Lender Learning

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Preliminary Draft – Please do not circulate without author permission

May 2022

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.

* We thank Alex Aleszczyk, Ilan Guttman, Anthony Joffre, Eric So, Joe Weber and workshop participants at NYU for helpful comments. We gratefully acknowledge financial support from the Miami Herbert Business School, Mendoza College of Business, and the Marshall School of Business. Any errors are our own.

1. Introduction

A primary advantage that private lenders leverage in the screening and monitoring of investment decisions, relative to public sources of capital (e.g., public bond markets, equity markets), is access to private borrower information channels (e.g., direct access to management, private conference calls, non-public financial projections and monthly financial statements). However, an emerging literature documents evidence consistent with lenders complementing their private information with credit-relevant information produced by intermediaries *outside* of the borrower, such as the media (Bushman et al., 2017) and sell-side analysts (Coyne and Stice, 2017; Call et al., 2022). Given that up to 50% of publicly available loan documents now include a provision whereby a subset of private lenders may waive their rights to private information (Amiraslani et al., 2022), identifying lenders' alternative public information sources is of critical importance to understanding contemporary contracting dynamics in the lending process. In this study, we extend this literature and ask: do private lenders learn credit-relevant information from secondary equity markets?

Unlike information intermediaries such as analysts and the media, equity markets represent a unique and important source of external information for lenders. In addition to aggregating and producing information about borrowers' fundamental prospects, prices aggregate the opinions and preferences of shareholders that have conflicting claims on the borrower relative to that of lenders. In particular, theoretical and empirical work demonstrates two channels that equity markets can convey information relevant to credit risk. First, lenders can learn about firm fundamentals and future cash flows from the information conveyed in prices. The "fundamentals channel" suggests that while firm insiders and other real decision makers may be 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). Given that the information conveyed in equity prices is shown to be informative to insiders' corporate investment decisions (e.g., Chen et al., 2007), it stands to reason that this information may also be useful to lenders. Moreover, prices are publicly observable signals with relatively little to no acquisition costs. If the information in prices is perceived as credible and credit-relevant, they should play a role in the lenders' assessment of creditworthiness of the borrower and the establishment of loan contracting parameters. To this end, the fundamental channel suggests that lenders are able to learn about borrowers' fundamental performance and predicts a negative relation between market returns of the borrower and lenders' perception of risk.

Second, the "incentive channel" suggests that lenders can learn about managers' incentives to take risky actions because managers' decisions are often made with a focus on how it will affect the firm's market price. Prior empirical and analytical studies demonstrate that managers' concern for share price can incentivize managers to act on the preferences of shareholders at the cost of other stakeholders (e.g., Brandenburger and Polak, 1996). As an example, a literature examining managerial myopia argues that managers make short-term oriented decisions due to an emphasis on short-term performance by shareholders. Furthermore, agency theory suggests that, as the pressure on and incentives for managers to act on the preferences of shareholders increases, shareholder-debtholders conflicts become more acute (Jensen and Meckling, 1976; Myers, 1977). Accordingly, stronger market preferences—i.e., larger absolute market responses—can motivate managers to take actions that result in increased risk to the lender. Therefore, the incentive channel suggests that lenders are able to learn about the degree of agency-related risk from future managerial actions based on the extremity of equity market returns and predicts a V-shaped

relation between market returns and lenders' perception of credit risk, i.e., a positive relation between absolute equity returns and risk.

Empirically assessing whether lenders learn from market prices is challenging. Designing such a test requires identifying a setting with sufficient complexity, uncertainty, and broad managerial action sets where lenders are unlikely to be fully informed about borrower fundamental and agency-related risk. To this end, we select a sample of merger and acquisition (M&A) announcements to study whether private lenders learn from public equity markets. M&As are significant corporate decisions with a high degree of uncertainty for insiders and capital providers. For example, the future prospects and potential synergies of the combined entity following the M&A are likely to be more contingent on external information (e.g., state of the economy, competitive pressures, consumer demand) rather than internal information about the acquiror's own fundamentals. Consistent with these arguments, Luo (2005) finds that managers learn from M&A announcement returns, suggesting that equity market participants are able to better analyze the international, macroeconomic, and industry issues relevant to announced M&A deals. Therefore, in this context, (1) lenders may not necessarily possess a strong information advantage over equity market participants and (2) managerial actions are sensitive to equity market responses. This corresponds appropriately to the fact that when lenders provide debt financing to the acquiring entity, they will consider both the operational risks of the business combination (e.g., fundamental deal quality) and any associated agency frictions that may arise (e.g., increased risk-taking resulting from the deal).

We test whether lenders incorporate information from equity prices by examining the relation between M&A announcement returns and the interest spreads in private debt contracts originated shortly after the announcement. We construct a sample that comprises of 5,323 U.S.

private loans originated within 180 days following M&A announcements between 2004 and 2017. Our initial univariate analysis documents a V-shaped relation between M&A announcement returns and loan spreads (see Figure 2), consistent with lenders learning from absolute M&A announcement returns. This relation remains in multivariate analysis after controlling for borrower fundamentals, M&A deal characteristics as well as year, industry, and lead arranger fixed effects. Economically, a one standard deviation increase in market reaction is associated with a 5.3% increase in loan spread. However, we do not find any significant relation between loan spreads and *signed* M&A announcement returns.

Collectively, this evidence is inconsistent with lenders learning about borrowers' fundamental performance (the fundamental channel) and suggests that lenders tend to learn about agency related risk from larger absolute market responses (i.e. the incentive channel). As equity markets express a greater opinion on the acquiror's M&A deal through the magnitude of market reaction, lenders perceive a larger degree of risk. While the implied negative relation between negative market reaction and loan spread could be consistent with lenders learning about either fundamental or agency-related risk, this is not true for positive M&A returns. The increase in loan spread for positive returns runs counter to the notion that lenders are learning about future fundamental risk because loan spreads should *decrease* as signed equity returns increase. Instead, our results are consistent with lenders pricing the concern that managers have incentives to take actions that cater to equity investors' preferences conveyed through the magnitude of absolute M&A returns. Overall, we interpret these findings as most consistent with lenders learning from equity markets through the incentive channel.

To further disentangle the two learning channels, we examine cross-sectional variation in the association between absolute M&A announcement returns and interest spreads. First, we

provide several cross-sectional tests that corroborate our inference that lenders learn from equity prices through the incentive channel. As the degree of the manager's expected payoff is tied to equity prices increases, the manager's incentives to act at the behest of shareholder preferences increases (Brandenburger and Polak, 1996). Thus, we predict and find that the association of loan spread to absolute equity returns is more pronounced for acquirors with managers whose 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 on management 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 evidence 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 protections that enable the lender to protect their claim from shareholder-debtholder related agency issues (e.g., asset substitution) will limit the degree to which lenders must price managerial agency risk. Indeed, we find that the association between loan spreads and absolute announcement returns is attenuated when debt contracts include covenants that allow lenders to restrict specific managerial actions that increase agency conflicts (e.g., investment restrictions, cash flow sweeps, etc.). Furthermore, we find that these results are 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. These cross-sectional findings are consistent with lenders impounding equity returns into loan price when the information in equity returns captures credible and salient ex post agency risk.

Next, although we do not find evidence of the fundamental channel on average, we examine the variation in the informativeness of M&A announcement returns to more fully explore whether lenders learn through the fundamental channel. As the informativeness of M&A announcement returns increases, the fundamental channel suggests that lenders will learn more about the acquisition impacts on borrower fundamental risk. We measure the informativeness of price using three proxies: low price synchronicity, high institutional ownership, and whether the target is a public company. Price synchronicity measures the extent to which a firm's stock price varies with the broader industry and market. Therefore, low price synchronicity infers more private firm-specific information is impounded in prices (Roll, 1988; Morck et al., 2000; Durnev et al., 2004; Chen et al., 2007). Given the future prospects of the combined entity are driven by external market factors, it is likely that institutional investors possess superior knowledge and a greater ability to assess potential synergies and M&A success, relative to retail investors. Moreover, the external information environment is stronger for public targets, meaning equity market investors will be more easily able to collect and process information, and integrate this with their own private information. Under all three scenarios the M&A announcement returns are expected to be more informative about fundamentals. However, we fail to find evidence of cross-sectional variation in the relation between signed M&A announcement returns and interest spreads when price is expected to be more informative about firm fundamentals, i.e., when price synchronicity is low, institutional ownership is high, or when target is a public firm. Collectively, the results of our cross-sectional analyses suggest that lenders learn from equity prices via the incentive channel as opposed to fundamental channel.

We also conduct additional analyses to address potential correlated omitted variable and selection concerns. Specifically, one possibility is that firms with larger absolute M&A

announcement returns are inherently high-risk (i.e., our results are driven by firm-type). To mitigate this particular concern, we examine a sample of loans originated immediately *prior* to the M&A announcement—i.e., within either 180-days or 45-days of the M&A announcement. If the equity market response to the M&A announcement is merely correlated with borrower's inherent creditworthiness or the lender's private information, we would expect to observe a similarly significant positive relation between interest spreads on loans originated just prior to the M&A announcement and subsequent absolute M&A announcement returns. However, we fail to find any significant relation. As an alternative approach, we re-run our main specification with firm-fixed effects and find that our results are qualitatively similar.

Another concern is that lenders are independently and privately informed about the M&A prior to the deal announcement, and thus the interest spread would reflect the risks associated with the incentive channel even without an observable market response. Observing a correlation between market prices and the terms of private debt contracts does not imply that the equity market is *revealing* new information to private lenders, it may simply reflect information that is correlated with information that lenders glean from other sources. We perform the following analyses to mitigate this concern. First, we add additional variables that capture the arrival of potentially new information between the M&A 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 our results are qualitatively similar in the presence of these additional control variables. Second, 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, the lender's reputation and relationship lending. Loan contracts commonly include "permitted acquisition" clauses which compel the borrower to notify the lender regarding a potential acquisition. Therefore, if the

borrower has a previous loan outstanding with the lender at the time of the M&A announcement, we expect that the lender is privately informed regarding the terms of the M&A deal prior to its announcement. Prior literature also demonstrates that information asymmetry between borrowers and lenders is lower for relationship lenders (e.g., Bharath et al., 2011) and that more reputable lenders perform more rigorous screening activities (e.g., Chemmanur and Fulghieri, 1994; Bushman and Wittenberg-Moerman, 2012). Therefore, 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, relationship loans, and/or originated by more reputable lead arrangers. However, we do not find any such evidence. Taken together, these results mitigate the concern that our results are driven by a correlated omitted variable.

In our last set of analyses, we address concerns of generalizability. While we argue that the M&A setting provides an ideal landscape to observe potential lender learning from equity prices, we also provide corroborating evidence using an alternative setting: a broad set of significant corporate actions detailed in 8K filings. In particular, we reperform our main empirical analysis on a large sample of 8K filings and examine whether the return reactions around these filings are associated with interest spreads in subsequent loan agreements. Consistent with our findings from the M&A sample, we find that three-day absolute filing returns 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 findings demonstrate further evidence consistent with our inference that lenders are able to learn from equity prices.

Our study makes several contributions. First, we contribute to the recent stream of literature examining whether lenders use information provided by outsiders—e.g., independent parties such as analysts (Coyne and Stice, 2017; Call et al., 2022), the financial press and media (Bushman et al., 2017)—in assessing the borrower's creditworthiness and establishing debt contract terms. We build on this literature and provide novel evidence regarding a *new* channel through which lenders can learn based on outside information, specifically that lenders can learn about a borrower's incentives to take greater risk based on the observed market response to a significant event.

Second, we provide empirical evidence of "feedback effects" in the context of lending decisions. Specifically, we document evidence consistent with lenders learning from equity market prices. While prior studies focus on managerial learning for corporate investment decisions, our study provides the first evidence that "feedback effects" also influence capital providers that *finance* those corporate investments. Notably, our results suggest that lenders learn about potential agency risk that arise from large corporate transactions. This finding is novel to the literature, given that prior studies on feedback effects tend to focus on managers' corporate investment decisions with respect to a single channel (e.g., deal quality). By looking at lenders and the influence on contracting terms we can look at an alternative to the fundamental channel and propose that lenders can glean information related to managerial incentives that are credit relevant.

Finally, we contribute the literature examining shareholder-debtholder agency conflicts. Shareholder-debtholder conflicts are fundamental to how lenders approach contractual relationships with public company borrowers (Smith and Warner, 1979). We document equity market returns as a novel avenue by which an important set of debtholders, private lenders, learn about agency problems and that loan pricing is the contractual parameter that is more sensitive to signals from equity markets.

2. Background and Predictions

Private lenders are generally considered unique capital providers because they are assumed to possess superior information about the prospects of borrowing firms relative to other market participants (e.g., Fama, 1985). 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 (2017) and Call et al. (2022) provide evidence that equity analysts provide useful information to private lenders in establishing the terms of covenants and collateral. 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, equity prices can reflect fundamental information directly relevant about the borrower's future cashflows. Second, equity prices can reveal shareholder preferences that may induce managers to take more risky actions. These channels have significant implications for how lenders impound equity market prices into debt contracts.

With regards to the first 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) show 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. We adopt the convention in Bond et al. (2012) and describe this as the "fundamental channel" between equity markets and managerial action. 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. If lenders believe that equity market reactions reflect the fundamental information channel,

then loan pricing would be negatively related to market response. As equity markets convey an action will have positive (negative) impacts on future cash flow with positive (negative) returns, then loan pricing will decrease.

A second channel, the incentives channel, stems from prior studies arguing that equity markets can motivate risky actions based on the preferences of shareholders. From the point of view of the lender, the equity market reaction can reflect the extent to which lenders need to worry about the agency cost of debt. Insiders care about market prices because they are prominently featured in their compensation contracts. 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—are asymmetrically sensitive to the downside risk. These conflicting risk preferences leads to agency problems between debtholders and shareholders, and lenders can learn about the degree to which managerial actions present agency problems from the observed equity market reactions. Put another way, the incentive channel is more of an indirect learning channel where lenders will observe the equity market reaction, and this will provide a signal of the increased likelihood of future risky managerial actions.

As an example, 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 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. For instance, as the market reaction is larger, the incentives of equity-compensated managers to act on behest of shareholders increases. 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 future cash flows and (b) exacerbates conflict between the preferences of shareholders versus debtholders.

Managerial myopia is another example of a phenomenon that arises from the incentives channel, where managerial behavior is tied to the short-term preferences of shareholders conveyed through equity prices. Public company managers face significant pressure to meet the short-term earnings expectations of equity market participants because investors significantly penalize firms for falling below expectations (Skinner and Sloan, 2002). This alleged short-term focus contrasts with that of debtholders because the maturity horizon of private debt is typically between 5-7 years, as opposed to shareholders that can alter their investment positions in highly liquid equity markets. Managers' focus on investors response to short-term earnings reduces their incentives to take actions that increase the long-term value of the firm at the expense of short-term performance. As an example, Kraft et al. (2018) show that as managers are required to more frequently report earnings, their investment level declines, consistent with manager's sacrificing long-term growth for short-term preferences. Moreover, Stein (1988) analytically shows that when investors are relatively less informed and stocks are undervalued, managers will emphasize actions that boost current profits to avoid an unfavorable takeover.

In sum, the incentives 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. Following, the incentive channel predicts that lenders would price the absolute magnitude of the equity market response, as the magnitude of the market response, positive or negative, would increase the probability that managers would act on the preferences of shareholders rather than that of debtholders.

3. Setting, Design and Data

3.1 Setting

Our empirical investigation of whether, and through which channel, 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 simply 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 investment decisions for identification. These types of impactful 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 (Luo, 2005).

Accordingly, we select M&A announcements as our empirical setting. In addition to being one of the most significant types of firm investment—U.S. firms invested over $38 trillion dollars in M&As from 1980 to 2018—M&As are material and complex events that generate significant uncertainty about the operations 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. 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).[1] 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 the two proposed channels through which we argue that lenders can learn from equity prices.

Under the fundamental channel, lenders can learn about investors' assessments of the expected future cash flows of the combined entity after the completion of the M&A transaction. Under this scenario, higher (lower) M&A announcement returns would lead to lower (higher) loan pricing to reflect this expected change in the borrower's fundamentals. On other hand, in the context of the incentive channel, larger absolute market reactions to M&A announcements can induce managers to take more risky corporate actions. Specifically, larger positive reactions to M&As can set a high benchmark for managers to meet investor expectations and realize a return on their investment, while larger negative reactions can motivate managers to make riskier decisions to overcome negative expectations and overcome investor skepticism about the firm going forward. Therefore, if lenders learn from equity prices through the incentive channel, we

[1] In the context of M&As, Lehn and Zhao (2006) find evidence that CEOs tend to 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).

expect larger market responses (both positive and negative) to be associated with higher loan pricing.

3.2 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 within a 361-day window (i.e., +/- 180 days) centered around the M&A announcement date, which yields a total of 17,460 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: we omit 3,578 observations with private acquirors and hence no equity market return data; we drop 3,004 observations related to non-US loan syndicates (i.e., we keep only U.S. private lenders to ensure no cross-country information frictions), and we lose 2,264 observations that lack relevant data needed to compute firm, loan, and M&A deal control variables. This yields a final sample of 8,614 M&A-loan facility observations. From this, our main empirical analyses focus on the 5,323 observations with loans originated in the 180-day window *following* the M&A announcement, comprising 3,050 unique M&A deals across 1,367 unique acquirors. We provide further details 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.

3.3 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 29 percent of the acquiror's total assets (*Deal Size to Acquiror Assets*). Nearly 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 77, while half the deals in our sample close within 45 days, and 75 percent close within 97 days.

Acquirors in our sample are large, with average total assets of approximately $2.4 billion [exp(*Size*)]. Additionally, debt represents a significant portion of the firm's capital structure, as total debt represents approximately 28% 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 $278 million [exp(*Loan Amount*)] and a maturity of approximately 53 months [(*Maturity*)]. Notably, there is little variation in maturity of the 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.[2]

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 -7.06%), which drops to 150 basis points in deciles five and six (avg. ret of 0.11% and 0.88%, respectively) and then increases to 225 basis points for the top decile of M&A announcement returns (avg. return 13.3%). 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 incentive channel, where lenders perceive returns as an indication of management's incentives to act on the behest of shareholders, and inconsistent with the fundamental information channel—where lenders react to the sign of the news as an indication of future cash flows.

4.2 Main Results: Multivariate Model and Results

[2] In additional analysis (tabulated and untabulated) we perform our analysis across tighter and longer windows. We expect and find that our results to be stronger for tighter windows, and to attenuate as the window expands and the signal in the M&A announcement returns becomes stale and less relevant to the subsequent loan origination.

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

$$\begin{aligned} \textit{Interest Spread} = {} & \beta_1 \textit{Ancmt. Returns} + \beta_2 \textit{Deal Size to Acquiror Assets} + \beta_3 \textit{Same Industry Deal Indicator} + \beta_4 \textit{Public Target Firm Indicator} + \beta_5 \textit{Book Leverage} + \beta_6 \textit{Size} + \beta_7 \textit{Market to Book} + \beta_8 \textit{Cash Flow from Ops.} + \beta_9 \textit{Cash Flow Volatility} + \beta_{10} \textit{Institutional Ownership} + \beta_{11} \textit{Intangibility} + \beta_{12} \textit{Revolver Indicator} + \beta_{13} \textit{Maturity} + \beta_{14} \textit{Loan Amount} + \beta_{15} \textit{Syndicate Size} + \beta_{16} \textit{Perf. Pricing Indicator} + \beta_{17} \textit{Institutional Tranche Indicator} + \beta_{18} \textit{Number of Financial Covenants} + \alpha_j + \alpha_t + \varepsilon \end{aligned} \quad \text{(Eq 1)}$$

The dependent variable is *Interest Spread* and the primary variable of interest is the announcement returns for the acquiror. The fundamental channel predicts a linear association between announcement returns and spread, so we first measure signed returns (*Acquiror Ancmt. Returns).* The incentive 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 that will be relevant to loan pricing, 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 control 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*), and the number of financial covenants in the loan (*Number of Financial Covenants*).

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 1.005 implies that a one standard deviation increase in market reaction is associated with a 5.39% increase in loan spread. Consistent with the univariate evidence in Figure 2, this suggests lenders perceive larger absolute equity returns as increasing borrower risk through the incentive channel, rather than an indicator of future fundamentals. In Panel B we re-estimate results for the sub-sample of loans originating in a 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; a positive and significant relation between absolute M&A announcement returns and loan spreads, while we continue to find no relation with signed returns.[3]

[3] Given our sample comprises of loans that are initiated prior to the M&A deal closing (53%) and after the M&A deal closing (47%) 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.

Collectively, we view this evidence as being inconsistent with lenders learning about borrowers' fundamental performance (the fundamental channel) as we would have expected to observe a negative relation with signed M&A returns. Instead, the *positive* relation between spread and absolute M&A returns is most suggestive with lenders pricing the risk that managers have incentives to take actions that cater to equity investors' as they exhibit stronger preferences through a stronger return response to the M&A. We interpret these findings as most consistent with lenders learning from equity markets through the incentives channel.

4.2 Identification and Robustness

4.2.1 Unobservable Firm Risk

In this section we discuss several additional analyses performed to address potential correlated omitted variables or alternative interpretations. For instance, one 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. 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 inherent creditworthiness (e.g., a "firm-type") or the lender's private information about the borrower's credit risk, 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. In Table 4 Panel A, we re-estimate model (1) for a sample of loans that originated immediately *prior* to the M&A announcement. In columns (1) and (2), we fail to find any significant relation between signed (*Acquiror Ancmt. Returns*) or absolute returns (*Abs. Acquiror Ancmt. Returns*) and interest spreads on loans originating 180 days prior to

the M&A. We observe similar null results in columns (3) and (4) for loans originating in a tighter window of 45 days prior to the M&A announcement.[4]

Second, in Panel B we re-perform the analysis reported in Table 3 Panel A with the inclusion of borrower fixed effects. We omit 336 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; a one standard deviation increase in absolute M&A announcement returns leads to a 2.01% increase in loan spread (based on within-FE variation). Based on these two analyses, we conclude that it is unlikely that our inferences are attributable to an unobservable firm risk characteristic.

4.2.2 Lender Alternative Information Sources

Another threat to our inferences is the concern that lenders are reflecting risk assessments gleaned from information sources independent of the market returns (e.g., other intermediaries or even their own private information collection). To mitigate this concern, we perform several additional analyses.

First, we lean on the evidence presented in Table 4, Panel B where we show no 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. Given borrowers are required to share with lenders information about "permitted acquisitions" we argue it is very likely that lenders possess information about the M&A in this period when they

[4] 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 (Panels A and B) 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.

are issuing a new loan. However, if the M&A announcement return was simply reflecting the same information that lenders already possess, we would expect to observe a significant association, but do not. In other words, the lenders likely have information about the deal but have not observed the M&A announcement return. We take this as corroborative evidence that our observed relations in our main analysis are due to learning from equity market reactions, as opposed to private information already held by the lender.

Second, 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 1.002 (as compared to 1.005 in Table 3 Panel A) and significant at the 1% level, similar to reported results in Table 3, Panel A.

Third, we examine cross-sectional variation based on characteristics of the lead arranger of the loan agreement. Lead arrangers play a significant role in information acquisition from the borrower and distribution of the information to syndicate participants (e.g., Bushman et al. 2010, Carrizosa and Ryan 2017l; Amiraslani et al. 2022). If returns capture information privately collected by the lending syndicate through the lead arranger, then we would expect to see stronger associations between returns and interest spread when the lead arranger is better informed. We

identify three conditions where the lead arranger is likely to be better informed – (1) when the lead arranger has an existing loan with the acquiror as of the M&A announcement, (2) when the lead arranger has a strong lending reputation, and (3) when the lead arranger has a stronger historical relationship with the acquiror.

In our first test, 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. Debt contracts commonly include "permitted acquisition" clauses which require 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 had conducted extensive diligence directly with the acquiror prior to the M&A announcement. Therefore, if the positive association between absolute M&A announcement returns and the cost of debt is driven by lenders' private information, we would expect to observe this association diminished if the lender has an existing loan outstanding at the time of the M&A announcement. However, in Table 5, Panel A we find that 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.

We next rely on prior literature that demonstrates that information asymmetry between borrowers and lenders is lower for relationship lenders (e.g., Bharath et al., 2011) and that more reputable lenders perform more rigorous screening activities (e.g., Chemmanur and Fulghieri, 1994; Bushman and Wittenberg-Moerman, 2012). In Table 5, Panel B we include *Lending Relationship Indicator,* which is an indicator equal to one if the lead arranger was previously a lead arranger on any loans issued to the acquiror in the last five years. We interact this with our M&A announcement return variable and find no significant coefficient on the interaction terms,

indicating our results are not driven by relationship lending. In Table 5, Panel C we include *Lender Reputation*, which is an indicator variable equal to one if the lead arranger is ranked within the top 5 of the league table in the respective year. We interact this with our M&A announcement return variable and find no significant coefficient on the interaction terms, indicating our results are not driven by highly reputable lenders. Note that we omit lender fixed-effects from this specification because lender-reputation is fairly stable throughout our sample period.

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 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) incentive channel, and (ii) fundamental information channel.

4.3.1 Incentive Channel

Given the main results presented in Table 3 are more consistent with the incentive 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).

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 6. 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 managerial incentives are a primary channel for how lenders perceive equity returns.

Second, we examine whether contractual protections mitigate the price impact of equity returns for lenders. Contractual covenants enable lender monitoring of managerial risk taking and reduce the incentive conflict between shareholders and lenders (Smith and Warner, 1979). We examine the presence of four different covenant types that can help lenders reduce potential agency

risk: a sweep covenant, a capex restriction covenant, a dividend restriction covenant, and performance covenants. Sweep covenants force borrowers to use excess cash flow (above some value) to pay down debt. Capex and dividend restrictions impose constraints on the borrower's ability to use cash for capital expenditures and distribution to shareholders. 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. For each type of covenant, we create an indicator variable equal to one if the loan includes the respective covenant, and zero otherwise. Table 7 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.

4.3.2 Fundamental Information Channel

Next, we consider the possibility that lenders could learn from equity prices through the fundamental channel under specific circumstances. Our main results presented in Table 3 do not provide evidence consistent with the fundamental channel. In particular, the positive association between positive announcement returns and interest spread (the right side of the V-shape) runs directly *opposite* of the predictions of the fundamental channel because positive returns should mean higher future cash flows and correspondingly lower loan spread. However, 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.

We examine this possibility using cross-sectional tests that identify three conditions by which shareholder returns are plausibly more informative about the impact of M&A on future cash flows for the acquiror. 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. 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. Given the future prospects of the combined entity are driven by external factors, it is likely that institutional investors possess superior knowledge and a greater ability to assess potential synergies and M&A success, relative to retail investors. Therefore, M&A announcement returns may be more informative the greater the level of institutional ownership. 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 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. We do not find any significantly different association between M&A announcement returns and loan spread when equity prices are plausibly better informed. This casts further doubt on the notion that lenders use public equity markets as a source of fundamental information.

4.4 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, 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, 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 incentive 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
Acquiror Ancmt. Returns	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
Abs. Acquiror Ancmt. Returns	Absolute value of *Acquiror Ancmt. Returns*.	CRSP
Analyst Revision	The average percentage change of all EPS forecast revisions made between the M&A announcement and the subsequent loan agreement.	IBES
Book Leverage	Total debt (DLTT+DLC) scaled by total assets (AT) of the acquiring firm.	CSTAT
Capex Restriction	An indicator variable equal to one if the loan includes a capex restriction covenant, and zero otherwise.	Dealscan
Cash Flow from Ops.	Cash flow from operating activities (OANCF) scaled by total assets (AT) of the acquiring firm.	CSTAT
Changes in Credit Rating,	The change in S&P credit rating, measured from the M&A deal announcement to just prior to the loan agreement	Capital IQ
Deal Size to Acquiror Assets	The total market value of the target firm scaled (VAL) by the total assets of the acquiring firm (AT).	SDC and CSTAT
Dividend Restriction	An indicator variable equal to one if the loan includes a dividend restriction covenant, and zero otherwise.	
Financial Covenant Indicator	An indicator variable equal to one if the loan includes a financial covenant, and zero otherwise.	Dealscan
High Avg. Delta	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
High Avg. Vega	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
High Max Delta	An indicator variable equal to one if the maximum compensation delta of the five highest paid executives at the acquiring firm is above the sample median, and zero otherwise.	Execucomp
High Max Vega	An indicator variable equal to one if the maximum compensation vega of the five highest paid executives at the acquiring firm is above the sample median, and zero otherwise.	Execucomp
Intangibility	Total intangible assets (INTAN) divided by total assets (AT) of the acquiring firm.	CSTAT
Institutional Ownership	The fraction of outstanding shares owned by institutional owners. We collect ownership data from the Thomson 13F (S34) institutional ownership summary file.	Thomson
Institutional Tranche Indicator	An indicator variable equal to one if the loan is a Term Loan B or below, and zero otherwise.	Dealscan
Interest Spread	The log of the all-in-drawn interest rate spread of the loan contract.	Dealscan
Lender Relationship	An indicator equal to one if the lead arranger was previously a lead arranger on any loans issued to the acquiror in the last five years	Dealscan

Lender Reputation	An indicator variable equal to one if the lead arranger is ranked within the top 5 of the league table in the respective year	Dealscan
Loan outstanding at M&A	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
Loan Amount	The log of the face value of the loan contract.	Dealscan
Maturity	The log of the maturity (in months) of the loan contract.	Dealscan
Market to Book	The market value of equity (PRCC_F*CSHO) scaled by the book value of equity (CEQ) of the acquiring firm.	CSTAT
Number of Financial Covenants	Count of the financial covenants included in the loan agreement.	Dealscan
Perf. Pricing Indicator	An indicator variable if the loan includes a performance pricing covenant, and zero otherwise.	Dealscan
Price Synchronicity	Following prior literature (e.g., Crawford et al., 2012) we measure price synchronicity as the log transformation of $\left(\frac{R^2}{1-R^2}\right)$ where R^2 is the coefficient of determination from the following firm-level equation: $$RET_{it} = \alpha + \beta_1 MKTRET_{it} + \beta_2 INDRET_{it} + \varepsilon_{it}$$ where RET_{it} is the daily return for firm *i* on date *t*, $MKTRET_{it}$ is the value-weighted return of all firms in the same three-digit SIC excluding firm *i*. We estimate these regressions in the calendar year prior to M&A announcement.	CRSP
Public Target Firm Indicator	An indicator variable equal to one if the target firm is a public company, and zero otherwise.	SDC
Revolver Indicator	An indicator variable equal to one if the loan is a revolving credit line, and zero otherwise.	Dealscan
Same Industry Deal Indicator	An indicator variable equal to one if the target firm has the same 2-digit SIC as the acquiring firm, and zero otherwise.	SDC
Size	The log of the total assets (AT) of the acquiring firm.	CSTAT
Sweep Covenant Indicator	An indicator variable equal to one if the loan includes a sweep covenant, and zero otherwise.	Dealscan
Syndicate Size	The log of the total number of syndicate participants for the loan.	Dealscan

Figure 1: Sample Construction and Empirical Approach

This figure illustrates our sample construction. We match M&A announcements to facilities issued within +/- 180 days. 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.

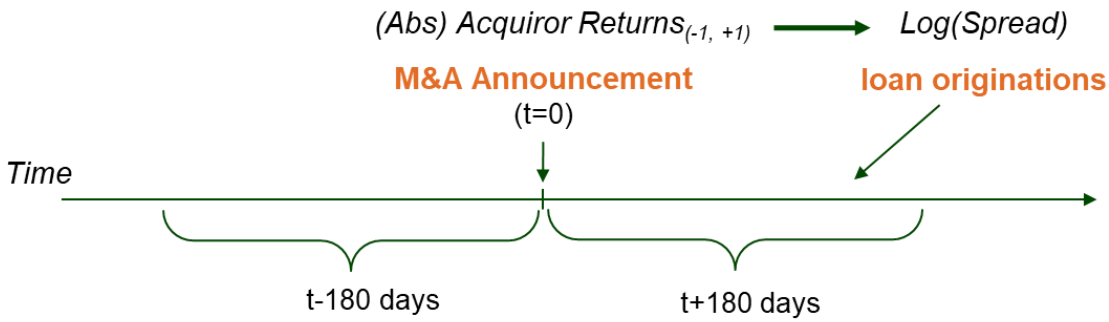

Figure 2: M&A Announcement Returns and Subsequent Loan Spreads

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.

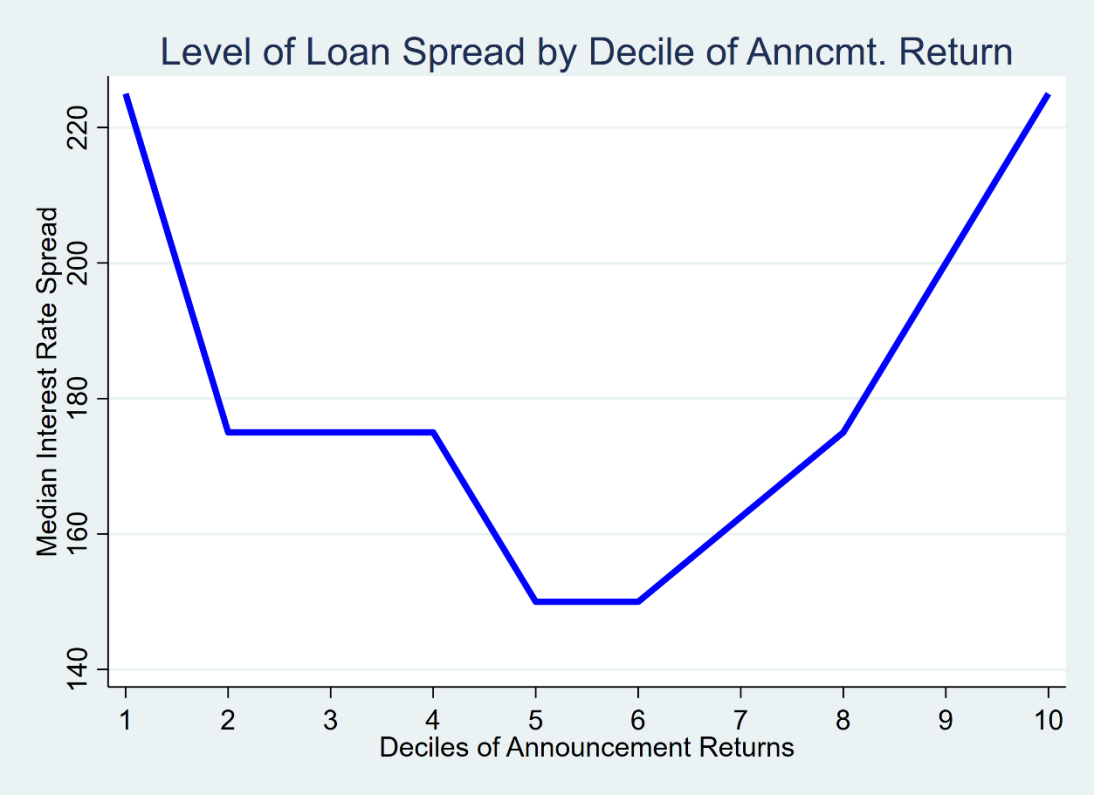

Table 1: Sample Selection

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

Panel A. Sample description

Description	Observations	Source
M&A deals announced between 2004 – 2017	181,342	*SDC*
Loan facilities originated between 2004 - 2017	42,473	*Dealscan*
Matched sample (loans within +/-180 days of M&A announcement)	17,460	
Less: Private acquirors (no return data)	(3,578)	*CRSP*
Non-US loan syndicates	(3,004)	*Dealscan*
Missing data re. control variables	(2,264)	*Compustat*
	8,614	
Main sample (loans originated post-M&A announcement)	5,323	
- *Unique M&A deals*	*3,050*	
- *Unique acquirors*	*1,367*	
Sensitivity sample (loans originated pre-M&A announcement)	3,285	

Panel B. Sample composition, by year

Year	Observations	Perc. (%)
2004	1,634	10.21
2005	1,708	10.67
2006	1,652	10.32
2007	1,476	9.22
2008	751	4.69
2009	407	2.54
2010	959	5.99
2011	1,197	7.48
2012	1,256	7.85
2013	1,199	7.49
2014	1,289	8.05
2015	1,268	7.92
2016	877	5.48
2017	330	2.06

Table 2: Descriptive Statistics

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

Variable	N	Mean	SD	P25	P50	P75
Interest Spread	5323	5.125	0.734	4.828	5.165	5.617
Acquiror Ancmt. Returns	5323	0.017	0.065	-0.015	0.007	0.043
Abs. Acquiror Ancmt. Returns	5323	0.046	0.051	0.011	0.027	0.060
Deal Size to Acquiror Assets	5323	0.290	0.445	0.023	0.097	0.370
Same Industry Deal Indicator	5323	0.550	0.497	0	1	1
Public Target Firm Indicator	5323	0.468	0.499	0	0	1
Percentage of Deal - cash (%)	3614	87.92	22.16	84.78	100	100
Book Leverage	5323	0.274	0.200	0.130	0.249	0.386
Size	5323	7.820	1.733	6.588	7.738	8.929
Market to Book	5323	2.972	3.317	1.617	2.379	3.553
Cash Flow from Ops.	5323	0.102	0.061	0.063	0.095	0.135
Cash Flow Volatility	5323	0.037	0.030	0.016	0.027	0.046
Institutional Ownership	5323	0.730	0.247	0.630	0.799	0.913
Intangibility	5323	0.283	0.219	0.091	0.250	0.436
Days to M&A completion	5323	77	128	8	45	97
Loans made post M&A close (%)	5323	46.66	49.89	0	0	1
Revolver Indicator	5323	0.525	0.500	0	1	1
Maturity (days)	5323	53.51	19.83	48.00	60.00	60.00
Loan Amount (log)	5323	5.640	1.488	4.605	5.704	6.684
Syndicate Size	5323	1.921	0.895	1.386	2.079	2.565
Perf. Pricing Indicator	5323	0.479	0.499	0	0	1
Number of Financial Covenants	5323	1.283	1.139	0	1	2
Institutional Tranche Indicator	5323	0.146	0.353	0	0	0
Prev. Loan O/S Indicator	5323	0.453	0.498	0	0	1
Lender Relationship	5323	0.465	0.490	0	0	1
Lender Reputation	5323	0.453	0.498	0	0	1
Sweep Covenant (indicator)	5323	0.365	0.481	0	0	1
Capex Restriction (indicator)	5323	0.128	0.334	0	0	0
Dividend Restriction (indicator)	5323	0.462	0.498	0	0	1
N Performance Covenants	5323	1.103	1.061	0	1	2

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 six months (Panel A) and 45 days (Panel B) 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. 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. The 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.

Panel A: Loans initiated within 180 days post M&A

Dependent Variable: *Interest Spread*	(1)	(2)
Acquiror Ancmt. Returns	-0.039	
	(-0.25)	
Abs. Acquiror Ancmt. Returns		1.005***
		(4.65)
Deal Size to Acquiror Assets	0.250***	0.207***
	(9.39)	(7.75)
Same Industry Deal Indicator	0.021	0.022
	(1.03)	(1.05)
Public Target Firm Indicator	0.043**	0.036*
	(2.15)	(1.81)
Book Leverage	0.576***	0.569***
	(7.54)	(7.57)
Size	-0.043***	-0.040***
	(-2.88)	(-2.75)
Market to Book	-0.006	-0.004
	(-1.52)	(-1.17)
Cash Flow from Ops.	-1.306***	-1.244***
	(-5.88)	(-5.63)
Cash Flow Volatility	1.782***	1.785***
	(4.03)	(4.03)
Institutional Ownership	0.017	0.007
	(0.34)	(0.13)
Intangibility	0.064	0.079
	(0.95)	(1.18)
Revolver Indicator	-0.140***	-0.138***
	(-7.22)	(-7.17)
Maturity	0.004***	0.004***
	(5.11)	(5.06)
Loan Amount	-0.144***	-0.142***
	(-10.92)	(-10.82)
Syndicate Size	-0.036**	-0.036**
	(-2.00)	(-1.97)
Perf. Pricing Indicator	-0.147***	-0.147***
	(-5.93)	(-5.98)
Institutional Tranche Indicator	0.264***	0.260***
	(7.49)	(7.44)

Table 3—*continued*

Number of Financial Covenants	0.051***	0.051***
	(4.01)	(4.05)
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	5,272	5,272
Adjusted R-squared	0.586	0.590

Panel B: Loans initiated within 45 days post M&A

Dependent Variable: *Interest Spread*	(1)	(2)
Acquiror Ancmt. Returns	0.016	
	(0.06)	
Abs. Acquiror Ancmt. Returns		1.070***
		(3.06)
Deal Size to Acquiror Assets	0.351***	0.304***
	(5.74)	(4.82)
Same Industry Deal Indicator	0.062	0.061
	(1.60)	(1.61)
Public Target Firm Indicator	-0.003	-0.012
	(-0.07)	(-0.34)
Book Leverage	0.626***	0.625***
	(5.19)	(5.16)
Size	-0.042*	-0.038*
	(-1.92)	(-1.78)
Market to Book	-0.000	0.001
	(-0.05)	(0.21)
Cash Flow from Ops.	-1.026***	-0.958***
	(-2.79)	(-2.59)
Cash Flow Volatility	1.922***	1.857***
	(3.00)	(2.87)
Institutional Ownership	-0.017	-0.032
	(-0.20)	(-0.37)
Intangibility	0.075	0.098
	(0.69)	(0.90)
Loan Controls	Yes	Yes
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	1,689	1,689
Adjusted R-squared	0.564	0.568

Table 4: Robustness – correlated omitted variables

This table presents the results of three robustness tests to mitigate the concern of a correlated omitted variable. In Panel A we examine whether acquiror M&A announcement returns are associated with the interest rate spread on loans issued to the acquiror within 180 days (45-days) *prior to* the M&A announcement. The dependent variable, *Interest Spread),* is the natural log of the all-in-drawn interest rate spread of the loan. The variables of interest, *Acquiror Ancmt. Returns* (columns 1&3) and *Abs. Acquiror Ancmt Returns* (Columns 2&4), are the signed and absolute value of the acquiror's M&A announcement returns, respectively. In Panel B we repeat our main analysis from Panel A, Table 3 with the inclusion of borrower fixed effects (*Borrower FE*). In Panel C we repeat our main analysis from Panel A, Table 3 and include additional control variables to capture the arrival of new information between M&A announcement and loan agreements. Specifically, 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 (e.g., *Revolver indicator, Maturity, Loan Amount, Syndicate Size, Perf. Pricing Indicator, Institutional Tranche Indicator, Number of Financial Covenants*) 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

	180-day pre-M&A window		*45-day pre-M&A window*	
Dependent Variable: *Interest Spread)*	(1)	(2)	(3)	(4)
Acquiror Ancmt. Returns	-0.025		0.056	
	(-0.13)		(0.11)	
Abs. Acquiror Ancmt. Returns		0.242		-0.226
		(0.90)		(-0.40)
Deal Size to Acquiror Assets	0.038	0.028	0.346***	0.359***
	(0.79)	(0.57)	(3.08)	(3.30)
Same Industry Deal Indicator	0.078***	0.078***	0.121**	0.123**
	(2.96)	(2.96)	(2.29)	(2.31)
Public Target Firm Indicator	0.002	0.002	-0.044	-0.043
	(0.09)	(0.06)	(-0.86)	(-0.86)
Book Leverage	0.547***	0.540***	0.731***	0.746***
	(6.21)	(6.14)	(4.95)	(5.06)
Size	-0.049***	-0.049***	-0.008	-0.008
	(-3.08)	(-3.04)	(-0.28)	(-0.30)
Market to Book	0.002	0.002	-0.007	-0.007
	(0.42)	(0.48)	(-0.81)	(-0.93)
Cash Flow from Ops.	-1.602***	-1.594***	-0.902**	-0.898**
	(-5.34)	(-5.32)	(-2.10)	(-2.08)
Cash Flow Volatility	2.014***	1.999***	3.327***	3.383***
	(3.49)	(3.46)	(3.49)	(3.53)
Institutional Ownership	0.065	0.063	0.242**	0.244**
	(0.97)	(0.94)	(2.17)	(2.18)
Intangibility	0.159**	0.159**	0.212	0.216
	(1.99)	(1.99)	(1.47)	(1.50)
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	3,253	3,253	932	932
Adjusted R-squared	0.635	0.635	0.632	0.632

Table 4—*continued.*

Panel B: Borrower Fixed Effects

Dependent Variable: *Interest Spread*	(1)	(2)
Acquiror Ancmt. Returns	-0.169	
	(-0.95)	
Abs. Acquiror Ancmt. Returns		0.662***
		(2.60)
Deal Size to Acquiror Assets	0.152***	0.129***
	(4.90)	(4.01)
Same Industry Deal Indicator	-0.004	-0.003
	(-0.19)	(-0.16)
Public Target Firm Indicator	0.053***	0.045**
	(2.66)	(2.24)
Book Leverage	0.245	0.241
	(1.60)	(1.59)
Size	-0.072	-0.067
	(-1.51)	(-1.42)
Market to Book	0.005	0.006
	(1.08)	(1.34)
Cash Flow from Ops.	-1.155***	-1.128***
	(-3.15)	(-3.02)
Cash Flow Volatility	0.642	0.700
	(0.84)	(0.91)
Institutional Ownership	-0.094	-0.090
	(-0.78)	(-0.75)
Intangibility	0.301*	0.325*
	(1.76)	(1.88)
Loan controls	Yes	Yes
Borrower FE	Yes	Yes
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	4,936	4,936
Adjusted R-squared	0.791	0.792

Table 4—*continued.*

Panel C: Controlling for new information between M&A announcement and loan agreement		
Dependent Variable: *Interest Spread*	(1)	(2)
Acquiror Ancmt. Returns	-0.027	
	(-0.17)	
Abs. Acquiror Ancmt. Returns		1.002***
		(4.64)
Deal Size to Acquiror Assets	0.251***	0.208***
	(9.35)	(7.74)
Same Industry Deal Indicator	0.020	0.021
	(0.98)	(1.00)
Public Target Firm Indicator	0.043**	0.036*
	(2.13)	(1.80)
Book Leverage	0.573***	0.566***
	(7.50)	(7.53)
Size	-0.043***	-0.040***
	(-2.88)	(-2.75)
Market to Book	-0.006	-0.005
	(-1.59)	(-1.25)
Cash Flow from Ops.	-1.289***	-1.228***
	(-5.79)	(-5.54)
Cash Flow Volatility	1.783***	1.785***
	(4.02)	(4.03)
Institutional Ownership	0.017	0.007
	(0.34)	(0.14)
Intangibility	0.067	0.082
	(0.99)	(1.22)
Changes in Credit Rating	-0.003	-0.003
	(-0.11)	(-0.11)
Analyst Forecast Revisions	-0.125	-0.123
	(-1.58)	(-1.58)
Changes in Media Sentiment	0.006	0.006
	(0.75)	(0.69)
Loan controls	Yes	Yes
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	5,272	5,272
Adjusted R-squared	0.587	0.590

Table 5: Prior Loans, Relationship Lending and Lender Reputation

This table presents the results of three falsification tests. In Panels A, we condition our main analysis—presented in Panel A of Table 3—on whether the lender had an active relationship with the acquiror at the time of the M&A. We include an interaction term of *Abs. Acq. Ancmt. Returns* and *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. In Panel B we examine the strength of the lending relationship between the lead arranger and acquiror. We include an interaction term of *Abs. Acquiror Ancmt. Returns* and *Lending Relationship Indicator*, which is an indicator equal to one if the lead arranger was previously a lead arranger on any loans issued to the acquiror in the last five years. In Panel C we condition our analysis on reputation of the lead arranger. We include an interaction of *Abs. Acquiror Ancmt. Returns* and *Lender Reputation,* where *Lender Reputation* is an indicator variable equal to one if the lead arranger is ranked within the top 5 of the league table in the respective year. In all specifications we include additional loan controls, and lead arranger, industry and year fixed effects, except in Panel C where we omit lead arranger 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.

Panel A: Prior Loans, M&A Announcement Returns, and Loan Spread

Dependent Variable: *Interest Spread*	*Acquiror Ancmt. Returns*	*Abs. Acquiror Ancmt. Returns*
	(1)	(2)
Returns	-0.063	0.959***
	(-0.30)	(3.37)
Loan outstanding at M&A	-0.064***	-0.055*
	(-2.61)	(-1.79)
*Returns*Loan outstanding at M&A*	-0.012	-0.007
	(-0.04)	(-0.02)
Deal Size to Acquiror Assets	0.244***	0.203***
	(9.15)	(7.55)
Same Industry Deal Indicator	0.021	0.021
	(1.00)	(1.02)
Public Target Firm Indicator	0.045**	0.038*
	(2.19)	(1.86)
Book Leverage	0.598***	0.588***
	(7.89)	(7.86)
Size	-0.043***	-0.041***
	(-2.92)	(-2.78)
Market to Book	-0.005	-0.004
	(-1.45)	(-1.12)
Cash Flow from Ops.	-1.310***	-1.249***
	(-5.89)	(-5.65)
Cash Flow Volatility	1.823***	1.821***
	(4.12)	(4.11)
Institutional Ownership	0.020	0.009
	(0.40)	(0.18)
Intangibility	0.074	0.087
	(1.10)	(1.31)
Loan controls	Yes	Yes
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	5,272	5,272
Adjusted R-squared	0.588	0.591

Table 5—*continued*

Panel B: Relationship Lending, M&A Announcement Returns, and Loan Spread

Dependent Variable: *Interest Spread*	*Acquiror Ancmt. Returns*	*Abs. Acquiror Ancmt. Returns*
	(1)	(2)
Returns	-0.107	0.758***
	(-0.53)	(2.74)
Relationship Lending Indicator	-0.083***	-0.093***
	(-3.52)	(-3.15)
*Returns*Relationship Lending Indicator*	0.111	0.460
	(0.43)	(1.30)
Deal Size to Acquiror Assets	0.204***	0.243***
	(7.61)	(9.13)
Same Industry Deal Indicator	0.020	0.021
	(0.98)	(1.01)
Public Target Firm Indicator	0.037*	0.043**
	(1.81)	(2.14)
Book Leverage	0.595***	0.606***
	(7.96)	(8.02)
Size	-0.041***	-0.044***
	(-2.85)	(-2.99)
Market to Book	-0.004	-0.005
	(-1.09)	(-1.42)
Cash Flow from Ops.	-1.273***	-1.336***
	(-5.78)	(-6.03)
Cash Flow Volatility	1.788***	1.795***
	(4.06)	(4.07)
Institutional Ownership	0.009	0.021
	(0.18)	(0.42)
Intangibility	0.084	0.070
	(1.27)	(1.04)
Loan controls	Yes	Yes
Lead Arranger FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	5,272	5,272
Adjusted R-squared	0.589	0.592

Table 5—*continued*

Panel C: Lender Reputation, M&A Announcement Returns, and Loan Spread

Dependent Variable: *Interest Spread*	*Acquiror Ancmt. Returns*	*Abs. Acquiror Ancmt. Returns*
	(1)	(2)
Returns	0.032	0.867**
	(0.12)	(2.49)
Lender Rep	-0.071***	-0.096***
	(-2.75)	(-2.88)
*Returns*Lender Reputation*	0.047	0.603
	(0.14)	(1.44)
Deal Size to Acquiror Assets	0.217***	0.243***
	(7.55)	(9.13)
Same Industry Deal Indicator	0.019	0.021
	(0.91)	(1.01)
Public Target Firm Indicator	0.024	0.043**
	(1.20)	(2.14)
Book Leverage	0.588***	0.606***
	(8.58)	(8.02)
Size	-0.034**	-0.044***
	(-2.31)	(-2.99)
Market to Book	-0.002	-0.005
	(-0.62)	(-1.42)
Cash Flow from Ops.	-1.352***	-1.336***
	(-6.27)	(-6.03)
Cash Flow Volatility	2.211***	1.795***
	(5.21)	(4.07)
Institutional Ownership	0.046	0.021
	(0.97)	(0.42)
Intangibility	0.107*	0.070
	(1.69)	(1.04)
Loan controls	Yes	Yes
Lead Arranger FE	No	No
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	5,466	5,466
Adjusted R-squared	0.546	0.541

Table 6: Incentive Channel – Managerial Compensation

This table presents the results of our cross-sectional tests to corroborate the Incentive channel. In columns (1) and (2) we repeat our main analysis (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: *Interest Spread*	*High Avg. Vega*	*High Avg. Delta*	*High Liquidity*
	(1)	(2)	(3)
Abs. Acquiror Ancmt. Returns	0.693**	0.761**	0.513**
	(2.51)	(2.47)	(2.29)
Incentive Proxy	-0.154***	-0.094**	-0.144***
	(-3.48)	(-2.32)	(-3.45)
*Abs. Acquiror Ancmt. Returns * Incentive Proxy*	1.458**	1.209**	1.331***
	(2.32)	(2.11)	(2.88)
Deal Size to Acquiror Assets	0.245***	0.245***	0.212***
	(6.79)	(6.78)	(7.82)
Same Industry Deal Indicator	0.026	0.025	0.019
	(1.11)	(1.05)	(0.92)
Public Target Firm Indicator	0.040*	0.041*	0.033*
	(1.68)	(1.73)	(1.66)
Book Leverage	0.615***	0.619***	0.568***
	(6.19)	(6.10)	(7.69)
Size	-0.028	-0.037*	-0.021
	(-1.39)	(-1.83)	(-1.22)
Market to Book	-0.006	-0.006	-0.004
	(-1.38)	(-1.18)	(-1.04)
Cash Flow from Ops.	-1.541***	-1.610***	-1.161***
	(-5.45)	(-5.70)	(-5.24)
Cash Flow Volatility	1.898***	1.964***	1.807***
	(3.41)	(3.49)	(4.11)
Institutional Ownership	0.097	0.088	0.018
	(1.33)	(1.17)	(0.34)
Intangibility	0.079	0.078	0.075
	(0.95)	(0.95)	(1.12)
Loan controls	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	3,878	3,879	5,272
Adjusted R-squared	0.619	0.616	0.593

Table 7: Incentive 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: *Interest Spread*	*Sweep Covenant*	*Capex Restriction*	*Dividend Restriction*	*Performance Covenants*
	(1)	(2)	(3)	(4)
Abs. Acquiror Ancmt. Returns	1.423***	1.198***	1.187***	1.467***
	(5.77)	(4.86)	(4.18)	(4.43)
Covenant Type	0.246***	0.237***	0.105***	0.069**
	(8.16)	(4.78)	(3.46)	(2.13)
*Abs. Acquiror Ancmt. Returns * Cov. Type*	-1.067***	-1.313**	-0.390	-0.734*
	(-2.82)	(-2.52)	(-1.04)	(-1.77)
Deal Size to Acquiror Assets	0.179***	0.202***	0.201***	0.201***
	(6.92)	(7.43)	(7.52)	(7.50)
Same Industry Deal Indicator	0.024	0.017	0.022	0.020
	(1.20)	(0.84)	(1.07)	(0.96)
Public Target Firm Indicator	0.033*	0.033	0.036*	0.038*
	(1.67)	(1.61)	(1.77)	(1.88)
Book Leverage	0.555***	0.582***	0.578***	0.580***
	(7.50)	(7.73)	(7.67)	(7.69)
Size	-0.030**	-0.038***	-0.037**	-0.041***
	(-2.07)	(-2.58)	(-2.54)	(-2.81)
Market to Book	-0.004	-0.003	-0.004	-0.004
	(-1.22)	(-0.93)	(-1.19)	(-1.17)
Cash Flow from Ops.	-1.250***	-1.273***	-1.228***	-1.257***
	(-5.71)	(-5.78)	(-5.49)	(-5.63)
Cash Flow Volatility	1.736***	1.674***	1.724***	1.721***
	(4.03)	(3.78)	(3.84)	(3.84)
Institutional Ownership	0.009	0.006	0.006	0.004
	(0.19)	(0.12)	(0.12)	(0.09)
Intangibility	0.065	0.099	0.086	0.089
	(0.99)	(1.48)	(1.27)	(1.31)
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	5.272	5.272	5.272	5.272
Adjusted R-squared	0.596	0.588	0.586	0.584

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 nonsynchronicity (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.

	Negative M&A Ancmt. Returns		
Dependent Variable: *Interest Spread*	*High Private info*	*High IO*	*Public Target*
	(1)	(2)	(3)
Acquiror Ancmt. Returns	-2.811***	-2.686***	-1.757***
	(-4.71)	(-4.05)	(-3.12)
Price Informativeness Proxy	0.015	0.019	-0.006
	(0.34)	(0.44)	(-0.13)
*Acquiror Ancmt. Returns * Price Informativeness Proxy*	0.729	0.885	-0.959
	(0.86)	(1.05)	(-1.22)
Deal Size to Acquiror Assets	0.210***	0.184***	0.179***
	(4.91)	(4.68)	(4.54)
Same Industry Deal Indicator	0.026	0.035	0.035
	(0.79)	(1.10)	(1.08)
Public Target Firm Indicator	0.038	0.027	-
	(1.11)	(0.81)	
Book Leverage	0.729***	0.684***	0.676***
	(6.77)	(6.49)	(6.42)
Size	-0.033*	-0.033*	-0.033*
	(-1.72)	(-1.82)	(-1.85)
Market to Book	-0.006	-0.007	-0.007
	(-1.10)	(-1.20)	(-1.24)
Cash Flow from Ops.	-1.493***	-1.217***	-1.192***
	(-4.49)	(-3.79)	(-3.70)
Cash Flow Volatility	2.558***	2.241***	2.313***
	(3.61)	(3.36)	(3.54)
Institutional Ownership	-0.033	-	-0.062
	(-0.46)		(-0.89)
Intangibility	0.012	0.005	0.020
	(0.12)	(0.05)	(0.22)
Loan controls	Yes	Yes	Yes
Lead Arranger FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	2,086	2,176	2,176
Adjusted R-squared	0.621	0.617	0.618

Table 9: 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.

Panel A: 8K Filings (All items)

Dependent Variable: *Interest Spread*	*All Filings*		*All Filings (exc. Item 2.02)*	
	Signed Ret.	*Absolute Ret*	*Signed Ret.*	*Absolute Ret.*
	(1)	(2)	(3)	(4)
Filing Return	-0.022	0.249***	0.012	0.396***
	(-0.85)	(5.00)	(0.32)	(5.44)
Book Leverage	0.275***	0.267***	0.241**	0.230**
	(3.22)	(3.14)	(2.51)	(2.40)
Size	-0.087***	-0.085***	-0.081***	-0.079***
	(-3.56)	(-3.49)	(-3.04)	(-2.94)
Market to Book	-0.004	-0.003	-0.004	-0.003
	(-1.01)	(-0.97)	(-0.97)	(-0.89)
Cash Flow from Ops.	-0.712***	-0.708***	-0.724***	-0.715***
	(-4.68)	(-4.65)	(-4.32)	(-4.28)
Cash Flow Volatility	0.162	0.163	0.046	0.040
	(0.50)	(0.51)	(0.13)	(0.11)
Institutional Ownership	-0.036	-0.035	-0.035	-0.032
	(-0.94)	(-0.91)	(-0.85)	(-0.78)
Intangibility	0.046	0.050	0.047	0.052
	(0.50)	(0.54)	(0.48)	(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: *Interest Spread*	*Item 1 Filings*		*Item 5 Filings*	
	Signed Ret.	*Absolute Ret*	*Signed Ret.*	*Absolute Ret.*
	(1)	(2)	(3)	(4)
Filing Return	0.049	0.350***	-0.080	0.405***
	(0.78)	(3.60)	(-1.12)	(3.56)
Book Leverage	0.185**	0.177*	0.251***	0.239***
	(2.01)	(1.94)	(2.74)	(2.61)
Size	-0.107***	-0.105***	-0.080***	-0.078***
	(-4.11)	(-4.03)	(-2.83)	(-2.76)
Market to Book	-0.007	-0.007	-0.006*	-0.006*
	(-1.59)	(-1.54)	(-1.69)	(-1.65)
Cash Flow from Ops.	-0.887***	-0.878***	-0.579***	-0.571***
	(-4.64)	(-4.62)	(-3.32)	(-3.27)
Cash Flow Volatility	0.756*	0.754*	0.202	0.182
	(1.90)	(1.90)	(0.62)	(0.56)
Institutional Ownership	0.008	0.013	-0.068	-0.067
	(0.16)	(0.26)	(-1.57)	(-1.56)
Intangibility	0.169	0.178	-0.012	-0.007
	(1.48)	(1.56)	(-0.12)	(-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