pressure. However, whether these takeover attempts are actually value-decreasing cannot be directly inferred from the above probability analysis. To quantify the consequence of bidding decisions driven by market timing motives, the next subsection examines the stock price reaction to bid announcements and the *ex post* changes in operating performance.

5.2. Announcement Returns and Operating Performance for Bidders with Fund Flow Pressure

I focus on corporate merger and acquisition decisions because they are large and observable investment decisions that routinely attract media attention. Moreover, the takeover decision is publicly available on a bid announcement date around which I can directly observe market reactions. I estimate OLS regressions with the announcement-period abnormal returns for a bidding firm as the dependent variable. I use a three-day window

centered on the bid announcement. I use both market-adjusted returns based on the CRSP value-weighted market index and size-adjusted returns based on the CRSP size-matched portfolio returns. The first independent variable is FFP, which again represents the presence of fund flow pressure. The other independent variables are drawn from the prior literature on acquisition decisions: an indicator variable for stock-financed deals, number of other bidders, transaction value, and an indicator variable representing whether a proposed bid is for diversifying acquisitions or not. Similar to the Logit estimation, I include industry and year fixed effects in all regression specifications and cluster heteroscedasticity-consistent standard errors at the firm level (Peterson 2009).

The estimation results based on an OLS regression are shown in Table 4. The coefficient on the presence of fund flow pressure is consistently significantly negative in all four specifications, insensitive to the inclusion of control variables that capture deal-specific characteristics and to the use of alternative benchmark returns. This supports the agency costs hypothesis in Jensen (2005) that managers of overvalued firms tend to make worse acquisitions than other firms because of their increased discretion over investment decisions. The acquisition bids made by fund flow pressure firms are associated with an abnormal stock price reaction that is lower by 55-74 basis points than the acquisition bids made by firms without such pressure.

The test based on stock returns assumes that the market is efficient in processing public information, or at least, its potential pricing error is not systematically related to the effect of fund flow pressure. Moreover, market's assessment of observable investment decisions could be biased because information on mutual fund trading is not sufficient for investors and/or provided with a lag. In order to complement this test based on stock price

reaction and to better understand the consequence of bids driven by market timing reasons, I examine changes in operating performance after successfully completed mergers.

I apply the Healy, Palepu, and Ruback (1992) model to my sample of completed mergers from 1990 to 2009 to estimate the potential value-destruction from opportunistic managerial investment decisions. First, the firms are matched based on the 48 industry classifications from Fama and French (1997) to obtain industry-adjusted cash flow from operations deflated by the corresponding sales numbers. Second, average values of industry-adjusted cash flows are calculated for both the pre-merger and post-merger periods. Each period encompasses the three-year measurement window before and after the merger. In the pre-merger period, the target and bidder performance figures are combined into one by weighting each with their corresponding sales from year *t*-3 to year *t*-1 relative to the merger completion. If information for a target is not available in the pre-merger period, I rely on operating performance figures of bidder firms only. In the post-merger period, I calculate the merged firm's industry-adjusted cash flows from year *t*+1 to year *t*+3. I estimate the following OLS regression for a cross-section of completed mergers after clustering heteroscedasticity-consistent standard errors at the firm-level.

$$OP_{i,post} = \beta_0 + \beta_1 OP_{i,pre} + \epsilon_i \quad (7)$$

where $OP_{i,pre}$ is the industry-adjusted operating cash flows deflated by sales weighted by sales for a combined target/bidder firm *i* in the pre-merger period, and $OP_{i,post}$ is the industry-adjusted operating cash flows deflated by sales for a merged firm *i* in the post-merger period. According to Healy, Palepu, and Ruback (1992), the β_0 coefficient captures abnormal operating performance increase or decrease between the pre- and post-merger periods. The regression uses all firms that successfully completed proposed mergers and the bids are

associated with fund flow pressure (i.e., FFP=1). I have a sample of 1,048 merges for which there are sufficient data for both pre-and post-periods.

The results indicate that the abnormal operating performance change over mergers for firms with fund flow pressure is significantly negative, with an abnormal performance decline of 3.2 percent with a two-tailed *p*-value less than 0.01 (not tabulated). I find no such decline for a sample of mergers which are not associated with fund flow pressure (i.e., FFP=0). Overall, the results based on operating performance support the announcement stock price reaction analysis. Moreover, the evidence based on the announcement returns combined with abnormal operating performance changes is consistent with the fundamental assumptions underpinning the agency cost explanations of overvalued equity (Jensen 2005). At the same time, the evidence presented here is inconsistent with neoclassical views positing the *q*-theory approach to corporate merger and acquisition investments (Jovanovic and Rousseau 2002).

5.3 The Corporate Governance Role of Financial Accounting Information in Mergers

The presence of equity overpricing captured by mutual fund flow pressure appears to lead to suboptimal merger and acquisition investment decisions by management. The agency cost hypothesis predicts that the problems caused by the presence of fund flow pressure increases as the incentives of the stockholders and managers diverge. Following Ball (2001) and Bushman and Smith (2001), I use the quality of publicly reported financial accounting information as a measure of the key corporate governance process ameliorating the degree of agency conflict found in a corporate acquisition decision. To determine whether the fund flow pressure effect is being attenuated by firms whose monitoring mechanisms are well supported by high-quality financial accounting data, I re-estimate a Logit equation for

predicting bidders on the COMPUSTAT sample used in Table 3. To facilitate economic interpretations of regression coefficients and associated marginal effects, I use an indicator variable representing whether a firm discloses high-quality financial accounting information. Specifically, HighAQ is set to one if the quality of accruals estimated based on the Dechow and Dichev (2002) model is in the top 20 percent of the COMPUSTAT firm-quarters each quarter, and zero otherwise. I then construct a new variable from an interaction of the presence of fund flow pressure and the accounting quality indicator variable.

The results of the Logits are presented in Table 5. In Column (1), the coefficient on the interaction between fund flow pressure and high-quality accounting information is significant and negative (at the 10 percent level), consistent with my first prediction. The result shows that, in situations where firms are affected by fund flow pressure, managers are less likely to undertake acquisitions for firms whose managerial decisions are well disciplined by high-quality accounting information. In economic terms, the probability of being a bidder in response to equity overpricing is 0.32 percent lower for firms with high-quality financial accounting information than otherwise similar firms.

However, the marginal significance on the disciplining impact of accounting information quality on managerial empire-building incentives documented above could be a result of failure to control for the fact that some bids are more value destroying and are more likely to be driven by opportunistic reasons. In fact, there are a number of studies that suggest that a bidding firm's stock prices drop upon the public release of proposed transactions (Andrade, Mitchell, and Stafford 2001). Moreover, prior studies appear to indicate that the managerial tendency toward a particular form of overinvestment is linked to agency

conflicts.[14] Travlos (1987) finds that the wealth destruction experienced by stockholders of bidding firms is particularly pronounced for firms that bid for acquisitions financed with stock issuance. Similarly, Loughran and Vijh (1997) find that more negative long-term stock price performance for stock-financed acquirers continues to persist for the three-year post-acquisition period. Furthermore, in periods when market prices are too high relative to fundamentals, managers of overvalued firms tend to use stock-for-stock acquisitions to simply expand the scope of control over corporate resources by exploiting the misvaluation (Shleifer and Vishny 2003). Therefore, stock-financed acquisitions are considered to be bad news about that firm's agency conflict.

I extend my examination of the governance role of financial accounting information quality in merger decisions by using a Logit prediction approach used above (Harford 1999). This approach predicts acquisition offers that are all stock and those that are all cash, separately. Additionally, I investigate the method of financing for an event sample of acquisition bids (Martin 1996; Faccio and Masulis 2005) with and without the possible effect of fund flow pressure.

In Columns (2) and (4) of Table 5, I perform the Logit regression analyses after partitioning the dependent variable. M&A_STK (M&A_CASH) is an indicator variable set to one for offers that are all stock (all cash), and zero elsewhere. The findings are consistent with my second prediction. Specifically, the results indicate that although the interaction and its marginal effect on mutual fund flow pressure and high-quality financial accounting information are insignificant for cash offers, for stock-financed offers they are strongly

[14] In addition, the prior empirical evidence documents that negative stock price reaction to bid announcements is stronger for acquirers with cash reserves in excess of the amount predicted by investment opportunities, having a small stake of management owned equity, and where a bid is made for unrelated diversifications (Stein 2003; Baker, Ruback, and Wurgler 2007). These results suggest that a particular type of mergers is more likely to be directly driven by agency conflicts such as managerial preference toward short-termism.

significant and negative (at the 1 percent level). In fact, the magnitude of its estimated marginal effect is three times that of all cash deals and is economically significant. This economic significance stems from the incremental effect of accounting discipline largely offsetting most of the marginal probability effect caused by fund flow pressure alone documented in Table 3. Moreover, these Logit regressions are repeated in Columns (3) and (5) after controlling for the market-to-book ratio and abnormal stock returns in the pre-bid announcement period. The interaction effect is still significant and negative for stock-financed acquisitions with a slight decrease in the estimated coefficient and marginal effect.

The negative coefficient on the interaction could be affected because the precision of accrual estimation process is deteriorated by management intentional bias toward certain bright-line earnings targets and unintentional errors associated with fundamental complexity inherent in business models. For example, each factor provides a noise to earnings signals through accounting discretion and its judgment and estimation procedures, and the disciplining effect of financial accounting information could simply be a proxy for those two determinants (Dechow and Skinner 2000). In Table 6, I repeat the Logit regression analysis after controlling for proxies of the degree of balance sheet overstatements and fundamental descriptors of business models from operating environments. An array of Logit specifications shows that the main inferences are not sensitive to these concerns. Finally, the main interaction effect appears to be robust to an alternative definition of accruals quality based on a direct future cash flow forecasting model from Barth, Cram, and Nelson (2001).

In addition, to examine the role of accounting information quality in making financing decisions, I employ the choice of funds model used in Martin (1996) and Faccio and Masulis (2005). The estimation uses all attempted mergers and acquisitions made by

U.S. public corporations from 1990 to 2009 for which data on deal-specific characteristics and equity holdings by block institutions and corporate insiders are available. Within this *ex post* acquisition bid sample from SDC, I estimate a Logit regression with an indicator, M&A_STK, set to one if a firm announces a bid and plans to finance the deal by issuing stock in quarter *q* and zero otherwise as the dependent variable. Thus, in this test, a sample of cash-financed acquisitions constitutes a natural control group because these acquisitions are attempted by managers but financed through cash instead of stock. I further partition the sample according to the presence of mutual fund flow pressure in any of the four quarters prior to the event quarter (i.e., FFP=1 and FFP=0) to isolate a situation where a potential divergence in interests between managers and stockholders is more likely to come into play. The primary variable of interest is the indicator variable representing the disclosure of high-quality financial accounting information.

The results on the choice of financing sources are given in Table 7. The data requirements leave 1,373 acquisition bids for the fund flow pressure sample and 1,432 bids for the non-fund flow pressure sample. As predicted by the governance view of accounting information quality, the probability of using all stock financing decreases with the quality of accounting information for the sample of firms likely subject to fund flow pressure. That is, in making an acquisition financing decision, a bidder's accounting information quality serves as a corporate control mechanism that constrains opportunistic managerial incentives to exploit temporary mispricing. More importantly, this shows that in determining a method of financing, high-quality financial accounting information is not a proxy for other alternative corporate governance mechanisms such as monitoring efforts exercised by block institutions or by corporate insiders with a large equity stake.

For the non-fund flow pressure sample, high-quality accounting information does not seem to exhibit a significant level of monitoring functions, although other determinants of financing sources exert similar influence over the choice. These analyses indicate that the monitoring mechanisms of financial accounting information are particularly pronounced for firms whose managers have strong incentives to act at the expense of stockholders' wealth.

Overall, the evidence based on the bidder prediction model and the choice of funds model suggests that a takeover attempt of a bidder with fund flow pressure is disciplined by internal corporate accounting and external reporting systems that provide a high-quality public accounting signal to stockholders. Further, the results indicate that the governance effect is stronger for firms whose managerial investment decisions are more likely to result in a high-cost outcome from the perspective of stockholders of bidding firms. This is consistent with the general predictions of Ball (2001) and Bushman and Smith (2001), which indicate that the effective stockholder monitoring through accounting disclosures reduces a significant portion of agency costs stemming from the manager-stockholder conflict.

5.4 Additional Tests

The series of empirical tests discussed in the previous section tells a consistent story supporting the monitoring mechanisms of financial accounting information. The economic benefits of high-quality financial reporting include a reduction in stockholder wealth destruction. Moreover, the effect of accounting discipline appears to be stronger for firms whose management is willing to sacrifice corporate long-term values by exploiting a temporary overvaluation of stock price.

In this section, I detail two additional tests concerning the role of financial accounting information in disciplining managerial stock issuance decisions and in likelihood

of withdrawing attempted bids, respectively. First, when equity prices are overstated, managerial financing decisions are more likely to be driven by market-timing considerations (Baker and Wurgler 2002). I investigate whether high-quality financial accounting information ameliorates the agency conflict related to stock issuance. Second, I investigate whether the bidder's accounting information quality is associated with the likelihood of attempted-but-failed acquisition deals.

5.4.1 The Corporate Governance Role of Financial Accounting Information in Stock Issuance

Jensen (2005) predicts that, when equity prices are overstated relative to firm fundamentals, managers are more likely to conduct stock issuance to exploit the temporary misvaluation. The excess cash generated from the market timing-driven equity issuance is likely to create an agency problem of free cash flows similar to that in Jensen (1986). However, managers of overvalued firms may prefer stock-financed acquisitions to seasoned public equity issuance. Managers may have this preference because the former provides an easy justification for a large volume of stock issuance while fulfilling management self-interest in empire building (Stein 2003).[15]

The test is performed exactly like the Logit specification for the case of predicting bidders, except that the dependent variable, SEO, is now set to one if the firm files for seasoned equity offerings in quarter *q* and zero otherwise, as recorded in SDC. This event sample includes all seasoned public stock offerings made by New York Stock Exchange (NYSE), American Stock Exchange (Amex), and NASDAQ firms from 1990 to 2009. The controls and sample selection procedures are identical to those used in the previous section.

[15] Using a large sample of U.S. public corporations from 1927 to 2003, Lamont and Stein (2006) find evidence consistent with a positive time-series correlation among net stock issuance, merger activity, and the degree of equity overvaluation.

The results are presented in Table 8. The interaction between the presence of fund flow pressure and high-quality financial reporting is negative and significant (at the 5 percent level). This result indicates that, in circumstances where firms are affected by fund flow pressure, managers are less likely to conduct public stock issuance for firms with high-quality financial accounting information. Specifically, the likelihood of being public issuers in response to fund flow pressure is 0.27 percent lower for high-quality financial reporting firms than for other firms. The interaction effect is economically significant given the unconditional probability of being a public issuer is 0.88 percent and the estimated marginal probability of conducting seasoned equity offerings in a base model is 0.36 percent in my sample (not tabulated). The base model excludes level and interaction terms related to financial accounting information. Overall, it is likely that fund flow pressure firms that tend to conduct public stock issuance are largely constrained by high-quality financial accounting information as a control mechanism. This is similar to the role of externally reported accounting information in disciplining opportunistic managerial merger decisions.

5.4.2 Withdrawal Probability and Financial Accounting Information

The main inferences relating to the governance role of financial accounting information were drawn based on a sample of either completed or withdrawn merger bids. I argue that corporate merger and acquisition decisions motivated by managerial opportunism are effectively monitored by internal governance mechanisms and supporting institutional arrangements such as high-quality financial accounting systems. Thus, the bidder's quality of externally reported accounting information is a key underlying mechanism through which stockholders of bidding firms avoid a high-cost outcome arising from the manager-stockholder conflict. However, proposed takeover deals can be withdrawn if stockholders of

target firms (or corporate boards of target firms) refuse to approve the proposed transactions. For example, Malmendier, Opp, and Saidi (2012) find that more than half of failed takeover attempts are associated with target board disapproval of attempted bids.

Specifically, when firms are influenced by fund flow pressure, a high-quality financial reporting system successfully constraining attempts for opportunistic merger bids decreases the likelihood of subsequent deal cancellation. On the other hand, under similar fund flow pressure, bids made by high-quality financial reporting firms are more likely to be rejected by target firms because of public availability of the bidder's financial accounting information. Thus, the inclusion of failed bids to my sample will overstate the governance effect of financial accounting information.

I examine the probability of deal failure as a function of high-quality financial accounting information. The dependent variable, WITHDRAWN, is one if the proposed bid is withdrawn after the public release of bid decisions as recorded in SDC. As in the test of choice of funds, I partition the merger and acquisition sample according to the presence of fund flow pressure. A sample of acquisition bids finally completed comprises a natural control group.

The results presented in Table 9, however, do not show any statistically significant evidence of the systematic relation between accounting information quality and the deal completion rate. The coefficients on the high-quality financial accounting information for both the fund flow pressure and non-fund flow pressure subsamples are negative but insignificant at any conventional levels. If anything, the negative coefficient is more consistent with internal control mechanisms and supports the inference that financial accounting information effectively curbs opportunistic takeover attempts by managers.

6. Conclusion

A positive correlation between merger activity and high valuation is of no particular interest under perfect capital markets with symmetric information between firm managers and stockholders. In this case, all movements in stock prices rationally reflect innovations either in future cash flow expectations from corporate activities, including investment and financing decisions, or in relevant discount rates. Thus, managers follow stock price changes in making important corporate decisions to maximize firm value. However, if there is potential mispricing by the capital markets, observed stock prices can deviate from the true fundamental and can increase divergence between manager and stockholder investment and financing interests. Specifically, the agency cost hypothesis in Jensen (2005) predicts that agency conflicts between managers and stockholders combined with the opportunity of management discretion from overstated stock prices produce corporate acquisition and financing decisions that diverge from the interest of stockholders.

To test whether stock overvaluation is associated with value-destroying corporate decisions, I study the merger and acquisition behavior of firms that are affected by mutual fund flow pressure. Using a bidder prediction model used in Harford (1999), I find that firms are more likely to bid for acquisitions when they are affected by fund flow pressure. Consistent with the agency cost explanations of Jensen (2005) these acquisition bids attempted by fund flow pressure firms are value-decreasing. This is reflected in short-window stock price reactions to bid announcements that are incrementally lower than other announcements and in a subsequent abnormal decline in operating performance of merger firms.

More importantly, I find evidence consistent with high-quality financial accounting information reducing a substantial amount of agency costs related to corporate merger decisions (Ball 2001; Bushman and Smith 2001, 2003). The probability of becoming a bidder in response to fund flow pressure is significantly lower for firms with high-quality accounting information than otherwise similar firms. I also find that the disciplining role of financial accounting information is mostly driven by merger bids that are financed through stock issuance. In a supplemental test, I provide corroborating evidence by examining a similar corporate control mechanism performed by high-quality financial accounting information in seasoned public equity offering markets. Overall, the evidence suggests that corporate accounting and external reporting systems that produce high-quality accounting signals discipline firm managers that are motivated to take advantage of temporary equity overvaluation. Moreover, evidence also shows that the effectiveness of control mechanisms supported by high-quality accounting information is particularly pronounced for firms with management pursuing investments that are not aligned with stockholder interests.

The results indicating economic benefits from financial accounting information in merger and acquisition decisions have implications for investors, boards of directors, and regulators. These results may be useful in assessing valuation consequences of corporate investment and financing decisions. Further, my paper speaks to the academic literature on the role of financial accounting information in important corporate events such as mergers and public equity offerings (Erickson and Wang 1999; Teoh, Welch, and Wong 1998). In sum, I demonstrate that there is an important economic link between the quality of externally reported accounting information and long-term performance of corporations, in part resulting from the effective governance of managerial myopia.

Table 1. Summary statistics on mutual fund trading

This table presents the change in quarterly mutual fund holdings, ranked by actual quarterly fund flows. Mutual fund flows are calculated as a percentage of beginning-of-period total net assets (TNA). Specifically, realized mutual fund flows are measured as the percentage change in total net assets (TNA) over the calendar quarter period after taking into account capital gains and losses of the initial holdings:

$$\text{Fund Flow}_{j,m} = \frac{[\text{TNA}_{j,m} - \text{TNA}_{j,m-1} * (1 + \text{R}_{j,m})]}{\text{TNA}_{j,m-1}} \quad (1)$$

where $\text{TNA}_{j,m}$ is the total net assets of fund *j* at the end of month *m*, and $\text{R}_{j,m}$ is the return of fund *j* at month *m*. Then, the monthly net flows, $\text{Fund Flow}_{j,m}$, are aggregated into the quarterly net fund flows, $\text{Fund Flow}_{j,q}$, for fund *j* in quarter *q* so as to be matched with the quarterly holding data. Panel A presents the average realized quarterly fund flows, most recent quarter fund returns, cash holdings, and number of stock holdings for portfolios of firms ranked by actual quarterly fund flows. Panel B presents fund holding characteristics including the fraction of holdings of stocks that are maintained, expanded, reduced, or eliminated relative to the beginning-of-period position.

Panel A. Mutual fund and fund characteristics (ranked by actual quarterly fund flows)

Decile	N	Quarterly Fund Flow (%)	Qaurterly Fund Return (%)	Average Cash/TNA (%)	Average Number of Holdings
10 (*extreme inflow*)	5,239	42.6%	4.3%	6.3%	94.7
9	5,239	11.7%	2.7%	5.7%	105.9
8	5,239	5.5%	2.4%	4.7%	116.6
7	5,239	2.4%	2.1%	4.6%	124.2
6	5,239	0.5%	1.4%	4.4%	115.7
5	5,239	-1.0%	1.1%	4.3%	108.7
4	5,239	-2.4%	0.5%	4.0%	103.0
3	5,239	-4.0%	-0.1%	3.5%	104.0
2	5,239	-6.5%	-0.8%	3.3%	95.0
1 (*extreme outflow*)	5,238	-15.9%	-1.5%	3.9%	93.0

Panel B. Mutual fund trading behavior (ranked by actual quarterly fund flows)

Decile	N	Quarterly Fund Flow (%)	Percentage of Positions (%) Maintained	Expanded	Reduced	Eliminated
10 (*extreme inflow*)	5,239	42.6%	18.8%	52.8%	8.7%	19.4%
9	5,239	11.7%	29.8%	41.4%	11.6%	17.0%
8	5,239	5.5%	34.8%	35.0%	13.6%	16.4%
7	5,239	2.4%	40.7%	28.7%	14.6%	15.8%
6	5,239	0.5%	43.3%	23.9%	16.8%	15.8%
5	5,239	-1.0%	42.9%	20.9%	19.4%	16.6%
4	5,239	-2.4%	39.3%	19.4%	23.3%	17.8%
3	5,239	-4.0%	34.2%	18.7%	27.9%	18.9%
2	5,239	-6.5%	29.0%	17.8%	32.7%	20.3%
1 (*extreme outflow*)	5,238	-15.9%	21.3%	13.6%	42.0%	22.6%

Table 2. Summary statistics on firm and deal characteristics

Panel A presents descriptive statistics on accounting quality metrics and selected firm characteristics, and Panel B presents descriptive statistics on deal-level characteristics, ownership structure, and tax benefit of debt. See Appendix for variable definitions.

Panel A. Accounting quality measures and firm characteristics

Variables	Mean	Standard Deviation	5th Percentile	1st Quartile	Median	3rd Quartile	95th Percentile
Accounting quality							
AQ_DD	-0.05	0.04	-0.14	-0.07	-0.04	-0.02	-0.01
AQ_CF	-0.11	0.09	-0.29	-0.14	-0.08	-0.05	-0.02
Financing constraints							
Excess Cash	0.00	0.17	-0.19	-0.10	-0.05	0.06	0.37
Leverage	0.21	0.18	0.00	0.04	0.20	0.34	0.53
Firm Age	2.67	0.74	1.61	2.08	2.64	3.22	3.99
Size	5.50	2.13	2.18	3.92	5.39	6.97	9.31
Performance and growth							
ROA	0.00	0.04	-0.08	0.00	0.01	0.02	0.05
Asset Growth	0.09	0.25	-0.25	-0.02	0.06	0.17	0.55
Sales Growth	0.09	0.32	-0.38	-0.03	0.08	0.20	0.59
Payout policy							
Pay Dividend	0.36	0.48	0.00	0.00	0.00	1.00	1.00
Dividend	0.00	0.01	0.00	0.00	0.00	0.01	0.02
Stock valuation							
Mkt-to-Book	2.64	2.56	0.57	1.18	1.86	3.09	7.41
CAR	0.05	0.63	-0.66	-0.31	-0.06	0.23	1.12
Idiosyncratic risk							
Idiosyncratic Vol	0.03	0.02	0.01	0.02	0.03	0.04	0.08
Systematic Vol	0.01	0.01	0.00	0.00	0.01	0.01	0.03
Overstated balance sheet							
NOA	0.85	1.00	0.13	0.35	0.56	0.93	2.56
Operating environment							
Sales Vol	0.07	0.06	0.01	0.03	0.05	0.08	0.18
Cash Flow Vol	0.05	0.04	0.01	0.02	0.03	0.06	0.12
Loss%	0.25	0.28	0.00	0.00	0.15	0.40	0.90
Operating Cycle	4.71	0.73	3.41	4.33	4.77	5.18	5.78

Panel B. Deal characteristics, ownership structure, and tax benefit of debt

Variables	Mean	Standard Deviation	5th Percentile	1st Quartile	Median	3rd Quartile	95th Percentile
Deal characteristics							
Number of Bids	1.04	0.26	1.00	1.00	1.00	1.00	1.00
Transaction Value	4.03	1.90	1.00	2.65	3.94	5.27	7.38
Diversifying	0.42	0.49	0.00	0.00	0.00	1.00	1.00
Ownership structure							
Pct of Blockholders (%)	20.9	16.1	0.0	7.5	19.5	31.7	49.0
Pct of Insiders (%)	3.5	7.4	0.0	0.2	0.7	3.0	17.2
Tax benefit of debt							
MTR (%)	31.2	7.2	12.0	32.0	34.0	35.0	35.0

Table 3. Predicting bidders using a Logit model

This table presents regression summary statistics from Logit regressions. The dependent variable, M&A, is set to one if the firm bids for acquisitions in quarter *q* and zero elsewhere. FFP is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters prior to quarter *q*, and zero otherwise. The definitions of other regression variables are provided in Appendix. All regressions include industry and year fixed effects and heteroscedasticity-consistent standard errors are clustered at the firm level (Peterson 2009). Marginal effects of the interaction term and the respective statistical significance are calculated using the delta method (Ai and Norton 2003).

***, **, and * represent the statistical significance at the 1%, 5%, and 10% levels, respectively, with a two-tailed test.

	(1)		(2)		(3)		(4)	
Dependent variable:	M&A		M&A		M&A		M&A	
Variables	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**
Fund flow pressure								
FFP	0.219 ***	0.039	0.166 ***	0.040	0.198 ***	0.039	0.141 ***	0.040
Financing constraints								
Excess Cash	0.354 **	0.138	0.268 *	0.138	0.311 **	0.137	0.236 *	0.137
Leverage	-1.039 ***	0.178	-0.977 ***	0.169	-0.974 ***	0.177	-0.919 ***	0.170
Firm Age	-0.088 **	0.036	-0.077 **	0.036	-0.096 ***	0.036	-0.088 **	0.036
Size	0.310 ***	0.018	0.311 ***	0.017	0.274 ***	0.019	0.271 ***	0.019
Performance/growth								
ROA	0.040 ***	0.007	0.032 ***	0.006	0.036 ***	0.007	0.026 ***	0.006
Asset Growth	0.444 ***	0.075	0.445 ***	0.076	0.415 ***	0.076	0.433 ***	0.078
Sales Growth	0.416 ***	0.068	0.297 ***	0.067	0.421 ***	0.068	0.301 ***	0.068
Payout policy								
Pay Dividend	-0.145 **	0.070	-0.081	0.069	-0.158 **	0.070	-0.108	0.069
Dividend	0.013	0.026	-0.028	0.027	0.010	0.026	-0.029	0.028
Stock valuation								
Mkt-to-Book			0.049 ***	0.007			0.046 ***	0.007
CAR			0.278 ***	0.021			0.304 ***	0.022
Idiosyncratic risk								
Idiosyncratic Vol					-0.083 ***	0.017	-0.100 ***	0.017
Systematic Vol					0.102 ***	0.027	0.082 ***	0.027
Marginal effect								
FFP	0.38% ***		0.29% ***		0.35% ***		0.25% ***	
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Number of Obs.	215,959		215,959		215,959		215,959	
Pseudo R-square	0.070		0.076		0.071		0.077	

Table 4. Stock price response to bids

This table presents regression summary statistics from OLS regressions. The dependent variables are the 3-day market-adjusted returns based on the CRSP value-weighted market index and 3-day size-adjusted returns based on the CRSP size-matched portfolio returns, respectively, where the 3-day window is centered on a bid announcement date. FFP is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters prior to quarter *q*, and zero otherwise. M&A_STK is set to one if the firm bids for pure stock acquisitions. The definitions of other regression variables are provided in Appendix. All regressions include industry and year fixed effects and heteroscedasticity-consistent standard errors are clustered at the firm level (Peterson 2009).
***, **, and * represent the statistical significance at the 1%, 5%, and 10% levels, respectively, with a two-tailed test.

	(1)		(2)		(3)		(4)	
Dependent variable:	3-day abnormal returns: value-weighted index		3-day abnormal returns: value-weighted index		3-day abnormal returns: size-matched		3-day abnormal returns: size-matched	
Variables	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**
Fund flow pressure								
FFP	-0.724 ***	0.256	-0.553 **	0.255	-0.747 ***	0.258	-0.579 **	0.257
Deal characteristics								
M&A_STK			-1.108 ***	0.332			-1.085 ***	0.332
Number of Bids			-0.563	0.489			-0.536	0.498
Transaction Value			-0.388 ***	0.071			-0.396 ***	0.072
Diversifying			0.008	0.251			-0.044	0.251
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Number of Obs.	3,909		3,909		3,909		3,909	
Adj. R-square	0.010		0.025		0.009		0.024	

Table 5. The governance role of financial accounting information

This table presents regression summary statistics from Logit regressions. The dependent variables include M&A, M&A_STK, and M&A_CASH. M&A is set to one if the firm bids for acquisitions in quarter *q* and zero elsewhere. M&A_STK (M&A_CASH) is set to one if the firm bids for pure stock (pure cash) acquisitions in quarter *q* and zero elsewhere. FFP is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters prior to quarter *q*, and zero otherwise. HighAQ is set to one if the quality of accruals based on the Dechow and Dichev (2002) model is in the top 20 percent of the COMPUSTAT firm-quarters each quarter, and zero otherwise. The definitions of other regression variables are provided in Appendix. All regressions include industry and year fixed effects and heteroscedasticity-consistent standard errors are clustered at the firm level (Peterson 2009). Marginal effects of the interaction term and the respective statistical significance are calculated using the delta method (Ai and Norton 2003).

***, **, and * represent the statistical significance at the 1%, 5%, and 10% levels, respectively, with a two-tailed test.

	(1)		(2)		(3)		(4)		(5)	
Dependent variable:	M&A		M&A_STK		M&A_STK		M&A_CASH		M&A_CASH	
Variables	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**
Fund flow pressure										
FFP	0.166 ***	0.043	0.455 ***	0.073	0.296 ***	0.077	0.128 ***	0.050	0.110 **	0.050
FFP*HighAQ	-0.182 *	0.104	-0.611 ***	0.211	-0.579 ***	0.213	-0.078	0.118	-0.069	0.117
HighAQ	-0.061	0.065	-0.019	0.116	-0.028	0.116	-0.086	0.073	-0.088	0.073
Financing constraints										
Excess Cash	0.239 *	0.137	0.068	0.249	-0.110	0.245	0.413 ***	0.156	0.392 **	0.157
Leverage	-0.901 ***	0.169	-1.427 ***	0.332	-1.271 ***	0.302	-0.657 ***	0.187	-0.660 ***	0.186
Firm Age	-0.088 **	0.036	-0.204 ***	0.060	-0.183 ***	0.059	-0.059	0.041	-0.057	0.041
Size	0.274 ***	0.019	0.241 ***	0.033	0.246 ***	0.032	0.280 ***	0.019	0.278 ***	0.019
Performance/growth										
ROA	0.026 ***	0.006	-0.012	0.009	-0.015 *	0.008	0.072 ***	0.009	0.068 ***	0.009
Asset Growth	0.428 ***	0.078	0.244 **	0.121	0.242 *	0.123	0.485 ***	0.098	0.517 ***	0.100
Sales Growth	0.303 ***	0.068	0.896 ***	0.111	0.687 ***	0.114	0.082	0.081	0.046	0.082
Payout policy										
Pay Dividend	-0.102	0.069	-0.176	0.127	-0.073	0.123	-0.143 *	0.075	-0.137 *	0.076
Dividend	-0.029	0.028	0.029	0.045	-0.055	0.048	-0.004	0.029	-0.008	0.030
Stock valuation										
Mkt-to-Book	0.046 ***	0.007			0.080 ***	0.011			0.004	0.009
CAR	0.303 ***	0.022			0.415 ***	0.031			0.160 ***	0.030
Idiosyncratic risk										
Idiosyncratic Vol	-0.101 ***	0.017	-0.041 *	0.023	-0.059 **	0.023	-0.138 ***	0.024	-0.148 ***	0.024
Systematic Vol	0.079 ***	0.027	0.328 ***	0.044	0.268 ***	0.045	0.006	0.033	0.011	0.034
Marginal effect										
FFP*HighAQ	-0.32% *		-0.32% ***		-0.30% ***		-0.10%		-0.09%	
Year fixed effects	Yes		Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes		Yes	
Number of Obs.	215,959		215,959		215,959		215,959		215,959	
Pseudo R-square	0.077		0.091		0.110		0.084		0.084	

Table 6. Measurement errors and equity overpricing

This table presents regression summary statistics from Logit regressions. The dependent variables are M&A_STK and M&A_CASH. M&A_STK (M&A_CASH) is set to one if the firm bids for pure stock (pure cash) acquisitions in quarter *q* and zero elsewhere. FFP is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters prior to quarter *q*, and zero otherwise. HighAQ (HighAQ_CF) is set to one if the quality of accruals based on the Dechow and Dichev model (the Barth, Cram, and Nelson model) is in the top 20 percent of the COMPUSTAT firm-quarters each quarter, and zero otherwise. The definitions of other regression variables are provided in Appendix. All regressions include industry and year fixed effects and heteroscedasticity-consistent standard errors are clustered at the firm level (Peterson 2009).

***, **, and * represent the statistical significance at the 1%, 5%, and 10% levels, respectively, with a two-tailed test.

	(1)		(2)		(3)		(4)		(5)		(6)	
Dependent variable:	M&A_STK		M&A_STK		M&A_STK		M&A_CASH		M&A_CASH		M&A_CASH	
Variables	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**
Fund flow pressure												
FFP	0.469 ***	0.073	0.489 ***	0.073	0.457 ***	0.074	0.153 ***	0.050	0.124 **	0.049	0.134 ***	0.050
FFP*HighAQ	-0.658 ***	0.214	-0.632 ***	0.211			-0.088	0.118	-0.078	0.118		
HighAQ	-0.019	0.117	0.032	0.118			-0.053	0.073	-0.124 *	0.074		
FFP*HighAQ_CF					-0.472 **	0.206					0.039	0.117
HighAQ_CF					-0.066	0.118					-0.052	0.073
Financing constraints												
Excess Cash	0.137	0.254	0.355	0.268	0.181	0.250	0.399 **	0.158	0.479 ***	0.164	0.399 **	0.158
Leverage	-1.521 ***	0.348	-1.522 ***	0.363	-1.613 ***	0.344	-0.688 ***	0.188	-0.707 ***	0.192	-0.707 ***	0.185
Firm Age	-0.231 ***	0.060	-0.190 ***	0.059	-0.220 ***	0.059	-0.037	0.041	-0.050	0.041	-0.034	0.041
Size	0.291 ***	0.035	0.301 ***	0.035	0.282 ***	0.034	0.322 ***	0.017	0.288 ***	0.018	0.321 ***	0.017
Performance/growth												
ROA	-0.019 **	0.009	-0.011	0.010	-0.015	0.009	0.081 ***	0.009	0.055 ***	0.009	0.082 ***	0.009
Asset Growth	0.400 ***	0.125	0.265 **	0.117	0.356 ***	0.120	0.470 ***	0.096	0.475 ***	0.101	0.473 ***	0.094
Sales Growth	0.961 ***	0.115	0.863 ***	0.110	0.911 ***	0.112	0.079	0.080	0.154 *	0.088	0.070	0.079
Payout policy												
Pay Dividend	-0.258 **	0.127	-0.207	0.130	-0.244 *	0.126	-0.092	0.075	-0.157 **	0.075	-0.092	0.075
Dividend	0.034	0.046	0.029	0.045	0.036	0.045	-0.002	0.029	0.003	0.029	-0.001	0.029
Overstated B/S												
NOA	-0.122 ***	0.046					-0.007	0.031				
Oper. environment												
Sales Vol			3.034 ***	0.549					-0.254	0.493		
Cash Flow Vol			-0.178	1.137					-2.864 ***	1.109		
Loss%			0.106	0.165					-0.741 ***	0.150		
Operating Cycle			0.057	0.059					-0.040	0.042		
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Number of Obs.	215,959		215,959		215,959		215,959		215,959		215,959	
Pseudo R-square	0.088		0.090		0.086		0.081		0.084		0.081	

Table 7. Method of financing and equity overpricing

This table presents regression summary statistics from Logit regressions on the fund flow pressure sample and non-fund flow pressure sample, separately. FFP is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters prior to quarter *q*, and zero otherwise. The dependent variable is M&A_STK being set to one if the firm bids for pure stock acquisitions in quarter *q* and zero elsewhere. HighAQ is set to one if the quality of accruals based on the Dechow and Dichev model is in the top 20 percent of the COMPUSTAT firm-quarters each quarter, and zero otherwise. The definitions of other regression variables are provided in Appendix. All regressions include industry and year fixed effects and heteroscedasticity-consistent standard errors are clustered at the firm level (Peterson 2009).

***, **, and * represent the statistical significance at the 1%, 5%, and 10% levels, respectively, with a two-tailed test.

	(1)		(2)	
	Fund flow pressure sample (FFP = 1)		Non-fund flow pressure sample (FFP = 0)	
Dependent variable:	M&A_STK		M&A_STK	
Variables	**Estimate**	**Std Err**	**Estimate**	**Std Err**
Accounting quality				
HighAQ	-0.527 **	0.243	0.003	0.155
Deal characteristics				
Number of Bids	-0.025	0.299	-0.541 **	0.235
Transaction Value	0.439 ***	0.058	0.374 ***	0.045
Diversifying	0.183	0.157	0.142	0.115
Ownership structure				
Pct of Blockholders	-0.021 ***	0.006	-0.018 ***	0.005
Pct of Insiders	-0.022 *	0.012	-0.009	0.008
Financing constraints				
Excess Cash	0.646	0.496	-0.662 *	0.396
Leverage	-0.686	0.592	-0.380	0.420
Firm Age	-0.453 ***	0.135	-0.242 **	0.104
Size	-0.182 ***	0.069	-0.252 ***	0.057
Tax benefit of debt				
MTR	-0.026 *	0.014	-0.059 ***	0.009
Year fixed effects	Yes		Yes	
Industry fixed effects	Yes		Yes	
Number of Obs.	1,373		2,432	
Pseudo R-square	0.445		0.343	

Table 8. The governance role of financial accounting information and issuance

This table presents regression summary statistics from Logit regressions. The dependent variable is SEO, being set to one if the firm files for seasoned public offerings in quarter q and zero elsewhere. FFP is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters prior to quarter q, and zero otherwise. HighAQ is set to one if the quality of accruals based on the Dechow and Dichev (2002) model is in the top 20 percent of the COMPUSTAT firm-quarters each quarter, and zero otherwise. The definitions of other regression variables are provided in Appendix. All regressions include industry and year fixed effects and heteroscedasticity-consistent standard errors are clustered at the firm level (Peterson 2009). Marginal effects of the interaction term and the respective statistical significance are calculated using the delta method (Ai and Norton 2003).

***, **, and * represent the statistical significance at the 1%, 5%, and 10% levels, respectively, with a two-tailed test.

	(1)		(2)		(3)		(4)	
Dependent variable:	SEO		SEO		SEO		SEO	
Variables	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**	**Estimate**	**Std Err**
Fund flow pressure								
FFP	0.477 ***	0.060	0.453 ***	0.061	0.384 ***	0.061	0.367 ***	0.062
FFP*HighAQ	-0.313 **	0.125	-0.299 **	0.125	-0.274 **	0.127	-0.266 **	0.128
HighAQ	0.049	0.076	0.050	0.076	0.043	0.077	0.043	0.077
Financing constraints								
Excess Cash	0.443 **	0.174	0.391 **	0.172	0.310 *	0.180	0.269	0.179
Leverage	1.750 ***	0.157	1.763 ***	0.155	1.708 ***	0.159	1.718 ***	0.158
Firm Age	-0.257 ***	0.043	-0.255 ***	0.043	-0.237 ***	0.044	-0.236 ***	0.044
Size	0.088 ***	0.016	0.091 ***	0.016	0.125 ***	0.016	0.126 ***	0.016
Performance/growth								
ROA	-0.038 ***	0.006	-0.034 ***	0.005	-0.043 ***	0.005	-0.041 ***	0.005
Asset Growth	0.786 ***	0.099	0.714 ***	0.099	1.016 ***	0.098	0.964 ***	0.098
Sales Growth	0.285 ***	0.090	0.251 ***	0.089	0.100	0.089	0.080	0.089
Payout policy								
Pay Dividend	-0.048	0.079	-0.008	0.079	0.008	0.080	0.032	0.080
Dividend	-0.072 **	0.034	-0.104 ***	0.035	-0.079 **	0.034	-0.099 ***	0.035
Stock valuation								
Mkt-to-Book			0.049 ***	0.008			0.032 ***	0.009
CAR					0.692 ***	0.022	0.686 ***	0.022
Marginal effect								
FFP*HighAQ	-0.27% **		-0.26% **		-0.24% **		-0.23% **	
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Number of Obs.	215,959		215,959		215,959		215,959	
Pseudo R-square	0.049		0.050		0.083		0.084	

Table 9. Withdrawal probability and financial accounting information

This table presents regression summary statistics from Logit regressions on the fund flow pressure sample and non-fund flow pressure sample, separately. FFP is set to one if firm-quarters are located in the top decile of Fund Flow Pressure$_{i,q}$ in any of the four quarters prior to quarter q, and zero otherwise. The dependent variable is WITHDRAWN being set to one if the acquisition bid is withdrawn in quarter q and zero elsewhere. HighAQ is set to one if the quality of accruals based on the Dechow and Dichev model is in the top 20 percent of the COMPUSTAT firm-quarters each quarter, and zero otherwise. M&A_STK is set to one if the firm bids for pure stock acquisitions. The definitions of other regression variables are provided in Appendix. All regressions include industry and year fixed effects and heteroscedasticity-consistent standard errors are clustered at the firm level (Peterson 2009).

***, **, and * represent the statistical significance at the 1%, 5%, and 10% levels, respectively, with a two-tailed test.

	(1)			(2)		
	Fund flow pressure sample (FFP = 1)			Non-fund flow pressure sample (FFP = 0)		
Dependent variable:	WITHDRAWN			WITHDRAWN		
Variables	**Estimate**		**Std Err**	**Estimate**		**Std Err**
Accounting quality						
HighAQ	-0.210		0.485	-0.040		0.206
Deal characteristics						
M&A_STK	0.815	***	0.289	1.287	***	0.171
Number of Bids	1.354	***	0.352	2.356	***	0.298
Transaction Value	0.222	***	0.079	0.107	**	0.045
Diversifying	-0.321		0.305	0.021		0.170
Number of Obs.	1,409			2,519		
Pseudo R-square	0.123			0.185		

Appendix. Variable definitions

Variable Name	Description
AQ_DD	The standard deviation of firm-level residuals from the cross-sectional estimation of Dechow and Dichev (2002) model over a five-year rolling window and multiplied by minus one. To avoid the look-ahead bias caused by the use of future period cash flows, the accruals quality for firm *i* in quarter *q* is estimated over the fiscal year period from *t*-5 to *t*-1 leading up to the end of quarter *q*-4 [from COMPUSTAT]
AQ_CF	The standard deviation of firm-level residuals from the one-year ahead cash flow forecasting model from Barth, Cram, and Nelson (2001) over a five-year rolling window, i.e., year *t*-4 to *t* leading up to the end of quarter *q*–4, and multiplied by minus one [from COMPUSTAT]
Excess Cash	The regression residuals from a quarterly model of normal cash holdings adapted from Harford (1999) for firm *i* in quarter *q*-4 [see footnote 12 for a detailed description, from COMPUSTAT]
Leverage	The sum of long-term debt and debt in current liabilities deflated by total assets for firm *i* at the end of quarter *q*-4 [(*DLTTQ* + *DLCQ*)/*ATQ* from COMPUSTAT]
Firm Age	The natural logarithm of number of years since the stock is first listed in the CRSP monthly file for firm *i* at the end of quarter *q*-4 [from CRSP]
Size	The natural logarithm of total assets for firm *i* at the end of quarter *q*-4 [log(*ATQ*) from COMPUSTAT]
ROA	The ratio of net income before extraordinary items and discontinued operations to total assets for firm *i* at the end of quarter *q*–4 [*IBQ*/*ATQ* from COMPUSTAT]
Asset Growth (Sales Growth)	The seasoned change in the natural logarithm of total assets (sales) for firm *i* from quarter *q*–8 to *q*-4 [seasonal changes in log(*ATQ*) and log(*SALEQ*), respectively, from COMPUSTAT]
Pay Dividend	The indicator variable that is equal to one if quarterly cash dividend is paid for firm *i* in quarter *q*–4, and zero otherwise [adj. *DVY* from COMPUSTAT]
Dividend	The quarterly cash dividend deflated by book value of equity for firm *i* at the end of quarter *q*–4 [(adj. *DVY*)/*CEQQ* from COMPUSTAT]
Mkt-to-Book	The ratio of market value of equity to book value of equity for firm *i* at the end of quarter *q*–4 [(*CSHOQ***PRCCQ*)/*CEQQ* from COMPUSTAT]
CAR	The market-adjusted buy-and-hold return over the period for firm *i* from the beginning of quarter *q*–4 to the end of quarter *q*–1, where the CRSP value-weighted market index is used as a benchmark [from CRSP]
Idiosyncratic Vol	The standard deviation of residuals from a regression of daily firm returns on value-weighted CRSP market returns and value-weighted Fama-French (1997) 48 industry returns for firm *i* in quarter *q*–4 [from CRSP/Ken French's database]
Systematic Vol	The square root of the variance of raw daily returns minus the variance of residuals from a regression of daily firm returns on market returns and value-weighted Fama-French (1997) 48 industry returns for firm *i* in quarter *q*–4 [from CRSP/Ken French's database]
NOA	The net operating asset, deflated by sales over the trailing four quarter window, for firm *i* at the end of quarter *q*-4 following Barton and Simko (2002) [(*CEQQ* - *CHEQ* + (*DLTTQ* + *DLCQ*)), divided by *SALEQ* over the trailing four quarter window from COMPUSTAT]
Sales Vol (Cash Flow Vol)	The standard deviation of seasoned changes in quarterly sales (cash flows), deflated by total assets, over the twenty-quarter rolling window for firm *i* relative to the end of quarter *q*-4 [quarterly sales are *SALEQ*/*ATQ*, and quarterly cash flows are (*OANCFQ* -

	XIDOCQ)/*ATQ*. If missing, (*IBQ* + *DPQ* + *RNDQ*)/*ATQ* from COMPUSTAT]
Loss%	The percentage of quarterly losses over the rolling twenty-quarter period for firm *i* relative to the end of quarter *q*-4 [based on *IBQ* from COMPUSTAT]
Operating Cycle	The natural logarithm of the sum of days accounts receivable and days inventory in the most recent fiscal year for firm *i* relative to the end of quarter *q*–4 [log((*RECT*/*SALE* + *INVT*/*COGS*)*360) from COMPUSTAT]
Number of Bids	The total number of bidders for the same target over the period beginning 180-days prior to the bid announcement and ending 180-days subsequent to the announcement date [from SDC]
Transaction Value	The natural logarithm of deal value [from SDC]
Diversifying	The indicator variable set to one if a bid relates to a target outside the bidder's industry classification, represented by the 2-digit SIC figures, and zero otherwise [from SDC]
Pct of Blockholders (%)	The percentage of shares held by institutional investors who own more than 3 percent of the firm's equity. The quarterly institutional ownership data are averaged over the trailing four quarter period for firm *i* leading up to the end of quarter *q*-4 [from Thomson Financial 13-F Institutional Holdings]
Pct of Insiders (%)	The percentage of shares held by direct and indirect insiders. The data on insider ownership are averaged over the trailing four quarter period for firm *i* leading up to the end of quarter *q*-4 [from Thomason Financial Insider Holdings]
MTR (%)	The estimated marginal tax rates for firm *i* in the most recent fiscal year relative to the end of quarter *q*-4 following the bin approach of Blouin, Core, and Guay (2010) [from WRDS]

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