Congruence in Governance:

Evidence from Creditor Monitoring of Corporate Acquisitions

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Abstract

We examine the impact of creditor control rights on corporate acquisitions, using covenant violations as an indicator of heightened creditor control. We show that private credit agreements frequently impose restrictions on borrower acquisition decisions. Following a covenant violation, creditors use their bargaining power to tighten these restrictions and limit acquisition activity, particularly deals expected to earn large negative announcement returns. Firms that do announce an acquisition while in violation of a covenant earn 1.8% higher stock returns, on average, with the effect concentrated among firms with weak external governance. We conclude that creditors and equity holders share congruent preferences to limit activity motivated by managerial agency conflicts.

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1. Introduction

Corporate creditors play an important role in the governance of firms. Through the provision of funding, enforcement of contractual restrictions, and frequent interactions with management, creditors have the ability and incentive to influence corporate decision-making. Existing research shows that financial covenant violations convey significant control rights to creditors and lead to less borrowing and investment at the violating firm. In this paper, we examine creditor control of acquisition activity to understand which types of investments creditors curtail and the shareholder value implications of these actions.

Our setting provides two significant advantages relative to prior research. First, creditors can directly contract on acquisitions because they are important decisions that can be described and verified. Second, acquisitions by public companies are large, discrete events that are publicly observable. These features allow us to measure the impact of creditor control on shareholder value using standard event study methodology and infer the types of investments that creditors prevent.

We begin by providing evidence that creditors directly contract on acquisition decisions. Lenders frequently include acquisition covenants in private credit agreements and significantly tighten these restrictions after a financial covenant violation. For example, after a covenant violation in the third quarter of 2008, Lee Enterprises, Inc. reported that they amended their existing credit agreement to "modify other covenants, including restricting the Company's ability to make additional investments and acquisitions without the consent of its Lenders."[1] Reading credit agreements for a large sample of firms, we find that the likelihood that creditors tighten acquisition restrictions is roughly 25 percentage points higher for violators than matched non-

[1] Lee's 2008 10-K https://www.sec.gov/Archives/edgar/data/58361/000119312508262419/d10k.htm.

violators. This comparison offers direct evidence that creditors exert contractual control over borrowers.

Next we show that creditors use their bargaining power and contractual authority to limit acquisition activity. Our estimates suggest that the likelihood of an acquisition falls by about one-third when firms are in violation of a financial covenant, which expands the findings of Nini, Smith, and Sufi (2012) to a broad set of acquisitions that includes deals made with all forms of payment. Our key innovation is using detailed acquisition data to infer which types of deals creditors prevent and to analyze the shareholder value implications.

Although the purpose of creditor interventions is to maximize the return on their investment, the spillover effect of these actions on shareholders is unclear. Due to differences in cash flow rights, creditors may use their control rights in ways that conflict with equity holders. Since creditors share less in the upside of returns, they have particular incentive to prevent risky investments, even if these investments would benefit equity holders. However, both creditors and equity holders share the incentive to limit investments that generate private benefits for management at the expense of firm value. If creditors use their control rights to discipline managers, we expect that creditor actions will confer spillover benefits on shareholders. In this latter case, we refer to the governance incentives of creditors and equity holders as congruent.

Using a sample of more than 7,000 acquisitions announced between 1997 and 2015 combined with covenant violation data hand-collected from SEC filings, we find evidence supporting the hypothesis that creditors use their control rights to prevent investments expected to destroy firm value. Our estimates imply that the likelihood of announcing a value-destroying acquisition falls by roughly 40% when firms are in violation of a covenant. Conversely, we find no evidence that the likelihood of announcing a value-increasing deal changes after a violation.

This censoring shifts the distribution of realized stock returns to the right. Acquisitions announced shortly after a violation earn, on average, 1.6 to 1.8 percentage points higher cumulative abnormal returns (CARs) over the three days surrounding deal announcement, compared with acquisitions by firms that have not recently violated a covenant. Moreover, if an acquirer does experience negative stock returns at announcement, it is more likely to withdraw the bid when in violation of a financial covenant.

We find no evidence to support the notion that creditors use their control rights to encourage firms to "play it safe" by limiting risky yet productive deals or by shifting borrowers toward diversifying acquisitions that destroy shareholder value, as proposed by Amihud and Lev (1981).[2] In contrast, we find that more than one-third of credit agreements explicitly prohibit diversifying acquisitions, suggesting that creditors view diversification as costly. In addition, regression estimates imply that firms in violation of a covenant are less likely to target a firm outside of their industry.[3]

To bolster the interpretation that creditor control provides spillover benefits to equity holders, we examine whether the effect of a covenant violation varies with the strength of external governance mechanisms. If equity holders already prevent managers from pursuing private benefits, we expect to observe smaller creditor effects in well governed firms. We form proxies for external governance based on prior research documenting that agency costs are most prevalent among firms without blockholders and firms operating in uncompetitive industries (Shleifer and Vishny, 1986; Giroud and Mueller, 2010, 2011). Consistent with our hypothesis, the decrease in

[2] Lewellen (1971) argues that diversifying acquisitions benefit creditors by reducing default risk if the underlying assets are not perfectly correlated. Gormley and Matsa (2011) suggest that the joint incentive of creditors and managers to "play it safe" may amplify managerial agency costs, resulting in more diversifying deals. Acharya, Amihud, and Litov (2011) use cross-country evidence to show that stronger creditor rights reduce corporate risk-taking and leads to more value-reducing diversifying acquisitions.

[3] Our results are consistent with Ersahin, Irani, and Le (2017), who show that firms are more likely to shut down periphery plants after a covenant violation.

acquisition activity and increase in acquirer returns is concentrated among firms with weak external governance. These results suggest a synergy exists between creditor and equity governance.

Since covenant violations are not randomly assigned to firms, we provide evidence to encourage a causal interpretation of our results. We use the timing of the effect, controls for a host of observable factors known to influence acquisition outcomes, and the quasi-regression discontinuity design of Roberts and Sufi (2009) and Nini et al. (2012) to identify the effect of a covenant violation. Further, we offer direct empirical support for one of the mechanisms through which creditors affect borrower decisions by showing that acquisition restrictions tighten after a violation.

Throughout the paper, we also highlight how any remaining identification challenges might affect our inferences. For example, financial constraints pose one plausible alternative explanation for our results. Firms in violation of a covenant might make fewer acquisitions because they are unable to obtain financing and subsequently earn higher CARs if acquisition announcements signal the relaxation of financial constraints. Indeed, we show that violating firms are less likely to use a new bank loan to finance an acquisition and that bank financed acquisitions earn higher average CARs. However, the effect of a covenant violation on acquirer CARs persists if we control for new debt financing. Moreover, we find no significant differences in post-acquisition balance sheet changes, as would be expected if violators were more likely to acquire "cash cows." Instead, the totality of the evidence indicates that creditors actively monitor borrower acquisition decisions.

Our findings are consistent with economic models showing that creditor monitoring can produce positive spillover effects for shareholders by preventing value-reducing investments via

state-contingent control rights.[4] Compared with existing research on covenant violations, our results provide two important contributions. First, we provide direct evidence of the contracting channel through which creditors exert control over borrowers. Prior research infers creditor control based on changes in firm outcomes.[5] Yet, even if the causal effect of a violation is properly identified, it could be the case that violations simply serve as a signal to encourage more stringent monitoring by shareholders and boards of directors, which would offer an alternative explanation for the seeming congruence between creditors and shareholders. By examining changes in credit contracts, we rule out the hypothesis that creditors remain passive following a covenant violation.[6]

Second, we provide compelling evidence that the actions taken by firms under heightened creditor control benefit shareholders. Prior research has drawn a similar conclusion by examining long-run stock returns and accounting performance following a violation.[7] Inferences based on long-run stock returns, however, require an accurate asset pricing model to account for changes in risk and imply that markets only slowly react to news of a violation, suggesting a fair amount of market inefficiency. Additionally, Barber and Lyon (1996) suggest that inferences based on accounting performance are plagued by mean reversion that is present in most accounting metrics, which may arise naturally if firms face decreasing returns to scale and cut back on investment following a violation. We complement these studies by examining short-run market reactions to

[4] For example, the incomplete contracting models of Aghion and Bolton (1992) and Dewatripont and Tirole (1994) show that debt contracts can be written such that decision rights optimally shift from managers to creditors when private benefits are likely to lead to inefficient outcomes.

[5] The existing literature shows that covenant violations are associated with declines in a broad range of investment and financial policies, including capital expenditure, leverage, and employment (Chava and Roberts, 2008; Roberts and Sufi, 2009; Falato and Liang, 2016).

[6] Nini, Sufi, and Smith (2009) show that restrictions on capital expenditures are more common for firms that violated a covenant in the recent past. However, covenant violations are not the focus of that paper.

[7] Nini et al. (2012) examine stock returns over two years following a violation and find that violators earn excess returns relative to a four-factor asset pricing model. Ersahin, Irani, and Le (2017) use establishment-level data to show that violating firms cut relatively unproductive plants but are unable to assess any shareholder value implications.

large corporate events for firms known to have recently violated a financial covenant.[8] The average 3-day CAR for acquisitions announced by violating firms is positive and significantly larger than for similar non-violating firms. Moreover, the difference in average returns is due to fewer announcements with large negative returns, as would be predicted if creditors curtail investments that they expect would destroy firm value.[9]

This paper also contributes to the literature that examines how agency conflicts impact acquirer returns.[10] Theory suggests that exposure to credit markets tempers managerial agency costs (Easterbrook, 1984; Jensen, 1986), and prior empirical research shows that creditors affect acquisitions as a provider of deal financing (Bharadwaj and Shivdasani, 2003). We contribute by providing evidence that creditors monitor corporate acquisitions through restrictions written in debt contracts. Harford, Humphery-Jenner, and Powell (2012) show that entrenched managers frequently destroy value by avoiding private targets and engaging in diversifying deals. We find that heightened creditor control reverses these trends, though target characteristics do not fully explain the improved acquisition outcomes. Even after controlling for target characteristics and method of payment, acquirers in violation of a covenant earn higher announcement returns, suggesting that creditors examine the details of each deal rather than imposing blanket restrictions. We conclude that creditors and equity holders share congruent preferences to limit activity motivated by managerial agency conflicts.

[8] Our approach does not rely on investors knowing that firms recently violated a covenant. The approach simply requires that short-run announcement returns accurately capture investors' perception of the acquisition gains.

[9] Ertan and Karolyi (2016) examine the stock market reaction to changes in the estimated likelihood of a covenant violation and conclude that shareholders expect creditor control to reduce equity value. The challenge with such an approach is measuring changes in the likelihood of a violation separate from changes in firm fundamentals.

[10] Related work studying the effect of external monitoring on acquisitions identifies anti-takeover provisions (Masulis, Wang, and Xie, 2007), boards of directors (Lin, Officer, and Zou, 2011; Schmidt 2015; Field and Mkrtchyan, 2017), and analyst coverage (Chen, Harford, and Lin, 2015) as important determinants of acquirer announcement returns. In conjunction, these papers suggest that managers' pursuit of private benefits influences acquisition activity and destroys firm value absent proper governance mechanisms.

2. Data and descriptive statistics

2.1 Sample construction

We begin our analysis with the universe of U.S. firm-quarter observations in Compustat from 1997 to 2015. The sample starts in 1997 because the Securities and Exchange Commission (SEC) did not require electronic filing for all registered firms until the second quarter of 1996 and we need data available two quarters before each deal to determine whether the acquirer is in violation of a financial covenant. Using the methodology of Nini et al. (2012), we employ a text-search algorithm to identify every occurrence of a financial covenant violation in the universe of 10-K/10-Q filings on EDGAR and manually inspect the paragraphs around each potential violation to remove false positives.[11] The resulting dataset contains an indicator that denotes whether a firm is in violation of a financial covenant for each fiscal quarter through 2015.

We also eliminate the following firms: financials (SIC between 6000 and 6999), firms with average book assets less than $10 million in 2000 dollars, as well as firm-quarter observations with missing total assets, total sales, common shares outstanding, closing share price, or calendar quarter information. We require that each firm-quarter observation has lagged accounting data available. Finally, we merge each observation with stock price information from the Center for Research in Security Pricing (CRSP) and require that each firm has one year of stock prices to compute the runup prior to acquisitions. These criteria yield a sample of 176,378 firm-quarter observations from 7,164 U.S. nonfinancial firms.

We draw our sample of acquisitions from the Securities Data Company (SDC) Platinum Merger and Acquisition database. Following prior research (e.g. Moeller, Schlingemann, and

[11] Covenant violations must be disclosed in quarterly financial statements in accordance with Regulation S-X. See the appendix to Nini et al. (2012) for more details on the text-search algorithm and manual coding.

Stulz, 2004; Masulis et al., 2007), we filter out spinoffs, recapitalizations, exchange offers, repurchases, self-tenders, privatizations, transactions valued at less than $1 million or 1% of the acquirer's market value eleven days prior to the announcement, deals where the acquirer controlled more than 50% of the target prior to the announcement or sought less than 100% after completion, and deals that do not involve a public, private, or subsidiary target. These standard filters ensure that deals are large enough to have a material effect on shareholders and creditors. We merge these deals into our firm-quarter sample using cusip, ticker, and company name recorded in the CRSP historical stock names file. We finalize our deal sample by dropping transactions with missing 3-day acquirer CARs, method of payment, or target characteristics. This process yields a sample of 7,191 deals made by 2,907 U.S. nonfinancial firms from fiscal years 1997 to 2015. Appendix 2 provides additional details on the sample selection process.

2.2 Identifying covenant violators

Chava and Roberts (2008) note that firms generally file compliance reports with creditors on a quarterly basis to coincide with SEC reporting requirements. In practice, we observe whether firms report a covenant violation in each SEC filing that corresponds to a particular quarter-end, but we do not observe exactly when firms breach covenants or negotiate waivers. In an acquisition setting, this limitation means that it is not possible to know precisely whether an acquisition occurred before or after control rights were transferred within a given quarter. We address this issue by using an indicator that classifies an observation as "in violation" if the firm reported a financial covenant violation in either of the prior two quarters, regardless of whether the firm reports a violation during the quarter of the acquisition.

An advantage of this approach is that it precludes a reverse causality problem in which acquisitions could lead to covenant violations in the same quarter. Our trailing indicator, however,

does not fully abate the measurement error common to studies of covenant violations. There may be borrowers that quickly cure a covenant violation and avoid creditor influence over subsequent acquisitions. In other instances, creditors might maintain approval rights over acquisition decisions for an extended period of time beyond two quarters. In either case, the separation of firms into treatment and control groups is imperfect, which creates classical errors-in-variables and biases our analysis against producing significant results. We choose to examine a two-quarter trailing indicator to correspond with the six-month average bidding process documented in Boone and Mulherin (2007). Thus, our analyses test whether creditors intervene in decisions regarding potential acquisitions that are on the near term horizon. In subsequent robustness tests, we verify that our results are robust to using a one-year trailing indicator.

2.3 Sample characteristics

Panel A of Table 1 reports descriptive statistics for the full sample of deals. Acquirers tend to be large, profitable firms. The average acquirer has a $5.1 billion market capitalization and a market-to-book ratio of about 2.0. Our sample acquirers have a mean operating cash flow to assets ratio of 0.12 and a leverage ratio of 0.26. We estimate market model cumulative abnormal returns using the CRSP equal-weighted index and a one year estimation window (252 trading days) ending one month (20 trading days) prior to the three-day [-1, +1] event window centered on the deal announcement day. Across the full sample, the mean acquirer 3-day CAR in our sample is 1.13%. The fraction of deals involving public, private, and subsidiary targets is 23%, 45%, and 32%, respectively. The average deal value is 29% of the acquirer's market value, measured 11 trading days prior to the announcement, and 95% of announced deals are ultimately completed. Overall, our descriptive statistics are quite similar to prior studies of mergers and

acquisitions, particularly those that parallel our sample selection process.[12]

2.4 Comparison of firms by violation status

It is important to first understand which firms violate their credit agreements before we attempt to identify the effect of creditor control rights on acquisition outcomes. Nini et al. (2012) show that financial covenant violations are common across firms and industries and stress that violations appear to indicate a downward *change* in performance, rather than a low absolute *level* of performance. Forty percent of firms in their sample report at least one covenant violation between 1997 and 2008. The propensity to violate does decrease with firm size, however, as the fraction of firms that ever report a covenant violation decreases from 44% for firms with less than $100 million in book assets to 25% for firms with greater than $5 billion in assets. Our extended sample of covenant violations mirrors Nini et al. (2012) along all dimensions.

Panel B of Table 1 presents acquirer characteristics split by covenant violation status. Within the set of acquirers, firms in violation differ from firms that have not recently violated a covenant. Violators are smaller and have experienced weaker performance than non-violators, though the typical violator in our deal sample is far from insolvent. The median violating acquirer triggered a technical default despite maintaining positive operating cash flow and a market-to-book ratio of 1.3. This valuation is nearly twice as high as the 0.75 median market-to-book ratio that Campbell, Hilscher, and Szilagyi (2008) report for their sample of distressed firms. Violators also do not appear to be extremely levered or suffer from liquidity shortfalls. The average violator

[12] For example, Masulis et al. (2007) report that the average acquirer has a $5.6 billion market value of equity and a 1.98 market-to-book ratio in their study of acquisitions from 1990 to 2003. Moeller, Schlingemann, and Stulz (2004) report, for their sample of deals spanning 1980 to 2001, mean operating ROA of 0.13, leverage of 0.31, CARs of 1.10%, and 22% of deals involving public targets. John, Knyazeva, and Knyazeva (2015) calculate a relative deal size of 24% and find that 91% of bids are completed in their 1985–2009 sample. Betton, Eckbo, and Thorburn (2008) detail mean acquirer returns of 0.73% for 15,987 deals from 1980-2005.

in our deal sample has a leverage ratio of 0.32, a current ratio of 2.03, and a ratio of cash-to-assets of 0.11. These statistics alleviate concerns that financial position alone may alter acquisition decisions for violating firms, but also point to the importance of controlling for differences between violators and non-violators.

3. Empirical design

Our empirical approach is to use the experience of firms that have not violated a covenant (the control group) to estimate the counterfactual outcome for firms that have violated a covenant (the treatment group). Covenant violations, however, are not randomly assigned to firms. By construction, violations occur when performance declines and accounting ratios breach contractually stated thresholds. Hence, the design of covenants poses a challenge for researchers wishing to use violations to identify the effects of creditor control. Our primary concern is that outcomes may be affected by firm characteristics correlated with violations and would occur absent creditor intervention. Omitted variable bias will emerge if violators and non-violators differ along unobserved dimensions that are associated with acquisition outcomes. Throughout the analysis, we highlight how these factors could affect inferences and take the following steps to address this identification challenge.

First, we plot outcome variables to explore the timing of the effect of a covenant violation. If constant unobserved firm characteristics explain our results, we would expect no differences in the quarters immediately around a covenant violation. Conversely, if creditor control drives our results, we would expect to see stronger results when firms are in violation than when firms are pre- or post-violation. Evidence that creditor influence wanes as time elapses post-violation would further suggest a causal interpretation and validate our measure of creditor control.

Second, we estimate regressions standard to the acquisition literature to account for observable differences between violators and non-violators. Following Moeller et al. (2004) and Masulis et al. (2007), we control for acquirer size, stock price runup, leverage, market-to-book-ratio, and operating cash flow. We refer to these variables as *AcquirerControls* through our analysis. We also include controls for relative deal size, toeholds, target listing status, method of payment, and deal nature. We do not include these variables (*DealControls*) in each specification, however, because we believe that these variables are best thought of as outcome variables rather than controls. For example, creditors may prefer acquirers to make diversifying acquisitions and use stock as the method of payment. Angrist and Pischke (2009) advise that regressions should not include controls that are themselves affected by the variable of interest. Nevertheless, we choose to layer in these deal controls in some specifications to be consistent with prior literature and to examine whether our estimates change after accounting for deal characteristics.

We also follow Roberts and Sufi (2009) and Nini et al. (2012) and implement a quasi-regression discontinuity design to confront identification concerns related to the non-random assignment of violations. Our goal is to exploit the discontinuity at the point of violation by flexibly controlling for continuous functions of the variables on which covenants are written. We refer to this strategy as a "quasi-discontinuity design" because we do not observe the contractual level of each individual covenant and thus cannot precisely compare firms just above and just below the threshold.

Instead, our approach identifies the effect of a covenant violation by comparing outcomes for violators to outcomes for non-violators with similar deterioration in performance. We accomplish this by controlling for lagged and higher-order functions of the following variables: operating cash flow to assets, leverage ratio, interest expense to assets, net worth to assets, current

ratio, and market-to-book ratio. These variables, labeled *CovenantControls*, account for the ratios on which covenants are commonly written (Roberts and Sufi, 2009), as well as those that may have an independent effect on acquisition decisions. We include linear, quadratic, and cubic covenant variables to control for possible nonlinear effects. We also include one year lags of these controls to account for firm conditions when the debt contracts were negotiated and to proxy for the unobserved level of the covenants. Together, these variables produce expected outcomes following patterns of poor performance and mimic a standard regression-discontinuity design if covenants are written at similar levels for similar firms.

Our broadest empirical specification is

$$\begin{aligned} y_{i,t} = \beta \cdot Violation_{i,t} + \theta_1 \cdot AcquirerControls_{i,t-1} + \theta_2 \cdot CovenantControls_{i,t-1} \\ + \theta_3 \cdot HigherOrderCovenantControls_{i,t-1} + \theta_4 \cdot CovenantControls_{i,t-5} \\ + \theta_5 \cdot DealControls_{i,t} + Industry_i + Year_t + \varepsilon_{i,t}, \end{aligned} \quad (1)$$

where $Violation_{i,t}$ is an indicator variable that equals one if firm *i* reported a financial covenant violation during either of the two quarters prior to quarter *t*, $Industry_i$ represents industry fixed effects based on Fama-French (1997) 48 industry classifications, and $Year_t$ represents year fixed effects. In all specifications, we follow standard practice in the acquisiton literature and cluster standard errors by firm to account for potentially serial correlated residuals (e.g., Masulis et al., 2007 and Field and Mkrtchyan, 2017). Although we cannot rule out the possibility of omitted variable bias, our empirical strategy of gradually imposing a more stringent specification provides insight into the nature of the endogeneity and guides our inferences about the effect of creditor control rights on acquisitions.

Finally, we offer direct evidence of changes in loans contracts following a covenant violation. By showing that acquisition-related restrictions tighten following a violation, we

provide empirical support for one of the mechanism through which creditors affect the decisions of their borrowers. We believe this makes it unlikely that the changes we observe would happen without the violation and subsequent change in control. The next section provides additional discussion of the nature of the contractual changes.

4. Creditor control over acquisitions

4.1 Mechanism: contractual renegotiation

Corporate creditors can influence acquisitions through three primary channels. First, firms often need new credit to finance the cash portion of a deal. To the extent that the acquirer must obtain additional financing, the lender can affect whether the deal occurs and potentially some of the terms of the deal. Second, creditors may exert influence through behind-the-scenes renegotiation after a covenant violation by refusing to grant a waiver unless the borrower alters their acquisition plans. Finally, negative covenants common to corporate credit agreements often constrain the types of acquisitions that firms can undertake. As discussed in Wight, Cooke, and Gray (2009), the standard credit agreement includes a covenant prohibiting "fundamental changes, asset sales, and acquisitions."[13]

We use financial covenant violations to identify periods of heightened creditor control under the hypothesis that creditors tighten acquisition restrictions following a violation. In order to test this hypothesis, we collect information on acquisition restrictions in loan agreements for a sample of covenant violators and a matched sample of firms that did not violate a covenant. We begin with the set of firm-quarters that experience a new covenant violation, defined as a reported

[13] Acquisitions can also be limited by negative covenants restricting investments.

violation following a period of four consecutive quarters without a violation.[14] We then match these firms to other firms in the same quarter that did not report a violation in that quarter or any of the previous 4 quarters. We match using one-to-one propensity matching (with replacement) on the full set of acquirer and covenant control variables used in Table 3, Column (2). We then choose a random set of 200 firms; 106 violators and 94 matched non-violators.

For each of these firms, we read the most recent credit agreement prior to the quarter of reported violation or pseudo-violation. This agreement provides the baseline set of restrictions prior to the violation. We next collect all loan amendments and new credit agreements filed with the SEC during the two years following the quarter-end date of the reported violation. As discussed in Roberts (2015), firms are required to disclose material contracts and amendments to those contracts; Roberts (2015) uses these data to examine the loan renegotiation process. These amendments and new agreements allow us to examine changes that happen after a violation.

From each credit agreement and amendment, we record whether the contract contains a prohibition on acquisitions without the consent of lenders ("Full restriction") or any of the following partial restrictions: (1) a prohibition on the size of a deal ("Expenditure limit"); (2) a prohibition on deals for which the borrower would not be in compliance with existing financial covenants on a pro forma basis ("Pro forma covenant compliance"); (3) a prohibition on deals that do not meet some other financial test ("Financial test"); and (4) a prohibition on a deal outside of the borrower's primary line of business ("Prohibit diversifying deals").

As an example of the evolution of restrictions around a covenant violation, consider the experience of Shiloh Industries Inc., a supplier of automotive parts. In their July 2009 10-Q, Shiloh reported that "the Company is not in compliance with certain of the financial covenants of its

[14] As in Nini et al. (2012), we use new violations to cleanly identify the impact of violations exclusive of the impact of a prior violation.

Credit Agreement …" As part of a June 30th loan amendment that provided a waiver from the covenant violation through October 31, 2009, the company agreed to modify their existing restrictions on acquisitions, which previously prohibited diversifying acquisitions and required pro forma compliance with financial covenants. The modification tightened the restriction to prohibit all acquisitions without consent of the lenders, writing, "… on and after the Third Amendment Effective Date, no Company shall effect an Acquisition without the prior written consent of Agent and the Required Lenders."[15]

Table 2 shows that the Shiloh's experience is not uncommon. For our sample of violators and matched non-violators, we find that roughly 30% of credit agreements fully restrict borrowers from making an acquisition without consent of lenders. In many other cases, borrowers are limited by one or more partial restrictions. The frequency of these restrictions are quite similar across the set of violators and non-violators, which supports the validity of our matching procedure.

The middle panel shows the frequency with which each provision is added after a violation or pseudo-violation. In our sample, creditors add a full restriction for 13.2% of violating firms, which is significantly higher than the 4.3% of non-violators. Partial restrictions do not appear to increase, on average, because some violators move from no restriction to partial restriction while others replace partial restrictions with a full restriction. Therefore, we construct a summary measure of contractual tightening and present the results in the bottom row. We define "tightening" of acquisition restrictions as a loan agreement that either (i) adds a prohibition without consent, (ii) reduces the expenditure limit on allowed acquisitions, or (iii) increases the number of restrictions other than the full prohibition. Based on this definition of tightening, 36.8% of violating firms face tighter restrictions following a violation, which represents over one-half of the

[15] Shiloh Industries 10-Q: https://www.sec.gov/Archives/edgar/data/904979/000119312510127756/d10q.htm.

firms that were not fully restricted before the violation. For comparison, only 8.5% of non-violators experience acquisition restriction tightening. The 28.3% difference is highly statistically significant and implies that covenant violations lead to significantly higher creditor control. As such, the results are consistent with research that examines the use and renegotiation of restrictive covenants in credit agreements (e.g. Denis and Wang, 2014).

Since credit agreements can be renegotiated, acquisition restrictions serve as a mechanism that forces borrowers to approach their existing lenders for permission to make a deal. In the example above, Shiloh Industries would be unable to acquire a firm unless it received lender consent, which is feasible in practice. Of course, the requirement for lender consent gives lenders the ability to prevent deals that they view as unattractive.

4.2 Acquisition activity

Our next empirical exercise explores the propensity of firms to make an acquisition following a violation. To the extent that creditors are preventing borrowers from undertaking acquisitions, we expect to find that acquisition activity falls following a violation.

Figure 1 plots two measures of acquisition activity around a covenant violation. The graphs reveal that firms are one-half as likely to make an acquisition while in violation of a financial covenant and that total acquisition expenditure falls by about one-third while in violation of a covenant. This finding is consistent with prior research that documents a decline in investment activity following a covenant violation and extends the findings of Nini, Smith, and Sufi (2012) to a set of acquisitions made with all forms of payment.

As previously discussed, firms in violation of a financial covenant differ in many ways from firms that have not recently breached a covenant threshold. Therefore, it is possible that constant unobserved differences between violators and non-violators could produce a spurious

relation between covenant violations and acquisition activity. For example, small firms are more likely to violate a covenant and less likely to make an acquisition. However, size and many other factors do not vary over short horizons, so if constant unobserved firm characteristics drive our results, we should see a similar effect for firms immediately pre-violation. The timing of the effect in Figure 1 refutes this alternative explanation. The effect of creditor monitoring on acquisition activity is strongest when firms are in violation of a convent and wanes as time elapses after a violation has occurred.

Nevertheless, it still could be the case that time-varying firm conditions explain the patterns in Figure 1. Therefore, we estimate regressions of the form in Equation (1) to control for factors that are known to influence acquisition decisions. Table 3 shows that the effect of a covenant violation remains large and statistically significant after controlling for observables. The estimate in Column (2) of Panel B implies that firms in violation of a covenant are 1.2% less likely to announce an acquisition compared to firms that have not recently violated. This effect is large relative to the unconditional likelihood of a transaction in 3.9% of firm-quarters. Columns (3) and (4) examine acquisition expenditure scaled by lagged assets as an alternative measure of acquisition activity. Acquisition expenditure is the total deal consideration announced per firm-quarter and takes a value of zero if the firm does not make an acquisition during that quarter. This alternative measure of acquisition activity produces similar inferences, as we continue to find that firms make significantly fewer acquisitions when in violation of a covenant.

5. Covenant violations and acquisition quality

In this section, we explore how covenant violations affect acquisition quality, focusing on the stock price reaction to deal announcements. This analysis provides a direct test of the

congruence of creditor and shareholder preferences, since stock announcement returns reflect expectations of how the acquisition will affect payoffs to equity.

5.1 Which acquisitions do creditors prevent?

Positive NPV acquisitions create value for both shareholders and debtholders. Therefore, we do not expect creditors to prevent all acquisitions. Instead, we expect creditors to constrain unproductive acquisitions that generate private benefits for managers. The intuition for this hypothesis is developed by incomplete contracting theory (Aghion and Bolton, 1992) and agency theory (Jensen and Meckling, 1976; Jensen 1986). If covenant violations grant creditors enough power to stop these bad investments, we expect the acquisitions that do occur to earn higher abnormal announcement returns.

On the other hand, Amihud and Lev (1981) argue that managers with career concerns have the incentive to engage in risk-reducing activities. If creditors share this incentive because of their concave payoff structure, we postulate that covenant violations will lead to privately optimal deals for managers and creditors but destroy shareholder value. Indeed, Gormley and Matsa (2011) provide evidence to this effect. They show that risk-aversion leads managers to make value-destroying acquisitions in response to an increase in liability risk and conjecture that "a high amount of financial leverage that moderates managerial agency problems in normal times may amplify another managerial agency conflict when the firm encounters an adverse shock."

We begin by testing the probability of announcing a value-destroying or value-enhancing acquisition. To do so, we classify deals as value-destroying (value-enhancing) if the acquirer earns a 3-day CAR that is more than one standard deviation below (above) the mean. This approach is similar to Paul (2006) and Chen, Harford, and Li (2007), who test whether boards of directors and institutional monitors can prevent value-destroying acquisitions. We differ from

their approach by analyzing the likelihood of announcing a value-destroying deal at the firm-quarter level (rather than the deal level) because we hypothesize that covenant violations enable creditors to prevent some deals from ever being announced. Panel C of Table 3 reports the results. The likelihood of announcing a value-destroying acquisition falls by roughly 40% of the sample mean when firms are in violation of a covenant. Conversely, we find no evidence that creditors use control rights to limit acquisitions that are expected to create shareholder value. These results suggest that creditors censor acquisitions with low synergies rather than impose a more conservative investment policy.

5.2 Acquirer announcement returns

We further quantify the effect of creditor monitoring by analyzing acquirer 3-day cumulative abnormal returns for deals that creditors do permit. Figure 2 shows that median and mean acquirer announcement returns are 1.5% to 2% higher for firms in violation of a financial covenant. These plots encourage a causal interpretation by highlighting the timing of the effect. Creditor control is associated with higher announcement returns for firms in violation of a covenant, but this effect is not present for firms pre-violation.

Although comparison of unconditional returns is informative, acquirers in violation of a covenant differ from non-violators in ways that are known to affect announcement returns. Therefore, we follow Masulis et al. (2007) and estimate regression models that control for these differences. Table 4 presents the results. The effect of a covenant violation on acquirer returns remains large and statistically significant after controlling for confounding factors. Coefficients on control variables in Column (1) compare closely with those found in related studies. For example, we find evidence that acquirer returns are inversely related to firm size and market-to-book ratio, consistent with evidence presented by Moeller et al. (2004).

Despite the inclusion of standard acquirer controls in Column (1), it is still possible that omitted variables correlated with covenant violations influence our coefficients. In particular, stock price runup is a noisy proxy and may not fully capture recent performance deterioration or deal anticipation. To address this concern, we add controls to implement the quasi-regression discontinuity design of Roberts and Sufi (2009) and Nini et al. (2012).[16] Column (2) reports that acquirers in violation of a financial covenant earn 1.76% higher announcement returns than acquirers that have not recently violated a covenant. Notably, our coefficient of interest remains large and significant as we impose more stringent specifications. This stability suggests that inferences from our event study results are unlikely to be biased by omitted variables.

In Columns (3) and (4), we present regressions that include deal characteristics frequently examined in the mergers and acquisitions literature (see Betton, Eckbo, and Thorburn, 2008 for a review). As these variables may be outcomes of covenant violations, the coefficient estimates should be interpreted with caution. Nevertheless, estimates reported in Columns (3) and (4) confirm that the relation between covenant violations and acquirer CARs persists with or without controls for relative deal size, target listing status, method of payment, and other target characteristics. The coefficients on these controls also align with previous literature. Evidence that acquirers experience significantly higher returns for private and subsidiary targets relative to public firms is consistent with Fuller, Netter, and Stegemoller (2002), and the negative coefficient on the all-stock indicator supports the view that the adverse selection problem in equity issuance leads to lower acquirer announcement returns (Travlos 1987).[17] Taken together, these results

[16] We also check SDC for rumors prior to announcement to address the possibility that deals made by violators may be more of a surprise to the market. We find that the likelihood of a rumor does not statistically differ between violators and non-violators, and observe no evidence that suggests anticipation drives our results.

[17] In robustness, we control for interactions between method of payment and target listing status because Chang (1998) and Fuller et al. (2002) find that all-stock acquisitions of private targets earn higher returns and Eckbo, Makaew, and Thorburn (2017) find that acquirer returns are negatively related with equity payment for public targets. Our results are nearly identical under this alternate specification so we do not tabulate to save space.

show that acquiring firms that are in violation of a covenant make superior acquisitions even when controlling for deal characteristics.

5.3 Deal completion

Thus far, we have shown that the likelihood of announcing a value-destroying acquisition falls by roughly 40% of the sample mean when firms are in violation of a covenant and that shareholders earn over 1.5% higher returns for deals that creditors do permit. Yet, it is unlikely that creditors can perfectly predict which acquisitions will create value. If creditors learn additional information about deal quality after announcement, we expect that firms in violation of a covenant will be more likely to withdraw a bid. Results in Table 5 support this conjecture. Firms in violation of a covenant are 3.1% less likely to complete an acquisition, particularly when the bid earned negative announcement returns. The economic magnitude of this effect is large, given that the unconditional frequency of bid withdrawal is 5%. In sum, our results suggest that creditors intervene in poor acquisition attempts by rescinding deal financing or pressuring management to call off the deal.

6. Additional supporting evidence

In this section, we provide additional evidence to support our main findings. We show that results are concentrated among the set of firms with weak external governance and explore whether creditors influence observable deal characteristics. Finally, we take steps to reduce the plausibility of financial constraints as an alternative explanation and provide several robustness checks.

6.1 Heterogeneity with respect to external governance

The preceding results are consistent with the hypothesis that creditors use control rights associated with covenant violations to prevent value-destroying acquisitions. This hypothesis suggests that firms that have not recently violated a covenant engage in acquisitions that are worse, on average, than firms that have violated a covenant and implies that existing governance mechanisms do not ensure that managers maximize shareholder value. Extant research argues that firms with poor equity governance fail to restrain managerial agency problems and frequently permit value-destroying acquisitions (e.g. Jensen, 1986; Masulis et al., 2007). If creditors provide additional monitoring following a covenant violation, we expect the impact on acquisition outcomes to be concentrated among the most poorly governed firms. In this section, we explore the hypothesis that creditor monitoring benefits shareholders by complementing, and perhaps even substituting for, other governance mechanisms.

We investigate the validity of this interpretation by testing the relation between covenant violations and acquirer returns on subsamples stratified by governance characteristics. The goal of each split is to proxy for "weakness" in a particular form of governance. We recognize that our governance splits are not perfect, nor do we assume that "weak" governance is necessarily value-reducing for all firms. As shown in Coles, Daniel, and Naveen (2008), one size of corporate governance rarely fits all firms. Nevertheless, we believe that consistent evidence across well-known proxies for corporate governance supports the plausibility of the agency interpretation.

Table 6 reports estimates in line with this argument. In Columns (1) and (2), we report OLS regressions estimated on subsamples split by the presence of a blockholder that owns at least ten percent of shares outstanding. Shleifer and Vishny (1986) argue that institutional shareholders have the financial incentive to monitor management. If creditors use control rights, in part, to substitute for weak shareholder monitoring, the effect of creditors should be

concentrated among firms without a blockholder. Consistent with this hypothesis, Columns (1) and (2) show that the effect of a covenant violation is significant for firms with weak institutional monitoring and insignificant for firms with a blockholder. However, the difference in coefficients is not significant at conventional levels. This insignificance is not surprising given the noise in our proxy for shareholder monitoring. Further, we do not expect covenant violations to have the opposite effect on firms with strong equity-governance; we merely hypothesize that the effect of creditor monitoring will most prevalent among firms with weak shareholder monitoring.[18]

Columns (3) and (4) provide further indication that the effect of creditor monitoring on deal outcomes is related to managerial agency. Giroud and Mueller (2010, 2011) demonstrate that firms in noncompetitive industries benefit more from strong shareholder rights. Our estimates highlight a similar relationship between industry competition and creditor monitoring. We find that the effect of creditor monitoring is stronger for firms in the top tercile of the HHI distribution than for firms in the bottom tercile. In sum, results in Table 7 support the conclusion that creditors filter out bad deals motivated by managerial agency.

6.2 Deal characteristics

Given the reduction in acquisition activity following a covenant violation, we next explore whether creditors influence target characteristics and method of payment. We focus on deal characteristics related to risk to test the hypothesis that creditors push firm policy toward acquisitions that increase the value of their claim despite potentially destroying shareholder value.

We first proxy for deal riskiness using the target's line of business. Table 7 provides no evidence that firms in violation of a covenant use acquisitions to reduce firm risk. If anything,

[18] We also split the sample into "dictator" and "democracy" firms using the classification in Harford et al. (2012). We find that the effect of a covenant violation is concentrated among firms with weak shareholder rights, but do not report the results because data necessary to construct the G-index is only available prior to 2008.

our analysis indicates the opposite. Acquirers in violation of a financial covenant are 4.7% less likely to target a firm outside of their primary Fama-French (1997) 12 industry. This estimate is consistent with our finding, reported in Table 2, that over one-third of credit agreements explicitly prohibit diversifying acquisitions. Together, these results suggest that creditors prefer managers to focus on their core competencies rather than grow their empire via diversification.

We next use listing status as a proxy for target risk. We assume that private targets are riskier than public targets, due to less public information and lack of market prices to assess value, and again find that acquirers in violation of a covenant do not shy away from risky deals. Our estimates suggest that violators are 6.5% more likely to target a private firm than non-violators.

Finally, we examine the probability of buying a private target entirely with stock. Hansen (1987) and Eckbo and Thorburn (2000) suggest that bidders use stock offers when there is high uncertainty in the target's valuation, since the ultimate value of the consideration depends on the realized value of the target. Thus, the interaction of private listing status and equity payment may provide a more precise proxy for deal riskiness. However, previous research (Chang, 1998; Fuller et al., 2002) documents that these deals are, on average, value increasing for bidders, so creditors may be less likely to prohibit these deals. Once again, we find no evidence that creditors prevent borrowers from engaging in risky acquisitions. The effect of a covenant violation on the likelihood of acquiring a private target using all stock payment is positive and marginally significant in Column (5) of Table 7 and becomes insignificant when we impose the quasi-regression discontinuity controls in Column (6).

In sum, we find no evidence that creditors systematically prefer diversifying acquisitions or prevent risky investments that are possibly productive. Rather, creditors prevent acquisitions with characteristics expected to be value-reducing. Harford et al. (2012) find that entrenched

managers destroy value by avoiding private targets and engaging in diversifying deals. Table 7 shows that creditor monitoring reverses this trend. Nevertheless, observable deal characteristics cannot fully explain our results. Panel C displays mean and median CARs split by deal type and violation status. We find that acquirers in violation of a covenant earn significantly higher CARs for all deal types, except those involving all stock payment.[19] This finding is consistent with Panel B, which shows that creditors have a greater ability to prevent cash deals.

6.3 Target balance sheet

One potential source of disagreement between creditors and shareholders relates to the strength of the target firm's balance sheet. Compared to equity holders, creditors may prefer targets that have relatively low leverage, high levels of cash holdings, and tangible assets that can serve as collateral to back borrowing. This preference for a strong balance sheet might be particularly strong following a covenant violation. Unfortunately, since few firms in violation of a covenant acquirer public targets, we cannot compare the balance sheets of targets across the treatment and control groups. As an alternative, we test how the balance sheets of acquirers in violation of a covenant change after an acquisition compared to a propensity matched sample of acquirers not in violation. If it is the case that creditors encourage the acquisition of "cash cows", we would expect to see greater improvement in violators' balance sheets relative to non-violators after an acquisition.

To test this conjecture, we construct a propensity matched sample of violators and non-violators. We estimate the probability that an acquirer is in violation of a financial covenant as a function of the variables in our main specification: firm size, stock price runup, covenant controls,

[19]390 of 1,644 deals involving public targets are paid entirely with stock. Acquirers in violation of a covenant earn significantly higher mean and median CARs for public targets if we exclude these deals.

four-quarter lags of the covenant controls, the second and third power of the covenant variables, industry and year fixed effects. We then use the estimated propensity scores from the first stage to match, with replacement, each deal made by an acquirer in violation of a financial covenant to a deal made by the nearest acquirer not in violation. Panel A of Table 8 reports summary statistics for the matched sample. The matched sample exhibits no statistically significant differences in four key balance sheet variables pre-acquisition: tangible assets, cash holdings, leverage, and current ratio. Further, Panel B shows that changes in these variables from one quarter pre-acquisition through four quarters post-acquisition do not significantly differ between violators and non-violators. We conclude that the primary intent of creditor governance is to monitor the quality of borrower investments, rather than influence the type of investment made by borrowers.

6.4 Alternative explanation: financial constraints

One plausible alternative explanation for our results is that firms in violation of a covenant make fewer acquisitions because they are financially constrained and earn higher CARs because acquisition announcements signal the relaxation of these constraints. While we acknowledge that financial constraints and creditor monitoring are not mutually exclusive, we take the following steps to ensure that financial constraints do not drive our results.

First, we highlight that acquirers in violation of a financial covenant are not in severe financial distress and note that our regressions control for observable measures of distress. Indeed, Table 8 Panel A shows that firms in violation of a covenant have sufficient liquidity to complete a cash acquisition. Furthermore, analysis of post-acquisition balance sheet changes in Panel B provides no evidence to support the conjecture that covenant violators use acquisitions to escape financial constraints.

We next examine how acquirer returns vary with deal financing. If the relaxation of financial constraints is responsible for higher announcement returns, we would expect positive CARs to be concentrated in deals where an acquirer received new bank debt. Moreover, Bharadwaj and Shivdasani (2003) show that cash tender offers financed exclusively with bank debt have higher CARs. To mitigate the scope for this alternative explanation, we hand-collect deal financing information from the acquirer's 10-K for our one-to-one propensity matched sample. We code whether the deal is financed with a new bank loan or an amendment increasing the amount of an existing bank loan (Bank Loan), and whether the acquirer issues another form of debt to finance the deal (Non-bank Credit).

Table 9 shows that firms in violation of a covenant are less likely to fund an acquisition with new bank debt compared to matched non-violators; a result consistent with prior evidence that covenant violations lead to a reduction in credit (Roberts and Sufi, 2009). We find no difference in the propensity to issue non-bank credit, suggesting violators are not substituting banks loans with notes and bonds. Importantly, our results indicate that CARs are indeed higher for acquirers that obtain new bank debt, but the effect of a covenant violation is unchanged after controlling for this effect. We conclude that the relaxation of financial constraints is not the sole source of positive announcement returns for firms that violate a covenant.

6.5 Alternative empirical specifications

Table 10 reports robustness tests for our acquirer CAR results. All regression models include the full set of controls, Fama-French (1997) 48 industry fixed effects, and year fixed effects, as in Column (2) of Table 4, but we alter the specification in each row to check robustness. We find that our main results are robust to i) double clustering on firm and year, ii) using a trailing four-quarter violation indicator, iii) using only the subsample of completed acquisitions, iv) using

three- and five-day CARs, v) using equal- and value-weighted CARs, and vi) repeating the analysis on our propensity matched sample.

7. Conclusion

Economic theory argues that state-contingent control rights associated with financial covenants can protect lenders in the face of moral hazard and asymmetric information (Dewatripont and Tirole, 1994; Garleanu and Zwiebel, 2009). A growing body of empirical literature documents that creditors use these control rights to impose more conservative investment and financial policies (Chava and Roberts, 2008; Roberts and Sufi, 2009). In this paper, we examine acquisitions to assess which type of investments creditors curtail and gauge how creditor control rights affect shareholder value.

Using financial covenant violations and the subsequent transfer of decision rights to identify periods of heightened creditor control, we document that creditors play an important role in acquisition decisions. Although acquisition activity drops after a firm violates a financial covenant, there is no evidence that creditors limit value-enhancing deals that might increase credit risk. Instead, we find that creditors use their bargaining power to tighten contractual restrictions and limit value-destroying acquisitions. Conditional on making a deal, we show that shareholders of acquiring firms in violation of a covenant earn significantly higher announcement returns, with the effect concentrated among firms with weak external governance. We conclude that creditors provide valuable corporate governance that benefits shareholders in the context of mergers and acquisitions.

While there are strong theoretical foundations for potential conflict between debt and equity holders, our empirical results are consistent with Fama and Miller (1972, pp. 180), who

conjecture, “From a practical viewpoint, however, situations of potential conflict between bondholders and shareholders … are probably unimportant. In general, investment opportunities that increase a firm's market value by more than their cost both increase the value of the firm's shares and strengthen the firm’s future ability to meet its current bond commitments.”

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Figure 1: Acquisition activity. This figure shows the effect of a financial covenant violation on acquisition activity for a sample of 176,378 firm-quarter observations from 7,164 U.S. nonfinancial firms between 1997 and 2015. Acquisition activity is a dummy variable that indicates an acquisition announcement during the firm-quarter. Acquisition expenditure is the total deal consideration announced during the firm-quarter, scaled by lagged assets. We classify a firm as pre violation if it reports a covenant violation in either of its next two financial statements, in violation for two quarters following a reported covenant violation, and post violation if it reported a covenant violation either three or four quarters prior but is no longer in violation. We classify a firm as not in violation if it has not reported a covenant violation in the previous four quarters. Bars represent group means and lines denote 90% confidence intervals.

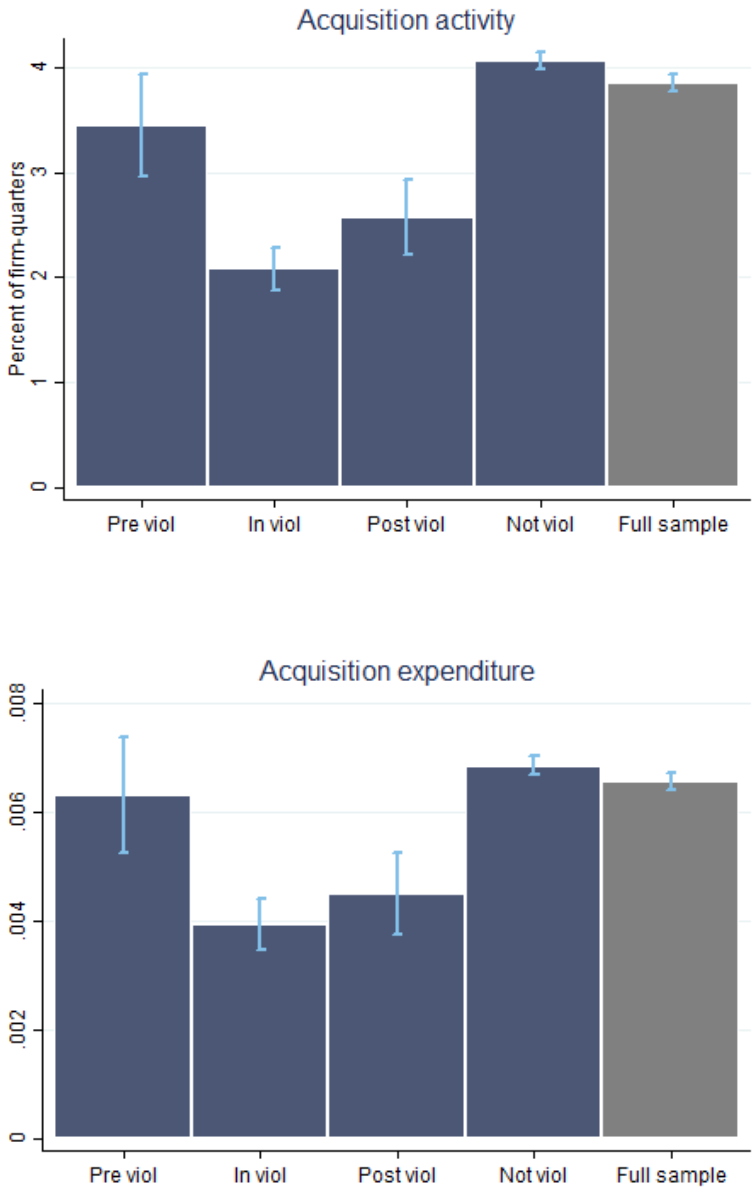
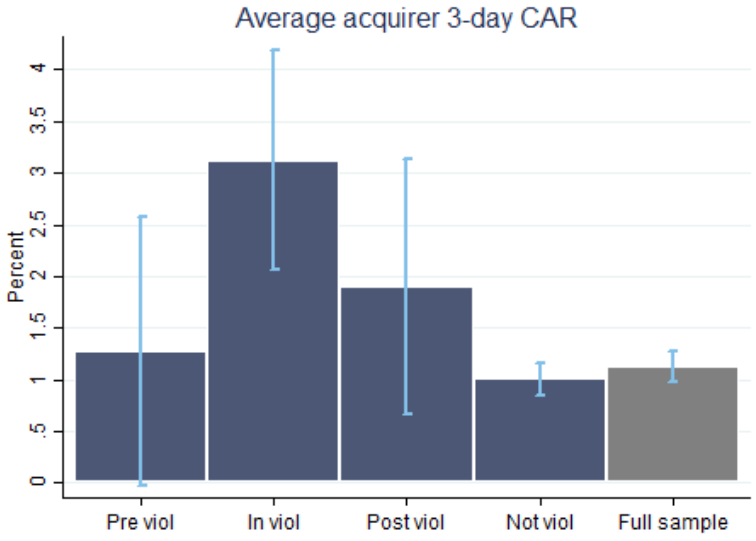


Figure 2: Acquirer announcement returns. This figure reports the shareholder value implications of creditor monitoring for a sample of 7,191 mergers and acquisitions made by 2,907 U.S. nonfinancial firms from 1997 to 2015. We estimate market model cumulative abnormal returns (CARs) using CRSP equally weighted index returns and a one year estimation window (252 trading days) ending one month (20 trading days) prior to the three day [-1, +1] event window. We classify a firm as pre violation if it reports a covenant violation in either of its next two financial statements, in violation for two quarters following a reported covenant violation, and post violation if it reported a covenant violation either three or four quarters prior but is no longer in violation. We classify a firm as not in violation if it has not reported a covenant violation in the previous four quarters. Bars represent group means or medians and lines denote 90% confidence intervals.



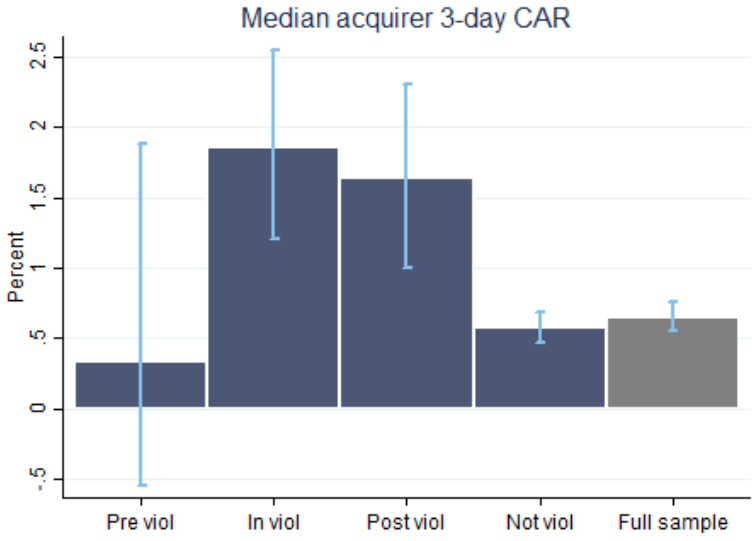


Table 1: Sample description. The firm-quarter sample consists of 176,378 firm-quarter observations from 7,164 U.S. nonfinancial firms between 1997 and 2015. The deal sample consists of 7,191 mergers and acquisitions made by 2,907 of these firms. We obtain the initial deal sample from the Securities Data Company (SDC) Platinum Merger and Acquisition database. We filter out spinoffs, recapitalizations, exchange offers, repurchases, self-tenders, privatizations, transactions valued at less than $1 million or 1% of the acquirer's market value 11 days prior to the announcement, deals where the acquirer controlled more than 50% of the target prior to the announcement or sought less than 100% after completion, and deals that do not involve a public, private, or subsidiary target. Panel A displays descriptive statistics for the deal sample. Panel B presents acquirer characteristics split by financial covenant violation status. We report difference in means using t-tests and difference in medians using Wilcoxon rank sum tests, and use the symbols *, **, and *** to indicate significant differences at the 10%, 5%, and 1% level, respectively. We winsorize unbounded variables at the 1/99% level throughout the analysis. Appendix 1 lists variable definitions. Appendix 2 provides a full description of the sample selection process.

Panel A – Descriptive statistics

	Mean	**S.D.**	**Q1**	**Median**	**Q3**	**Obs**
Acquirer characteristics						
Market value of equity ($B)	5.144	14.588	0.266	0.893	3.087	7191
Assets ($B)	4.146	9.964	0.216	0.814	2.898	7191
Stock price runup	0.039	0.527	-0.261	-0.038	0.206	7191
Market-to-book ratio	2.007	1.327	1.224	1.607	2.261	7191
Operating cash flow / assets	0.116	0.149	0.077	0.133	0.189	7191
Leverage ratio	0.256	0.206	0.080	0.239	0.377	7191
Interest expense / assets	0.019	0.020	0.005	0.014	0.027	7191
Net worth / assets	0.495	0.228	0.343	0.489	0.660	7191
Current ratio	2.714	2.436	1.326	1.992	3.070	7191
Blockholder (0/1)	0.352	0.478	0.000	0.000	1.000	5586
HHI	0.153	0.143	0.058	0.105	0.193	7191
Deal characteristics						
Acquirer 3-day CAR (%)	1.130	7.768	-2.485	0.654	4.203	7191
Deal value ($M)	725.299	2188.975	26.056	93.254	362.034	7191
Relative deal size	0.292	0.493	0.039	0.104	0.306	7191
Completed (0/1)	0.948	0.221	1.000	1.000	1.000	7191
Toehold (%)	0.376	3.531	0.000	0.000	0.000	7191
Diversifying (0/1)	0.284	0.451	0.000	0.000	1.000	7191
All-cash (0/1)	0.592	0.492	0.000	1.000	1.000	7191
All-stock (0/1)	0.113	0.317	0.000	0.000	0.000	7191
Public target (0/1)	0.229	0.420	0.000	0.000	0.000	7191
Private target (0/1)	0.449	0.497	0.000	0.000	1.000	7191
Subsidiary target (0/1)	0.322	0.467	0.000	0.000	1.000	7191
Cross-border deal (0/1)	0.164	0.370	0.000	0.000	0.000	7191
Hostile (0/1)	0.008	0.087	0.000	0.000	0.000	7191
Tender offer (0/1)	0.057	0.232	0.000	0.000	0.000	7191

Table 1: Sample description (cont.)

Panel B – Summary statistics of acquirers by violation status

	In Violation			Not in Violation		
	Mean	Median	Obs	Mean	Median	Obs
Assets ($B)	2.068***	0.230***	285	4.232	0.856	6906
Stock price runup	0.016	-0.171***	285	0.040	-0.036	6906
Market-to-book ratio	1.791***	1.325***	285	2.016	1.613	6906
Operating CF / assets	0.040***	0.076***	285	0.119	0.135	6906
Leverage ratio	0.324***	0.295***	285	0.253	0.236	6906
Current ratio	2.030***	1.589***	285	2.743	2.010	6906
Cash / assets	0.108***	0.048***	285	0.166	0.079	6906
PP&E / assets	0.277	0.185	285	0.260	0.170	6906

Table 2: Frequency of acquisition covenants. This table displays the frequency of acquisition restrictions in a random sample of 106 violators and 94 matched non-violators. We construct the sample by matching firms that report a new financial covenant violation to the nearest non-violator in the same quarter via a one-to-one propensity match (with replacement) on the full set of control variables in Table 3, Column (2). We randomly sort this sample and hand-collect covenant information from filings in EDGAR for the first 200 observations where the matched firms both have a credit agreement available prior to the violation quarter. We record the pre-violation frequency of acquisition restrictions in these contracts and search for post-violation changes to these covenants in contracts and amendments filed within two years of the violation quarter. A "Full restriction" is a prohibition on any acquisition without the consent of lenders. A credit agreement has a "Partial restriction" if it contains at least one of the following four restrictions: (1) a prohibition on the size of a deal ("Expenditure limit"); (2) a prohibition on deals for which the borrower would not be in compliance with existing financial covenants on a pro forma basis ("Pro forma covenant compliance"); (3) a prohibition on deals that do not meet some other financial test ("Financial test"); and (4) a prohibition on a deal outside of the borrower's primary line of business ("Prohibit diversifying deals"). The bottom row reports the fraction of firms with credit agreements that tightened after the violation quarter, where we define "tightening" as a loan agreement that either (i) adds a full restriction, (ii) reduces the expenditure limit on allowed acquisitions, or (iii) increases the number of partial restrictions.

	Violators N = 106	**Non-Violators** N = 94	**Difference**	***p*-value**
Ex-ante acquisition restrictions				
Full restriction	0.302	0.266	0.036	0.577
Partial restriction:	0.557	0.553	0.004	0.962
Expenditure limit	0.377	0.319	0.058	0.392
Pro forma covenant compliance	0.274	0.255	0.019	0.772
Financial test	0.274	0.277	-0.003	0.962
Prohibit diversifying deals	0.387	0.351	0.036	0.604
No restriction	0.142	0.181	-0.039	0.451
Restriction added post-violation				
Full restriction	0.132	0.043	0.089	0.027
Partial restriction:	0.075	0.043	0.032	0.330
Expenditure limit	0.142	0.053	0.089	0.038
Pro forma covenant compliance	0.094	0.043	0.051	0.153
Financial test	0.104	0.043	0.061	0.102
Prohibit diversifying deals	0.047	0.032	0.015	0.585
Frequency of covenant tightening	0.368	0.085	0.283	0.000

Table 3: Acquisition behavior. The sample consists of 176,378 firm-quarter observations from 7,164 U.S. nonfinancial firms between 1997 and 2015. Panel A displays the proportion of firm-quarters with an acquisition announcement. Panels B and C report ordinary least squares estimates of the effect of a covenant violation on acquisition activity and quality. Acquisition expenditure is the total deal consideration announced during the firm-quarter, scaled by lagged assets. We classify a deal as value-destroying (value-enhancing) if the acquirer's 3-day cumulative abnormal return (CAR) is more than one standard deviation below (above) the mean. We classify an acquisition as value-neutral otherwise. We estimate market model CARs using CRSP equally weighted index returns and a one year estimation window (252 trading days) ending one month (20 trading days) prior to the three day [-1, +1] event window. The full model regresses the dependent variable on an indicator that equals one if the firm reported a financial covenant violation within the previous two quarters, firm size, stock price runup, covenant controls, four-quarter lags of the covenant controls, the second and third power of the covenant variables, and Fama-French (1997) 48 industry and year fixed effects. Accounting variables are measured at the previous fiscal quarter end. Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively. Appendix 1 lists variable definitions.

Panel A: Acquisition frequency

	Acquisition activity (0/1)	**Value-destroying acquisition (0/1)**	**Value-neutral acquisition (0/1)**	**Value-enhancing acquisition (0/1)**
Proportion of sample	0.039	0.008	0.025	0.007

Panel B: Acquisition activity

	Acquisition activity		**Acquisition expenditure**	
	(1)	(2)	(3)	(4)
Financial covenant violation	-0.016***	-0.012***	-0.002***	-0.001***
	(0.002)	(0.002)	(0.000)	(0.000)
Size	0.001***	0.001***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Stock price runup	0.011***	0.010***	0.003***	0.002***
	(0.001)	(0.001)	(0.000)	(0.000)
Market-to-book ratio	0.000	0.041***	0.001***	0.008***
	(0.000)	(0.003)	(0.000)	(0.001)
Operating cash flow / assets	0.032***	0.030***	0.005***	0.004***
	(0.003)	(0.004)	(0.001)	(0.001)
Leverage ratio	0.009***	0.112***	0.000	0.013***
	(0.003)	(0.023)	(0.001)	(0.005)
Interest expense / assets		-0.044		0.056
		(0.233)		(0.047)
Net worth / assets		0.051***		0.010***
		(0.008)		(0.002)
Current ratio		0.003**		0.001**
		(0.001)		(0.000)
Lagged & Higher-order cov. controls	No	Yes	No	Yes
Industry FE & Year FE	Yes	Yes	Yes	Yes
Observations	176,378	176,378	176,378	176,378
Adjusted R-squared	0.009	0.012	0.007	0.010

Panel C: Acquisition quality

	Value-destroying acquisition	Value-enhancing acquisition
	(1)	(2)
Financial covenant violation	-0.003***	-0.000
	(0.001)	(0.001)
Size	0.000***	-0.000
	(0.000)	(0.000)
Stock price runup	0.002***	0.003***
	(0.000)	(0.001)
Market-to-book ratio	0.007***	0.006***
	(0.001)	(0.001)
Operating cash flow / assets	0.004**	0.006***
	(0.002)	(0.002)
Leverage ratio	0.027***	0.016*
	(0.009)	(0.009)
Interest expense / assets	-0.050	0.043
	(0.088)	(0.091)
Net worth / assets	0.010***	0.007**
	(0.003)	(0.003)
Current ratio	0.000	0.001**
	(0.001)	(0.001)
Lagged & Higher-order cov. controls	Yes	Yes
Industry FE & Year FE	Yes	Yes
Observations	176,378	176,378
Adjusted R-squared	0.004	0.002
p-value of difference	0.002	

Table 4: Acquirer announcement returns. This table reports ordinary least squares estimates of the effect of a covenant violation on acquirer announcement returns. The sample consists of 7,191 deals made by 2,907 U.S. nonfinancial firms from 1997 to 2015. Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.

	Acquirer 3-day CAR (%)			
	(1)	(2)	(3)	(4)
Financial covenant violation	1.860***	1.758***	1.614**	1.619**
	(0.687)	(0.678)	(0.663)	(0.657)
Size	-0.057***	-0.050***	-0.021***	-0.018**
	(0.007)	(0.007)	(0.007)	(0.008)
Stock price runup	-0.041	-0.158	0.032	-0.021
	(0.241)	(0.287)	(0.238)	(0.283)
Market-to-book ratio	-0.277**	-0.728	-0.144	0.097
	(0.108)	(0.828)	(0.107)	(0.817)
Operating cash flow / assets	-0.711	1.730	-0.207	1.755
	(0.933)	(1.886)	(0.915)	(1.848)
Leverage ratio	0.870	-2.562	0.334	-1.636
	(0.556)	(4.944)	(0.546)	(4.882)
Interest expense / assets		45.513		52.026
		(52.688)		(51.891)
Net worth / assets		-4.084		-4.090
		(3.083)		(2.981)
Current ratio		0.124		0.149
		(0.332)		(0.327)
Relative deal size			2.189***	2.046***
			(0.320)	(0.324)
Completed			0.199	0.184
			(0.542)	(0.538)
Toehold			0.056**	0.053**
			(0.026)	(0.025)
Diversifying			0.331	0.304
			(0.212)	(0.212)
All-cash			-0.114	-0.061
			(0.236)	(0.238)
All-stock			-1.098***	-1.258***
			(0.422)	(0.419)
Private target			2.849***	2.785***
			(0.330)	(0.328)
Subsidiary target			3.441***	3.380***
			(0.329)	(0.327)
Cross-border deal			-0.043	-0.063
			(0.222)	(0.223)
Hostile			-2.159**	-2.183**
			(0.952)	(0.951)
Tender offer			1.739***	1.715***
			(0.419)	(0.419)
Lagged & Higher-order covenant controls	No	Yes	No	Yes
Industry FE & Year FE	Yes	Yes	Yes	Yes
Observations	7,191	7,191	7,191	7,191
Adjusted R-squared	0.018	0.025	0.053	0.057

Table 5: Deal completion. This table reports ordinary least squares estimates of the effect of a covenant violation on deal completion. The sample consists of 7,191 deals made by 2,907 U.S. nonfinancial firms from 1997 to 2015. The dependent variable is an indicator that equals one if an announced acquisition is completed. Column (1) reports estimates from a regression on the full sample of acquisition announcements. Columns (2) and (3) report estimates from a regression on the subsample of acquisition announcements that earned negative and positive CARs, respectively. Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Acquisition completed		
	Full Sample	*Negative CAR Sample*	*Positive CAR Sample*
	(1)	(2)	(3)
Financial covenant violation	-0.031*	-0.057**	-0.017
	(0.017)	(0.029)	(0.020)
Size	-0.001***	-0.001	-0.001**
	(0.000)	(0.001)	(0.001)
Stock price runup	0.020***	0.024**	0.019***
	(0.006)	(0.011)	(0.007)
Market-to-book ratio	-0.010	-0.015	-0.007
	(0.019)	(0.029)	(0.023)
Operating cash flow / assets	0.035	0.086	-0.010
	(0.044)	(0.068)	(0.060)
Leverage ratio	0.045	-0.058	0.124
	(0.120)	(0.197)	(0.158)
Interest expense / assets	-0.446	2.664	-2.346
	(1.225)	(1.989)	(1.511)
Net worth / assets	0.143**	0.194**	0.091
	(0.067)	(0.083)	(0.101)
Current ratio	0.008	0.017	-0.001
	(0.009)	(0.014)	(0.011)
Lagged & Higher-order cov. controls	Yes	Yes	Yes
Industry FE & Year FE	Yes	Yes	Yes
Observations	7,191	3,178	4,013
Adjusted R-squared	0.022	0.030	0.017
p-value of difference		0.255	

Table 6: Heterogeneity with respect to governance. This table displays cross-sectional variation in the effect of a covenant violation on acquisition outcomes. Odd columns report OLS estimates of the likelihood of making a value-destroying acquisition, using the same specification reported in Table 3. Even columns report OLS estimates of the effect on acquirer CARs, using the same specification reported in Table 4. The samples are split according to governance characteristics measured at the prior fiscal year end. In Columns (1) and (2), we proxy for shareholder monitoring by splitting the sample based on the presence of a 10% blockholder. In Columns (3) and (4), we proxy for the disciplining effect of product market competition by sorting firms into the top and bottom HHI terciles. Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Value-destroying acquisition	**Acquirer 3-day CAR (%)**	**Value-destroying acquisition**	**Acquirer 3-day CAR (%)**
	(1)	(2)	(3)	(4)
	No blockholder		*Top HHI tercile*	
Financial covenant violation	-0.003***	1.748**	-0.003**	2.617**
	(0.001)	(0.848)	(0.001)	(1.197)
Observations	91,385	3,622	69,087	2,776
Adjusted R-squared	0.004	0.032	0.003	0.038
	Blockholder		*Bottom HHI tercile*	
Financial covenant violation	-0.001	1.386	0.001	-0.374
	(0.001)	(1.580)	(0.002)	(1.324)
Observations	49,813	1,964	51,321	2,036
Adjusted R-squared	0.005	0.029	0.004	0.035
Acquirer controls	Yes	Yes	Yes	Yes
Covenant controls	Yes	Yes	Yes	Yes
Lagged & Higher-order cov. controls	Yes	Yes	Yes	Yes
Industry FE & Year FE	Yes	Yes	Yes	Yes
p-value of difference	0.325	0.838	0.000	0.088

Table 7: Deal characteristics. The sample consists of 7,191 deals made by 2,907 U.S. nonfinancial firms from 1997 to 2015. Panels A and B display ordinary least squares estimates of the effect of a covenant violation on target selection and method of payment, respectively. We classify an acquisition as diversifying if the primary SIC code of the acquirer and target are not in the same Fama-French (1997) 12 industry. Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses. Panel C presents mean and median CARs split by acquirer financial covenant violation status and deal type. We report difference in means using t-tests and difference in medians using Wilcoxon rank sum tests, and use the symbols *, **, and *** to indicate significant differences at the 10%, 5%, and 1% level, respectively.

Panel A: Target selection

	Diversifying target		**Private target**		**Private all-stock**	
	(1)	(2)	(3)	(4)	(5)	(6)
Financial covenant violation	-0.049*	-0.047*	0.067**	0.065**	0.029*	0.024
	(0.027)	(0.028)	(0.031)	(0.031)	(0.017)	(0.017)
Size	-0.001	-0.001	-0.009***	-0.008***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Stock price runup	0.012	0.018	0.017	0.016	0.001	0.005
	(0.011)	(0.013)	(0.013)	(0.015)	(0.008)	(0.008)
Market-to-book ratio	0.003	0.034	0.010*	0.033	0.023***	0.010
	(0.005)	(0.041)	(0.005)	(0.043)	(0.004)	(0.024)
Operating cash flow / assets	-0.067*	0.052	-0.094**	-0.144	-0.180***	-0.188***
	(0.040)	(0.085)	(0.045)	(0.095)	(0.031)	(0.056)
Leverage ratio	0.010	0.507*	-0.180***	0.073	-0.052***	0.016
	(0.038)	(0.269)	(0.035)	(0.282)	(0.015)	(0.145)
Interest expense / assets		4.694*		-2.319		1.533
		(2.814)		(2.805)		(1.406)
Net worth / assets		-0.014		0.175		-0.154*
		(0.146)		(0.140)		(0.089)
Current ratio		-0.004		-0.003		-0.008
		(0.018)		(0.019)		(0.009)
Lagged & Higher-order cov. controls	No	Yes	No	Yes	No	Yes
Industry FE & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,191	7,191	7,191	7,191	7,191	7,191
Adjusted R-squared	0.068	0.071	0.094	0.101	0.079	0.092

Panel B: Method of payment

	All cash		Mixed		All stock	
	(1)	(2)	(3)	(4)	(5)	(6)
Financial covenant violation	-0.125***	-0.098***	0.069**	0.054*	0.056**	0.044*
	(0.032)	(0.031)	(0.031)	(0.032)	(0.026)	(0.026)
Size	0.000	-0.001	-0.000	0.001	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Stock price runup	-0.049***	-0.057***	0.033***	0.023*	0.016	0.034***
	(0.012)	(0.014)	(0.012)	(0.014)	(0.010)	(0.011)
Market-to-book ratio	-0.045***	-0.030	0.011**	0.043	0.034***	-0.013
	(0.005)	(0.041)	(0.005)	(0.041)	(0.004)	(0.031)
Operating cash flow / assets	0.598***	0.831***	-0.263***	-0.410***	-0.334***	-0.421***
	(0.042)	(0.095)	(0.043)	(0.096)	(0.038)	(0.075)
Leverage ratio	-0.016	-0.061	0.051	-0.072	-0.034	0.133
	(0.035)	(0.285)	(0.034)	(0.281)	(0.023)	(0.190)
Interest expense / assets		-5.983**		1.953		4.030**
		(2.816)		(2.801)		(1.985)
Net worth / assets		0.144		0.005		-0.149
		(0.155)		(0.145)		(0.112)
Current ratio		0.049**		-0.024		-0.024*
		(0.019)		(0.019)		(0.013)
Lagged & Higher-order cov. controls	No	Yes	No	Yes	No	Yes
Industry FE & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,191	7,191	7,191	7,191	7,191	7,191
Adjusted R-squared	0.128	0.152	0.034	0.047	0.104	0.125

Panel C: Acquirer CARs by deal type and violation status

	In Violation			Not in Violation		
	Mean	Median	Obs	Mean	Median	Obs
Diversifying target	3.856***	2.079	70	1.273	0.692	1969
Focused target	2.888***	1.695***	215	0.958	0.580	4937
Public target	0.073	-0.025	58	-0.910	-0.581	1586
Private target	3.433***	1.643**	144	1.305	0.727	3084
Subsidiary target	4.725***	3.701***	83	2.083	1.149	2236
All-cash payment	3.279***	1.925***	116	1.224	0.719	4139
Mixed payment	4.439***	2.331**	111	1.298	0.767	2010
All stock payment	0.304	-0.735	58	-0.577	-0.922	757

Table 8: Financial position. This table displays balance sheet changes for a propensity matched sample of 414 acquisitions made by 404 U.S. nonfinancial firms. We construct the sample with a one-to-one propensity match (with replacement) on size, stock price runup, covenant controls, four-quarter lags of the covenant controls, the second and third power of the covenant variables, industry and year fixed effects. We drop withdrawn deals, acquirers that complete more than one deal over a three year horizon, and acquirers with missing accounting data over the three year horizon. The symbol Δ denotes the difference from one year pre-acquisition to three years post-acquisition. We report difference in means using t-tests and difference in medians using Wilcoxon rank sum tests, and use the symbols *, **, and *** to indicate significant differences at the 10%, 5%, and 1% level, respectively.

Panel A: Pre-acquisition descriptive statistics

	In Violation			**Not in Violation**		
	Mean	Median	Obs	Mean	Median	Obs
PP&E / assets	0.277	0.177	202	0.309	0.207	212
Cash / assets	0.114	0.055	202	0.128	0.054	212
Current ratio	2.104	1.611	202	2.245	1.778	212
Leverage ratio	0.307	0.267	202	0.314	0.281	212

Panel B: Post-acquisition changes

	In Violation			**Not in Violation**		
	Mean	Median	Obs	Mean	Median	Obs
Δ PP&E / assets	-0.028	-0.012	202	-0.019	-0.015	212
Δ Cash / assets	-0.018	-0.002	202	-0.033	-0.004	212
Δ Current ratio	-0.265	-0.135	202	-0.398	-0.147	212
Δ Leverage ratio	0.038	0.026	202	0.045	0.026	212

Table 9: Acquisition monitoring and acquirer returns. This table reports the source of deal financing for a propensity matched sample of 524 acquisitions. The propensity matched sample includes 282 violator acquisitions matched to 242 non-violator acquisitions based on size, stock price runup, covenant controls, four-quarter lags of the covenant controls, the second and third power of the covenant variables, industry and year fixed effects. We eliminate deals for which we are unable to hand-collect deal financing information from the acquirer's 10-K. Bank loan is an indicator that equals one if the deal is financed with either a new bank loan or an amendment increasing the amount of an existing bank loan. Non-bank credit is an indicator that equals one if the acquirer issues another form of debt to finance the deal. Panel A reports the proportion of deals that are financed with debt. Panel B reports estimates from OLS regressions of acquirer CARs on the violation indicator and indicators for debt financing. Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Panel A: Prevalence of debt financing

	All (N=524)	**In Violation** (N=282)	**Not in Viol** (N=242)	**T-stat of difference**
Bank loan (0/1)	0.313	0.270	0.364	-2.32**
Non-bank credit (0/1)	0.122	0.131	0.112	0.68
Bank loan or Non-bank credit (0/1)	0.376	0.344	0.413	-1.63

Panel B: Debt financing and acquirer returns

	Acquirer 3-day CAR (%)			
	(1)	(2)	(3)	(4)
Financial covenant violation	2.341**			2.482***
	(0.915)			(0.917)
Bank loan		1.576*		1.735*
		(0.924)		(0.919)
Non-bank credit			1.588	1.136
			(1.256)	(1.264)
Intercept	0.738	1.505***	1.804***	-0.019
	(0.598)	(0.580)	(0.487)	(0.724)
Observations	524	524	524	524
Adjusted R-squared	0.013	0.005	0.003	0.021

Table 10: Robustness. This table reports robustness tests for the acquirer CAR results. All regression models include the full set of controls, Fama-French (1997) 48 industry fixed effects, and year fixed effects, as in Column (2) of Table 4. Row (1) presents the main specification, but with standard errors double clustered on firm and year. In row (2), we replace our main trailing two-quarter covenant violation indicator with a trailing four-quarter violation indicator. Column (3) reports the main specification estimated on the subsample of completed acquisitions. Columns (4) – (6) presents the main specification with alternate acquirer CAR measurements. Column (7) reports the mean difference in CARs between violators and non-violators in the propensity matched sample. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Acquirer CAR (%)
(1) Double cluster on firm and year	1.758***
	(0.620)
(2) Four-quarter violation indicator	1.321***
	(0.513)
(3) Subsample of completed deals	1.704**
	(0.681)
(4) 5-day CARs	1.744**
	(0.747)
(5) 3-day value weighted CARs	2.117**
	(0.966)
(6) 5-day value weighted CARs	2.094**
	(1.066)
(7) Propensity matched sample	2.250**
	(0.890)

Appendix 1: Variable definitions. CCM denotes the CRSP-Compustat merged database. TFN denotes Thomson Reuters. SDC denotes the SDC Platinum Mergers and Acquisition database.

Panel A: Firm characteristics

Variable	Source	Description
Acquisition activity	SDC	Indicator for an acquisition announcement during the firm-quarter
Acquisition expenditure	SDC	Deal consideration announced in firm-quarter, scaled by lagged assets
Blockholder	TFN	Indicator that equals one if an institutional investor owns more than 10% of shares outstanding
Book value of equity	CCM	Total assets minus total liabilities (*ltq*) plus deferred taxes and investment tax credits (*txditcq*), if available
Cash	CCM	Cash holdings (*cheq*)
Current ratio	CCM	Total current assets (*actq*) divided by total current liabilities (*lctq*)
Financial covenant violation	Hand-collected	Indicator that equals one if the firm reported a financial covenant violation within the previous two quarters
HHI	CCM	Herfindahl–Hirschman Index calculated at the 3-digit SIC code level, following Giroud and Mueller (2010)
Interest expense	CCM	Interest expense (*xintq*)
Leverage ratio	CCM	Long-term debt (*dlttq*) plus debt in current liabilities (*dlcq*), divided by total assets
Market value of assets	CCM	Market value of equity minus book value of equity plus total assets
Market value of equity	CCM	Common shares outstanding (*cshoq*) times the quarter closing price (*prccq*)
Market-to-book ratio	CCM	Ratio of market value to book value of total assets
Net worth	CCM	Stockholder's equity (*seqq*)
Operating cash flow	CCM	Operating income before depreciation (*oibdpq*)
PP&E	CCM	Net property, plant and equipment (*ppentq*)
Size	CCM	Average assets (*atq*), reported in billions of dollars
Stock price runup	CCM	Deal sample: Acquirer's buy-and-hold abnormal return (BHAR) over the [-210, -11] window, using the CRSP equal-weighted index as market proxy. Firm-quarter sample: Acquirer's buy-and-hold abnormal return (BHAR) over the [-4qtr, -1qtr] window, using the CRSP equal-weighted index as market proxy
Value-destroying acquisition	SDC	Indicator for an acquisition announcement that earns a 3-day CAR that is more than one standard deviation below the mean
Value-neutral acquisition	SDC	Indicator for an acquisition announcement that earns a 3-day CAR that is within one standard deviation of the mean
Value-enhancing acquisition	SDC	Indicator for an acquisition announcement that earns a 3-day CAR that is more than one standard deviation above the mean

Appendix 1: Variable definitions (cont.)

Panel B: Deal Characteristics

Variable	Source	Description
Acquirer 3-day cumulative abnormal return	SDC + CRSP	Market model cumulative abnormal returns (CARs) estimated using CRSP equally weighted index returns and a one year estimation window (252 trading days) ending one month (20 trading days) prior to the [-1, +1] event window
All-cash	SDC	Indicator for an acquisition paid entirely with cash
All-stock	SDC	Indicator for an acquisition paid entirely with stock
Completed	SDC	Indicator that equals one if an announced acquisition is completed
Cross-border deal	SDC	Indicator that equals one if the target is located outside the U.S.
Deal value	SDC	Total value paid by the acquirer, excluding fees and expenses
Diversifying	SDC	Indicator that equals one if the primary SIC code of the acquirer and target are not classified in the same Fama-French (1997) 12 industry
Hostile	SDC	Indicator that equals one if the acquisition is hostile
Private target	SDC	Indicator that equals one if the target is a private firm
Public target	SDC	Indicator that equals one if the target is a public firm
Subsidiary target	SDC	Indicator that equals one if the target is a subsidiary of a public or private firm
Relative deal size	SDC + CRSP	Deal value scaled by the acquirer's market value 11 trading days prior to the announcement
Tender offer	SDC	Indicator that equals one if a tender offer is made
Toehold	SDC	Percentage of target's common stock owned by the acquirer prior to deal announcement. Assumed 0 if missing in SDC

Appendix 2: Sample Selection

	Firm-qtr	Firms
Universe of observations in Compustat FUNDQ master file from 1997 to 2015	875,259	27,231
Impose Nini, Smith, Sufi (2012) filters		
Keep only nonfinancial U.S. firms (*fic* = USA & *sich* not between 6000 and 6999)	-301,042	-7,522
Drop firms with average book assets less than $10 million in 2000 dollars	-76,471	-3,142
Drop firm-quarters with missing *atq*, *saleq*, *cshoq*, *prccq*, or *datacqtr*	-156,184	-4,672
Drop firm-quarter obs not in Nini, Smith, Sufi (2012) covenant violation dataset	-24,972	-2,052
Drop firm-quarter obs with missing industry code (*sich*) or CRSP data (*permno*)	-39,863	-895
Firm-quarter regressions require non-missing outcome and control variables	-100,349	-1,784
Firm-quarter sample	**176,378**	**7,164**

	M&A	Firms
Merge in SDC Platinum M&A deals (excluding spinoffs, recapitalizations, exchange offers, repurchases, self-tenders, privatizations, and deals not involving a U.S. firm) 40,419 matches on historical cusip. 262 additional matches on historical ticker, name, and date	40,681	6,091
Drop deals valued at less than $1 million or if missing deal value	-18,597	-796
Drop deals valued at less than 1% of the acquirer's market value 11 days prior to the announcement or if missing relative deal size	-4,220	-138
Drop deals where the acq. controlled more than 50% of the target prior to announcement	-284	-26
Drop deals where acquirer sought less than 100% ownership upon completion	-1,121	-125
Require that deal involves a public, private, or subsidiary target	-163	-16
Drop deals with missing method of payment or 3-day CAR	-4,598	-745
M&A regressions require non-missing outcome and control variables	-4,507	-1,338
M&A sample	**7,191**	**2,907**