

# Do Private Lenders Learn from Public Equity Markets?

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Preliminary Draft – Please do not cite or circulate without author permission

February 2023

## Abstract

We examine whether private lenders learn from the borrower's equity market investors and impound this information into loan pricing. Using the setting of corporate merger and acquisitions (M&A), we document a “V-shaped” pattern between M&A announcement returns and the loan spread charged on subsequent private debt contracts. We argue that this evidence is consistent with lenders learning about agency-related risk associated with future managerial actions (i.e., conflicts between debt and equity investors) from equity market returns. The association between absolute M&A announcement returns and loan spread is larger when managerial compensation is more sensitive to equity prices and when loans lack covenants that facilitate lender monitoring. Importantly, we do not find a significant association between loan spreads and M&A announcement returns when the loan is issued immediately before the M&A announcement, which mitigates concerns of correlated omitted variables related to unobservable firm risk characteristics. Overall, we provide novel evidence that equity markets can inform private lenders of agency risk.

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\* We thank Alex Aleszczyk, Mark Bradshaw, Ilan Guttman, Amy Hutton, Anthony Joffre, Steve Ryan, Eric So, Joe Weber and workshop participants at Boston College, the Miami Winter Warm Up Conference, New York University and the Tel Aviv Accounting Conference for helpful comments. We gratefully acknowledge financial support from the Miami Herbert Business School, Mendoza College of Business, Sloan School of Management and the Marshall School of Business. Any errors are our own.

## 1. Introduction

An extant literature documents that access to private information is a primary advantage that private lenders leverage in screening borrowers and assessing their credit risk (e.g., Diamond 1984; Fama 1985; Rajan and Winton 1995, Carrizosa and Ryan 2017).<sup>1</sup> Recent studies also document that lenders complement their private information with credit-relevant information produced by financial intermediaries, such as the media and sell-side analysts (Bushman et al., 2017; Coyne and Stice 2018; Call et al. 2022). While prior research shows that private information obtained through lending relationships enhances price discovery in the equity market (e.g., Bushman et al. 2010), we know little with respect to whether private lenders can learn credit-relevant information from equity markets.

Our focus on private lenders’ potential learning from equity markets builds on theories of how equity prices inform and influence managerial behavior (see Bond et al. 2012 for a review of this literature). While a firm’s managers are typically the most informed *individuals* about their own firm’s fundamentals, equity market prices aggregate information across many investors who may be *collectively* informative (e.g., Jegadeesh et al. 1993). In line with these arguments, prior studies show that stock returns influence managers’ corporate investment decisions through the transmission of new information about their firms’ fundamentals (e.g., Dow and Gorton 1997; Subrahmanyam and Titman 1999; Luo 2005; Chen et al. 2007; Bakke and Whited 2010). Because information conveyed in equity prices provides new insights to corporate insiders, this “fundamentals channel” may also provide valuable information to private lenders. Alternatively, given that managers are party to contracts that are contingent on market prices (e.g., compensation

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<sup>1</sup> This information includes monthly financial statements, covenant compliance reports, non-public financial projections, and requests for acquisitions and dispositions (e.g., Standard & Poor’s 2020).

contracts), they are incentivized to anchor on stock price when making real decisions (Bond et al. 2012; Bradenburger and Polak 1996). For example, managers' concern regarding the share price may encourage them to act on the preferences of shareholders at the cost of debtholders, leading to greater shareholder-debtholders conflicts of interest (Jensen and Meckling 1976; Myers 1977). This "conflict channel" suggests that stock returns can inform private lenders about the managers' incentives to take risky actions at the behest of shareholders.

We rely on corporate merger and acquisition (M&A) as a setting to examine whether lenders learn from stock prices. M&A transactions are significant corporate decisions that involve major capital outlays and have uncertain value implications for both shareholders and lenders (e.g., Moeller et al. 2005). Specifically, future operating prospects stemming from potential synergies between the acquiror and the target are argued to be more contingent on *external* information (e.g., state of the economy, competitive pressures, consumer demand, and industry prospects) than *internal* information about the acquiror's own fundamentals (e.g., Luo 2005; Bond et al. 2012).<sup>2</sup> Therefore, shareholders may collectively possess information about the prospects of the business combination that is incremental to the lender's private information about the borrower. The fundamental channel suggests that lenders can learn new credit-relevant information from M&A announcement returns. Therefore, under the fundamentals channel, we would expect to observe a negative relation between these returns and the interest spread, as higher returns should signal better borrowers' future performance and consequently lower credit risk.

Furthermore, managers' incentives to take risky actions at the behest of shareholders may be particularly acute in our setting given that managers are often held personally responsible for

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<sup>2</sup> Consistent with these arguments, Luo (2005) finds that managers' propensity to close a transaction is positively related to investor reactions to the M&A announcement, suggesting that equity market participants are able to incrementally analyze factors pertinent to announced M&A deals that inform managers' actions.

the success of M&A deals and are face a higher probability of being replaced after a poor performance of the deal they championed (Lehn and Zhao 2006). Although M&A deals are approved by the board of directors, they are usually initiated by managers, who are also responsible for overseeing their progress and associated future outcomes. Therefore, in response to higher negative M&A announcement returns, managers are likely to undertake risky actions to assuage shareholders regarding the quality of the M&A deal. At the same time, higher positive announcement returns may also incentivize managers to take risky actions in order to ensure that shareholders' high expectations of synergies and greater operating performance are realized (Jensen 2005; Bens et al. 2012). Accordingly, lenders can learn and build expectations from M&A announcement returns about managers propensity to engage in risky actions that are likely to be detrimental to the value of their claims. Thus, the conflict channel predicts that the interest spread will increase with both larger negative and positive returns.

We examine the relation between M&A announcement returns and the interest spreads utilizing a sample of 5,139 syndicated loans originated within 180 days following M&A announcements between 2004 and 2017. The initial univariate analysis documents a V-shaped relation between the three-day M&A announcement returns and the interest spread (see Figure 2), which is inconsistent with the negative relation between these variables predicted by the fundamentals channel. Furthermore, our multivariate analyses, which controls for borrower fundamentals, M&A deal characteristics, and loan terms, as well as year, industry, and lead arranger fixed effects, reveal an insignificant relation between announcement returns and the interest spread.

In contrast, we find a significant and positive association between *absolute* announcement returns and the interest spread, which indicates that loan pricing is increasing with both negative

and positive returns. Economically, a one standard deviation increase in abnormal returns is associated with a 5.2% higher interest spread. To further corroborate this evidence, we perform our analyses separately for negative and positive returns. We find a significant and positive association between absolute abnormal returns and the interest spread within both negative and positive return sub-samples. While we acknowledge that both the fundamental and conflict channels predict a positive association between abnormal returns and loan spread for negative returns, only the conflict channel predicts the positive association between abnormal returns and loan spread for positive returns. Thus, our findings do not support the proposition that lenders primarily learn about borrower fundamentals from M&A announcement returns.<sup>3</sup> Rather, they tend to support the conflict channel, and suggest that lenders learn about managers' incentives to engage in risky actions that may increase borrowers credit risk and adversely affect loan value.

To reinforce our proposition that lenders learn from stock prices, we conduct several analyses to address potential endogeneity concerns. Given lenders' extensive access to borrower's private information, one concern is that lenders are independently and privately informed about the M&A and its implications for the borrowers' credit risk prior to the deal announcement. Under this scenario, the interest spread would reflect the risks associated with managers' incentives to engage in risky actions even in the *absence* of an observable stock market response to the announcement. To mitigate this concern, we examine a sample of loans originated during a short 45-day period *prior* to the M&A announcement. During the screening process, lenders should learn about a borrower's upcoming major corporate events, as borrowers are obligated to report these events

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<sup>3</sup> For the sub-sample of M&A deals with negative M&A returns we acknowledge that the observed relation could also be indicative of the fundamental channel. To this end, we examine whether the association between the interest spread and returns—in this sub-sample—is stronger when M&A returns are more likely to be informative about firm fundamentals. We measure return informativeness using price synchronicity, a borrower's institutional ownership, and whether the target is a public company (e.g., Roll 1988; Morck et al. 2000; Durnev et al. 2004; Chen et al., 2007). We find only weak evidence in support of the fundamental channel.

when applying for a loan. Similarly, we examine whether the borrower has an outstanding loan with the lenders of the focal loan at the time of the M&A announcement because loan contracts have several clauses that compel the borrower to notify the lender regarding a potential acquisition.<sup>4</sup> Therefore, for loans issued just prior to the M&A announcement, and for borrowers with loans outstanding at the time of the M&A, the lender should be privately informed regarding the occurrence of the M&A deal and its terms prior to the deal announcement. If stock returns are not the information source for lenders but rather reflect information that is correlated with lenders' private information, we should observe a significant relation between abnormal returns and loan spread for loans issued over the 45 days prior to the M&A announcement and a when there is an existing loan outstanding with the lender. However, we do not find such evidence.

Another concern is that firms M&A announcement returns are correlated with borrower inherent risk or firm-type which would result in a mechanical relation between the magnitude of absolute announcement returns and loan spread. To mitigate this concern, we re-run our main specification with firm-fixed effects and find that our results are qualitatively similar. Finally, lenders can learn from information intermediaries rather than from stock returns. We account for additional variables that capture the arrival of potentially new information between the M&A

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<sup>4</sup> Lenders use two contractual mechanisms to compel borrowers to disclose expected future transactions during diligence. First, they can use a negative covenant restricting M&A activity. For example, see this example from [DT Midstream Inc.'s 2021 credit agreement](#), "From and after the Funding Date, the Borrower covenants and agrees with each Lender that until the occurrence of the Payment in Full, unless the Required Lenders shall otherwise consent in writing, the Borrower will not, and will not permit its Restricted Subsidiaries to: ... Merge into, amalgamate with or consolidate with any other Person, or permit any other Person to merge into, amalgamate with or consolidate with it, or sell, transfer, lease or otherwise dispose of (in one transaction or in a series of transactions) all or any part of its assets (whether now owned or hereafter acquired) including Equity Interests held by it, or issue, sell, transfer or otherwise dispose of any Equity Interests of any Restricted Subsidiary (including, for the avoidance of doubt, issuances of any preferred stock and/or Disqualified Stock of any Restricted Subsidiary, but excluding any Equity Interests of the Borrower), or purchase, lease or otherwise acquire (in one transaction or a series of transactions) all or any substantial part of the assets of any other Person." Lenders will typically require pre-approval of major transactions which are called "permitted acquisitions." If a borrower does not disclose an expected future transaction during the loan diligence phase, then they run the risk of defaulting on the loan if their lenders do not approve of the transaction. Second, lenders can add a "use of loan proceeds" representation to the loan contract where management attests that they will only use the funds for certain purposes.

announcement and the loan agreement. Specifically, we control for any changes in credit ratings, the magnitude of analyst forecast revisions, and changes in media sentiment. We find that our results persist in the presence of these additional control variables. Collectively, these tests demonstrate the robustness of the documented association between absolute M&A announcement returns and loan spreads.

In the next set of our analyses, we attempt to provide further support to our inference that the conflict channel is the primary mechanism underpinning our findings. First, we expect that as the degree of the manager's expected payoff that is tied to equity markets increases, the manager's incentives to act at the behest of shareholder preferences increases (e.g., Brandenburger and Polak 1996). We predict and find that the association between the loan spread and absolute equity returns is more pronounced when managers' wealth exhibits higher sensitivity to the mean and variance of stock prices (i.e., delta and vega, respectively). Second, we expect managers to be particularly responsive to equity prices when shareholders can exert pressure through their trading (i.e., threat of exit). Analytical and empirical models demonstrate that the threat of exit is stronger when stock liquidity is higher (e.g., Bharath et al. 2013; Edmans 2009; Edmans et al. 2013). We predict and find that the association between absolute M&A announcement returns and interest spreads is amplified when the borrower has greater stock price liquidity.

Third, we argue that contractual provisions that enable the lender to better protect their claim from asset substitution and wealth expropriation by shareholders will diminish the association between loan spreads and absolute announcement returns. Indeed, we find that this association is attenuated when debt contracts include covenants that allow lenders to restrict managers' risky actions, such as investment restrictions and cash flow sweeps (e.g., Smith and Warner 1979; Nini et al. 2009; Armstrong et al. 2010). Furthermore, we find that the association

between loan spreads and absolute returns is attenuated when debt contracts include performance covenants which allocate contingent control to the lender if the borrower's performance deteriorates ex-post, which further alleviates agency conflicts (e.g., Christensen and Nikolaev 2012).

Fourth, we provide direct evidence of the conflict channel by examining ex-post risky actions taken by the borrower. If lenders are learning from stock prices about the increased threat of agency conflicts, we would expect loan pricing to be more sensitive to announcement returns when firms are more likely to engage in risky actions subsequent to the loan issuance. To proxy for the expectation of ex-post risky actions taken by the borrower, we measure the number of realized risky events in the two years following the M&A deal, including reorganizations, changes in strategic alliances, managerial turnover, expansions, and divestments. We find that the association between loan spreads and absolute announcement returns is stronger when the number of borrowers' ex-post risky actions is greater. Collectively, the evidence from our cross-sectional tests is consistent with lenders impounding equity returns into loan price when the information in equity returns captures credible and salient agency risk.

Our last set of empirical analyses addresses generalizability concerns. While we argue that the M&A setting provides is suitable to observe potential lender learning from equity prices, it is important to verify that our findings and inferences hold in other more general settings. Therefore, we examine a broad set of significant corporate actions detailed in 8K filings and examine whether stock returns around these filings are associated with interest spreads in subsequent loan agreements. Consistent with our findings in our primary M&A sample, we find that the three-day absolute returns around these actions exhibit a positive association with loan spreads. Our results are particularly pronounced for the sub-sample of 8K filings that capture material changes in firms'



business operations and corporate governance and management, i.e., corporate actions associated with higher levels of uncertainty (Bochkay et al., 2022). These analyses provide further evidence consistent with our inference that lenders are able to learn from equity prices.

We note that our evidence should be interpreted with caution for several reasons. First, our primary analyses rely on M&A announcement returns, and recent studies suggest that M&A announcement returns are not correlated with several post-acquisition performance measures (e.g., Ben-David et al. 2020). Critically, our tests do not rely on the assumption that these returns perfectly capture ex-post performance; rather, our tests only require that lenders form *expectations* of future actions based on the observing the announcement return. We also perform an additional robustness test using 8K announcement returns to further mitigate this concern and demonstrate the generalizability of our results. Second, we acknowledge that our results may be affected by omitted correlated variables. While we attempt to mitigate this concern by performing a number of falsification tests and cross-sectional analyses, we are not able to identify a credible instrument for equity returns.

Our study makes several contributions. First, we contribute to the “feedback effects” literature by exploring these effects in the context of debt markets. While prior studies focus on managerial learning with respect to corporate investment decisions (Luo 2005; Chen et al., 2007; Edmans et al., 2017), our study provides the first evidence that “feedback effects” also influence debt capital providers. Furthermore, our results suggest that lenders learn from stock returns about managers’ incentives to engage in risky actions that may be detrimental to the value of their claims. This evidence is novel as prior studies primarily focus on stock returns conveying information about firms’ fundamental performance.

Second, we add to the literature examining how lenders assess borrower's credit risk. Recent studies suggest that despite lenders' access to borrower's private information, they also rely on information provided by non-credit market information intermediaries, such as analysts and financial press (Bushman et al., 2017; Coyne and Stice, 2018; Call et al., 2022). We document a new information channel - equity market returns - through which lenders obtain additional information relevant to their lending decisions. In this context, we also add to the literature on shareholder-debtholder conflicts of interest (e.g., Smith and Warner, 1979; Parrino and Weisbach 1999; Maxwell and Rao 2003; Becker and Stromberg, 2012). Specifically, by demonstrating that lenders learn about agency issues from stock returns, we extend prior work on the information sources on which lenders rely to evaluate the risks of wealth expropriation and asset substitution (e.g., De Franco et al. 2014).

Third, we add to the literature on information transfers between equity and private debt markets. Prior studies primarily document information spillover from the private debt market to the equity market. Private information obtained through lending relationships enhances price discovery in the equity market (e.g., Bushman et al., 2010) and enables private lenders to earn abnormal returns when trading in borrowers' equity (e.g., Ivashina and Sun 2011; Massaud 2011). Allen and Gottesman (2006) show that lagged and contemporaneous secondary loan market returns can explain equity returns and vice versa, in particular when the same financial intermediary simultaneously acts as an equity market maker and a loan syndicate participant. Despite this evidence of a relatively tight integration across private debt and equity markets, Addoum and Murfin (2020) document that equity markets fail to account for private information reflected in publicly available secondary loan prices, such that private debt prices lead equities by

as much as a month.<sup>5</sup> We contribute to this research by demonstrating that private lenders can learn new credit-relevant information from stock returns and by providing insight into the type of information they glean from this information source.

## 2. Setting and Predictions

### 2.1 Setting

Our empirical investigation of whether and how lenders learn from public equity prices requires identification of a material corporate event for which the market response would be relevant to private lenders. We adopt this approach rather than a long-run associational study because documenting the relation between debt contract terms and long-run market returns would not allow us to disentangle whether lenders *learn* from equity markets, or whether lenders' private information set is simply *reflected* in equity market prices. For this reason, empirical studies that examine the real effects of financial markets tend to focus on major corporate transactions (e.g., M&A, IPOs, SEOs) and corporate investment decisions for identification. These types of corporate actions represent circumstances in which external information production by a diverse set of equity investors can complement the internal information set of managers (Bond et al. 2012) and where the preferences of equity holders can be acute (Lehn and Zhao 2006; Luo 2005).

Accordingly, we select M&A announcements as our empirical setting. M&As represent one of the most significant types of firm investment that impacts a broad sample of listed firms—U.S. firms invested over \$38 trillion dollars in M&As from 1980 to 2018 with 91% of US listed companies involved in an M&A during this time (Renneboog and Vansteenkiste 2019). Further, M&As are material and complex events that generate significant uncertainty about the operations

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<sup>5</sup> In the context of information flows between the public debt and equity markets, Kwan (1996) and Hotchkiss and Ronen (2002) do not find evidence consistent with bond returns leading equity returns. While Tolikas (2017) finds that daily stock returns lead the returns on high yield bonds but not investment grade bonds.

about the combined entity for both firm insiders and capital providers (Ellahie et al., 2022). The future prospects of the combined entity are likely to be more contingent on external information (e.g., state of the economy, competitive pressures, consumer demand) relative to internal information about the acquiror's own fundamentals. In this context, the strong information advantage that private lenders tend to have over equity market participants may be attenuated given informed investors may be very familiar with relevant external market conditions. Prior literature demonstrates that lenders face meaningful processing costs when incorporating complex and voluminous information in debt contracts (Chakraborty et al. 2022). Further, M&As are typically initiated by CEOs who are personally held accountable for the progress and execution of the deal—e.g., ensuring the expected synergies and integration benefits are realized. Therefore, there are strong reputation incentives for CEOs to take actions to ensure M&A deals are successfully in the medium-term and meet the expectations of shareholders (e.g., Lehn and Zhao 2006).<sup>6</sup> Lenders not only price the operational risks of the business combination, but also any associated agency frictions that may arise (e.g., increased managerial risk-taking in order to achieve M&A success). Therefore, M&A announcement returns provide a powerful setting for us to examine our two proposed channels, which we outline below, through which we argue that lenders can learn from equity prices.

## *2.2 Predictions*

Private lenders are unique capital providers because they possess superior information about the prospects of borrowing firms relative to other market participants (e.g., Fama, 1985).

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<sup>6</sup> In the context of M&As, Lehn and Zhao (2006) find evidence that CEOs tend to be replaced for making value-destroying acquisitions. They find negative M&A announcement returns are associated with the subsequent removal of a CEO in the period following the acquisition. More generally, a large literature has documented a negative relation between firm performance and the probability of CEO turnover (e.g., Warner et al. 1988; Murphy and Zimmerman, 1993; Weisbach, 1988; Gibbons and Murphy, 1990).

Private lenders accumulate information through private communications with the borrower, such as direct interactions with management and access to private financial records, as well as through repeated lending relationships (e.g., Diamond 1984; Petersen and Rajan 1994; Bharath et al. 2011; Carrizosa and Ryan 2017).

However, a growing literature demonstrates that public information sources complement private lenders' private information access in their lending decisions. Bushman et al. (2017) provide evidence that the media helps to mitigate information asymmetry within a lending syndicate, which facilitates new lending relationships and alters the share of the loan held by lead arrangers. Coyne and Stice (2018) and Call et al. (2022) provide evidence that equity analysts provide useful information to private lenders in establishing the terms of covenants and collateral. Amiraslani et al. (2023) find a growing trend of private lenders waiving private information access rights to avoid SEC insider trading scrutiny, forcing their reliance on public information. We seek to extend this literature by examining whether equity markets are a source of information relevant to private lenders.

Why focus on equity markets? Equity capital markets play a significant role for public firms well after the initial capital raise by (1) aggregating and producing information about the firm's prospects, (2) aggregating the opinions and preferences of shareholders and (3) providing incentives for managers to take actions when managers' compensation is tied to equity prices. As managers contemplate risky corporate actions, prior studies demonstrate that equity markets factor in the manager's decision-making. From the perspective of private lenders, understanding the dynamic between equity markets and managerial behavior can help facilitate their risk assessment of a significant change to the prospects of a borrower. We propose two different channels through which lenders can learn from equity prices and impound this information in debt contracts. First,

we appeal to well-established arguments in the managerial learning literature that demonstrates equity prices can reflect fundamental information directly relevant about the borrower's future cashflows. Second, we propose that equity prices can reveal shareholder preferences that may induce managers to take more risky actions.

With regards to the first channel—which we label the “fundamental channel”—lenders may perceive equity market response to significant potential (or intended) corporate actions as reflecting expectations about realizable future cash flows (e.g., fundamental information). While insiders, such as lenders and managers, may be better informed than any one trader, insiders do not have *perfect* information. Secondary markets reflect information from many traders that can together provide information incremental to the information set of the insider (e.g., Grossman, 1976). Thus, managers can use the information contained in equity prices to inform their decision making (Boot and Thakor, 1997) creating a “feedback” effect. Indeed, Boot and Thakor (1997) analytically show that the ability of managers to learn from secondary trading influences the firm's first-order decision to enter public markets. Empirically, Chen et al. (2007) shows that manager's investment sensitivity to stock price is increasing in the informativeness of equity prices. There is also evidence that managers explicitly seek equity market feedback. For example, Jayaraman and Wu (2020) demonstrate that managers use voluntary disclosure to help decide on investment expenditures.

In our context, this channel suggests that the market is conveying whether the M&A is “good” or “bad” with respect to future combined-firm cash flows, that is lenders are able to directly learn about borrower fundamentals from the signal in equity market returns. Specifically, the future prospects of the combined entity are likely to be more contingent on external information (e.g., state of the economy, competitive pressures, consumer demand) relative to internal information

about the acquiror's own fundamentals. The strong information advantage that private lenders tend to have over equity market participants may be attenuated given informed investors may be very familiar with relevant external market conditions. To the extent lenders perceive that equity market reactions reflect the fundamental information channel, then we should observe a negative relation between loan pricing and the equity market response to the M&A announcement. As equity markets convey an action will have positive (negative) impacts on future cash flow with positive (negative) returns, then loan pricing will decrease (increase).

We also propose a second channel—the “conflict channel”—which builds on prior literature that argues equity market incentives can motivate risky actions by managers. Managers' risk-taking behavior is affected by equity markets because stock prices are prominently featured in their compensation contracts (Core and Larcker 2002; Coles et al. 2006). In this sense, equity markets can influence the incentives of an insider to take actions that are appealing to risk-seeking shareholders who hold an option value in the firm, but can be detrimental to lenders that are risk-averse and have a fixed claim that is asymmetrically sensitive to downside risk. Theory suggests that as the pressure on, and incentives for, managers to act on the preferences of shareholders increases, shareholder-debtholder conflicts become more acute (Jensen and Meckling 1976; Myers 1977).<sup>7</sup>

As an analytical example of how equity markets can prompt this conflict, Brandenburger and Polak (1996) model conditions under which a manager is better informed about a particular value-maximizing action than the market and market prices reflect the “opinion” of the market as to the action a manager should take. In their model, they find that when the manager's objective is

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<sup>7</sup> In our context, we argue that market prices represent the “pressure” on managers to act, and their compensation contracts capture the “incentives” that influence the extent to which they cater to the preferences of shareholders relative to lenders.

to maximize share price, the optimal strategy of the manager is to ignore their superior private information (and thus, the value-maximizing action) and act on the preferences of the market. Manager's acting on the whims of shareholders, rather than acting based on the best available information, represents a significant potential risk to lenders because (a) it reduces expected future cash flows and (b) exacerbates conflict between the preferences of shareholders versus debtholders.

The M&A setting provides salient examples of how equity markets can influence the risk-taking incentives for managers because managers future prospects are directly tied to the outcome of M&A deals (e.g., Lehn and Zhao 2006). We outline several ways lenders can perceive credit risk arising from M&A market returns. For example, lenders might perceive that managers will increase risk-taking in response to negative M&A announcement returns in order to assuage investors that the deal is good. As the negative market reaction increases, the required risk in managerial actions to recover or exceed the drop in market value increases. In parallel, lenders can perceive that more positive returns encourage risk on two dimensions. First, increases in market value attributable to M&A announcements put pressure on managers to ensure investors' high expectations of synergies and improved operating performance are realized. Following Bradenburger and Polak (1996), this pressure can be acute if the market has a higher view of the future prospects of the combined entity than that of management. Second, the high positive returns themselves could be perceived by managers as a signal that shareholders prefer riskier bets going forward. In either case, larger positive or negative market responses to M&A announcements can motivate managers to take actions that result in increased risk to the lender.

In sum, the conflict channel suggests that lenders can use equity market responses to expected corporate actions as an indicator of potential agency risks arising from differential risk



preferences of shareholders and lenders. Thus, the conflict channel predicts that the interest spread will increase with both negative and positive returns, as both would increase the probability that managers would act on the preferences of shareholders rather than that of debtholders.

### **3. Data and Descriptive Statistics**

#### *3.1 Sample Selection and Data*

We begin with the universe of 181,128 M&A deals (with deal value of at least \$1 million) completed between 2004 through 2017 from Thomson Reuters SDC database. We also identify a sample of 42,473 private loan facilities (35,066 packages) from Dealscan issued over the same sample period. We then match private loan facilities issued between 45 days prior- and 180 post an M&A announcement, which yields a total of 16,082 facility-M&A announcement observations. We then match these private loans to Compustat using the linking table provided by Michael Roberts in WRDS (see Chava and Roberts, 2008) and further require CRSP daily return data to be available to measure M&A announcement returns. These procedures result in the following sample attrition: we omit 2,754 observations with private acquirors and hence no equity market return data; we drop 2,301 observations related to non-US loan syndicates (i.e., we keep only U.S. private lenders to ensure no cross-country information frictions); we lose a further 3,885 observations that lack relevant data needed to compute firm, loan, and M&A deal control variables, and we also drop 969 observations with deal value less than \$10M USD. This yields a final sample of 6,173 M&A-loan facility observations. From this, our main empirical analyses focus on the 5,139 observations with loans originated in the 180-day window *following* the M&A announcement, comprising 3,031 unique M&A deals across 1,386 unique acquirors.<sup>8</sup> We provide further details

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<sup>8</sup> The remaining 1,034 observations are those with loans originated in the 45-day window *prior* to the M&A announcement are used in supplementary analysis.

of the sample construction and timeline (Figure 1), sample breakdown and frequency of observations by year (Table 1), and provide all variable definitions in Appendix A.

### 3.2 Descriptive Statistics

Table 2 reports descriptive statistics for our main sample. We document significant market responses to M&A announcements. Specifically, we find the absolute value of risk-adjusted three-day stock returns surrounding M&A deal announcements are approximately 4.6% on average (*Abs. Acquiror Ancmt. Returns*). Additionally, the acquisitions in our sample are material, with average deal size representing approximately 32% of the acquiror's total assets (*Deal Size to Acquiror Assets*). Just over half of the acquisitions in our sample are within the same industry (*Same Industry Deal Indicator*), and approximately 47% include an acquired target that is a publicly traded company (*Public Target Firm Indicator*). In addition—for M&A deals where we are able to ascertain the type of deal financing—we find that the majority are 100% financed with cash, as opposed to stock-financed M&As. Further, for the average deal in our sample, we observe 87% of the deal value is cash-financed. This is not surprising given our sample construction keeps only M&A deals that are accompanied by new loans within a 180-day window. Finally, the average number of days from M&A announcement to deal close is 75, while half the deals in our sample close within 45 days, and 75 percent close within 98 days.

Acquirors in our sample are large, with average total assets of approximately \$2.4 billion [ $\exp(\text{Size})$ ]. Additionally, debt represents a significant portion of the firm's capital structure, as total debt represents 26% of the borrower's total assets (*Leverage*). Acquirors also tend to have significant institutional ownership, in excess of 70%. Finally, consistent with prior literature in private debt contracting, the average debt contract in our sample has a face value of approximately \$293 million [ $\exp(\text{Loan Amount})$ ] and a maturity of approximately 53 months [ $(\text{Maturity})$ ].

Notably, there is little variation in maturity of these loans, with 90 percent of loans ranging from 45-month duration to 60 months.

## 4. Empirical Results

### 4.1 Main Results: Univariate

Our primary tests examine whether (and how) lenders perceive equity market returns in their borrower risk assessment by examining the relation between M&A announcement returns and the interest spreads in private debt contracts originated shortly after the announcement. By conditioning the sample on loans that are originated in the 180-day window after the M&A announcement, we can expect that (a) lenders are able to observe the market returns associated with the M&A announcement prior to the loan price auction and (b) a relatively short window has elapsed since the M&A announcement such that the impact of the M&A (and resolution of any uncertainty) to the acquiring firm has not been realized.

Figure 2 plots the median loan spread (*Interest Spread*) across deciles of signed M&A announcement returns (*Acquiror Ancmt. Returns*). We find a V-shaped relation. Specifically, we observe a median loan spread of 225 basis points in the bottom decile of M&A announcement returns (avg. return of -9.07%), which drops to 150-156 basis points in deciles five and six (avg. ret of 0.4% and 0.3%, respectively) and then increases to 225 basis points for the top decile of M&A announcement returns (avg. return of 15%). This suggests a non-linear association between announcement returns and lenders' perception of borrower risk. Lenders charge higher spreads on loans for borrowers based on the magnitude, rather than the sign, of the equity investors' reactions to recent M&A activity. This univariate evidence is most consistent with the conflict channel, where lenders perceive returns as an indication of management's incentives to act on the behest of shareholders, and only partially consistent with the fundamental information channel (i.e., on the

negative side where lenders react similarly to the sign of the news as an indication of future cash flows).

#### 4.2 Main Results: Multivariate Model and Results

Next, we examine the relation between announcement returns and lender pricing in the following multivariate model:

$$\begin{aligned} \text{Interest Spread} = & \beta_1 \text{Ancmt. Returns} + \beta_2 \text{Deal Size to Acquiror Assets} + \beta_3 \text{Same Industry} \\ & \text{Deal Indicator} + \beta_4 \text{Public Target Firm Indicator} + \beta_5 \text{Book Leverage} + \\ & \beta_6 \text{Size} + \beta_7 \text{Market to Book} + \beta_8 \text{Cash Flow from Ops.} + \beta_9 \text{Cash Flow} \\ & \text{Volatility} + \beta_{10} \text{Institutional Ownership} + \beta_{11} \text{Intangibility} + \beta_{12} \text{Pre-loan} \\ & \text{Returns} + \beta_{13} \text{Revolver Indicator} + \beta_{14} \text{Maturity} + \beta_{15} \text{Loan Amount} + \beta_{16} \\ & \text{Syndicate Size} + \beta_{17} \text{Perf. Pricing Indicator} + \beta_{18} \text{Institutional Tranche} \\ & \text{Indicator} + \beta_{19} \text{Number of Financial Covenants} + \alpha_k + \alpha_j + \alpha_t + \varepsilon \end{aligned}$$

(Eq 1)

The dependent variable is *Interest Spread* and the primary variable of interest is the announcement returns for the acquiror. The fundamental channel predicts a negative association between announcement returns and spread, so we first measure signed returns (*Acquiror Ancmt. Returns*). The conflict channel predicts that the relation between interest spread and announcement returns is V-shaped, and therefore we replace the independent variable of interest in model (1) with the absolute acquiror announcement return (*Abs. Acquiror Ancmt. Returns*).

We control for several deal-specific properties, borrower fundamentals and the structure of the loan. We include control variables to capture characteristics of the acquisition, including the relative size of the deal to the acquiror (*Deal Size to Acquiror Assets*), whether the acquiror and target are in the same industry (*Same Industry Deal Indicator*) and whether the target is a publicly listed company (*Public Target Firm Indicator*). We also control for acquiror fundamentals,

including the acquirors leverage (*Book Leverage*), total assets (*Size*), market-to-book ratio (*Market to Book*), operating cash flow (*Cash Flow from Ops.*), operating cash flow volatility (*Cash Flow Volatility*), the ratio of institutional ownership of the borrower's public equity (*Institutional Ownership*), and the relative amount of intangible assets (*Intangibility*). Finally, we include controls for loan structure, including whether the loan is a revolving facility (*Revolver Indicator*), the loan maturity (*Maturity*), the amount of the loan (*Loan Amount*), the size of the syndicate (*Syndicate Size*), whether the loan includes a performance pricing provision (*Perf. Pricing Indicator*), whether the loan is an institutional tranche (*Institutional Tranche Indicator*), the number of financial covenants in the loan (*Number of Financial Covenants*), and the borrower returns in the 10-day window (where appropriate) just prior to the loan initiation (*Pre-loan return*). In addition we include lender ( $\alpha_k$ ), industry ( $\alpha_j$ ) and year ( $\alpha_t$ ) fixed effects.

Table 3, Panel A presents the results from the multivariate estimation of Equation (1) for the main sample of loans originated within 180 days following the M&A deal announcement. In column (1) we fail to find any significant relation between signed M&A announcement returns (*Acquiror Ancmt. Returns*) and loan spreads, inconsistent with the fundamental channel. However, in column (2) we find a positive and significant relation between absolute M&A returns (*Abs. Acquiror Ancmt. Returns*) and loan spreads, consistent with the V-shape documented in Figure 2. Economically, the estimated coefficient of 0.975 implies that a one standard deviation increase in market reaction is associated with a 5.2% increase in the loan spread.<sup>9</sup> While we acknowledge that both the fundamental and conflict channels predict a positive association between abnormal returns and loan spread for negative returns, only the conflict channel predicts the positive association

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<sup>9</sup> For reference, the within-fixed effect standard deviation is 80% of the pooled standard deviation for *Interest Spread* (.585 / .733) and 92% of the pooled standard deviation for *Abs. Acquiror Ancmt. Returns* (.048 / .052) following the estimation procedure in deHaan (2021).

between abnormal returns and loan spread for positive returns. Thus, our findings do not support the proposition that lenders primarily learn about borrower fundamentals from M&A announcement returns.<sup>10</sup> Rather, they suggest that lenders learn about managers' incentives to engage in risky actions that may increase borrowers credit risk and adversely affect loan value.<sup>11</sup>

We provide more direct evidence of this in Table 3, Panel B by analyzing the association between absolute announcement returns and loan spreads separately for the sub-samples of deals with positive and negative M&A announcement returns. The results demonstrate a significant association between loan spreads and absolute M&A announcement returns, for both positive and negative return sub-samples, further providing evidence consistent with the conflict channel of lender learning from stock prices.

#### *4.3 Identification and Robustness*

In this section we discuss several additional analyses performed to address potential correlated omitted variables and alternative interpretations.

##### *4.3.1 Lenders' private information*

One significant concern is that lenders are independently and privately informed about the M&A prior to the deal announcement, and thus the interest spread reflects the risks associated with the conflict channel even in the *absence* of an observable market response. To this end, observing a correlation between market prices and the terms of private debt contracts may not imply that

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<sup>10</sup> See section 4.4.2 for additional tests of the fundamental channel.

<sup>11</sup> In untabulated sensitivity tests we estimate our main results for loans originating within the tighter window of 45 days following the M&A announcement to further reduce the likelihood of correlated and confounding events occurring between the M&A announcement and loan origination and find similar results. In addition, given our sample comprises of loans that are initiated prior to the M&A deal closing (54%) and after the M&A deal closing (46%) we reperform our analysis within both sub-samples. We find that our results are qualitatively similar across both sub-samples, suggesting that results are not sensitive to when the deal was completed.

observed equity market returns are the source of the information, but simply reflect information that is correlated with lender's private information. To mitigate this concern, we examine cross-sectional variation based on whether the borrower and lender have an existing loan outstanding at the time of the M&A announcement and examine a sample of loans originated in the 45-days *prior* to the M&A announcement. Loan contracts commonly include "permitted acquisition" clauses which compel the borrower to notify the lender regarding a potential acquisition. If the borrower has a loan outstanding with the lender at the time of the M&A announcement, we expect that the lender conducted extensive diligence directly with the acquiror prior to the M&A announcement. Moreover, for loans issues just prior to the M&A announcement (i.e., with 45 days) we expect that the lender is already privately informed regarding the terms of the imminent M&A deal prior to its announcement. If lender's private information is merely reflected in equity prices, we expect our results to be concentrated among firms with an existing loan outstanding with the lender and to persist in loans issues just prior to the M&A.

In columns (1) and (2) of Panel A, Table 4, we re-estimate model (1) for a sample of loans that originated immediately *prior* to the M&A announcement and fail to find any significant relation between signed (*Acquiror Ancmt. Returns*) or absolute returns (*Abs. Acquiror Ancmt. Returns*) and interest spreads on loans originating in the 45-day window just prior to the M&A. In columns (3) and (4) we include *Loan outstanding at M&A*, which is an indicator equal to one if the lead arranger had a loan outstanding to the acquiror at the time of the M&A announcement date and interact this with our M&A announcement return measures. We find that the coefficient on the interaction term is not significant, which suggests that our results are not driven by lenders having private information about M&A deal fundamentals.

#### 4.3.2 Unobservable Firm Risk

Another threat to our inferences is that firms with larger absolute M&A announcement returns are just inherently more risky borrowers, and our results are attributable to this unobservable risk or measurement error in the estimation of risk. We address this concern with two different analyses. First, if the equity market response to the M&A announcement is merely correlated with borrower's unobservable and difficult-to-measure creditworthiness (e.g., a "firm-type") we would expect to observe a similarly significant positive relation between interest spreads and M&A announcement returns for loans originated just *prior* to the M&A. As observed in Table 4, Panel A we fail to find any significant relation between signed M&A returns and interest spreads on loans originating 45 days prior to the M&A.<sup>12</sup>

Second, in Table 4, Panel B we re-perform the analysis reported in Table 3, Panel A with the inclusion of borrower fixed effects. The observed reduction in number of observations is due to the omission of 363 singleton observations due to the fixed effect structure. We find results are qualitatively similar, however we acknowledge that the magnitude of our findings is attenuated by about 35%, with the reported coefficient 0.631 (as compared to 0.975 reported in Table 3 Panel A). Based on these analyses, we conclude that it is unlikely that our inferences are attributable to an unobservable firm risk characteristic.

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<sup>12</sup> Given the validity of this robustness relies on observations in the sensitivity sample (i.e., those loans issued pre-M&A announcement) having similar loan characteristics, and a similar correlation structure between covariates and spreads, with our main sample (i.e., loans issued post-M&A announcement), we document the following. First, we find that pre-M&A announcement loans are more likely to be revolvers and slightly less likely to include performance price covenants than post-M&A announcement loans, however loans across these samples have similar maturities, syndicate size, and number of financial covenants. Second, we observe similar signs and magnitudes on covariates between our main results in Table 3 (Panel A) and those reported in our robustness (Table 4, Panel A) which provides further comfort that borrower and loan characteristics just prior to the M&A announcement are not structurally different than our main sample.



#### 4.3.3 Alternative information channels

Finally, we address the potential concern that lenders are reflecting risk assessments gleaned from information sources independent of the market returns (e.g., other intermediaries). To mitigate this concern, we augment our main specification with additional variables that capture the arrival of potentially new information between the M&A announcement and the loan agreement. Several intermediaries produce information that is credit relevant, including credit rating agencies, sell-side analysts, and the media (e.g., deHaan 2017; Call et al. 2021; Bushman et al. 2017). Specifically, in Table 4, Panel C, we control for any changes in the S&P credit rating of the borrower (*Changes in Credit Rating*), the magnitude of analyst forecast revisions (*Analyst Forecast Revisions*), and changes in media sentiment based on Ravenpack (*Change in Media Sentiment*). We find our results are qualitatively similar in the presence of these additional control variables, for example the coefficient on *Abs. Acquiror Ancmt. Returns* is 0.971 and significant at the 1% level (similar to the reported result of 0.975 in Table 3 Panel A).

Collectively, these results provide support for the notion that lenders are incorporating information specific to the equity market returns, and not capturing signals correlated with M&A announcement returns.

#### 4.3.4 Additional Analysis

We conduct two sets of untabulated additional analysis. First, we consider alternative windows to conduct our main tests and perform our analysis across tighter and longer windows. We expect and find that our results to be stronger for tighter windows, i.e., for loans originated within 45 and 90 days of the M&A announcement, and are slightly attenuated as the window expands to 360 days out, as the credit risk associated with the M&A announcement becomes realized. Second, we address concerns related to how well announcement returns capture market

sentiment towards the transaction. While we find little evidence of deal information leakage prior to the announcement, we also widen the event study window to incorporate the ten days prior to and ten days following the M&A announcement.<sup>13</sup> We find that our results remain qualitatively similar when increasing the window of the M&A return.

#### *4.4 Channels of lender learning*

This section provides further evidence on the two distinct channels through which lenders may learn from equity prices. We provide empirical tests of our two main channels: (i) conflict channel, and (ii) fundamental information channel.

##### *4.4.1 Conflict channel*

Given the main results presented in Table 3 are more consistent with the conflict channel, in this section we provide additional analysis by examining cross-sectional variation in the extent of agency risk. First, we examine whether managerial compensation sensitivity to stock price and the threat of stockholder exit influence the association between the absolute magnitude of M&A announcement returns and loan pricing. We argue that managerial teams that have relatively high levels of their compensation tied to stock price are more likely to take risks that benefit shareholders (e.g., Coles et al., 2006) and, correspondingly, to be influenced by large stock price movements. Moreover, when a firm's stock is more liquid, stockholders can more effectively threaten exit as a method to motivate managerial behavior in favor of that favored by shareholders (e.g., Edmans et al., 2013).

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<sup>13</sup> With respect to information leakage prior to the M&A, we examine the Capital IQ Key Developments dataset and observe whether any "M&A rumors" appeared in the financial press in the 3 months preceding the M&A deal. We find that over 85% of our M&A transactions had no mention of any M&A rumors preceding the announcement, suggesting little evidence of deal information leakage prior to official M&A announcements.

We calculate the average vega (the dollar change in wealth for a one standard deviation change in stock returns) and delta (the dollar change in wealth for a one standard deviation change in stock price) for the five top compensated managers for each acquiror with available data in Execucomp following Coles et al. (2006). To facilitate interpretation, we create an indicator variable equal to one if the average vega (delta) for the top five compensated managers is above the sample median, and zero otherwise (*High Avg. Vega* and *High Avg. Delta*, respectively). For the liquidity cross-sectional test, we create an indicator variable equal to one if the acquiror's liquidity—the average daily stock price impact, computed following Amihud (2002)—is above the sample median, and zero otherwise (*High Liquidity*). We interact the compensation and liquidity indicator variables with absolute M&A announcement returns and report the results in Table 5. In columns (1) and (2), we find that managerial compensation sensitivity to stock price increases the association between M&A announcement returns and loan spread. In column (3), we also find that high stock liquidity increases the relation between returns and interest spread. This collective evidence is consistent with lenders perceiving greater risk of managerial agency costs triggered by shareholder's response to the M&A announcement when managers' actions are more tightly tied to the preferences of shareholders. This is further evidence that lenders are able to learn about potential agency costs from equity returns.

Second, we examine whether contractual protections mitigate the risks associated with managerial actions following the M&A announcement. Contractual covenants enable lender monitoring of managerial risk taking and reduce agency conflicts between shareholders and lenders (Smith and Warner 1979). We examine the presence of four different covenant types that can help lenders reduce specific agency risks: a sweep covenant, a capex restriction covenant, a dividend restriction covenant, and performance covenants. Lenders can limit the borrowers' ability

to engage in asset substitution by using excess cash flow sweep and capex restriction covenants. Sweep covenants force borrowers to use excess cash flow (above some value) to pay down debt, limiting the borrowers' ability to use that excess cash flow for risky investment. Dividend restrictions impose constraints on the borrower's ability to use cash for distribution to shareholders, and the rate of dividends can reduce the liquidation value of the firm (Smith and Warner 1979). Performance covenants create contractual performance expectations such that if performance falls below a specified threshold control rights are transferred from the borrower to lenders who can step in to protect their claim (Christensen and Nikolaev 2012). For each type of covenant, we create an indicator variable equal to one if the loan includes the respective covenant, and zero otherwise. Table 6 presents the results. We find that, with the exception of a dividend restriction covenant, the presence of covenants mitigates the relation between absolute M&A announcement returns and loan pricing. Thus, when lenders have alternative contractual protections that mitigate agency costs associated with shareholder influence, loan price sensitivity to risks arising from equity market returns is reduced.<sup>14</sup>

Third, we provide direct evidence of the conflict channel by considering ex-post risky actions by the borrower. If lenders are responding to the increased threat of agency conflicts, then we would expect loan pricing to be most sensitive for firms that engage in riskier actions (e.g., high variance in expected payoffs) subsequent to the closing of the M&A. We measure risky actions as the number of risky events undertaken in the two years following the M&A deal using Capital IQ Key Developments data. This data tracks firm-specific material news and events from

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<sup>14</sup> It is also possible that lenders could use covenants, instead of pricing, in response to the risk of agency conflicts. However, in untabulated analyses, we do not find any significant association between absolute M&A announcement returns and covenant use. The substitution effect we observe regarding pricing and covenant use is consistent with prior work that demonstrates lenders will lower loan prices when they believe they can more adequately address risks with covenants (e.g., Costello and Wittenberg-Moerman 2011).

regulatory filings, news wires, press releases, conference call transcripts, corporate websites. Specifically, our measure includes the following types of events to capture risky actions: auditor going concern doubts, business expansions and reorganizations, strategic alternatives and new strategic alliances or agreements, discontinued operations and downsizings, CEO, CFO and board member turnover, new acquisition and divestment discussions, spin-offs. We create an indicator (*High Risky Evts*) equal to one if the number of risky events is above the sample median, and zero otherwise. We interact this variable with *Abs. Acquiror Ancmt. Returns* as our variable of interest.

In Table 7, we find that the sensitivity of loan pricing to absolute announcement returns is significantly higher when there are relatively more ex-post risky actions taken by the borrower. These findings corroborate that lenders are responding to concerns about ex-post agency risk attributable to the M&A. This evidence demonstrates that lenders can reasonably infer the likelihood of ex post realization of risky credit-relevant actions post-merger.

#### *4.4.2 Fundamental Information Channel*

While our main results are broadly consistent with lenders learning about potential agency risk via the conflict channel, the documented V-shape and positive relation between absolute M&A announcement returns and subsequent loan spreads does not preclude the existence of fundamental learning for deals with negative returns (i.e., the left side of the V-shape). For example, one could argue that the negative returns being positively associated with loan spread could incorporate some fundamental learning, in that lenders are pricing risk associated with a “bad” M&A transaction as identified by shareholders. For this reason, we acknowledge that underlying mechanism for the association between loan spreads and negative M&A announcement returns is difficult to disentangle.

However, to address this issue we examine whether the association between the interest spread and returns is stronger when M&A returns are more likely to be informative about firm fundamentals for the sub-sample of negative announcement returns. Consistent with prior literature on managerial learning, we identify three conditions in which shareholder returns are plausibly more informative about the impact of M&A on future cash flows and thus can facilitate fundamental learning (e.g., Roll 1988; Morck et al. 2000; Durnev et al. 2004; Chen et al. 2007). First, we measure price synchronicity for each acquiror and create an indicator variable equal to one if the acquiror's price synchronicity is below median, and zero otherwise (*High Private Info*). A firm with lower price synchronicity is interpreted as having relatively more idiosyncratic private information in their stock price. Second, we measure the extent of institutional ownership within the acquiror's investor base at the time of the M&A announcement given institutional investors possess a greater ability to assess potential synergies and M&A success relative to retail investors. We include an indicator variable (*High IO*) equal to one if the institutional ownership in a given stock (measured at the end of the previous calendar quarter) is above the sample median, and zero otherwise. Third, we use an indicator variable equal to one if the target firm is a public company, and zero otherwise (*Public Target Firm Indicator*). We argue that targets with public equity, intuitively, are going to be better understood by public equity stockholders. Moreover, the external information environment of public firms means that institutional investors will be more easily able to collect and process information and integrate with their own private information set.

We interact each of the price informativeness proxies with signed acquiror announcement returns and condition the sample on loans issued to acquirors with negative announcement returns and report the results in Table 8. While columns (1) and (2) find no evidence of fundamental learning, we observe in column (3) that the association between M&A announcement returns and

loan spread is statistically significant at the 10% level when the target is a public firm. Overall, these results provide only weak evidence that lenders are able to learn about fundamentals from equity prices under certain conditions.

#### *4.5 Alternative setting: 8K filings*

In the final set of analyses, we address concerns of generalizability by extending our results to an alternative setting. While we argue that the M&A setting provides an ideal landscape to observe potential lender learning from equity prices (as discussed in section 2), we provide similar evidence using the broader set of risky and uncertain corporate actions disclosed in 8K filings. Given our predictions extend to equity market responses to corporate actions in general, 8K filings provide a similar setting where lenders are able to observe equity market prices to disclosures about borrower corporate actions. We collect all 8K filings filed between 2004 and 2017 and match these to loan facilities initiated in the subsequent 180 days following the 8K filing, similar to our sampling procedure for our main M&A sample. Our final 8K sample consists of 97,639 8K filing-loan facility observations.

We adapt our main empirical analysis to a broad sample of 8K filings and estimate Equation (1) using three-day market reactions to 8K filings and subsequent loan spreads on facilities issued within 180 days of the 8K. We control for the firm and loan characteristics and also include borrower fixed effects. We present these results in Table 9. Consistent with our findings from the M&A sample, in panel A we find that 3-day absolute filing returns exhibit a positive association with loan spreads, while we find no significant association with signed filing returns. In Panel B, we limit our sample to 8K filings that contain significant material changes in firms' business operations (Item 1) and corporate governance and management (Item 5), i.e., corporate actions associated with higher levels of uncertainty. Consistent with our understanding,

we find that our results are slightly more pronounced for this sub-sample of 8K filings that pertain to more uncertain corporate events. Taken together, these findings demonstrate further evidence consistent with our main inference that lenders are able to learn from equity prices, primarily via the conflict channel.

## **5. Conclusion**

A growing literature documents the relevance of public sources of information as a complement to private lenders' private information in their screening and monitoring decisions. In this study, we seek to contribute to this literature by understanding how private lenders use equity returns in their risk assessment of borrowers. The tension in our study arises from the ambiguity of stock returns to the agency risks borne by firm stakeholders. On one hand, stock returns can motivate value-maximizing actions by managers through novel shareholder information production about the firm's future cash flows. On the other hand, stock returns can reflect shareholder preferences and motivate risk-taking by managers that can run counter to preferences of other stakeholders (e.g., lenders).

We examine loan pricing in private debt contracts to firms that recently completed merger and acquisition transactions to understand how lenders perceive this ambiguity in equity returns. We find that a V-shaped relation between loan spreads and the absolute magnitude of M&A announcement returns. This suggests that even positive returns increase lenders perception of risk. We find that lenders appear to perceive higher equity returns as an indicator of higher agency costs, whereby managers are more likely to take risky actions based on the preferences of shareholder relative to the conservative preferences of lenders. Overall, our study provides novel evidence of the dynamics between shareholders and debtholders.



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## Appendix A: Variable Definitions

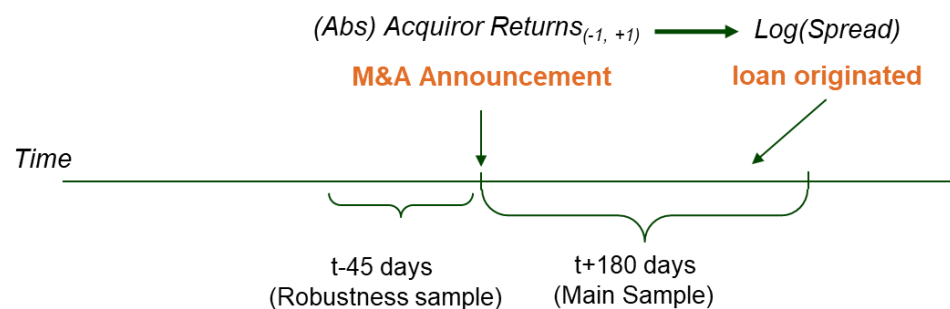
Variable	Definition	Source
<i>Acquiror Ancmt. Returns</i>	Acquiror's announcement returns measured over the 3-days around the M&A announcement from day -1 to day +1. Daily abnormal returns are computed using the Fama-French three factor model, estimated over 250 trading days [-272, -22] ending 20 days prior to the M&A announcement. We ensure at least 90 non-missing daily return observations.	CRSP
<i>Abs. Acquiror Ancmt. Returns</i>	Absolute value of <i>Acquiror Ancmt. Returns</i> .	CRSP
<i>Analyst Revision</i>	The average percentage change of all EPS forecast revisions made between the M&A announcement and the subsequent loan agreement.	IBES
<i>Book Leverage</i>	Total debt (DLTT+DLC) scaled by total assets (AT) of the acquiring firm.	CSTAT
<i>Capex Restriction</i>	An indicator variable equal to one if the loan includes a capex restriction covenant, and zero otherwise.	Dealscan
<i>Cash Flow from Ops.</i>	Cash flow from operating activities (OANCF) scaled by total assets (AT) of the acquiring firm.	CSTAT
<i>Changes in Credit Rating,</i>	The change in S&P credit rating, measured from the M&A deal announcement to just prior to the loan agreement	Capital IQ
<i>Deal Size to Acquiror Assets</i>	The total market value of the target firm scaled (VAL) by the total assets of the acquiring firm (AT).	SDC and CSTAT
<i>Dividend Restriction</i>	An indicator variable equal to one if the loan includes a dividend restriction covenant, and zero otherwise.	
<i>Financial Covenant Indicator</i>	An indicator variable equal to one if the loan includes a financial covenant, and zero otherwise.	Dealscan
<i>High Avg. Delta</i>	An indicator variable equal to one if the average compensation delta of the five highest paid executives at the acquiring firm is above the sample median, and zero otherwise.	Execucomp
<i>High Avg. Vega</i>	An indicator variable equal to one if the average compensation vega of the five highest paid executives at the acquiring firm is above the sample median, and zero otherwise.	Execucomp
<i>Intangibility</i>	Total intangible assets (INTAN) divided by total assets (AT) of the acquiring firm.	CSTAT
<i>Institutional Ownership</i>	The fraction of outstanding shares owned by institutional owners. We collect ownership data from the Thomson 13F (S34) institutional ownership summary file.	Thomson
<i>Institutional Tranche Indicator</i>	An indicator variable equal to one if the loan is a Term Loan B or below, and zero otherwise.	Dealscan
<i>Interest Spread</i>	The log of the all-in-drawn interest rate spread of the loan contract.	Dealscan
<i>Loan outstanding at M&amp;A</i>	An indicator equal to one if the lead arranger had a loan outstanding to the acquiror at the time of the M&A announcement date	Dealscan
<i>Loan Amount</i>	The log of the face value of the loan contract.	Dealscan
<i>Maturity</i>	The log of the maturity (in months) of the loan contract.	Dealscan
<i>Market to Book</i>	The market value of equity (PRCC_F*CSHO) scaled by the book value of equity (CEQ) of the acquiring firm.	CSTAT

<i>Number of Financial Covenants</i>	Count of the financial covenants included in the loan agreement.	Dealscan
<i>Perf. Pricing Indicator</i>	An indicator variable if the loan includes a performance pricing covenant, and zero otherwise.	Dealscan
<i>Price Synchronicity</i>	<p>Following prior literature (e.g., Crawford et al., 2012) we measure price synchronicity as the log transformation of <math>\left(\frac{R^2}{1-R^2}\right)</math> where <math>R^2</math> is the coefficient of determination from the following firm-level equation:</p> $RET_{it} = \alpha + \beta_1 MKTRET_{it} + \beta_2 INDRET_{it} + \varepsilon_{it}$ <p>where <math>RET_{it}</math> is the daily return for firm <math>i</math> on date <math>t</math>, <math>MKTRET_{it}</math> is the value-weighted return of all firms in the same three-digit SIC excluding firm <math>i</math>. We estimate these regressions in the calendar year prior to M&amp;A announcement.</p>	CRSP
<i>Public Target Firm Indicator</i>	An indicator variable equal to one if the target firm is a public company, and zero otherwise.	SDC
<i>Revolver Indicator</i>	An indicator variable equal to one if the loan is a revolving credit line, and zero otherwise.	Dealscan
<i>Same Industry Deal Indicator</i>	An indicator variable equal to one if the target firm has the same 2-digit SIC as the acquiring firm, and zero otherwise.	SDC
<i>Size</i>	The log of the total assets (AT) of the acquiring firm.	CSTAT
<i>Sweep Covenant Indicator</i>	An indicator variable equal to one if the loan includes a sweep covenant, and zero otherwise.	Dealscan
<i>Syndicate Size</i>	The log of the total number of syndicate participants for the loan.	Dealscan

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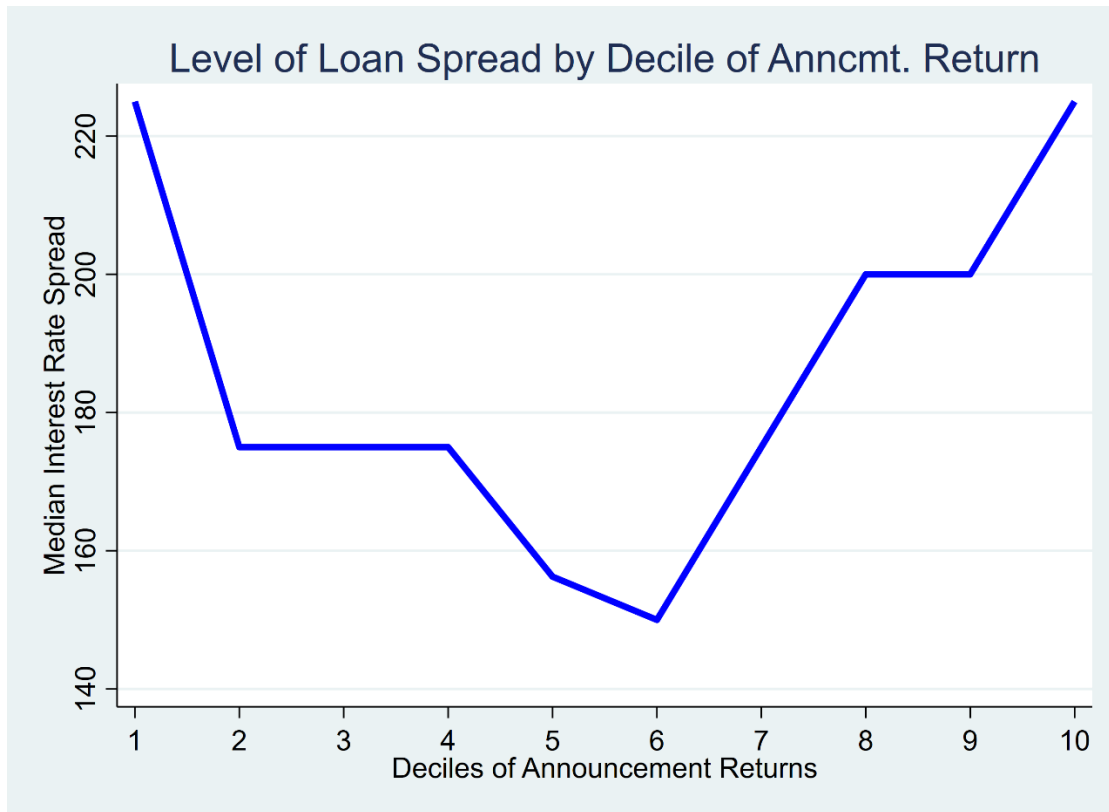
**Figure 1: Sample Construction and Empirical Approach**

This figure illustrates our sample construction. We match M&A announcements to facilities issued within a  $[-45, +180]$  window. Our main analysis focuses on loans originated in the window *following* the M&A announcement and we examine whether the three-day risk-adjusted M&A announcement returns are correlated with subsequent interest spreads on the loans. We use loans originated in the pre-M&A announcement window to rule out alternative explanations and correlated omitted variable concerns.



**Figure 2: M&A Announcement Returns and Subsequent Loan Spreads**

This graph illustrates the median interest spread of loans issued within six months of an M&A announcement to the acquiror for each decile of the acquiror's M&A announcement returns.



**Table 1: Sample Selection**

This table reports sample breakdown (Panel A) and frequency of observations by year (Panel B).

<b>Panel A. Sample description</b>		
Description	Observations	Source
M&A deals announced between 2004 – 2017Q1	181,342	<i>SDC</i>
Loan facilities originated between 2004 – 2017Q1	42,473	<i>Dealscan</i>
Matched sample: loans within [t-45, t+180] days of M&A ancmt.	16,082	
<i>Less:</i> Private acquirors (no return data)	(2,754)	<i>CRSP</i>
Non-US loan syndicates	(2,301)	<i>Dealscan</i>
Missing / invalid data re. control variables	(3,031)	<i>Cstat, SDC</i>
Small deals (< \$10M USD)	(969)	<i>SDC</i>
	6,173	
<b>Main sample (loans originated post-M&amp;A announcement)</b>	<b>5,139</b>	
- <i>Unique M&amp;A deals</i>	<i>3,031</i>	
- <i>Unique acquirors</i>	<i>1,386</i>	

<b>Panel B. Main Sample composition, by year</b>		
Year	Observations	Perc. (%)
2004	537	10.33
2005	496	9.53
2006	559	10.75
2007	519	9.98
2008	243	4.67
2009	114	2.19
2010	302	5.80
2011	439	8.44
2012	382	7.34
2013	410	7.88
2014	431	8.28
2015	419	8.06
2016	331	6.37
2017	18	3.46



**Table 2: Descriptive Statistics**

This table reports descriptive statistics. All variables are defined in Appendix A.

Variable	N	Mean	SD	P25	P50	P75
<i>Interest Spread</i>	5,139	5.121	0.733	4.828	5.165	5.617
<i>Acquiror Ancmt. Returns</i>	5,139	0.017	0.065	-0.015	0.008	0.043
<i>Abs. Acquiror Ancmt. Returns</i>	5,139	0.046	0.052	0.011	0.028	0.061
<i>Deal Size to Acquiror Assets</i>	5,139	0.318	0.475	0.032	0.121	0.412
<i>Same Industry Deal Indicator</i>	5,139	0.546	0.497	0	1	1
<i>Public Target Firm Indicator</i>	5,139	0.475	0.499	0	0	1
<i>Percentage of Deal - cash (%)</i>	5,139	86.50	21.29	83.93	100	100
<i>Pre-loan market return</i>	5,139	-0.003	0.080	-0.047	-0.002	0.041
<i>Book Leverage</i>	5,139	0.261	0.177	0.128	0.246	0.376
<i>Size</i>	5,139	7.808	1.727	6.579	7.738	8.921
<i>Market to Book</i>	5,139	3.209	2.877	1.650	2.410	3.618
<i>Cash Flow from Ops.</i>	5,139	0.102	0.062	0.063	0.096	0.136
<i>Cash Flow Volatility</i>	5,139	0.037	0.031	0.016	0.027	0.048
<i>Institutional Ownership</i>	5,139	0.726	0.249	0.626	0.799	0.912
<i>Intangibility</i>	5,139	0.279	0.218	0.085	0.243	0.436
<i>Loans post-M&amp;A close (%)</i>	5,139	45.88	48.91	0	0	1
<i>Revolver Indicator</i>	5,139	0.530	0.499	0	1	1
<i>Maturity (months)</i>	5,139	53.37	19.83	48.00	60.00	60.00
<i>Loan Amount (log)</i>	5,139	5.683	1.469	4.700	5.703	6.684
<i>Syndicate Size</i>	5,139	1.941	0.891	1.386	2.079	2.565
<i>Perf. Pricing Indicator</i>	5,139	0.487	0.499	0	0	1
<i>Number of Financial Covenants</i>	5,139	1.290	1.139	0	1	2
<i>Institutional Tranche Indicator</i>	5,139	0.137	0.344	0	0	0
<i>Prev. Loan O/S Indicator</i>	5,111	0.451	0.498	0	0	1
<i>Sweep Covenant (indicator)</i>	5,139	0.367	0.482	0	0	1
<i>Capex Restriction (indicator)</i>	5,139	0.126	0.332	0	0	0
<i>Dividend Restriction (indicator)</i>	5,139	0.462	0.499	0	0	1
<i>N Performance Covenants</i>	5,139	1.104	1.041	0	1	2
<i>Liquidity (Avg. DPI prev. year)</i>	5,139	-0.065	0.991	-0.005	-0.001	0.000
<i>Average Vega</i>	3,704	77.55	116.32	10.05	32.06	99.79
<i>Average Delta</i>	3,706	347.65	860.94	57.95	131.09	302.33

**Table 3: M&A Announcement Returns and Subsequent Loan Spreads**

This table examines whether acquiror M&A announcement returns are associated with the interest rate spread on loans issued to the acquiror within 180 days after the M&A announcement. The dependent variable, *Interest Spread*, is the natural log of the all-in-drawn interest rate spread of the loan. In Panel A, we report our main results where the variables of interest, *Acquiror Ancmt. Returns* (column 1) and *Abs. Acquiror Ancmt Returns* (column 2), are the signed and absolute value of the acquiror's M&A announcement returns, respectively. In Panel B, we repeat the analysis reported in column (2) of Panel A, partitioned into negative (column 1) and positive (column 2) M&A returns. All models include lead arranger and year fixed effects. Standard errors are clustered by acquiror. All variables are defined in Appendix A. \*\*\*, \*\*, and \* indicates statistical significance at the 1%, 5% and 10% level.

<b>Panel A: Loans initiated within 180 days post M&amp;A</b>		
Dependent Variable: <i>Interest Spread</i>	(1)	(3)
<i>Acquiror Ancmt. Returns</i>	-0.031 (-0.22)	
<i>Abs. Acquiror Ancmt. Returns</i>		0.975*** (4.64)
<i>Deal Size to Acquiror Assets</i>	0.240*** (9.06)	0.201*** (7.60)
<i>Same Industry Deal Indicator</i>	0.030 (1.38)	0.030 (1.40)
<i>Public Target Firm Indicator</i>	0.019 (0.92)	0.012 (0.59)
<i>Book Leverage</i>	0.759*** (8.47)	0.745*** (8.33)
<i>Size</i>	-0.052*** (-3.15)	-0.048*** (-2.96)
<i>Market to Book</i>	-0.018*** (-3.43)	-0.017*** (-3.23)
<i>Cash Flow from Ops.</i>	-1.084*** (-5.05)	-1.033*** (-4.84)
<i>Cash Flow Volatility</i>	1.972*** (4.20)	1.986*** (4.27)
<i>Institutional Ownership</i>	0.054 (1.02)	0.046 (0.87)
<i>Intangibility</i>	0.050 (0.70)	0.064 (0.91)
<i>Pre-loan Returns</i>	-0.049 (-0.40)	-0.053 (-0.44)
<i>Revolver Indicator</i>	-0.129*** (-5.48)	-0.128*** (-5.47)
<i>Maturity</i>	0.004*** (4.64)	0.004*** (4.62)
<i>Loan Amount</i>	-0.139*** (-10.24)	-0.138*** (-10.18)
<i>Syndicate Size</i>	-0.051*** (-2.61)	-0.050** (-2.56)

**Table 3—continued.**

<b>Panel A. (continued)</b>		
<i>Perf. Pricing Indicator</i>	-0.118*** (-4.45)	-0.119*** (-4.52)
<i>Institutional Tranche Indicator</i>	0.266*** (6.57)	0.261*** (6.56)
<i>Number of Financial Covenants</i>	0.052*** (4.41)	0.051*** (4.39)
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	5,093	5,093
Adjusted R-squared	0.585	0.588

**Table 3—continued.**

**Panel B: Loans initiated within 180 days post M&A, by sign of M&A return**

	Negative M&A returns (1)	Positive M&A returns (2)
Dependent Variable: <i>Interest Spread</i>		
<i>Abs. Acquiror Ancmt. Returns</i>	1.874*** (4.76)	0.713*** (3.02)
<i>Deal Size to Acquiror Assets</i>	0.164*** (4.35)	0.252*** (7.73)
<i>Same Industry Deal Indicator</i>	0.044 (1.32)	0.033 (1.23)
<i>Public Target Firm Indicator</i>	0.015 (0.43)	0.009 (0.37)
<i>Book Leverage</i>	0.788*** (6.24)	0.720*** (6.95)
<i>Size</i>	-0.038* (-1.94)	-0.053*** (-2.75)
<i>Market to Book</i>	-0.016** (-2.00)	-0.017*** (-2.90)
<i>Cash Flow from Ops.</i>	-1.183*** (-3.81)	-0.987*** (-3.72)
<i>Cash Flow Volatility</i>	2.536*** (3.64)	1.789*** (3.19)
<i>Institutional Ownership</i>	0.028 (0.38)	0.048 (0.74)
<i>Intangibility</i>	-0.037 (-0.37)	0.177** (2.16)
Loan Controls	Yes	Yes
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	2,065	3,001
Adjusted R-squared	0.611	0.582

**Table 4: Identification Concerns**

This table presents the results of several tests to mitigate correlated omitted variable concerns. In Panel A, Columns (1) and (2) we examine whether acquiror M&A announcement returns are associated with the interest rate spread on loans issued to the acquiror within 45-day window *prior to* the M&A announcement. In columns (3) and (4) we condition our main analysis from Panel A, Table 3 on whether the lender has an active relationship with the acquiror at the time of the M&A, and include an interaction term with our return measures and *Loan outstanding at M&A*, which is an indicator to one if the lead arranger had a loan outstanding to the acquiror at the time of the M&A announcement. In Panel B we repeat our main analysis with the inclusion of borrower fixed effects (*Borrower FE*). In Panel C we repeat our main analysis and include additional control variables to capture the arrival of new information between M&A announcement and loan agreements. We include *Changes in Credit Rating*, *Analyst Revisions*, and *Changes in Media Sentiment*. All variables are defined in Appendix A. All models include loan-level controls which are not reported for brevity, as well as lead arranger and year fixed effects. Standard errors are clustered by acquiror. \*\*\*, \*\*, and \* indicates statistical significance at the 1%, 5% and 10% level, respectively.

**Panel A: M&A Announcement Returns and pre-M&A Loan Spread**

Dependent Variable: <i>Interest Spread</i>	45-day pre-M&A window		Prior Outstanding Loan	
	<i>Acquiror Ancmt. Returns</i>	<i>Abs. Acquiror Ancmt. Returns</i>	<i>Acquiror Ancmt. Returns</i>	<i>Abs. Acquiror Ancmt. Returns</i>
	(1)	(2)	(3)	(4)
<i>Returns</i>	0.237 (0.59)	-0.056 (-0.12)	-0.049 (-0.26)	0.954*** (3.78)
<i>Returns*Loan outstanding at M&amp;A</i>			0.031 (0.12)	0.111 (0.31)
<i>Loan outstanding at M&amp;A</i>	-	-	-0.051** (-2.01)	-0.047 (-1.54)
<i>Deal Size to Acquiror Assets</i>	0.260*** (2.70)	0.267*** (2.65)	0.236*** (8.89)	0.198*** (7.48)
<i>Same Industry Deal Indicator</i>	0.189*** (3.97)	0.190*** (3.97)	0.029 (1.34)	0.029 (1.34)
<i>Public Target Firm Indicator</i>	-0.087** (-1.98)	-0.084* (-1.93)	0.018 (0.89)	0.012 (0.58)
<i>Book Leverage</i>	0.927*** (6.20)	0.931*** (6.20)	0.769*** (8.38)	0.752*** (8.21)
<i>Size</i>	-0.020 (-0.77)	-0.020 (-0.75)	-0.052*** (-3.13)	-0.049*** (-2.94)
<i>Market to Book</i>	-0.028*** (-2.59)	-0.029*** (-2.62)	-0.018*** (-3.34)	-0.016*** (-3.16)
<i>Cash Flow from Ops.</i>	-0.704* (-1.70)	-0.714* (-1.73)	-1.105*** (-5.10)	-1.053*** (-4.90)
<i>Cash Flow Volatility</i>	4.161*** (4.68)	4.213*** (4.75)	1.987*** (4.22)	1.995*** (4.29)
<i>Institutional Ownership</i>	0.170* (1.74)	0.172* (1.74)	0.051 (0.95)	0.039 (0.73)
<i>Intangibility</i>	0.245* (1.86)	0.247* (1.88)	0.052 (0.73)	0.065 (0.93)
Loan controls	Yes	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,010	1,010	5,065	5,065
Adjusted R-squared	0.611	0.611	0.584	0.587

**Table 4—continued.**

<b>Panel B: Borrower Fixed Effects</b>		
Dependent Variable: <i>Interest Spread</i>	(1)	(2)
<i>Acquiror Ancmt. Returns</i>	-0.196 (-1.17)	
<i>Abs. Acquiror Ancmt. Returns</i>		0.631*** (2.92)
<i>Deal Size to Acquiror Assets</i>	0.162*** (5.07)	0.141*** (4.39)
<i>Same Industry Deal Indicator</i>	0.000 (0.00)	0.001 (0.07)
<i>Public Target Firm Indicator</i>	0.061*** (3.22)	0.053*** (2.81)
<i>Book Leverage</i>	0.330 (1.63)	0.315 (1.57)
<i>Size</i>	-0.078 (-1.58)	-0.071 (-1.44)
<i>Market to Book</i>	-0.001 (-0.11)	0.000 (0.04)
<i>Cash Flow from Ops.</i>	-1.109*** (-3.12)	-1.079*** (-2.99)
<i>Cash Flow Volatility</i>	1.301* (1.90)	1.379** (1.99)
<i>Institutional Ownership</i>	-0.101 (-0.77)	-0.095 (-0.75)
<i>Intangibility</i>	0.323* (1.86)	0.341* (1.96)
Lead Arranger FE	Yes	Yes
Borrower FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	4,730	4,730
Adjusted R-squared	0.791	0.792

Table 4—continued.

<b>Panel C: Controlling for new information between M&amp;A announcement and loan agreement</b>		
Dependent Variable: <i>Interest Spread</i>	(1)	(2)
<i>Acquiror Ancmt. Returns</i>	-0.021 (-0.15)	
<i>Abs. Acquiror Ancmt. Returns</i>		0.971*** (4.63)
<i>Deal Size to Acquiror Assets</i>	0.239*** (8.97)	0.200*** (7.56)
<i>Same Industry Deal Indicator</i>	0.028 (1.33)	0.029 (1.36)
<i>Public Target Firm Indicator</i>	0.018 (0.89)	0.011 (0.56)
<i>Book Leverage</i>	0.758*** (8.43)	0.743*** (8.30)
<i>Size</i>	-0.052*** (-3.15)	-0.048*** (-2.97)
<i>Market to Book</i>	-0.018*** (-3.44)	-0.017*** (-3.25)
<i>Cash Flow from Ops.</i>	-1.078*** (-5.03)	-1.028*** (-4.82)
<i>Cash Flow Volatility</i>	1.981*** (4.24)	1.993*** (4.30)
<i>Institutional Ownership</i>	0.054 (1.03)	0.046 (0.87)
<i>Intangibility</i>	0.048 (0.68)	0.062 (0.89)
<i>Changes in Credit Rating</i>	-0.028 (-0.73)	-0.025 (-0.68)
<i>Analyst Forecast Revisions</i>	-0.070 (-0.81)	-0.070 (-0.82)
<i>Changes in Media Sentiment</i>	0.002 (0.23)	0.002 (0.19)
Loan controls	Yes	Yes
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	5,093	5,093
Adjusted R-squared	0.585	0.588

**Table 5: Conflict Channel – Managerial Compensation**

This table presents the results of our cross-sectional tests to corroborate the conflict channel. In columns (1) and (2) we repeat our main analysis (reported in Table 3, column 2) and include interaction terms of *Abs. Acquiror Ancmt. Returns* with two managerial compensation sensitivity to price proxies. *High Avg. Vega* is an indicator variable equal to one if the average compensation vega of the five highest paid executives at the acquiring firm is above the sample median, and zero otherwise. *High Avg. Delta* is an indicator variable equal to one if the average compensation delta of the five highest paid executives at the acquiring firm is above the sample median, and zero otherwise. In column (3) we include an interaction term of *Abs. Acquiror Ancmt. Returns* and *High Liquidity*, where *High Liquidity* is an indicator equal to one if the firm's average daily price impact (Amihud, 2002) measured over the previous calendar year, is above the median across all sample firms and zero otherwise. All models include loan-level controls, as well as lead arranger and year fixed effects. Standard errors are clustered by acquiror. All variables are defined in Appendix A. \*\*\*, \*\*, and \* indicates statistical significance at the 1%, 5% and 10% level, respectively.

Dependent Variable: <i>Interest Spread</i>	<i>High Avg. Vega</i>	<i>High Avg. Delta</i>	<i>High Liquidity</i>
	(1)	(2)	(3)
<i>Abs. Acquiror Ancmt. Returns</i>	0.706** (2.50)	0.811*** (2.58)	0.590** (2.51)
<i>Agency Cost Proxy</i>	-0.136*** (-3.00)	-0.069* (-1.67)	-0.104** (-2.42)
<i>Abs. Acquiror Ancmt. Returns * Agency cost Proxy</i>	1.274** (2.05)	0.941* (1.68)	1.170** (2.59)
<i>Deal Size to Acquiror Assets</i>	0.257*** (6.94)	0.256*** (6.95)	0.222*** (7.88)
<i>Same Industry Deal Indicator</i>	0.019 (0.82)	0.018 (0.78)	0.018 (0.87)
<i>Public Target Firm Indicator</i>	0.029 (1.21)	0.031 (1.25)	0.014 (0.69)
<i>Book Leverage</i>	0.781*** (7.08)	0.788*** (7.02)	0.764*** (8.88)
<i>Size</i>	-0.033 (-1.63)	-0.042** (-2.09)	-0.034** (-2.01)
<i>Market to Book</i>	-0.014** (-2.64)	-0.014** (-2.45)	-0.012** (-2.70)
<i>Cash Flow from Ops.</i>	-1.322*** (-4.67)	-1.395*** (-4.89)	-0.996*** (-4.49)
<i>Cash Flow Volatility</i>	2.013*** (3.48)	2.077*** (3.56)	1.752*** (3.93)
<i>Institutional Ownership</i>	0.084 (1.10)	0.073 (0.94)	0.041 (0.76)
<i>Intangibility</i>	0.023 (0.27)	0.021 (0.24)	0.032 (0.46)
Loan controls	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	3,667	3,667	4,914
Adjusted R-squared	0.620	0.618	0.600



**Table 6: Conflict Channel – Covenants**

This table presents the results of our cross-sectional tests examining whether the association between equity returns and interest rate spread changes conditional on whether the loan includes terms that mitigate agency costs for the lending syndicate. We include interaction terms of *Acquiror Ancmt. Returns* with four types of loan covenants that protect lenders. *Sweep Covenant* is an indicator variable equal to one if the loan includes any type of sweep covenant, and zero otherwise. *Capex Restriction* is an indicator variable equal to one if the loan includes a capex restriction covenant, and zero otherwise. *Dividend Restriction* is an indicator variable equal to one if the loan includes a dividend restriction covenant, and zero otherwise. *Performance Covenants* is an indicator variable equal to one if the loan includes a performance-based covenant, and zero otherwise. All models include loan-level controls, as well as lead arranger and year fixed effects. Standard errors are clustered by acquiror. All variables are defined in Appendix A. \*\*\*, \*\*, and \* indicates statistical significance at the 1%, 5% and 10% level, respectively.

Dependent Variable: <i>Interest Spread</i>	<i>Sweep Covenant</i>	<i>Capex Restriction</i>	<i>Dividend Restriction</i>	<i>Performance Covenants</i>
	(1)	(2)	(3)	(4)
<i>Abs. Acquiror Ancmt. Returns</i>	1.343*** (4.92)	1.083*** (4.77)	1.129*** (3.95)	1.438*** (4.36)
<i>Covenant Type</i>	0.257*** (7.86)	0.214*** (4.42)	0.107*** (3.62)	0.082** (2.52)
<i>Abs. Acquiror Ancmt. Returns * Cov. Type</i>	-1.019*** (-2.86)	-0.832* (-1.72)	-0.362 (-1.04)	-0.769** (-1.97)
<i>Deal Size to Acquiror Assets</i>	0.175*** (6.98)	0.195*** (7.24)	0.196*** (7.48)	0.196*** (7.45)
<i>Same Industry Deal Indicator</i>	0.032 (1.50)	0.028 (1.29)	0.031 (1.42)	0.029 (1.35)
<i>Public Target Firm Indicator</i>	0.011 (0.55)	0.008 (0.41)	0.012 (0.61)	0.014 (0.69)
<i>Book Leverage</i>	0.754*** (8.48)	0.770*** (8.51)	0.768*** (8.58)	0.771*** (8.58)
<i>Size</i>	-0.039** (-2.39)	-0.049*** (-2.95)	-0.047*** (-2.87)	-0.050*** (-3.08)
<i>Market to Book</i>	-0.017*** (-3.24)	-0.016*** (-3.07)	-0.017*** (-3.29)	-0.017*** (-3.29)
<i>Cash Flow from Ops.</i>	-1.031*** (-4.82)	-1.039*** (-4.81)	-1.000*** (-4.63)	-1.026*** (-4.74)
<i>Cash Flow Volatility</i>	1.955*** (4.34)	1.907*** (4.08)	1.969*** (4.20)	1.971*** (4.19)
<i>Institutional Ownership</i>	0.047 (0.91)	0.040 (0.77)	0.045 (0.85)	0.043 (0.82)
<i>Intangibility</i>	0.050 (0.73)	0.087 (1.23)	0.073 (1.02)	0.073 (1.03)
Loan controls	Yes	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	5,093	5,093	5,093	5,093
Adjusted R-squared	0.558	0.588	0.586	0.585

**Table 7: Conflict Channel – Ex-post Risky Actions**

This table presents the results of our cross-sectional tests to corroborate the conflict channel. We repeat our main analysis (reported in Table 3, column 2) and include interaction terms of *Abs. Acquiror Ancmt. Returns* with *High Risky Evts*, which is an indicator variable equal to one if the number of risky actions undertaken by firms in the two-year period following the M&A is above the sample median, and zero otherwise. We measure risky actions using Capital IQ Key Developments dataset that covers all significant corporate actions, in particular we focus on: going concern issues, business expansions, reorganizations and new strategies, downsizing and divestitures, CEO, CFO, and executive board member changes, seeking new investment opportunities, spin-offs, and strategic alliances. In column (1) we run this on the full sample, and in columns (2) and (3) we repeat this analysis for the sub-sample of positive and negative returns, respectively. All models include loan-level controls, as well as lead arranger and year fixed effects. Standard errors are clustered by acquiror. All variables are defined in Appendix A. \*\*\*, \*\*, and \* indicates statistical significance at the 1%, 5% and 10% level, respectively.

Dependent Variable: <i>Interest Spread</i>	<i>Full sample</i>	<i>Positive returns</i>	<i>Negative returns</i>
	(1)	(2)	(3)
<i>Abs. Acquiror Ancmt. Returns</i>	0.543** (2.05)	0.245 (0.84)	1.362** (2.53)
<i>High Risky Evts</i>	-0.076** (-2.41)	-0.092** (-2.35)	-0.059 (-1.27)
<i>Abs. Acquiror Ancmt. Returns * High Risky Evts</i>	0.970*** (2.60)	1.134*** (2.72)	0.973 (1.37)
<i>Deal Size to Acquiror Assets</i>	0.205*** (7.73)	0.256*** (7.89)	0.170*** (4.45)
<i>Same Industry Deal Indicator</i>	0.028 (1.34)	0.029 (1.07)	0.045 (1.35)
<i>Public Target Firm Indicator</i>	0.009 (0.45)	0.008 (0.31)	0.011 (0.32)
<i>Book Leverage</i>	0.741*** (8.38)	0.713*** (7.00)	0.793*** (6.24)
<i>Size</i>	-0.042** (-2.48)	-0.045** (-2.33)	-0.032 (-1.55)
<i>Market to Book</i>	-0.016*** (-3.22)	-0.016*** (-2.92)	-0.015** (-1.96)
<i>Cash Flow from Ops.</i>	-1.042*** (-4.92)	-0.982*** (-3.74)	-1.198*** (-3.87)
<i>Cash Flow Volatility</i>	2.026*** (4.37)	1.880*** (3.38)	2.543*** (3.65)
<i>Institutional Ownership</i>	0.053 (1.01)	0.056 (0.87)	0.035 (0.48)
<i>Intangibility</i>	0.061 (0.87)	0.181** (2.21)	-0.047 (-0.46)
Loan controls	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	5,093	3,001	2,065
Adjusted R-squared	0.590	0.583	0.612

**Table 8: Fundamental Channel**

This table presents the results of our cross-sectional tests examining whether the association between signed equity returns and interest rate spread changes conditional on the informativeness of M&A announcement returns. We perform this analysis on a sample that includes only negative M&A announcement returns, given our main findings rule out this channel for deals with positive M&A announcement returns. We include interaction terms of *Acquiror Ancmt. Returns* with three proxies that capture more informative M&A announcement returns. *High Private Info* is an indicator variable equal to one if the acquiror exhibits high price non-synchronicity (i.e., low *Price Synchronicity*) in the previous calendar year. *Price synchronicity* is measured as one minus the adjusted R-squared from a regression of daily firm returns on value-weighted market return and industry returns. *High IO* is an indicator variable equal to one if percentage of institutional ownership in a given acquiror is above the sample median, and zero otherwise. *Public Target* is an indicator variable equal to one if the target is a public company, and zero otherwise. All models include loan-level controls, as well as lead arranger and year fixed effects. Standard errors are clustered by acquiror. All variables are defined in Appendix A. \*\*\*, \*\*, and \* indicates statistical significance at the 1%, 5% and 10% level, respectively.

Dependent Variable: <i>Interest Spread</i>	<i>Negative M&amp;A Ancmt. Returns</i>		
	<i>High Private info</i>	<i>High IO</i>	<i>Public Target</i>
	(1)	(2)	(3)
<i>Acquiror Ancmt. Returns</i>	-2.882*** (-4.80)	-2.368*** (-3.81)	-1.242** (-2.12)
<i>Price Informativeness Proxy</i>	0.037 (0.77)	0.066 (1.48)	-0.033 (-0.78)
<i>Acquiror Ancmt. Returns * Price Informativeness Proxy</i>	1.259 (1.39)	0.688 (0.85)	-1.440* (-1.90)
<i>Deal Size to Acquiror Assets</i>	0.218*** (4.76)	0.168*** (4.40)	0.164*** (4.30)
<i>Same Industry Deal Indicator</i>	0.042 (1.25)	0.042 (1.26)	0.040 (1.24)
<i>Public Target Firm Indicator</i>	0.026 (0.73)	0.016 (0.46)	-
<i>Book Leverage</i>	0.902*** (7.04)	0.788*** (6.29)	0.779*** (6.21)
<i>Size</i>	-0.039* (-1.86)	-0.035* (-1.83)	-0.038** (-1.97)
<i>Market to Book</i>	-0.011 (-1.55)	-0.015** (-1.96)	-0.015** (-1.99)
<i>Cash Flow from Ops.</i>	-1.484*** (-4.29)	-1.192*** (-3.85)	-1.186*** (-3.83)
<i>Cash Flow Volatility</i>	2.501*** (3.21)	2.553*** (3.56)	2.507*** (3.61)
<i>Institutional Ownership</i>	0.027 (0.35)	-	0.026 (0.36)
<i>Intangibility</i>	-0.068 (0.65)	0.050 (0.49)	-0.044 (-0.44)
Loan controls	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1,963	2,065	2,065
Adjusted R-squared	0.626	0.612	0.612

**Table 9: Alternative Setting - 8K Filings**

This table examines whether 3-day excess returns surrounding an 8K filings are associated with the interest rate spread on loans issued to the filer within six months. The dependent variable, *Interest Spread*, is the natural log of the all-in-drawn interest rate spread of the loan. The variables of interest, *Filing Return* is either the *Signed Ret* (columns 1&3) or *Absolute Ret* which is the signed and absolute value, respectively, of the 3-day excess return from a Fama-French three factor model surrounding the date of the 8K filing. In Panel A we include All 8K filings in columns 1 and 2, and All Filings excluding those with Item 2.02 disclosures (i.e., earnings announcements) in columns 3 and 4. In Panel B we limit our sample to 8K filings with Item 1 disclosures only (columns 1 and 2) and Item 5 disclosure only (columns 3 and 4). The models include Loan controls, borrower, lead arranger, industry, and year fixed effects. Standard errors are clustered by filer. All variables are defined in Appendix A. \*\*\*, \*\*, and \* indicates statistical significance at the 1%, 5% and 10% level.

<b>Panel A: 8K Filings (All items)</b>				
Dependent Variable: <i>Interest Spread</i>	<i>All Filings</i>		<i>All Filings (exc. Item 2.02)</i>	
	<i>Signed Ret.</i>	<i>Absolute Ret</i>	<i>Signed Ret.</i>	<i>Absolute Ret.</i>
	(1)	(2)	(3)	(4)
<i>Filing Return</i>	-0.022 (-0.85)	0.249*** (5.00)	0.012 (0.32)	0.396*** (5.44)
<i>Book Leverage</i>	0.275*** (3.22)	0.267*** (3.14)	0.241** (2.51)	0.230** (2.40)
<i>Size</i>	-0.087*** (-3.56)	-0.085*** (-3.49)	-0.081*** (-3.04)	-0.079*** (-2.94)
<i>Market to Book</i>	-0.004 (-1.01)	-0.003 (-0.97)	-0.004 (-0.97)	-0.003 (-0.89)
<i>Cash Flow from Ops.</i>	-0.712*** (-4.68)	-0.708*** (-4.65)	-0.724*** (-4.32)	-0.715*** (-4.28)
<i>Cash Flow Volatility</i>	0.162 (0.50)	0.163 (0.51)	0.046 (0.13)	0.040 (0.11)
<i>Institutional Ownership</i>	-0.036 (-0.94)	-0.035 (-0.91)	-0.035 (-0.85)	-0.032 (-0.78)
<i>Intangibility</i>	0.046 (0.50)	0.050 (0.54)	0.047 (0.48)	0.052 (0.53)
Loan controls	Yes	Yes	Yes	Yes
Borrower FE	Yes	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	97,639	97,639	69,134	69,134
Adjusted R-squared	0.786	0.787	0.788	0.788

**Table 9—continued**

**Panel B: 8K Filings with material uncertain events**

Dependent Variable: <i>Interest Spread</i>	<i>Item 1 Filings</i>		<i>Item 5 Filings</i>	
	<i>Signed Ret.</i>	<i>Absolute Ret</i>	<i>Signed Ret.</i>	<i>Absolute Ret.</i>
	(1)	(2)	(3)	(4)
<i>Filing Return</i>	0.049 (0.78)	0.350*** (3.60)	-0.080 (-1.12)	0.405*** (3.56)
<i>Book Leverage</i>	0.185** (2.01)	0.177* (1.94)	0.251*** (2.74)	0.239*** (2.61)
<i>Size</i>	-0.107*** (-4.11)	-0.105*** (-4.03)	-0.080*** (-2.83)	-0.078*** (-2.76)
<i>Market to Book</i>	-0.007 (-1.59)	-0.007 (-1.54)	-0.006* (-1.69)	-0.006* (-1.65)
<i>Cash Flow from Ops.</i>	-0.887*** (-4.64)	-0.878*** (-4.62)	-0.579*** (-3.32)	-0.571*** (-3.27)
<i>Cash Flow Volatility</i>	0.756* (1.90)	0.754* (1.90)	0.202 (0.62)	0.182 (0.56)
<i>Institutional Ownership</i>	0.008 (0.16)	0.013 (0.26)	-0.068 (-1.57)	-0.067 (-1.56)
<i>Intangibility</i>	0.169 (1.48)	0.178 (1.56)	-0.012 (-0.12)	-0.007 (-0.07)
Loan controls	Yes	Yes	Yes	Yes
Borrower FE	Yes	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	18,847	18,847	21,805	21,805
Adjusted R-squared	0.786	0.787	0.788	0.788