Mergers and Acquisitions and Debt Recontracting: Evidence from Bond Covenants*

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January 2022

Abstract

We study debt recontracting through bond covenant redesign by firms engaging in the market for corporate control. Addressing endogeneity problems through difference-in-differences on matched sample and a quasi-experiment of failed acquisitions, we find significant reductions in merger, direct investment, financing and payout indentures, following tender-offer bond repurchases by firms that are subsequently acquirers or targets. But such firms increase change-in-control covenants as a potential anti-takeover defense. Credit risk implications of tender offer bond repurchases by future acquirers are associated with wealth transfers from bondholders of acquiring firms to their shareholders and effects on their CDS spreads and slopes. We thus document redesign of restrictive covenants as a major incentive for tender offer corporate bond repurchases. Consistent with predictions of the theory of incomplete contracts, our analysis highlights the significant role of debt recontracting in the creation and allocation of value through corporate mergers and acquisitions.

Keywords: Covenants; bond repurchases; mergers and acquisitions; financial contracts; wealth transfers

JEL classification codes: G32, G34

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Abstract

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1 Introduction

Corporate mergers and acquisitions (M&A) are a major form of business expenditures or investment, resulting in significant reallocation of resources (e.g., David (2020)).[1] But most public firms are levered and a significant number have outstanding corporate bonds.[2] In particular, firms with public debt typically carry covenants that restrict—in some fashion—their ability to undertake M&A.[3] These constraints arise directly in the form of merger and direct investment covenants or indirectly in the form of covenants on subsequent financing, payouts and change-of-control events (e.g., Smith and Warner (1979); Chava et al. (2010)). Figure 1 below shows that M&A related restrictive covenants became widespread in the early 1990s, following the insider trading and junk bond financing M&A scandals of the late 1980s. Notably, unless renegotiated, these covenants are legally binding restrictions on firms' M&A activity irrespective of the method of acquisition financing or, more generally, deal design.

The fast and widespread adoption of these covenants is consistent with the contracting efficiency theory of the firm: by restricting shareholder and managerial opportunism ex post, the firm can lower its cost of debt ex ante. However, debt contracts, such as corporate bonds are intrinsically incomplete (Aghion and Bolton (1992); Hart and Moore (1998); Zender (1991)), covenants that were efficient for the firm at time of debt issue may become inefficient as the firm's investment opportunities and business strategies evolve (e.g., Demarzo (2019)). Hence, there will be incentives for firms and creditors to undertake debt recontracting through alterations of existing covenants, that is, covenant redesign. But despite the strong theoretical motivation, empirical evidence on dynamic inefficiency and renegotiation of covenants in the M&A process is not available in the existing literature.

In this paper, we attempt to fill this gap by documenting significant M&A related covenant *redesign*—that is, altering the distribution of covenants—through tender offer bond repurchases by

[1] For instance, David (2020) reports that M&A expenditures in the U.S. during 1980-2009 averaged 5% of GDP annually, and reached 16% during the Hi-Tech M&A wave in the late 1990s.

[2] Strebulaev and Yang (2013) report that during 1962-2009 on average about 90% of large public non-financial firms were levered. In our sample, close to 6,000 publicly-listed U.S. firms had issued corporate bonds (excluding Yankee/Canadian/Foreign/Sinking/Putable/144a bonds) after 1990.

[3] The literature generally classifies covenants into financial covenants (that impose restrictions of financial ratios) and restrictive covenants on firms' operations. Moreover, while bank debt typically carries financial covenants, corporate bond debt generally carries restrictive covenants (see, e.g., Chava et al. (2019)).

firms that subsequently engage in the market for corporate control either as acquirers or as targets. We exploit the fact that for corporations with publicly traded bonds, debt recontracting may be undertaken through observable bond repurchases and reissues with changed covenants. We also find significant wealth transfers from bondholders to shareholders through debt recontracting. Our analysis, to the best of our knowledge, presents the first evidence on the significance of debt recontracting in M&A related value creation—and its allocation between debt and equity holders.

We develop our hypotheses by building on the received literatures on bond covenants and the market for corporate control. In brief, firms anticipating engaging in M&A as acquirers have incentives to lighten restrictive indentures on mergers and direct investment (for acquisitions), as well as subsequent financing restrictions (to allow for levered financing of M&A) and payout restrictions (to allow for cash payouts to target shareholders). For potential targets as well, there are ex ante benefits from reducing merger restrictions that will directly benefit their shareholders. But to gain flexibility during the acquisitions process for tactics that raise expected bid premium or act as anti-takeover defenses (or poison pills)—for example, capital structure changes (Stulz (1988)), reverse-takeover attempts, special dividend payments (Denis (1990); Jensen (1986))—targets have incentives to lighten direct investment, subsequent financing and payout restrictions. In a similar vein, both potential acquirers and targets have a motivation to *increase* change-of-control covenants—that often take the form of poison pills—to deter hostile acquisition attempts and/or increase the expected price premium paid by acquirers (Comment and Schwert (1995)).[4]

Rather than pursue direct covenant renegotiations with existing bond owners, which may involve relatively high transaction and delay costs, firms anticipating M&A activity may find it more effective to repurchase their issued bonds. Anecdotally, firms appear to routinely use repurchases to strategically redesign covenants. For instance, in 2017, Verizon paid $1 billion to buy back bonds on behalf of itself and numerous subsidiaries while also removing various limiting covenants (Verizon (2017)). In particular, bond repurchases are used to address M&A restrictions. For example, in 2015 Albertsons (the Idaho-based grocery chain) did a $9 billion merger with rival Safeway. In 2018, a claim was filed against Albertsons of M&A related inden-

[4]In particular, potential acquirers may also increase their anti-takeover defense to preempt "reverse" acquistion offers by targets during hostile acquisitions.

ture violations by a class of senior note holders; as the dispute threatened to escalate, Albertsons paid $330 million to buy back the debt from agitating bondholders, thereby using the buyback to neutralize the affected indentures (Doherty (2018)). Consistent with these examples, more comprehensive studies also report that covenant relaxation is a significant motivation for bond buybacks (Kruse et al. (2014)).

Meanwhile, the M&A literature documents the presence of merger and acquisitions waves because of industry shocks (Harford (2005)) or equity valuation waves (Shleifer and Vishny (2003); Rhodes-Kropf et al. (2005)). Hence, if the motivation for bond repurchase is to redesign covenants to improve positioning in the market for corporate control, then the repurchase must be executed in a timely manner. But because of fragmentation and low liquidity (relative to equity markets) of corporate bond markets (Bao et al. (2011); Bessembinder et al. (2018)), open market bond repurchases are typically conducted through privately-placed deals (Levy and Shalev (2017)), which significantly raises search and transactions costs and hence uncertainty regarding achieving bond repurchase targets in a fixed time window. This suggests that M&A related covenant redesign will generally be undertaken through fixed-price tender offers rather than open market repurchases. We note that the joint hypotheses of M&A related covenant redesign executed through tender offer bond repurchases are distinct from the information signaling motivation for share repurchases (Vermaelen (1981); Comment and Jarrell (1991)).

We test the empirical hypotheses using a comprehensive sample of bond repurchases in the U.S. covering the twenty eight year period from 1990 through 2017. We then identify sample firms that were either *future* acquirers or targets during our sample period. Empirically, covenant redesign may involve both bond *repurchase* of selected issued bonds—for example, those that carry heavy M&A related indentures—and bond *reissues* with desired covenant portfolio. Hence, our empirical test design is built on bond repurchase events that include both repurchased bonds and reissues in the short-to-medium run following the repurchase, which allows us to more reliably measure covenant redesign associated with repurchase events. In particular, we examine the average M&A related covenants in outstanding bonds one quarter before a repurchase event and compare it with the average M&A related covenants in bonds outstanding after the repurchase, including any new bonds issued within eight quarters after the event.

The linkage between prospective M&A related activity and current covenant redesign through

bond repurchases and reissues is potentially confounded by two endogeneity concerns. There may be latent common trends across sample firms regarding covenant redesign through bond repurchases and reissues that may be unrelated to expected developments in the market for corporate control. We ameliorate this concern by comparing covenant redesign in repurchase events for the entire sample of repurchasing firms versus covenant redesign for firms that were acquirers or targets subsequent (in the next eight quarters) to the repurchase events. We find no significant evidence of covenant redesign in the overall sample of repurchasing firms.

In addition, there may be latent and permanent differences between acquiring/target firms and non-acquiring/non-target firms. To help address this concern, we use two approaches. First, we utilize a "nearest-neighbor" approach to match an acquirer/target (treated) firm with a non-acquirer/non-target (control) firm in the same industry based on the total assets and leverage in the previous year. We then examine their covenant redesign through debt repurchases with cross-sectional and difference-in-differences (DiD) regressions (using the post-repurchase event window). In striking contrast to the full sample results mentioned above, there are significant reductions in indentures related to investment, dividends, and subsequent financing following tender offer repurchase events of acquirers, relative to matched non-acquirers. In particular, the relative reductions in merger indentures are especially strong, as are the reductions in covenants related to direct and indirect investment. Meanwhile, relative to matched firms, both acquirer and target firms significantly *increase* change-in-control restrictions during tender offer repurchase events. We also find evidence that target firms tend to relax merger restrictions and increase dividend restrictions during repurchase events. In general, the impact of tender offers on covenant redesign during repurchase events is significantly stronger compared to the effects of open market repurchases.

Second, following Savor and Lu (2009) and Seru (2014), we exploit a quasi-experiment. More specifically, using news articles, we research every failed M&A deal in our sample and create a subsample of those that did not succeed for exogenous reasons unrelated to any outstanding debt-related concerns. In this case, the assignment of firm pairs to the treatment sample (successful deals) versus control samples (failed M&A deals) can be regarded as random with respect to the repurchase event. This analysis confirms that successful bidders who use tender offers reliably reduce merger, investment, dividend and subsequent financing restrictions. And

future targets use tender offers to reduce merger and subsequent financing restrictions. But as predicted by the takeover-defense hypothesis, such firms increase dividend restrictions.

Our empirical hypotheses essentially relate prospective (or future) M&A activity to current bond repurchases, especially through tender offers. Hence, we also examine the effects of *predictors* of M&A on the propensity of bond repurchase. That is, we analyze whether tender offer repurchases are contemporaneously positively related to factors that are also positively associated with future M&A activity. Controlling for other determinants of repurchases, we find that firms are significantly more likely to do tender offer repurchases if their industry is currently undergoing a merger wave (Harford (2005)), which directly verifies the basic premise of our hypotheses. Conversely, our conceptual framework implies that firms that successfully redesign M&A related covenants during the repurchase event should subsequently exhibit greater M&A activity, other things held fixed. And we find support for this in the data.

We also undertake additional robustness analysis of the main results. First, we attempt to further address the concern about unobserved differences between firms that repurchased bonds and were subsequently involved in M&A (the treated firms) by constructing the control sample in a different way. We use propensity score matching to first match acquiring firms with similar non-repurchasing firms in the same industry and then select non-repurchasing firms from the matched non-acquiring firms. In this way, we utilize matched non-acquiring-non-repurchasing firms as controls. We then use the Heckman (1976) procedure to help control for selection effects in observed repurchases and M&A activity. The results remain robust. Second, we undertake a falsification exercise where we examine the link between bond repurchases and M&A related covenant redesign in non-merger wave—that is, placebo—time-periods: We do not find significant redesign of M&A related covenants by acquirers after repurchase events. In sum, we find significant empirical support for our main hypotheses, namely, that firms anticipating active participation in the market for corporate control will undertake debt recontracting by effecting covenant redesign through strategic tender offer bond repurchases and reissues.

But covenant redesign that lightens M&A related indentures or adds change-of-control related covenants in the interests of shareholders and managers should imply wealth transfers from bondholders to shareholders. Note that M&A related indentures are designed to protect bondholders from shareholders/managers undertaking acquisitions that increase default risk.

Because bondholders can observe covenant redesign in repurchase events and are aware of the likelihood of M&A activity (for example, the presence of merger waves), we expect shareholders to earn positive excess returns and bondholders to earn negative excess returns in repurchase events for potential acquirers. However, the effects of adding change-of-control indentures are more ambiguous for bondholders (Chava et al. (2010)). We find evidence supporting wealth transfer from bondholders to shareholders for tender offer repurchases effected by subsequent acquirers but the results are more ambiguous for future target firms.

In a similar vein, while bond repurchases should ceteris paribus reduce credit risk and hence reduce Credit Default Swap (CDS) spreads. But the level of credit risk in a firm should be higher in cases where covenant redesign via bond repurchase is motivated by risky future M&A activity. Thus, we expect CDS spreads to increase when a future acquirer or target repurchases a bond to relax merger-related covenant restrictions. An analysis, using CDS trading data for 2001–2017, indicates that the CDS market perceives future acquirers who redesign covenants as more risky compared to those who do not repurchase (or who do not become acquirers). However, we do not observe such patterns in the case of future targets.

There is a vast literature on incomplete financial contracts (Aghion and Bolton (1992); Hart (2001)) that emphasizes recontracting and renegotiations when agents face ex post inefficiency. One strand of this literature theoretically examines covenant redesign due to incomplete debt contracts (Sridhar and Magee (1996); Gârleanu and Zwiebel (2009)), while Green (2018) empirically shows the effects of covenant redesign on firms' bond refinancing strategies. In addition, a recent literature empirically relates corporate debt repurchases to covenant relaxation (Kruse et al. (2014); Levy and Shalev (2017)). This paper is closely related to Billett and Yang (2016) that documents an increase in M&A completion likelihood among acquiring firms that announce a bond tender offer. But, to our knowledge, this is the first study to relate ex-ante strategic covenant redesign through tender offer bond repurchases—exclusive of bond calls or refinancing transactions—to M&A. In this fashion, our study presents a novel illustration of the role of financial contracting—in particular, the effects of allocation of decision or control rights between debt holders and insiders—in the market for corporate control.

Strategic debt recontracting by potential acquiring and target firms also raises new aspects of the allocation of value generation in M&A. In particular, the M&A literature focuses on the

allocation of abnormal returns between shareholders of acquiring and target firms (e.g., Jensen and Ruback (1983)). Our analysis highlights the transfer of value generation from M&A between bond and equity holders. In particular, the financial markets appear to correctly evaluate the credit risk implications of bond repurchases by firms that subsequently engage in M&A activity.

Finally, bond repurchases attract increasing interest due to the substantial growth of bond repurchases through tender offers in recent decades (from $57 million in 1992 to $65.58 billion in 2017). This growth is consistent with our analysis in light of the increased use of restrictive M&A and investment related covenants since the early 1990s. But while there is a large and long-standing literature studying share repurchases by firms, the literature on motivations and effects of tender offer bond repurchases is still relatively sparse. Mao and Tserlukevich (2015) theoretically consider the optimality of debt repurchases and Julio (2013) examines the interaction of capital investment and debt repurchases. Our analysis is most closely related to Levy and Shalev (2017) who relate tender offers to redesign of *financial* covenants. To our knowledge, this is the first paper to examine the relation of bond repurchases to the redesign of restrictive covenants and its relation to M&A activity.

In the remaining paper, Section 2 develops the empirical hypotheses. Section 3 describes the data and Section 4 presents the empirical results of tests of the hypotheses. Section 5 undertakes robustness checks, and Section 6 analyzes wealth transfers between bondholders and shareholders, and response of CDS market to bond repurchases by prospective participants of the market for corporate control. Section 7 concludes.

2 Motivation and hypotheses

In this section, we build on the bond repurchase and bond covenant literatures to generate empirical hypotheses on strategic covenant redesign through bond repurchases. We focus on the market for corporate control; that is, for firms involved in mergers and acquisitions and firms that are targets of acquisitions.

2.1 Bond covenants

2.1.1 Types of covenants

For our purposes, it is important to distinguish between financial and restrictive covenants.[5] The former are generally designed in terms of requirements of disclosing financial accounting related information and/or requiring acceptable ranges of accounting ratios or financial performance ratios (based on the disclosed information). Upper limits on leverage-related ratios or lower limits on interest-coverage ratios are examples of financial covenants. Restrictive covenants, on the other hand, impose restrictions or limitations on the borrower's investment and financial activities. As mentioned above, the literature generally classifies restrictive covenants into four groups or categories: those related to investment, subsequent financing, dividend payouts, and special events. Appendix A.2 details the most common covenants in each category. Of particular interest for our study are the restrictions on mergers, risky direct investments, special (non-dividend) payouts, and debt issuance. These covenants clearly constrain a firm's effectiveness in undertaking M&A. On the other hand, indentures related to change in control can deter hostile acquisitions and/or increase the price-premium paid by a successful bidder (Comment and Schwert (1995)).

2.1.2 Covenant design and renegotiation

Because of asymmetric information, costly monitoring and agency conflicts among equity holders, debt holders and managers (Chava et al. (2010)), covenants lower the cost of debt ex ante by reducing monitoring costs (Smith and Warner (1979)) and enhancing lenders' incentives to monitor (Rajan and Winton (1995)). From a financial contracting standpoint, therefore, covenant design of an issued bond is endogenous and reflects the firm's attempts to optimize the trade-off between high issuing price and low operational restrictions at the time of issue (Smith and Warner (1979)). Indeed, while most issued bonds include basic financial covenants, empirically we find significant heterogeneity in the frequency of inclusion of different types of restrictive covenants (Chava et al. (2019)).

[5] While the broader literature on debt covenants includes multiple categorization schemes, the distinction between financial and restrictive is typically the focus of the recent financial economics literature; see Chava et al. (2019) for a fuller discussion.

As with other types of financial contracts, in practice debt contracts are generally incomplete (Aghion and Bolton (1992); Hart (2001)). Therefore, covenant design that is efficient at bond issue will generally can become inefficient ex post. Consistent with the incomplete contracting literature (Grossman and Hart (1986); Hart and Moore (1988)), optimal covenant design trades off ex-ante incentive efficiency—provided by strict enforcement of covenants—against ex post economic costs of operational disruptions by allowing renegotiation (Berlin and Mester (1992); Sridhar and Magee (1996); Gârleanu and Zwiebel (2009)). But covenant renegotiations with debt holders, while contractually feasible, can be substantially costly for firms. In particular, coordination problems among public debt holders are known to lead to investment inefficiencies during renegotiations in distressed firms (Gertner and Scharfstein (1991)).[6] Firms may therefore be motivated to eliminate—or reduce significantly—restrictive covenants by repurchasing bonds with heavy indentures. But firms may also be motivated to add indentures related to special events, such as default and change of control. And, depending on the firm's external financing needs, there may be incentives to issue new bonds with lighter investment, subsequent-financing and payout related indentures.

2.2 Bond repurchases

Bond repurchases immediately alter the extent and composition (or "distribution") of outstanding covenants for the repurchasing firm. As we have discussed earlier, bond repurchases potentially allow firms to relax restrictive covenants and add covenants by strategically combining repurchases with reissues. Corporations can repurchase their traded bonds in three principal ways: (1) exercise the redemption option (if present) in the bond; (2) open market repurchases; and (3) tender offers. While most corporate bonds are 'callable', that is, have the redemption option, the exercise price is typically high (generally equals the outstanding principal plus a premium). We will, therefore, focus on bond repurchases through open market transactions and tender offers. While these repurchase methods are also present in stock buybacks (Comment and Jarrell (1991)), there are some differences between the mechanics of bond and stock repurchases that are especially relevant to our study.

[6] Bondholders are typically allowed considerable flexibility in responding to covenant violations, including ignoring the violations, renegotiating (or redesigning) covenants, and implementing more formal changes in control.

Debt repurchases are subject to the rules in Securities and Exchange Commission (SEC) Regulation 14E (under the SEC act of 1934). Securities laws do not define tender offers. Rather, the SEC provides guidance on recognizing repurchases as tender offers through (offer) characteristics that include active and widespread solicitation of public security holders to purchase a substantial fraction of outstanding securities; the offer to purchase at a premium over market value; a limited time-window for the offer and pressure on security holders to tender.[7] Regulation 14E prohibits repurchases based on material inside (non-public) and sets a minimum tender windows for the offer.[8] Thus, debt tender offers exist for a limited duration and the offer price is between the market price and face value of the bond. Tender offers can be through cash offers or through offers to exchange newly issued debt for outstanding debt where presumably the new debt is more favorable to the repurchasing firm—for example, reducing interest expense and/or allowing covenant redesign more suitable to the firm's forward-looking objectives.

Open market debt repurchases do not satisfy the major characteristics of tender offers, in particular they do not involve widespread solicitation of existing bondholders to repurchase a specified minimum fraction of outstanding debt at a fixed offer price. While they afford the repurchasing firm flexibility in terms of purchasing price (through strategically timed market transactions), open market debt repurchases involve significant transactions costs because corporate bond markets are more fragmented and significantly less liquid than equity markets (Bao et al. (2011); Bessembinder et al. (2018)). Open market bond repurchases are therefore mostly done through privately placed deals (Levy and Shalev (2017)). But private deals also raise search and transactions costs relative to trading in organized exchanges (the primary method for conducting open market stock repurchases). Hence, there is considerable uncertainty in achieving bond repurchase targets in a fixed time window with open market repurchases compared with tender offers.

2.3 M&A, covenant redesign, and bond repurchases

The previous discussion on cost-efficient covenant redesign through bond repurchases has special relevance for the market for corporate control. To fix ideas, let us consider firms that have

[7] The SEC website investor.gov provides a useful summary of tender offers.

[8] For example, offers must stand for at least twenty business days from initiation and any changes in the offer results in extension of the window.

traded bonds with strict restrictions on merger activity. As we noted above, while such restrictive covenants may have been efficient at the time of bond issue, some of the issuing firms may find such restrictions inefficient ex post if attractive acquisition opportunities present themselves, for example, if there is a merger wave (Shleifer and Vishny (2003); Harford (2005); Rhodes-Kropf et al. (2005)) and/or the firm's evolving business strategy places greater emphasis on acquisitions. Rather than pursue direct covenant renegotiations with existing bond owners, which may involve relatively high transaction and delay costs, such firms may find it more effective to repurchase their issued bonds with particularly strict direct investment (for acquisitions), merger, and subsequent-financing restrictions.

In a related vein, it is well known that successful acquisitions require financial flexibility in the form of deal design, including the financing method (e.g., cash versus stock). In general, payout covenants impose restrictions on the percentage of income that can be paid out to shareholders and "other entities," that is, limit the total cash payout from the firm. We, therefore, also expect firms planning acquisitions to relax the payout restrictions. Furthermore, firms anticipating M&A need to plan for contingencies or events that may occur during the process. In particular, during hostile takeovers target firms can trigger defensive moves, such as making a takeover bid on the acquirers and/or executing "flip-over" poison pills that allow target shareholders to receive the acquirer's shares at a discount. Acquiring firms can attempt to preempt these contingencies by strengthening their change-in-control debt covenants, which effectively perform as anti-hostile takeover defenses. Furthermore, bidding contests may force the acquiring firm to debt-finance the bid. Acquiring firms can reduce the cost of debt, other things being equal, by strengthening default event covenants in new debt because these covenants offer greater protection to bondholders during the default process.

As noted above, covenant redesign through bond market transactions will generally involve strategic combinations of repurchases and subsequent reissues. For expositional parsimony, we will couch the empirical hypotheses in terms of bond repurchase *events* that include repurchases and subsequent reissues in the short and medium run.

Hypothesis 1 *Firms anticipating being acquirers are ceteris paribus more likely to use bond repurchases to reduce direct investment, mergers, subsequent financing, and payout restrictions (especially relating to*

non-dividend payments). Such firms are also ceteris paribus more likely to utilize bond repurchases to strengthen special event covenants related to change in control.

We turn, next, to firms anticipating being targets in the M&A process. Because mergers are intrinsically cooperative or friendly, firms that anticipate merger negotiations will ceteris paribus prefer to reduce indentures restricting mergers; therefore, relaxing merger indentures facilitates the company integration process. In addition, potential target firms benefit ex ante from reducing covenants that restrict their flexibility in acquisition attempts, such as direct investment and subsequent financing indentures that may preclude tactics like reverse-takeovers and/or changes in capital structure as anti-takeover defenses (Stulz, 1988). On the other hand, change-of-control related indentures also act as poison polls. Such takeover defenses may also be effective in raising the acquisition prices (Comment and Schwert (1995)). Since target shareholders in acquisitions—whether friendly or hostile—benefit from higher bids, other things being equal, we expect shareholders of firms anticipating becoming targets to add or strengthen change-of-control related covenants. Meanwhile, Jensen (1986) emphasizes that high cash holdings can make firms more vulnerable to takeover attempts from "asset stripping" acquirers. Special dividend payments can then deter such takeovers and benefit target shareholders (Denis, 1990). Hence, potential targets would have incentives to relax payout restrictions.

Hypothesis 2 *Firms anticipating being targets of mergers or acquisitions are ceteris paribus more likely to use bond repurchases to reduce covenants on mergers, direct investment, subsequent financing, and payouts. But such firms are likely to use bond repurchases to add change-of-control covenants.*

Finally, as we discussed above, tender offer repurchases will generally be more effective in completing covenant redesign in a timely manner.

Hypothesis 3 *Firms anticipating being acquirers or targets are ceteris paribus more likely to use tender offers for covenant redesign compared with open market repurchases.*

We summarize the above hypotheses in Figure 2 for easy reference and now turn to empirical analysis. We first describe the data and the empirical methodology and then discuss the results.

3 Data

3.1 Data and sample construction

Data used in this paper are sourced from multiple databases. Data on corporate debt issues comes from Mergent Fixed Income Securities Database (FISD) for the 28-year period from 1990 through 2017. We restrict attention to corporate bonds issued by firms domiciled in the U.S.; in particular, we exclude Yankee, Canadian, Foreign, Sinking, Puttable, and (US and foreign) 144A bonds. We also require that the issuers be represented in the CRSP and COMPUSTAT databases. After implementing these filters, our sample consists of 21,305 bonds issued by 3,989 unique firms. We then match the sample with Thomson's SDC M&A database to identify firms that were either acquirers—that is, sample firms that made at least one announced attempt to acquire at least one company—or targets—that is, sample firms that were a target of at least one announced acquisition attempt during our sample period.[9] Next, we identify bond repurchases by firms in the sample using Mergent FISD database. Our empirical tests focus on acquiring and target firms with bond repurchases in the previous two years. Our final sample yields 4,774 bond repurchase events by 1,638 unique firms. Table 1 summarizes the sample construction process.

3.2 Summary statistics

Panel A of Table 2 presents the distribution of the repurchase sample across twelve major industry groups based on the Fama and French 12 industry classification.[10] We further decompose repurchases into open market transactions and tender offers. The highest proportion of repurchases are in Finance, followed by Telecommunications, Manufacturing, Wholesale Trading, and Energy. Hence, the repurchases are distributed across a wide range of industries representing heterogeneous economic activities. Almost two-thirds of our sample repurchases (68.8%) are conducted through tender offers.[11]

[9] We do not condition our sample of acquirers and targets based on whether the acquisition attempt was successful or not. This is because there are multiple reasons for deals being unsuccessful. For our hypotheses, the important requirement is that firms anticipated making acquisition attempts or being targets of acquisition attempts at the time of bond repurchases and covenant redesign.

[10] Table IA.1 in the appendix gives the corresponding distribution across 48 Fama and French (1997) industries.

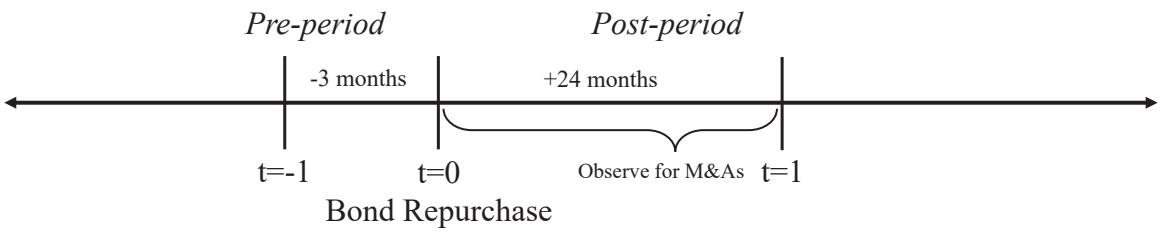
[11] In contrast, most of the share repurchases in the U.S. (over 90%) are through open market repurchases (Banyi et al. (2008)).

Panel B of Table 2 summarizes the distribution of restrictive covenant types in our bond repurchase sample. We report the mean and standard deviation of various covenant types in the sample. Overall, on average, repurchased bonds have a ninety percent likelihood of having investment related covenants. Among these, merger related covenants are most likely to be present (88%) followed by direct investment restrictions (35%). We also find a preponderance of subsequent financing restrictions in the repurchase sample: over ninety percent of the repurchased bonds carry such covenants. Asset sale/lease restrictions (87%) and limits on subordinate debt issuance (67%) are especially highly represented among these restrictive covenants. Default and change-in-control related covenants account for a significant portion of the Event related restrictions that are found in the eighty per cent of repurchased bonds; finally, over one third of the bonds contain dividend related restrictions.[12]

4 Empirical tests

We next turn to empirical tests of the hypotheses. As we discussed earlier (in Section 2), the net effect of repurchases on covenant redesign is not fully captured by limiting the analysis to only the covenant coverage of repurchased bonds. A more reliable approach is to interpret bond repurchase "events" more broadly by including the possibility of reissues. We therefore organize our analysis around *bond repurchase events* that includes both repurchased bonds and reissues in the short-to-medium run following the repurchase. Specifically, we examine the average restrictive covenants in outstanding bonds one quarter before a repurchase event—the *pre-period*—and compare it with the average restrictive covenants in bonds outstanding after the repurchase, including any new bonds issued within eight quarters (two years)—the *post-period*. We choose the quarter before and the two-year period following the repurchase as a reasonable window for measuring the effect of the repurchase event on restrictive covenant coverage of the firm's outstanding bonds. Correspondingly, we focus on repurchasing firms that were either acquirers or targets in the post-period (that is, up to eight quarters after the repurchase). Please see the below time line figure for a graphical representation of our empirical setup.

[12] Table IA.2 in the appendix summarizes the key characteristics of firms in our sample.



4.1 Covenant redesign and M&A: Univariate analysis

Table 3 presents this analysis for our entire sample. As we mentioned above, an analysis on the entire sample helps address the concern that, in our sample period, there may be latent extraneous factors common to all firms that may drive a spurious correlation between repurchase events and covenant redesign; this analysis also provides a useful benchmark for our subsequent tests. Table 3 indicates that in the overall sample there are no statistically significant differences in the pre- and post-event restrictive covenants–across all types–for both tender offers and open market repurchases.[13]

We now turn to the tests of our empirical hypotheses (Hypothesis 1–Hypothesis 3 in Section 2) that relate covenant redesign through bond repurchases to M&A. We undertake our analysis with acquirers and targets as treated firms and matched non-acquirers and non-targets as control firms, respectively.[14] For each repurchase by an acquirer, we use a nearest-neighbor approach to match the acquirer (treated) firm with a non-acquirer (control) in the same industry based on the total assets and leverage in the last year. In addition, we require that the control firm must have repurchased a bond within the last four quarters of the treated firm's repurchase event and both the treated and control firm must have used the same repurchase method. We use the same procedure to match repurchases of targets companies with that of non-targets. If there are latent permanent differences between acquirers and non-acquirers and/or targets and non-targets, then those differences should be muted with the matched firms. In addition, if there are latent common factors generating a spurious correlation between repurchase events and covenant

[13] In their sample of 208 debt repurchases from 1989 to 1996, Kruse et al. (2014) find that about 18% of firms cite or state covenant relaxation as a major motivation for their repurchase. Our total sample covers over 4,474 repurchases during a much longer period (1990-2017) and we examine actual change in covenant distribution in repurchase events.

[14] Table IA.3 in the appendix summarizes covenant restrictions on bonds repurchased by firms in our sample that became acquirers or targets within two years of the repurchase event.

redesign, then these factors should also impact the control firms in a similar fashion to the treated firms. In sum, examining the differences in the link between repurchases and covenant redesign between acquirers (targets) and matched non-acquirers (non-targets), therefore, helps address concerns regarding the effects of latent factors.

Panel A of Table 4 shows the mean difference:

$$(Post - Pre)Covenant\ Restrictions\ |_{\text{treated}} - (Post - Pre)Covenant\ Restrictions\ |_{\text{control}}, \qquad (1)$$

for acquirers (treated) and non-acquirers (control) for both open market and tender offer repurchase events.[15] These results indicate significant reductions in indentures related to investment, dividends, and subsequent financing following tender offer repurchase events of acquirers, relative to non-acquirers. In particular, the relative reductions in merger indentures are especially strong (with *t-statistics* of over 4.6), as are the reductions in direct and indirect investment (with *t-statistics* of over 4.3). On the other hand, relative to non-acquirers, there are significant increases in event related covenants—specifically, change-in-control event covenants— following tender offer repurchase events by acquirers. These results are consistent with Hypothesis 1. Moreover, evidence regarding changes on M&A related indentures following open market repurchases by acquirers (relative to non-acquirers) is significantly weaker compared with tender offer repurchases. These results support Hypothesis 3.

In Panel B of Table 4, we present the analysis for targets, using non-target firms (that is, sample firms not targeted in any announced acquisition attempt) as controls. Relative to non-target firms, target firms significantly lower merger and direct investment restrictions with tender offer repurchases, which is consistent with Hypothesis 2. In addition, we observe significant reductions in subsequent financing and payout restrictions by target firms (relative to non-target firms), supporting this hypothesis. In contrast, but consistent with Hypothesis 2, there are significant additions of change-in-control event indentures after tender offer repurchases. Finally, we do not find significant effects of open market repurchases on covenant redesign related to M&A activity.[16] These results are consistent with Hypothesis 3.

[15] To help relate (1) to Table 4, it may be useful to rearrange terms in the form $Post(Covenant\ Restrictions|_{treated} - Covenant\ Restrictions|_{control}) - Pre(Covenant\ Restrictions|_{treated} - Covenant\ Restrictions|_{control})$.

[16] Target firms use open market repurchases to increase indirect investment, but these covenants are not generally

4.2 Multivariate regression analysis

To control for firm characteristics related to bond repurchases directly, we now extend the matched sample analysis in Table 4 using the cross-sectional regression framework given in Equation (2) below:

$$\Delta Y_{iq} = \beta_0 + \beta_1 Acquirer_{iq} + \beta_2 Target_{iq} + \beta_3 \mathbf{X}_{iq} + \mu_q + \mu_{ind} + \epsilon_{iq}, \tag{2}$$

where i and q represent the repurchase event and calendar quarter respectively. The dependent variable (ΔY_{iq}) is the difference in the average restrictive covenants in outstanding bonds in the pre-period—that is, one quarter before a repurchase event—and the post-period—that is, within 2 years of the event. We identify through dummy variables that indicate whether a firm acted as an acquirer in an M&A deal ($Acquirer_{iq}$), or was the target of an M&A deal ($Target_{iq}$), within two years after the repurchase event. In addition to fixed effects for the industry and repurchase calendar quarter, we control for total assets and leverage of the firm one quarter before the repurchase.

Panel A of Table 5 displays the results for tender offer repurchases. The first row of this panel indicates that, relative to matched non-acquirers, future acquirers reliably reduce covenants related to merger, (direct and indirect) investment, subsequent financing, and dividend payouts. These effects are also economically significant. For example, acquirers reduce merger restrictions by -0.008, which is equivalent to 33% ($= \frac{-0.008}{-0.0063} - 1; -0.0063$ is the mean of $\Delta Merger$) greater reduction compared to the average merger reductions in the matched sample. This behavior of acquirers is consistent with Hypothesis 1. Meanwhile, estimates in the second row indicate that, relative to matched non-target firms, future targets increase reliably increase event-related restrictions and this effect is also economically significant. This finding supports Hypothesis 2.

In Panel B, we display the analysis for open market repurchases. Planned acquisition activity or expectation of becoming a target within the next two years has a much weaker impact on covenant redesign through open market repurchases, compared with the tender offers seen in Panel A. Hence, we find support for Hypothesis 3.

related to M&A activity. For example, such covenants include provisions for minimum net worth (see the online Appendix) and serve as financial covenants.

We note that the results from Tables 4 and 5 both support Hypothesis 3, that is, firms expecting to engage in M&A activity are more likely to use the tender offer method to redesign their M&A related debt covenants. Hence, for expositional ease, we will henceforth typically restrict attention to tender offer repurchases and place results for open market repurchases in the online Appendix for comparison.

Next, we investigate the relationship between covenant redesign and future M&A activity using a panel dataset that tracks the matched treated (acquirer) and control (non-acquirer) firms two years before and two years after each repurchase event. Specifically, we run the following difference-in-differences (DiD) specification on the matched panel data set and report the results in Panel A of Table 6.

$$\begin{aligned} Y_{iq} =& \beta_0 + \beta_1 \textit{Tender Offer}_i + \beta_2 \textit{Post}_{iq} + \beta_3 \textit{Acquirer}_i + \beta_4 \textit{Post}_{iq} \times \textit{Tender Offer}_i \\ &+ \beta_5 \textit{Post}_{iq} \times \textit{Acquirer}_i + \beta_6 \textit{Tender Offer}_i \times \textit{Acquirer}_i \\ &+ \beta_7 \textit{Post}_{iq} \times \textit{Tender Offer}_i \times \textit{Acquirer}_i + \beta_8 \mathbf{X}_{iq} + \mu_i + \mu_q + \epsilon_{iq}, \end{aligned} \tag{3}$$

where Y_{iq} represents the average merger, investment, dividend, subsequent financing and event related indentures of firm i's outstanding bond portfolio in quarter q. Here, for each treated repurchase event (acquirer within 2 years of the event) and control repurchase event (non-acquirer during 2 years after the event), we track the corresponding firm's outstanding bond portfolio for 8 quarters before and 8 quarters after the repurchase event. $\textit{Post}_{iq}$ is assigned a value of '1' for quarters after the repurchase event for both treated and control observations. $\textit{Tender Offer}_i$ indicates tender offer repurchase events and '0' for open market repurchases. $\textit{Acquirer}_i$ identifies companies that attempted an acquisition within two years after the repurchase event.

The negative coefficients of $\textit{Post}_{iq} \times \textit{Tender Offer}_i$ in columns (1)-(4), though insignificant, indicate that firms undertaking tender offer bond repurchases reduce their merger, investment, dividend and subsequent financing indentures, compared to those doing open market operations. The coefficients of $\textit{Post}_{iq} \times \textit{Acquirer}_i$ implies that acquirers tend to reduce payout restrictions while increasing event restrictions. This is in line with Hypothesis 1. The coefficient of interest in this analysis is the triple interaction term, $\textit{Post}_{iq} \times \textit{Tender Offer}_i \times \textit{Acquirer}_i$, which shows that acquirers use the tender offer method to reduce their investment and financing related inden-

tures and increase change in control restrictions. This provides support for Hypothesis 1 and Hypothesis 3.

In Panel B of Table 6 we repeat the the DiD analysis of (3) for targets versus matched non-target firm repurchases. While the $Post_{iq} \times$ *Tender Offer*$_i \times Target_i$ coefficients are statistically insignificant in columns (1) and (2), as expected the signs are negative. The significant triple interaction coefficients in columns (3) and (5) lend support to Hypothesis 3 which argues that firms that anticipate becoming targets of M&A deals are more likely to increase dividend and change in control restrictions. Overall, the results from the difference-in-differences analyses in Table 6 are consistent with that from the cross-sectional analysis in Table 5 and show that future acquirers and targets use tender offer repurchases to redesign restrictive M&A related covenants.

4.3 Covenant redesign and M&A outcomes: A quasi-experiment

In the analysis above, we compare covenant redesign (through bond repurchases) by acquirers or targets with that of similar non-acquirers and non-targets. One possible criticism of this approach is that the reported relationship between bond repurchases and future M&A activity could be caused by endogenous selection of firms into the treatment group. An ideal test to study the relationship between covenant redesign and future M&A would be where firms are randomly assigned to repurchase outstanding bonds and are randomly presented with attractive opportunities to become an acquirer or be exposed to an acquisition bid. Given the difficulty in identifying such an experiment, we undertake a quasi-experiment by randomizing the repurchase decision conditional on a firm engaging in future M&A activity.

We focus our attention on firms that have at least one outstanding bond and have made at least one acquisition bid as an acquirer or have been target of at least one bid during our sample period. The treated event in this analysis is "repurchase". We study the relationship between covenant redesign and M&A activity $\pm$ *2-years* around each event. A repurchasing firm could have a successful or a failed M&A bid within two years of the repurchase event. We classify each acquisition bid as *successful* or *failed* using the status reported in SDC M&A database. We read news articles around each failed acquisition bid and exclude firms with bids that failed because of any outstanding debt-related concerns. Next, we randomly match each successful-bid-repurchasing firm and failed-bid-repurchasing firm with three successful-bid-*non*-repurchasing

firms and failed-bid-*non*-repurchasing firms, respectively, in the same SIC 4-digit industry and quarter. By doing so, we attempt to randomize the repurchasing decision with respect to future M&A bid outcomes. This approach is similar to Savor and Lu (2009), Seru (2014) and Bena and Li (2014) who use failed M&A as controls to study the impact of M&As on value-creation and innovation.

We run the DiD specification below and report the results in Table 7.

$$\begin{aligned} Y_{iq} =& \beta_0 + \beta_1 \textit{Post-Tender Offer}_{iq} + \beta_2 \textit{Successful Bid}_{iq} \\ &+ \beta_3 \textit{Post-Tender Offer}_{iq} \times \textit{Successful Bid}_{iq} + \beta_4 X_{iq} + \mu_i + \mu_q + \epsilon_{iq}, \end{aligned} \tag{4}$$

where, Y_{iq} represents the average merger, investment, dividend, subsequent financing and change in control indentures of firm i's outstanding portfolio of bonds in quarter q. *Post-Tender Offer* indicates quarters after a tender offer repurchase event. *Successful Bid* identifies firm-quarters that are within 8 quarters of a future successful M&A bid. According to our Hypotheses 1– 3, we should expect future successful acquirers and targets of successful bids to make greater changes in M&A related covenants through tender offers compared to failed acquirers or targets of failed bids. The main coefficient of interest here is that of *Post-Tender Offer* $\times$ *Successful Bid*.

In panel A of Table 7, we focus on acquirers and match successful- and failed-bid-tender-offer acquirer firms with three successful-bid-*non*-repurchasing firms and failed-bid-*non*-repurchasing firms, respectively. The coefficients of *Post-Tender Offer* $\times$ *Successful Bid* show that successful bidders who use tender offers reliably reduce merger, investment, dividend and subsequent financing restrictions, while increasing change-in-control covenants—supporting Hypothesis 1.

Panel B focuses on target firms. We match successful- and failed-bid-tender-offer target firms with three successful-bid-*non*-repurchasing firms and failed-bid-*non*-repurchasing firms, respectively. The coefficients of *Post-Tender Offer* $\times$ *Successful Bid* indicate that target firms facing successful bids, and who use tender offers, reliably reduce merger, investment, and subsequent financing restrictions. However, we do not find significant effects for payout and change-in-control covenants. Hence, the results in Panel B partially support Hypothesis 2. Overall, we find support for Hypotheses 1 and 2 after randomizing the decision to repurchase with respect to M&A outcomes.

4.4 Prospective M&A and current bond repurchases

Thus far, our empirical tests have analyzed covenant redesign around bond repurchase events by firms revealed to be acquirers or targets ex post, that is, in the two years after the repurchase. However, our empirical hypotheses state that firms *anticipating* M&A activity—as potential acquirers or targets—will be motivated to undertake covenant redesign through bond repurchases and reissues; that is, the hypotheses relate prospective M&A activity to current repurchases. Put differently, an implication of our conceptual framework is that tender offer repurchases will be contemporaneously positively related to factors that are also positively associated with future M&A activity. We, therefore, now test the hypotheses by examining the effects of *predictors* of M&A on the likelihood of bond repurchase.

To undertake this analysis, we regress—using a linear probability model—bond repurchases in firm-quarter t on the state of industry merger wave (M&A Wave) in quarter $t-1$, while controlling for macro-level, firm-level, and issue-level determinants of bond repurchases in $t-1$. Specifically, the presence of the merger wave in any quarter t in a Fama-French 48 industry (see Fama and French (1997)) is identified by a dummy variable that takes a value '1' if the industry is experiencing a M&A wave based on the Harford (2005) methodology. Potential waves are identified by 24-month periods with highest concentration of bids in an industry. Our sample period is divided into three periods: 1990-1999 (120 months), 2000-2007 (96 months), and 2008-2018 (132 months). Taking the total number of bids over each period for a given industry, we simulate 10,000 distributions of the number of occurrences of firm involvement in a bid over the period with equal probability of assignment for each month. A potential wave is assigned as "merger wave" if actual concentration is higher than the 95th percentile of the simulated distribution. Using lagged covariates helps address simultaneity bias concerns.

Table 8 presents the results of this analysis. The coefficient of interest is the one on *M&A Wave*. We find that a M&A wave in the firm's industry in the previous quarter is significantly positively related to the likelihood of tender offer repurchases, but not open market repurchases. Since firms located in industries undergoing M&A waves should ceteris paribus have higher expectations of engaging in M&A activity in the next two years (based on our construction of M&A waves), we expect such firms to be more likely to undertake tender offer repurchases, other

things held fixed. Hence, the analysis in Table 8 supports Hypotheses 1–3.

In addition to the test discussed in this section, we examine the predictive power of current bond repurchases for future M&A activity—specifically the likelihood of being acquirers or targets in the succeeding eight quarters—through Logit regressions. The results of this analysis are reported in Table IA.5 in the online appendix. We find that repurchasing firms that modify merger, subsequent financing, and change-in-control covenants are significantly more likely to be future acquirers or targets.

5 Additional robustness checks

The results above indicate significant positive effects of prospective M&A activity—both by potential acquirers and targets—on M&A related covenant redesign through tender offer bond repurchases and reissues. In this section, we conduct additional robustness checks on the results by analyzing the link between covenant redesign and M&A activity after correcting for endogenous selection effects in observed bond repurchases and M&A activity, and by conducting a falsification test.

5.1 Covenant redesign and M&A activity controlling for selection effects

In Table 6, we did a difference-in-differences analysis of the link between covenant redesign and M&A activity using a matched sample of controls derived from firms that undertook bond repurchases in the same quarter. In Table 9, we undertake a similar analysis to investigate the link between covenant redesign and M&A activity after controlling for selection effects in observed bond repurchases and M&A activity using the Heckman (1976) two-step approach. Here, unlike in Table 6, we do not restrict our sample to firms that have repurchased a bond issue. We construct the sample as follows: First, we use the propensity score method to match acquirers (treated) with non-acquirers (control) within each Fama-French 48 industry-quarter strata. That is, we match Compustat firms that engaged in an acquisition in quarter t with non-acquirer firms that are in the same industry and similar in terms of previous quarter's (that is, $t-1$) total assets, Tobin's Q, and leverage. This step attempts to control for a firm's decision to engage in acquisition. Second, we construct a panel with 9 quarters ($t-8$ to t) for each matched acquirer

and non-acquirer firm-quarter pair. Third, among the matched treated and control pairs we choose pairs where the acquirer (treated) firm has repurchased a bond issue and the non-acquirer (control) firm has not repurchased any bond issue in the 2-year window before engaging in acquisition. Therefore, now our treated firm is an 'Acquirer-Repurchasing' firm while the control firm is a 'Non-Acquirer-Non-Repurchasing' firm. The post (repurchase) period now identifies eight quarters after the repurchase for the treated and corresponding control firms.

We then apply the Heckman (1976) two step approach. In the first stage, we run a probit regression on this propensity score matched sample with the bond repurchase identifier (Repurchase) for treated firms as the dependent variable and total assets, market-to-book, and leverage as independent variables, along with firm and quarter fixed effects. From this step, we calculate the Inverse Mills Ratio (IMR). In the second step, we test the relationship between covenant redesign and acquisition activity after attempting to control for the repurchase decision through the inclusion of IMR. Panel A of table 9 reports the results of the regression (Acquirer vs. Non-Acquirer) in the matched open market sample. Panel B repeats the above steps for tender offer repurchases. The dependent variables in columns (1)-(5) are average covenant restrictions on all outstanding bond issues for a firm in a quarter. Heteroskedasticity-adjusted robust standard errors are reported in parentheses. This methodology is similar to that adopted by Subrahmanyam et al. (2014)

The results indicate that, relative to the matched non-acquiring-non-repurchasing firms, companies that engaged in mergers and acquisitions in the post-period were significantly more likely to use tender offer repurchases to reduce merger, investment, subsequent financing, and dividend payout indentures, while being significantly more likely to add change-in-control covenants. These results are similar to those seen above and support Hypotheses 1.

5.2 Falsification test

Our argument is that firms strategically redesign their covenants before engaging in M&A activity in the near future. If this were true, firms are more likely to redesign their covenants in years where there is significant M&A activity in the industry, that is, during (or just before) M&A wave years. Such covenant redesign should be insignificant during non-M&A wave years, however.

From the process outlined previously (see Table 8), we know whether a repurchase event

happened during an industry M&A wave period or non-wave period. For our falsification test, we randomly assign M&A activity around repurchase events during non-wave years, which is equivalent to randomly assigning repurchase events to low M&A years. We then examine if covenant redesign activity is lower in these non-wave years. Specifically, we first we assign all actual M&A activity around repurchases the value zero, that is, assign the variables *Acquirer* and *Target* (see Table 5) a value of zero for all repurchases. Next, we randomly assign M&A activity around repurchases made by acquirers and targets only during non-wave years to create *Placebo Acquirer* and *Placebo Target* variables.

We replicate the analysis of Table 5 with these placebo variables in Table 10. The dependent variables are the change in covenant restrictions in a firm's bond portfolio around the repurchase events. We run the regressions on the matched sample with tender offer repurchases. The coefficients of *Placebo Acquirer* and *Placebo Target* are statistically insignificant in all regressions. That is, we fail to find the result of table 5—potential acquirers and targets redesign their covenant restrictions through tender offers—in this falsification test. This lends support to our argument that firms anticipating to engage in M&A activity in the near future strategically repurchase outstanding bond issues to redesign their covenant restrictions through tender offers.

6 Covenant redesign and market response

6.1 Covenant redesign and wealth transfers

In general, debt holders should benefit from bond repurchases because they reduce leverage, other things being equal. However, if bond repurchases are instruments for covenant redesign that facilitate risky investments such as acquisitions, then repurchase announcements should transfer wealth from bondholders to shareholders in rational security markets. On the other hand, covenant redesign through repurchases by potential target firms that act as antitakeover defenses (such as addition of change-in-control restrictions) should benefit the bondholders by making levered acquisitions more difficult. Finally, based on the foregoing analysis, the wealth transfer effects of relaxed M&A related indentures should be higher for tender offers compared with open market repurchases. In sum, we can derive from Hypotheses 1–3 above the following hypothesis.

Hypothesis 4 *There will be significant wealth transfers from bondholders to shareholders during bond repurchases by potential acquirers, and these effects should be stronger for tender offers relative to open market repurchases. However, the effects of bond repurchases by potential targets on wealth transfers from bondholders to shareholders is ambiguous.*

To test Hypothesis 4, we first obtain the daily abnormal return for a stock by subtracting the equally-weighted CRSP stock returns from the company's stock return. We cumulate these abnormal returns over $\pm$ 30-day and $\pm$ 60-day windows around bond repurchases to calculate the cumulative abnormal returns (CAR) for the respective windows. We next calculate the daily abnormal bond return as the difference between the bond's return and the return of the closest treasury debt instrument, in terms of time remaining to maturity. We obtain data on treasury debt instrument (from 3 month to longest terms bonds) prices from DataStream.

The results are presented in Table 11. Panel A compares wealth effects of repurchases through tender offers and open market transactions for equity holders and bond holders of firms engaged in M&A—that is, acquirers and targets—relative to the equity and bond holders of matched firms that do not engage in M&A. Consistent with our previous results, there is significant wealth accretion by equity holders of M&A firms through tender offer bond repurchases, compared with open market repurchases—supporting (the last part of) Hypothesis 4.

Panel B reports the stock and bond CARs for acquirers and non-acquirers in our sample. The last column of this Panel shows that, compared to non-acquirers, acquirers experience significant positive abnormal stock returns in 30-day window around tender offer bond repurchases. In contrast, the abnormal returns for bond holders of acquirers are significantly negative relative to non-acquirers for tender offer bond repurchases; this applies for both 30- and 60 day windows. Hence, the last column indicates a strong wealth redistribution from bond holders to equity holders following tender offer bond repurchases by acquirers relative to non-supporting acquirers, supporting the first part of Hypothesis 4. This result also supports the reasoning underlying Hypothesis 1. Furthermore, the third column of this panel shows that the wealth gain to shareholders of acquirers is significantly greater with tender offer repurchases compared with open-market repurchases for both 30- and 60-day windows, especially the former. This result further supports Hypothesis 3.

Panel C analyzes the wealth transfer implications of bond repurchases for target firms relative to non-target firms. In the last column, we do not find significant differences between the abnormal returns of equity holders of targets and non-targets following tender offer repurchases in either the 30-day or the 60-day windows. Thus, we do not find significant wealth transfers from bondholders of targets following tender offer repurchases, relative to non-targets. This analysis supports the second part of Hypothesis 4. Meanwhile, in the third column of Panel C we continue to find significant positive wealth effects for shareholders of target firms that undertake tender offer repurchases, compared with open market repurchase. This is consistent with the argument that by undertaking covenant redesign specified in Hypothesis 2 through tender offers (Hypothesis 3), shareholders of potential target firms improve their expected gains from acquisition attempts.

6.2 Covenant redesign and CDS market response

The CDS market allows investors to hedge their credit risk exposure to underlying firms. The literature has shown that the CDS market leads bond market in determining the price of credit risk (Blanco et al. (2005)) and that the secondary market for corporate bonds becomes less efficient after the introduction of CDS trading for the underlying firm (Das et al. (2014)). Similar to the argument underlying Hypothesis 4, the level of credit risk in a firm should be higher in cases where covenant redesign via bond repurchase is motivated by risky future M&A activity, as opposed to a general bond repurchase that reduces leverage and hence the credit risk of a firm. But the effects on credit risk during tender offer repurchases by potential targets should be ambiguous.

Because CDS spreads (in levels) are positively related to default risk, we thus expect CDS spreads will increase when a potential acquirer repurchases bonds—mainly through tender offers—to relax M&A-related covenant restrictions. Meanwhile, the literature argues that the *slopes* of credit spread term structure provides information on future riskiness of firms (e.g., Han et al. (2017) and Augustin (2018)). In particular, the difference between long- and short-run CDS spreads is positively related to intertemporal changes in credit risk. In particular, there will be a resolution of uncertainty over time regarding the outcome of M&A activity by potential acquirers. For instance, according to the timing conventions adopted in our study, this resolution

will occur after two years. Hence, we expect the difference between longer maturity (exceeding 2 years) CDS spreads and short maturity (less than two years) spreads to fall during tender offer bond repurchase episodes of potential acquirers. Finally, for reasons mentioned in the previous section, the effects on CDS spreads and slopes during tender offer repurchases by potential targets should be ambiguous.

Hypothesis 5 *There will be significant increase in CDS spreads, but a significant decrease in the slope of CDS spreads, during tender offer bond repurchases by potential acquirers. However, the effects of bond repurchases by potential targets on CDS spreads and slopes are ambiguous.*

The CDS trading data for the period 2001 to 2017 is sourced from Markit. For these tests, we include firms that have at least one outstanding bond when the firm's CDS is traded. For each repurchase event (treated) in year 't' during this sample period, we match firms with a control firm that did not repurchase a bond within the same Fama-French 12 industry and similar propensity score based on total assets and leverage in year '$t-1$'. We choose the 5-year CDS instrument to construct our variables because it is the most liquid instrument in the CDS market. We construct proxies for the level and slope of credit risk using 5-year CDS spreads and the difference between 5-year and 1-year CDS spreads, respectively. We utilize $\pm$30-days and $\pm$60-days windows around repurchase events.

In Table 12, the *Tender Offer* $\times$ *Acquirer* coefficients show that future acquirers who redesign covenants through tender offer bond repurchases experience an increase in their 5-year CDS spread for both $\pm$30-days (column (1)) and $\pm$60-days (column (4)) windows, consistent with Hypothesis 5. Furthermore, CDS slope flattens significantly for both windows, suggesting that the CDS market perceives the shorter run credit risk of potential acquirers reducing risky investment and financing indentures to exceed the longer run risk. This finding also supports Hypothesis 5. Finally, we do not observe such patterns in the case of future targets. Overall, we document a novel and significant response by the CDS market for future acquirers who redesign covenant restrictions via tender offer repurchases.

7 Conclusion

Building on insights from the financial contracting and M&A literatures, we hypothesize that firms anticipating M&A activity or being targets of acquisitions will redesign ex post inefficient M&A related covenants in their debt through tender offer repurchases of their outstanding bonds, possibly followed by reissues with more dynamically efficient covenant design. In particular, firms anticipating increased M&A activity—for example, firms in industries undergoing M&A waves—will have incentives to relax merger, direct investment, subsequent financing, and payout restrictions, while increasing change-in-control restrictions. Notably, firms anticipating M&A activity need such covenant redesign irrespective of the mode of acquisition financing. In addition, because opportunities for M&A arise in waves, timeliness of covenant redesign is an important consideration and hence affected firms are likely to execute through tender offer repurchases—where they have control on the repurchase window—rather than uncertain execution through open market operations.

Our empirical tests, using a comprehensive database of bond repurchases and M&A activity during 1990-2017, indicate strong support for these hypotheses. There are significant reductions in indentures related to mergers, direct investment, dividends and subsequent financing, but increases in change-in-control covenants, following tender offer repurchase events of acquirers and targets, relative to matched non-acquirers and non-targets. These findings are robust to further addressing endogeneity concerns through a quasi-experiment of a matched sample of failed M&As (for reasons exogenous to the debt market). There are significant wealth transfers from bondholders of acquiring firms to their shareholders, as well increases CDS spreads and decreased CDS slopes, during tender offer repurchases following tender offer announcements.

Our results are consistent with the predictions of the incomplete financial contracting literature as well as the M&A literature. Empirical tests of financial recontracting motivated by dynamic or ex post inefficiency are generally difficult because data limitations on negotiations. But both bond repurchases and M&A activity are observable and by dynamically linking the two, our analysis supports the view that removing ex post inefficiency of debt contracts—in the form of strict indentures restricting M&A activity—is an important driver of debt recontracting. Overall, our analysis highlights the significant role of debt recontracting in creation and allocation of

value through corporate M&A.

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Table 1: Sample selection

This table describes the sample selection process for our analysis. Each row shows the number of bond issues and issuers in the sample following a selection criteria. The "Repurchases" row reports the number of issues, issuers and repurchase events in our final sample.

	Issues	Issuers	Repurchase Events
FISD	429,003	15,065	
Domiciled in USA	345,776	10,801	
Only Corporate Bonds	57,229	9,284	
Exclude Yankee/Canadian/Foreign/Sinking/Putable/144A	38,694	6,917	
Exclude Issues offered before 1990	31,066	5,990	
In CRSP/Compustat	21,305	3,989	
Acquirers	18,352	3,051	
Targets	15,806	2,540	
Repurchases	3,532	1,537	4,774
Acquirers with repurchases in last 2 yrs	1,860	819	2,466
Targets with repurchases in last 2 yrs	1,281	620	1,638

Table 2: Sample distributions of bond repurchases events and covenant restrictions

Panel A of this table presents the distribution of corporate bond repurchase events across 12 industries as defined by Fama and French (1997). The panel reports events by repurchase method—open market and tender offer repurchase.

Panel B summarizes covenant restrictions on bonds that were repurchased bonds during the sample period. The reported variables indicate the presence of a restriction in the repurchased bond. *Investment-related Restrictions* indicates whether the bond covenants place any investment related restriction, such as activities such as merger, stock sale, etc., on the firm. *Merger* indicates whether the bond covenants place merger related restrictions on the firm. *Direct investment* indicates whether the bond covenants place restrictions on direct investments, transactions with affiliates and subsidiaries. *Other Investment* indicates the presence of stock sale, indirect investment and other investment restrictions placed on the firm via the bond. *Dividend-related Restrictions* indicates whether the bond covenants place any payout related restrictions on the firm. *Subsequent Financing-related Restrictions* indicates whether the bond covenants place any restrictions on the firm from issuing new debt or equity. *Event-related Restrictions* indicate the presence restrictions regarding default, governance changes and rating declines. *Change in control* indicates whether the bond covenants places any provisions regarding firm control. See Appendix A.2 for detailed definitions of each covenant restriction.

Panel A: Industry Distribution of Repurchases

Industry	# Open Market	% of Sample	# Tender	% of Sample	Total	% of Sample
Non Durables	68	1.42	173	3.62	241	5.05
Durables	24	0.50	73	1.53	97	2.03
Manufacturing	123	2.58	353	7.39	476	9.97
Energy	171	3.58	285	5.97	456	9.55
Chemicals	45	0.94	98	2.05	143	3.00
Business Equipment	172	3.60	152	3.18	324	6.79
Telecoms	146	3.06	331	6.93	477	9.99
Utilities	123	2.58	287	6.01	410	8.59
Wholesales	120	2.51	342	7.16	462	9.68
Healthcare	133	2.79	196	4.11	329	6.89
Finance	181	3.79	555	11.63	736	15.42
Others	187	3.92	436	9.13	623	13.05
Total	1492	31.25	3282	68.75	4774	100.00

Panel B: Distribution of Covenants

Variable	Mean	SD	N
Investment-related Restrictions	0.90	0.30	4,774
Merger	0.88	0.33	4,774
Direct Investment	0.35	0.48	4,774
Other Invesmtent	0.32	0.47	4,774
Dividend-related Restrictions	0.37	0.48	4,774
Subsequent Financing-related Restrictions	0.91	0.29	4,774
Event-related Restrictions	0.80	0.40	4,774
Change in Control	0.57	0.49	4,774
Other Event	0.73	0.45	4,774

Table 3: Covenant redesign around all repurchase events

This table summarizes covenant restrictions on all outstanding bonds of a firm around each repurchase event. The results are reported after dividing the repurchase events into open market and tender offer repurchases. The covenant restriction variables below are the averages of restriction indicators for all outstanding bonds of a firm. The pre-repurchase period (*Pre*) averages are constructed by using all bonds outstanding one quarter before a repurchase event and the post-repurchase period (*Post*) averages are constructed by averaging all outstanding bonds during 2 years after the repurchase event. The sample contains 4,774 repurchase events (see Table 1). The unit of observation is repurchase event.

	Open Market			Tender offer		
Variable	Pre	Post	Post-Pre	Pre	Post	Post-Pre
	[SD]	[SD]	[t-stat]	[SD]	[SD]	[t-stat]
Investment-related Restrictions	0.87	0.87	-0.00	0.90	0.90	-0.01
	[0.27]	[0.27]	[-0.41]	[0.22]	[0.22]	[-1.63]
Merger	0.84	0.83	-0.01	0.88	0.88	-0.01
	[0.30]	[0.29]	[-0.63]	[0.24]	[0.24]	[-1.47]
Direct Investment	0.38	0.37	-0.01	0.32	0.31	-0.00
	[0.44]	[0.43]	[-0.52]	[0.44]	[0.43]	[-0.40]
Other Invesmtent	0.32	0.32	0.00	0.33	0.33	0.00
	[0.39]	[0.38]	[0.02]	[0.37]	[0.35]	[0.13]
Dividend-related Restrictions	0.41	0.40	-0.01	0.33	0.33	-0.00
	[0.44]	[0.43]	[-0.48]	[0.44]	[0.43]	[-0.31]
Subsequent Financing-related Restrictions	0.86	0.85	-0.00	0.92	0.91	-0.00
	[0.29]	[0.28]	[-0.37]	[0.21]	[0.21]	[-0.84]
Event-related Restrictions	0.85	0.84	-0.00	0.77	0.78	0.01
	[0.29]	[0.28]	[-0.24]	[0.34]	[0.32]	[1.34]
Change in Control	0.70	0.70	-0.01	0.51	0.52	0.01
	[0.40]	[0.40]	[-0.35]	[0.45]	[0.45]	[1.09]
Other Event	0.76	0.76	0.00	0.71	0.72	0.01
	[0.35]	[0.33]	[0.16]	[0.36]	[0.34]	[1.10]
No. Observations	1,493	1,493		3,281	3,281	

Table 4: Covenant redesign in matched M&A firms

This table summarizes the differences in covenant redesign between firms that engage in M&A deals as acquirers or targets and those firms that do not engage in any M&A deals within two years of a a bond repurchase. Each treated firm (acquirer/target) is matched with a control firm (non-acquirer/non-target) using the nearest-neighbor approach outlined in section 4.1. The *Pre* columns report the differences in covenant restrictions between treated and control firms one quarter before the repurchase. The *Post* columns report the differences in covenant restrictions between treated and control firms during 2 years after the repurchase. The *Post-Pre* columns reports the difference between *Post-* and *Pre*-period covenants for the treated and control firms. The numbers in square brackets are the t-statistic from t-tests of differences. Panel A reports the differences between acquirers and non-acquirers. Panel B reports the differences between targets and non-targets. The unit of observation is repurchase event.

Panel A: Difference between Acquirers and Non-Acquirers

Variable	Open Market			Tender offer		
	Pre	Post	Post-Pre	Pre	Post	Post-Pre
	[t-stat]	[t-stat]	[t-stat]	[t-stat]	[t-stat]	[t-stat]
Investment-related Restrictions	0.00	-0.01	-0.01	0.03***	0.02**	-0.01***
	[0.15]	[-0.35]	[-1.58]	[3.40]	[2.24]	[-4.26]
Merger	-0.01	-0.02	-0.00	0.03***	0.02	-0.01***
	[-0.60]	[-0.84]	[-0.64]	[2.92]	[1.64]	[-4.64]
Direct Investment	-0.02	-0.03	-0.01**	-0.07***	-0.08***	-0.01***
	[-0.65]	[-1.05]	[-2.47]	[-4.04]	[-4.78]	[-4.35]
Other Invesmtent	0.01	0.01	-0.00	0.06***	0.04***	-0.01**
	[0.53]	[0.35]	[-0.89]	[3.85]	[3.27]	[-2.32]
Dividend-related Restrictions	-0.01	-0.02	-0.01**	-0.06***	-0.07***	-0.01**
	[-0.52]	[-0.85]	[-2.15]	[-3.51]	[-3.96]	[-2.58]
Subsequent Financing-related Restrictions	-0.02	-0.02	-0.01	0.04***	0.03***	-0.01***
	[-0.82]	[-1.25]	[-1.20]	[3.83]	[2.85]	[-3.90]
Event-related Restrictions	-0.03*	-0.03**	-0.00	-0.07***	-0.06***	0.01**
	[-1.65]	[-1.98]	[-0.69]	[-5.33]	[-5.09]	[2.53]
Change in Control	-0.00	0.00	0.01	-0.10***	-0.09***	0.01**
	[-0.16]	[0.08]	[1.16]	[-5.39]	[-5.07]	[2.29]
Other Event	0.02	0.01	-0.01*	-0.06***	-0.06***	0.00
	[0.88]	[0.37]	[-1.72]	[-4.39]	[-4.62]	[0.05]
No. Observations	458	458		1,229	1,229	

Panel B: Difference between Targets and Non-Targets

Variable	Open Market			Tender offer		
	Pre [t-stat]	Post [t-stat]	Post-Pre [t-stat]	Pre [t-stat]	Post [t-stat]	Post-Pre [t-stat]
Investment-related Restrictions	-0.01	-0.02	-0.01	0.03***	0.02*	-0.01***
	[-0.59]	[-0.93]	[-0.98]	[2.62]	[1.77]	[-3.27]
Merger	-0.02	-0.03	-0.01	0.05***	0.04***	-0.01***
	[-0.98]	[-1.36]	[-1.07]	[4.46]	[3.65]	[-3.44]
Direct Investment	-0.04	-0.04	0.01	-0.06***	-0.06***	-0.01***
	[-1.21]	[-1.06]	[0.99]	[-2.71]	[-3.14]	[-2.61]
Other Invesmtent	-0.05	-0.03	0.02**	0.00	0.01	0.00
	[-1.56]	[-1.02]	[2.49]	[0.22]	[0.34]	[0.32]
Dividend-related Restrictions	-0.03	-0.03	0.00	-0.07***	-0.08***	-0.01*
	[-0.92]	[-0.86]	[0.47]	[-3.63]	[-3.95]	[-1.88]
Subsequent Financing-related Restrictions	-0.02	-0.02	-0.00	0.04***	0.04***	-0.01**
	[-0.75]	[-0.85]	[-0.20]	[4.09]	[3.54]	[-2.41]
Event-related Restrictions	-0.06***	-0.06***	-0.00	-0.05***	-0.03**	0.01***
	[-3.13]	[-3.39]	[-0.04]	[-3.01]	[-2.18]	[4.51]
Change in Control	-0.09***	-0.08***	0.00	-0.10***	-0.10***	0.01**
	[-2.78]	[-2.77]	[0.41]	[-4.93]	[-4.58]	[2.28]
Other Event	-0.04	-0.04	0.00	-0.04**	-0.03*	0.01**
	[-1.50]	[-1.60]	[0.13]	[-2.37]	[-1.89]	[2.48]
No. Observations	305	305		963	963	

Table 5: Cross-sectional analysis of covenant redesign in matched M&A firms

This table reports regressions that study the link between covenant redesign and M&A activity 2 years following the repurchase event in the matched sample. Each treated firm (acquirer/target) is matched with a control firm (non-acquirer/non-target) using the nearest-neighbor approach outlined in section 4.1. The unit of observation is repurchase event. The dependent variables in columns (1)-(5) are differences in covenant restrictions on all bonds outstanding during two years after a repurchase event compared to covenant restrictions on all bonds one quarter before the event. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

Panel A: Tender Offer Repurchases

	(1)	(2)	(3)	(4)	(5)
	Δ Merger	Δ Investment	Δ Dividend	Δ Subsequent Financing	Δ Change in Control
Acquirer	-0.008***	-0.006**	-0.009***	-0.006***	0.005*
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
Target	-0.002	-0.002	0.003	0.003	0.010***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Obs.	3984	3984	3984	3984	3984
$Adj. - R^2$	0.144	0.140	0.123	0.111	0.131
Repurchase Qtr. F.E.	✓	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓	✓

Panel B: Open Market Repurchases

	(1)	(2)	(3)	(4)	(5)
	Δ Merger	Δ Investment	Δ Dividend	Δ Subsequent Financing	Δ Change in Control
Acquirer	-0.002	-0.005	-0.009**	-0.004	0.008
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)
Target	0.009	0.008	0.009**	0.010*	0.010*
	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)
Obs.	1586	1586	1586	1586	1586
$Adj. - R^2$	0.143	0.131	0.145	0.106	0.143
Repurchase Qtr. F.E.	✓	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓	✓

Table 6: DiD analysis of covenant redesign in matched M&A firms

This table reports panel regressions that study the link between covenant redesign and M&A activity $\pm$ *2-years* around repurchase events in our matched sample. Each treated firm (acquirer/target) is matched with a control firm (non-acquirer/non-target) using the nearest-neighbor approach outlined in section 4.1. The unit of observation is firm-quarter. For repurchase event of in a company, we track the covenants on all outstanding bonds during 2 years before and after the event. The dependent variables in columns (1)-(5) are average covenant restrictions on all outstanding bond issues in a firm-quarter. Panel A focuses on acquirers and non-acquirers. Panel B replicates the same analysis for targets and non-targets. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

Panel A: Acquirers vs. Non-acquirers

	(1)	(2)	(3)	(4)	(5)
	Merger	Investment	Dividend	Subsequent Financing	Change in Control
Post	0.007	0.007	0.007	0.006	-0.005
	(0.007)	(0.007)	(0.008)	(0.005)	(0.008)
Tender Offer	0.050**	0.044*	0.173***	0.045	-0.014
	(0.022)	(0.023)	(0.046)	(0.027)	(0.030)
Acquirer	0.019	0.015	0.075**	0.015	-0.070**
	(0.015)	(0.017)	(0.024)	(0.016)	(0.023)
Post $\times$ Tender Offer	-0.009	-0.011	-0.015	-0.008	0.002
	(0.007)	(0.008)	(0.013)	(0.007)	(0.010)
Post $\times$ Acquirer	-0.017	-0.015	-0.031*	-0.014	0.045**
	(0.020)	(0.021)	(0.017)	(0.020)	(0.018)
Tender Offer $\times$ Acquirer	-0.042***	-0.036**	-0.063**	-0.033*	-0.080*
	(0.012)	(0.013)	(0.024)	(0.018)	(0.040)
Post $\times$ Tender Offer $\times$ Acquirer	-0.033*	-0.036*	-0.047*	-0.030	0.073**
	(0.018)	(0.018)	(0.026)	(0.021)	(0.029)
Obs.	34164	34164	34164	34164	34164
$Adj. - R^2$	0.156	0.151	0.310	0.130	0.424
Qtr. F.E.	✓	✓	✓	✓	✓
Repurchase Qtr. F.E.	✓	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓	✓

Panel B: Targets vs. Non-targets

	(1) Merger	(2) Investment	(3) Dividend	(4) Subsequent Financing	(5) Change in Control
Post	0.000	0.002	-0.003	0.001	-0.010**
	(0.007)	(0.007)	(0.007)	(0.005)	(0.004)
Tender Offer	0.026*	0.020	0.156**	0.025	-0.044
	(0.014)	(0.015)	(0.051)	(0.016)	(0.043)
Target	-0.001	0.007	0.056**	0.014	0.034
	(0.023)	(0.025)	(0.018)	(0.029)	(0.026)
Post × Tender Offer	-0.002	-0.003	-0.003	-0.004	0.016**
	(0.010)	(0.010)	(0.010)	(0.008)	(0.006)
Post × Target	-0.007	-0.013	-0.065**	-0.013	-0.058**
	(0.024)	(0.025)	(0.027)	(0.029)	(0.020)
Tender Offer × Target	-0.006	-0.012	-0.071***	-0.022	-0.028
	(0.024)	(0.024)	(0.018)	(0.023)	(0.022)
Post × Tender Offer × Target	-0.033	-0.035	0.106***	0.040	0.055*
	(0.031)	(0.030)	(0.030)	(0.030)	(0.027)
Obs.	23948	23948	23948	23948	23948
$Adj. - R^2$	0.180	0.177	0.324	0.155	0.405
Qtr. F.E.	✓	✓	✓	✓	✓
Repurchase Qtr. F.E.	✓	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓	✓

Table 7: Covenant redesign and M&A outcomes: A quasi-experiment

This table reports results of regressions that study the link between covenant redesign by *tender offer* repurchase and future M&A outcomes after randomizing the repurchase decision conditional on firms engaging in M&A activity in the future. The unit of observation is firm-quarter. For tests in panels A, we restrict our attention to companies that have at least one outstanding bond and have made at least one acquisition bid during our sample period. For each firm in each quarter, we look forward the next two years and identify their acquisition bids and classify them as successful or failed using the status reported in in SDC Platinum. The treated event in this analysis is a "repurchase". We randomly match each successful-bid-tender offer repurchasing firm and failed-bid-tender offer repurchasing firm with three successful-bid-*non*-repurchasing firm and failed-bid-*non*-repurchasing firm, respectively, in the same SIC 4-digit industry and quarter as outlined in section 4.3. In panel A we focus on tender offer repurchases of future acquirers; therefore the matched sample tracks treated and control firms $\pm$ 2-years around repurchase events. The dependent variables in the below difference-in-differences regressions in columns (1)-(5) are average covenant restrictions on all outstanding bond issues in a quarter. *Post-Tender Offer* indicates quarters after the repurchase event. *Successful Bid* identifies firm-quarters that are within 8 quarters of a future successful M&A bid. All regressions control for the firm's previous quarter total assets, leverage, and firm and quarter fixed effects. In panel B we replicate the analysis of Panel A for future target firms. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

Panel A: Successful and failed bids by acquirers

	(1)	(2)	(3)	(4)	(5)
	Merger	Investment	Dividend	Subsequent Financing	Change in Control
Post-Tender Offer	0.003***	0.003***	0.003***	0.003***	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Successful Bid	0.003**	0.003***	-0.001	0.003***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Post-Tender Offer $\times$ Successful Bid	-0.009***	-0.007***	-0.001	-0.007***	0.003*
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Obs.	73857	73857	73857	73857	73857
$Adj. - R^2$	0.919	0.927	0.947	0.929	0.944
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Panel B: Successful and failed bids on targets

	(1)	(2)	(3)	(4)	(5)
	Merger	Investment	Dividend	Subsequent Financing	Change in Control
Post-Tender Offer	0.003***	0.002***	0.002	0.001*	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Successful Bid	0.010***	0.009***	-0.023***	0.011***	-0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Post-Tender Offer $\times$ Successful Bid	-0.021***	-0.021***	0.003	-0.022***	-0.001
	(0.005)	(0.005)	(0.003)	(0.005)	(0.004)
Obs.	49462	49462	49462	49462	49462
$Adj. - R^2$	0.937	0.941	0.942	0.943	0.950
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Table 8: Prospective M&A and current bond repurchases

This table reports results of linear probability regressions that investigate the link between bond repurchases and factors that predict future M&A activity. The unit of observation is firm-quarter. The dependent in column (1), *Repurchase*, indicates whether a firm repurchased a bond in quarter 't'. *Tender Offer* and *Open Market* identify firms that repurchased a bond in quarter 't' via tender offer and open market method, respectively. All independent variables are measured in quarter 't-1'. The independent variable of interest *M&A Wave Qtr.* identifies firm-quarters that are part of 24-month M&A waves identified using modified Harford (2005) methodology described in section 4.4. The sample for this analysis includes all firms in Compustat that have at least one bond issue outstanding between 1990 to 2017. All regressions include firm and quarter fixed effects. All variables are defined in Appendix Table A.1. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

	(1) Repurchase	(2) Tender Offer	(3) Open Market
Issue-level Variables			
Callable Issue	0.000	0.000	-0.000
	(0.001)	(0.000)	(0.000)
Investment Grade Issue	-0.004***	-0.002**	-0.002***
	(0.001)	(0.001)	(0.000)
Time to Maturity	-0.000	-0.000***	0.000***
	(0.000)	(0.000)	(0.000)
Firm-level Variables			
Ln(Total Assets)	-0.002***	-0.001***	-0.000
	(0.000)	(0.000)	(0.000)
Market-to-Book	-0.000	-0.000**	0.000
	(0.000)	(0.000)	(0.000)
Leverage	0.006***	0.002	0.004***
	(0.002)	(0.002)	(0.001)
Interest Coverage	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
Operating Cash Flow Ratio	0.001	0.001	0.000
	(0.001)	(0.001)	(0.001)
Fama-French 48 Industry-level Variables			
M&A Wave Qtr.	0.001**	0.001**	-0.000
	(0.000)	(0.000)	(0.000)
Macro-level Variables			
10-year Treasury Yield	-0.001	-0.001	0.000
	(0.009)	(0.008)	(0.005)
(10 year−3 Month) Treasury	-0.002	-0.003	0.001
	(0.043)	(0.037)	(0.023)
Obs.	395782	395782	395782
$Adj. - R^2$	0.024	0.014	0.037
Qtr. F.E.	✓	✓	✓
Firm F.E.	✓	✓	✓

Table 9: Covenant redesign and M&A activity controlling for selection effects

This table reports results of regressions that study the link between covenant redesign and M&A activity after controlling for the endogenous decisions of repurchasing a bond via tender offer and engaging in M&A market as acquirers or targets. This table similar to Table 6 but here, we do not restrict our sample to firms that have repurchased a bond issue. For panel A, we use the propensity score matching method outlined in section 5.1 to match *Tender-Offer-Acquirers* (treated), that is acquirers who used tender offer method to repurchase bonds with *Non-repurchasing-Non-Acquirers* (control), that is firms that did not engage in both the M&A market and bond repurchase market who are in the same industry and similar observables. We track the treated and control firms for 2 years before and after the repurchase event and run a two-step Heckman (1976) model. We calculate the Inverse Mills Ratio in the first step by regressing total assets, market-to-book ratio and leverage on the repurchase indicator. We use the calculated IMR to control for selection effects in the second step reported below. The dependent variables in columns (1)-(5) are average covenant restrictions on all outstanding bond issues of a firm in each quarter. *Post Tender Offer* identifies quarters after the tender offer repurchase for Tender-Offer-Acquirers and their corresponding control firms. In Panel B, we repeat the analysis using *Tender Offer-Targets*, that is, targets who repurchased a bond via tender offer as the treated sample. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

Panel A: Acquirer Covenant Redesign, Repurchases and M&A: Tender Offer Sample

	(1) Merger	(2) Investment	(3) Dividend	(4) Subsequent Financing	(5) Change in Control
Tender Offer-Acquirer	0.066***	0.048***	0.133***	0.042***	0.120***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
Post Tender Offer	0.052***	0.042***	0.129***	0.031***	0.051***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
Tender Offer-Acquirer × Post Tender Offer	-0.048***	-0.036***	-0.101***	-0.022***	0.024***
	(0.005)	(0.004)	(0.006)	(0.004)	(0.005)
Inverse Mills Ratio	0.005***	0.004***	-0.006***	0.005***	-0.003*
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Obs.	95670	95670	95670	95670	95670
$Adj. - R^2$	0.476	0.468	0.621	0.475	0.667
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Panel B: Target Covenant Redesign, Repurchases and M&A: Tender Offer Sample

	(1) Merger	(2) Investment	(3) Dividend	(4) Subsequent Financing	(5) Change in Control
Tender Offer-Target	0.038***	0.020***	0.134***	0.022***	0.133***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
Post Tender Offer	0.035***	0.019***	0.125***	0.025***	0.075***
	(0.004)	(0.004)	(0.005)	(0.003)	(0.005)
Tender Offer-Target × Post Tender Offer	-0.029***	-0.012***	0.007	0.002	0.018***
	(0.005)	(0.005)	(0.006)	(0.004)	(0.006)
Inverse Mills Ratio	0.003*	0.003*	-0.005**	0.002	-0.005**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Obs.	79470	79470	79470	79470	79470
$Adj. - R^2$	0.505	0.495	0.615	0.496	0.651
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Table 10: Falsification tests for covenant redesign in matched M&A firms

This table reports falsification tests that support results tabulated in Panel A of Table 5, which studies the link between covenant redesign via tender offer repurchases and M&A activity 2 years following the repurchase event. The dependent variables in columns (1)-(5) are differences in average covenant restrictions during the two years after an event compared to one quarter before the event. The unit of observation is repurchase event. As explained in section 5.2 *Placebo Acquirer (Target)* identifies firms that were randomly assigned the acquirer flag value of '1' following tender offer repurchases made in *"Non M&A wave"* years. M&A waves are identified by adopting the Harford (2005) methodology. We control for the firm's total assets and leverage in the previous quarter, and repurchase quarter and industry fixed effects in all regressions. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
	Δ Merger	Δ Investment	Δ Dividend	Δ Subsequent Financing	Δ Change in Control
Placebo Acquirer	0.001	0.000	-0.000	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Placebo Target	0.003	0.003	0.005***	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Obs.	3981	3981	3981	3981	3981
$Adj. - R^2$	0.141	0.138	0.122	0.110	0.126
Repurchase Qtr. F.E.	✓	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓	✓

Table 11: Common stock and bond abnormal returns around covenant redesign

This table summarizes the common stock and bond cumulative abnormal returns around bond repurchases for firms in our matched sample. The unit of observation is repurchase event. Stock CAR is calculated for $\pm$ 30-day and $\pm$ 60-day windows by cumulating the daily differences between stock returns and the equally weighted CRSP stocks return. Bond CAR is the cumulative difference in returns between the repurchased bond and the return of closest treasury debt instrument in terms of time remaining to maturity. Here *day-0* is the effective date of the repurchase event. Panel A summarizes returns for the full open market and tender offer matched samples, Panel B and Panel C show the univariate comparison between acquirers and non-acquirers, and targets and non-targets, respectively.

Panel A: Open Market Vs. Tender Offer Repurchases

	Open Market (A)		Tender Offer(B)		t-Test
	Mean	N	Mean	N	A-B
Variable	[SD]		[SD]		[t-stat]
Stock CAR [-30,+30]	-1.97	1,365	1.48	3,270	-3.45***
	[25.95]		[15.85]		[-4.57]
Stock CAR [-60,+60]	-3.12	1,365	1.77	3,270	-4.89***
	[35.79]		[23.40]		[-4.65]
Bond CAR [-30,+30]	0.26	1,219	0.61	3,805	-0.35
	[11.90]		[4.50]		[-1.00]
Bond CAR [-60,+60]	0.87	1,219	0.86	3,805	0.02
	[13.40]		[5.37]		[0.04]

Panel B: Acquirers Vs. Non-Acquirers

	Acquirers					Non-Acquirers					t-Test	
	Open Market (A)		Tender Offer (B)		t-Test	Open Market (C)		Tender Offer (D)		t-Test		
	Mean	N	Mean	N	A-B	Mean	N	Mean	N	C-D	A-C	B-D
Variable	[SD]		[SD]		[t-stat]	[SD]		[SD]		[t-stat]	[t-stat]	[t-stat]
Stock CAR [-30,+30]	-1.27	434	2.62	1,107	-3.88***	-1.97	387	0.02	666	-2.00	0.71	2.59***
	[26.08]		[15.28]		[-2.91]	[26.65]		[17.12]		[-1.32]	[0.38]	[3.22]
Stock CAR [-60,+60]	-1.11	434	2.38	1,107	-3.48*	-4.07	387	0.85	666	-4.92**	2.96	1.52
	[34.99]		[22.33]		[-1.93]	[37.62]		[26.13]		[-2.27]	[1.16]	[1.25]
Bond CAR [-30,+30]	1.81	357	0.41	1,139	1.40***	-0.60	382	0.92	1,068	-1.52**	2.41	-0.51***
	[9.83]		[2.82]		[2.66]	[14.60]		[5.66]		[-1.98]	[2.65]	[-2.65]
Bond CAR [-60,+60]	2.65	357	0.62	1,139	2.03***	-0.43	382	1.33	1,068	-1.75***	3.07	-0.71***
	[13.63]		[3.93]		[2.77]	[12.15]		[6.78]		[-2.68]	[3.23]	[-2.96]

Panel C: Targets Vs. Non-Targets

	Targets					Non-Targets					t-Test	
	Open Market (A)		Tender Offer (B)		t-Test	Open Market (C)		Tender Offer (D)		t-Test		
	Mean	N	Mean	N	A-B	Mean	N	Mean	N	C-D	A-C	B-D
Variable	[SD]		[SD]		[t-stat]	[SD]		[SD]		[t-stat]	[t-stat]	[t-stat]
Stock CAR [-30,+30]	-2.15	276	1.40	923	-3.55**	-2.92	268	1.09	574	-4.01**	0.77	0.31
	[26.96]		[15.42]		[-2.09]	[23.63]		[15.96]		[-2.52]	[0.35]	[0.37]
Stock CAR [-60,+60]	-3.53	276	1.64	923	-5.16**	-4.61	268	1.88	574	-6.49***	1.09	-0.24
	[33.25]		[20.88]		[-2.44]	[36.93]		[25.78]		[-2.60]	[0.36]	[-0.19]
Bond CAR [-30,+30]	-0.36	240	0.37	883	-0.72	-0.07	240	0.74	715	-0.81	-0.29	-0.38
	[11.37]		[3.01]		[-0.98]	[10.16]		[5.98]		[-1.18]	[-0.29]	[-1.53]
Bond CAR [-60,+60]	-0.02	240	0.53	883	-0.55	1.20	240	0.94	715	0.26	-1.22	-0.41
	[14.83]		[4.55]		[-0.57]	[13.21]		[5.82]		[0.29]	[-0.95]	[-1.55]

Table 12: Cross-sectional analysis of CDS Spreads around repurchase events

This table reports results of regressions that study the link between covenant redesign and corporate CDS spreads. To be included in this analysis, a firm should have at least one outstanding bond issue when the company's CDS is traded in the market. The treated event is tender offer repurchase. For each treated event in year 't', we match the bond repurchasing firm with a firm that did not repurchase a bond in the same industry and financial in 't-1' using the propensity score matching methodology outlined in section 6.2. The dependent variable *5-yr Spread [-30,30]* is the average of the 5-year CDS spread $\pm$30 days around a repurchasing event for treated and control firms. *5 minus 1 yr [-30,30]* is the difference between average 5-year and 1-year CDS spreads $\pm$30 days around a repurchasing event. We define similar variables for $\pm$60 days window also. *Tender Offer* identifies treated firms. *Acquirer* and *Target* are binary variables that identify firms that become acquisition bidders or target of bids within 8 quarters of the repurchase event. We control for total assets and leverage of the firm in the previous quarter, and repurchase quarter and industry fixed effects in all regressions. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	5-yr Spread	5 minus 1 yr	5-yr Spread	5 minus 1 yr
	[-30,30]	[-30,30]	[-60,60]	[-60,60]
Tender Offer	-0.074**	0.299***	-0.092***	0.364***
	(0.031)	(0.058)	(0.031)	(0.055)
Acquirer	-0.099***	0.301***	-0.116***	0.366***
	(0.022)	(0.042)	(0.022)	(0.039)
Target	0.019*	-0.008	0.020*	-0.008
	(0.011)	(0.021)	(0.011)	(0.019)
Tender Offer $\times$ Acquirer	0.085***	-0.295***	0.103***	-0.360***
	(0.029)	(0.053)	(0.028)	(0.050)
Tender Offer $\times$ Target	-0.011	0.003	-0.012	0.004
	(0.014)	(0.026)	(0.014)	(0.025)
Obs.	1162	1135	1162	1136
$Adj. - R^2$	0.051	0.017	0.064	0.056
Repurchase Qtr. F.E.	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓

Figure 1: New bond issues and M&A-related covenants

This figure shows the percentage of bonds with M&A-related covenants among the new bonds that were issued by all publicly listed firms available in CRSP/Compustat between 1980 to 2018. We exclude Yankee, Canadian, Foreign, Sinkable, Putable and 144A bonds. The bars represent the number of new bonds issued in each year and the lines show the percentage of bonds with M&A related covenant restrictions.

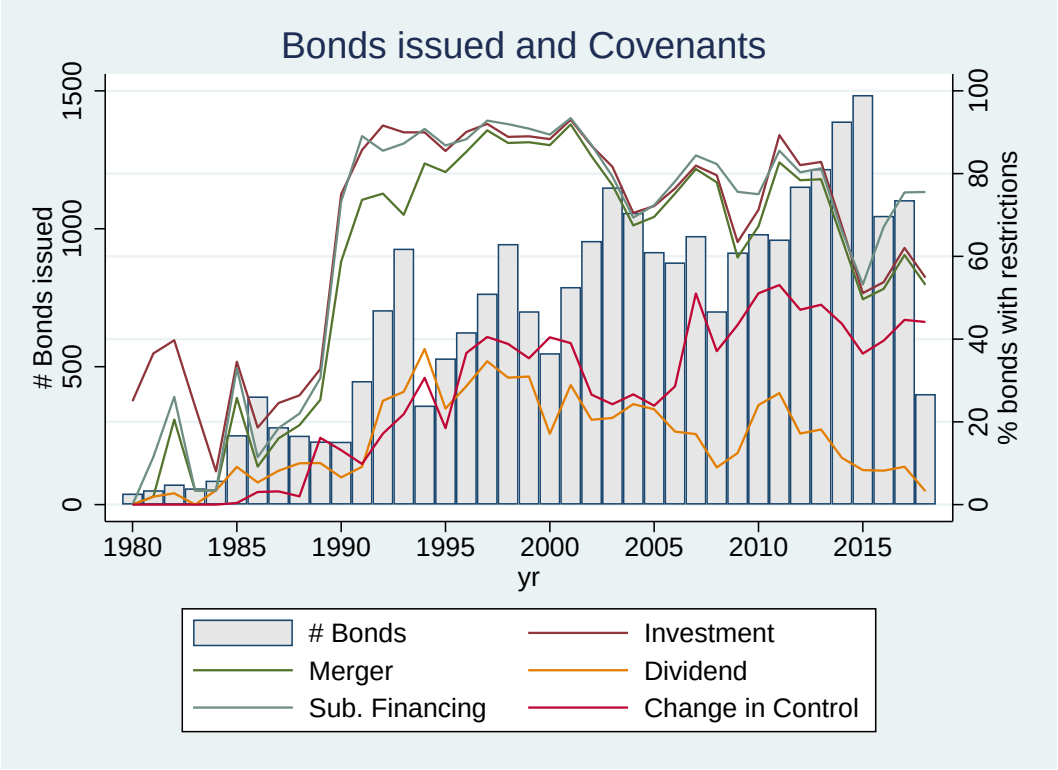

Figure 2: Hypotheses summary

This figure summarizes our hypotheses discussed in sections 2.3, 6.1, and 6.2 of the paper.

		Direction of covenant redesign	
	Covenant	*Acquirer Firms (H1)*	*Target Firms (H2)*
Hypothesis 1 & 2	Investment-related	decrease	decrease
	Merger	decrease	decrease
	Direct investment	decrease	
	Dividend-related	decrease	increase
	Subsequent financing-related	decrease	
	Event-related	increase	increase
	Change in control	increase	increase
Hypothesis 3	Prospective acquirers and targets are more likely to use tender offers compared to open market repurchases.		
Hypothesis 4	Prospective acquirers will experience significant wealth transfer from bond holders to shareholders during tender offer repurchases. Ambiguous effects for targets.		
Hypothesis 5	Prospective acquirers will experience increase in CDS spreads and decrease in CDS slopes during tender offer repurchases. Effects are ambiguous for targets.		

A Appendix

Table A.1: Data sources

Variable	Source	Definition
Repurchase	Fixed Income Securities Database (FISD)	a binary variable that indicates whether a firm repurchased a bond in a quarter.
Tender offer	FISD	a binary variable that indicates whether a firm repurchased a bond in a quarter using tender offer method
Open market	FISD	a binary variable that indicates whether a firm repurchased a bond in a quarter using open market method.
Covenant restrictions	FISD	binary variables that indicate the presence of various covenant restrictions in a bond issue (see table A.2 for detailed explanations).
Callable Issue	FISD	a binary variable that indicates whether a bond issue is callable.
Investment Grade Issue	FISD	a binary variable that indicates whether a bond rated as investment grade.
Time to maturity	FISD	number of years left for a bond to mature
Acquirer	SDC Platinum M&A (SDC)	a binary variable that indicates whether a firm placed an acquisition bid within two years of repurchasing a bond.
Target	SDC	a binary variable that indicates whether a firm received an acquisition bid within two years of repurchasing a bond.
Successful bid	SDC	a binary variable that indicates whether an M&A bid was successful.
CAR	CRSP	cumulative return of a firm's common stock above CRSP's equally-weighted returns over $\pm$ 30-day and $\pm$ 60-day periods.
Ab. Bond Return	Reg-TRACE	cumulative return of a bond above the treasury security with the closest maturity over $\pm$ 30-day and $\pm$ 60-day periods.
Total Assets	Compustat	Total assets in $ billions as reported in Compustat quarterly file.
Market-to-book	Compustat, CRSP	Market value per share/Book value per share
Leverage	Compustat	Total Debt/Equity
Interest coverage	Compustat	Operating Income/Interest and related expenses
Op. cash flow ratio	Compustat	Operating Cash flow/Total Debt
M&A Wave Qtr.	SDC	a binary variable that indicates whether a firm-quarter is part of the firm's industry 24-month M&A wave. M&A waves identified using Harford (2005) methodology.
10-yr Treasury yield	Data Stream	yield on the most recently issued 10-year treasury in a quarter.
(10 yr-3 month) Treasury	Data Stream	difference between the most recently issued 10-year and 3-month treasury instrument in a quarter.
5-yr Spread [-30,30]	Markit CDS	average of the 5-year CDS spread $\pm$30 days around a repurchasing event.
5 minus 1 yr [-30,30]	Markit CDS	average difference between 5-year and 1-year CDS spreads $\pm$30 days around a repurchasing event
# Contributors [-30,30]	Markit CDS	number of contributors who gave data to Markit on the 5-year CDS spread for the $\pm$30 days around a repurchasing event.
5-yr Spread [-60,60]	Markit CDS	average of the 5-year CDS spread $\pm$60 days around a repurchasing event.
5 minus 1 yr [-60,60]	Markit CDS	average difference between 5-year and 1-year CDS spreads $\pm$60 days around a repurchasing event
# Contributors [-60,60]	Markit CDS	number of contributors who gave data to Markit on the 5-year CDS spread for the $\pm$60 days around a repurchasing event.

Table A.2: Definitions of covenants

Restriction Type	Category	Sub-category
Investment-related	Merger related	Consolidation merger
	Direct Investment	Investments
	Other Investment	After acquired property clause, Maintenance net worth, Stock transfer sale dispose, Transaction affiliates, Investments unrestricted subsidiary, Fixed charge coverage (Issuer), Subsidiary re-designation, Fixed charge coverage (Subsidiary), Secured
Dividend-related		Dividends related payments (Issuer and Subsidiary), Restricted payments
Subsequent financing-related	Subordinate Debt Issuance	Negative pledge covenant, Subordinated debt issuance, Net earnings test issuance, Leverage test (Issuer and Subsidiary), Borrowing restricted, Subsidiary guarantee, Asset sale clause, Sales leaseback (Issuer and Subsidiary), Sale assets, Sale transfer assets unrestricted, Funded debt (Issuer and Subsidiary), Indebtedness (Issuer and Subsidiary), Liens (Issuer and Subsidiary), Senior debt issuance, Stock issuance (Issuer and Subsidiary), Preferred stock issuance
Event-related	Change in Control	Change control put provisions, Voting power percentage, Voting power percentage erp
	Other Event	Cross default, Cross acceleration, Rating decline trigger put, Rating decline provision, Declining net worth percentage, Declining net worth trigger, Declining net worth provisions

Mergers and Acquisitions and Debt Recontracting:

Evidence from Bond Covenants

Internet Appendix: Additional Tables

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Table IA.1: Sample distribution across Fama French 48 industries

This table presents the distribution of corporate bond repurchase events across 48 industries as defined by Fama and French (1997). The table reports events by repurchase method—open market and tender offer repurchase.

Industry	# Open Market	% of Sample	# Tender	% of Sample	Total	% of Sample
Food Products	8	0.17	71	1.49	79	1.65
Candy & Soda	0	0.00	13	0.27	13	0.27
Beer & Liquor	0	0.00	12	0.25	12	0.25
Tobacco Products	0	0.00	16	0.34	16	0.34
Recreation	10	0.21	7	0.15	17	0.36
Entertainment	16	0.34	67	1.40	83	1.74
Printing and Publishing	39	0.82	27	0.57	66	1.38
Consumer Goods	11	0.23	25	0.52	36	0.75
Apparel	6	0.13	13	0.27	19	0.40
Healthcare	37	0.78	88	1.84	125	2.62
Medical Equipment	28	0.59	39	0.82	67	1.40
Pharmaceutical Products	68	1.42	69	1.45	137	2.87
Chemicals	42	0.88	84	1.76	126	2.64
Rubber and Plastic Products	2	0.04	15	0.31	17	0.36
Textiles	5	0.10	11	0.23	16	0.34
Construction Materials	10	0.21	52	1.09	62	1.30
Construction	32	0.67	82	1.72	114	2.39
Steel Works Etc	28	0.59	61	1.28	89	1.86
Fabricated Products	1	0.02	15	0.31	16	0.34
Machinery	42	0.88	58	1.21	100	2.09
Electrical Equipment	4	0.08	7	0.15	11	0.23
Automobiles and Trucks	18	0.38	68	1.42	86	1.80
Aircraft	3	0.06	11	0.23	14	0.29
Shipbuilding, Railroad Equipment	0	0.00	3	0.06	3	0.06
Defense	3	0.06	18	0.38	21	0.44
Precious Metals	3	0.06	7	0.15	10	0.21
Non-Metallic and Industrial Metal Mining	11	0.23	20	0.42	31	0.65
Coal	12	0.25	17	0.36	29	0.61
Petroleum and Natural Gas	159	3.33	268	5.61	427	8.94
Utilities	123	2.58	287	6.01	410	8.59
Communication	146	3.06	331	6.93	477	9.99
Personal Services	19	0.40	26	0.54	45	0.94
Business Services	100	2.09	149	3.12	249	5.22
Computers	19	0.40	32	0.67	51	1.07
Electronic Equipment	90	1.89	88	1.84	178	3.73
Measuring and Control Equipment	21	0.44	7	0.15	28	0.59
Business Supplies	20	0.42	63	1.32	83	1.74
Shipping Containers	3	0.06	31	0.65	34	0.71
Transportation	20	0.42	48	1.01	68	1.42
Wholesale	32	0.67	124	2.60	156	3.27
Retail	65	1.36	177	3.71	242	5.07
Restaurants, Hotels, Motels	40	0.84	88	1.84	128	2.68
Banking	37	0.78	217	4.55	254	5.32
Insurance	57	1.19	109	2.28	166	3.48
Real Estate	14	0.29	10	0.21	24	0.50
Trading	72	1.51	220	4.61	292	6.12
Almost Nothing	16	0.34	31	0.65	47	0.98
Total	1492	31.25	3282	68.75	4774	100.00

Table IA.2: Characteristics of firms repurchasing bonds

Panel A of this table summarizes key characteristics of firms that repurchased a bond during our sample period. Panels B and C summarize acquirers and targets that repurchased a bond. The unit of observation is repurchase event.

Panel A: Firms that repurchased a bond

	Open Market (A)				Tender offer (B)				t-stat
Variable	Mean	Median	SD	N	Mean	Median	SD	N	(A-B)
Firm characteristics									
Total Assets (bil.)$_{t-1}$	11.33	2.47	62.63	1,397	130.38	10.28	406.97	2,714	-10.87***
Return on Assets$_{t-1}$	0.01	0.02	0.05	1,310	0.03	0.03	0.02	2,527	-8.86***
(Cash/Total Assets)$_{t-1}$	0.08	0.05	0.10	770	0.06	0.03	0.07	2,008	7.58***
(Total Debt/Total Assets)$_{t-1}$	0.48	0.43	0.31	1,397	0.42	0.39	0.24	2,714	6.71***
(Cash/Short-term Debt)$_{t-1}$	118.75	2.13	849.19	643	42.18	1.64	255.54	1,838	3.45***
(Cash/Total Debt)$_{t-1}$	0.26	0.12	0.48	769	0.25	0.09	2.60	2,005	0.11
Leverage$_{t-1}$	0.48	0.43	0.31	1,396	0.42	0.39	0.24	2,710	6.69***
Tobins Q$_{t-1}$	1.48	1.20	1.11	1,397	1.47	1.28	0.68	2,714	0.62
Market-to-Book$_{t-1}$	1.73	1.35	22.88	1,405	2.71	1.73	48.63	2,741	-0.71
Stock Return$_{t-1}$	0.03	0.00	0.66	1,405	0.14	0.03	2.75	2,743	-1.57
Invested Capital$_{t-1}$	4.87	1.56	14.73	1,397	39.18	6.75	96.26	2,711	-13.24***
Bond Characteristics									
Initial Maturity (Yrs.)	10.45	7.88	9.63	1,493	12.81	9.98	10.32	3,281	-7.47***
Offering Amt. (bil.)	0.38	0.28	0.41	1,493	0.56	0.35	0.80	3,281	-8.25***
Offering Yield	6.95	7.00	2.62	584	6.85	6.73	2.16	2,023	0.91
Secured	0.06	0.00	0.24	1,493	0.06	0.00	0.23	3,281	0.44
Covenants	0.93	1.00	0.25	1,493	0.95	1.00	0.21	3,281	-2.71***
Convertible	0.29	0.00	0.45	1,493	0.04	0.00	0.20	3,281	26.53***
Callable	0.76	1.00	0.42	1,493	0.77	1.00	0.42	3,281	-0.71
Make Whole	0.39	0.00	0.49	1,493	0.55	1.00	0.50	3,281	-10.71***
Straight	0.12	0.00	0.32	1,493	0.21	0.00	0.40	3,281	-7.26***
Inv. Grade	0.31	0.00	0.46	1,083	0.57	1.00	0.50	2,987	-14.79***
Repurchase characteristics									
Repurchase Amt. (bil.)	0.06	0.02	0.13	1,493	0.23	0.16	0.25	3,281	-24.99***
Repurchase Amt./Offer Amount	0.19	0.09	0.24	1,493	0.53	0.50	0.40	3,281	-30.68***
Remaining Maturity (Yrs.)	6.60	4.49	8.61	1,493	7.16	4.45	8.91	3,277	-2.02**
Repurchase Amt./Total Assets	0.00	0.00	0.00	1,408	0.00	0.00	0.00	2,783	-1.86*

Panel B: Acquirers that repurchased a bond

	Open Market (A)				Tender offer (B)				t-stat
Variable	Mean	Median	SD	N	Mean	Median	SD	N	(A-B)
Firm characteristics									
Total Assets (bil.)$_{t-1}$	16.03	2.70	84.30	712	181.17	15.40	477.50	1,746	-9.17***
Return on Assets$_{t-1}$	0.02	0.02	0.05	672	0.03	0.03	0.02	1,624	-4.84***
(Cash/Total Assets)$_{t-1}$	0.09	0.05	0.11	367	0.05	0.03	0.06	1,305	7.71***
(Total Debt/Total Assets)$_{t-1}$	0.45	0.39	0.28	712	0.39	0.36	0.22	1,746	5.25***
(Cash/Short-term Debt)$_{t-1}$	138.73	2.37	1,081.94	306	32.65	1.46	200.08	1,222	3.22***
(Cash/Total Debt)$_{t-1}$	0.31	0.13	0.59	366	0.20	0.10	0.47	1,304	3.57***
Leverage$_{t-1}$	0.45	0.39	0.28	712	0.39	0.36	0.22	1,746	5.25***
Tobins Q$_{t-1}$	1.56	1.26	1.24	712	1.50	1.33	0.62	1,746	1.63
Market-to-Book$_{t-1}$	1.17	1.48	27.61	712	3.12	1.94	56.10	1,746	-0.89
Stock Return$_{t-1}$	0.03	0.01	0.33	712	0.17	0.04	3.42	1,746	-1.13
Invested Capital$_{t-1}$	6.47	1.76	19.91	712	54.20	9.84	114.58	1,746	-11.05***
Bond Characteristics									
Initial Maturity (Yrs.)	11.12	7.90	11.74	712	13.80	10.01	11.40	1,754	-5.23***
Offering Amt. (bil.)	0.42	0.30	0.48	712	0.70	0.45	1.02	1,754	-6.93***
Offering Yield	6.46	6.79	2.59	265	6.66	6.47	2.05	1,138	-1.35
Secured	0.04	0.00	0.21	712	0.05	0.00	0.21	1,754	-0.01
Covenants	0.94	1.00	0.23	712	0.95	1.00	0.22	1,754	-0.37
Convertible	0.34	0.00	0.47	712	0.02	0.00	0.15	1,754	24.64***
Callable	0.73	1.00	0.44	712	0.75	1.00	0.44	1,754	-0.72
Make Whole	0.36	0.00	0.48	712	0.57	1.00	0.50	1,754	-9.80***
Straight	0.13	0.00	0.34	712	0.24	0.00	0.43	1,754	-6.27***
Inv. Grade	0.32	0.00	0.47	498	0.64	1.00	0.48	1,634	-13.11***
Repurchase characteristics									
Repurchase Amt. (bil.)	0.06	0.03	0.12	712	0.25	0.17	0.26	1,754	-18.09***
Repurchase Amt./Offer Amount	0.18	0.09	0.22	712	0.49	0.43	0.43	1,754	-18.68***
Remaining Maturity (Yrs.)	7.34	4.48	10.62	712	8.12	4.67	10.13	1,751	-1.71*
Repurchase Amt./Total Assets	0.00	0.00	0.00	711	0.00	0.00	0.00	1,726	-2.87***

Panel C: Targets that repurchased a bond

	Open Market (A)				Tender offer (B)				t-stat
Variable	Mean	Median	SD	N	Mean	Median	SD	N	(A-B)
Firm characteristics									
Total Assets (bil.)$_{t-1}$	14.73	2.57	79.85	465	217.27	17.85	545.93	1,169	-7.96***
Return on Assets$_{t-1}$	0.02	0.02	0.05	430	0.03	0.03	0.02	1,115	-5.42***
(Cash/Total Assets)$_{t-1}$	0.11	0.06	0.13	236	0.06	0.03	0.07	865	7.01***
(Total Debt/Total Assets)$_{t-1}$	0.48	0.42	0.30	465	0.40	0.36	0.23	1,169	6.01***
(Cash/Short-term Debt)$_{t-1}$	305.99	2.84	1,531.25	189	32.78	1.67	230.45	801	4.83***
(Cash/Total Debt)$_{t-1}$	0.33	0.16	0.66	235	0.23	0.10	0.56	865	2.31**
Leverage$_{t-1}$	0.48	0.43	0.30	465	0.40	0.36	0.23	1,169	6.00***
Tobins Q$_{t-1}$	1.45	1.20	0.86	465	1.48	1.32	0.60	1,169	-0.80
Market-to-Book$_{t-1}$	0.80	1.25	35.91	465	2.83	1.85	73.33	1,169	-0.57
Stock Return$_{t-1}$	-0.01	0.00	0.35	465	0.22	0.04	4.18	1,169	-1.15
Invested Capital$_{t-1}$	6.03	1.83	16.62	465	61.39	10.62	128.84	1,169	-9.23***
Bond Characteristics									
Initial Maturity (Yrs.)	9.86	7.79	9.28	465	13.53	10.01	11.42	1,173	-6.17***
Offering Amt. (bil.)	0.42	0.30	0.50	465	0.74	0.50	1.07	1,173	-6.24***
Offering Yield	6.38	6.50	2.84	196	6.80	6.56	2.18	761	-2.27**
Secured	0.06	0.00	0.23	465	0.04	0.00	0.20	1,173	1.58
Covenants	0.93	1.00	0.25	465	0.97	1.00	0.17	1,173	-3.40***
Convertible	0.31	0.00	0.46	465	0.02	0.00	0.14	1,173	18.90***
Callable	0.71	1.00	0.45	465	0.72	1.00	0.45	1,173	-0.33
Make Whole	0.35	0.00	0.48	465	0.55	1.00	0.50	1,173	-7.39***
Straight	0.15	0.00	0.35	465	0.27	0.00	0.44	1,173	-5.32***
Inv. Grade	0.24	0.00	0.43	337	0.61	1.00	0.49	1,094	-12.35***
Repurchase characteristics									
Repurchase Amt. (bil.)	0.07	0.03	0.16	465	0.26	0.19	0.28	1,173	-14.25***
Repurchase Amt./Offer Amount	0.19	0.09	0.23	465	0.50	0.44	0.46	1,173	-14.12***
Remaining Maturity (Yrs.)	6.34	4.49	8.43	465	7.94	4.68	10.13	1,171	-3.02***
Repurchase Amt./Total Assets	0.00	0.00	0.00	465	0.00	0.00	0.00	1,165	-2.30**

Table IA.3: Covenant distribution of bonds repurchased by acquirer and target firms

This table summarizes covenant restrictions on bonds repurchased by firms our sample that became acquirers or targets within two years of the repurchase event. Panel A shows the distribution of covenants in bonds repurchased by firms that attempted to acquire another firm within two years of the event. Panel B reports the distribution for firms that were targeted for M&A within two years of a repurchase event.

Panel A: Covenant distribution of bonds repurchased by Acquirers

Variable	Mean	SD	N
Investment-related Restrictions	0.90	0.29	2,466
Merger	0.89	0.32	2,466
Direct Investment	0.30	0.46	2,466
Other Invesmtent	0.31	0.46	2,466
Divident-related Restrictions	0.32	0.47	2,466
Subsequent Financing-related Restrictions	0.91	0.29	2,466
Event-related Restrictions	0.77	0.42	2,466
Change in Control	0.53	0.50	2,466
Other Event	0.71	0.45	2,466

Panel B: Covenant distribution of bonds repurchased by Targets

Variable	Mean	SD	N
Investment-related Restrictions	0.92	0.27	1,638
Merger	0.91	0.29	1,638
Direct Investment	0.33	0.47	1,638
Other Invesmtent	0.28	0.45	1,638
Divident-related Restrictions	0.34	0.47	1,638
Subsequent Financing-related Restrictions	0.93	0.25	1,638
Event-related Restrictions	0.76	0.43	1,638
Change in Control	0.52	0.50	1,638
Other Event	0.70	0.46	1,638

Table IA.4: Covenant redesign via open market repurchases and M&A outcomes: A quasi-experiment

This table is the open market repurchase counterpart for analysis in Table 7 in the paper. This table reports results of regressions that study the link between covenant redesign by open market repurchase and future M&A outcomes after randomizing the repurchase decision conditional on firms engaging in M&A activity in the future. The unit of observation is firm-quarter. For tests in panels A, we restrict our attention to companies that have at least one outstanding bond and have made at least one acquisition bid during our sample period. For each firm in each quarter, we look forward the next two years and identify their acquisition bids and classify them as successful or failed using the status reported in in SDC Platinum. The treated event in this analysis is a "repurchase". We randomly match each successful-bid-open-market repurchasing firm and failed-bid-open-market repurchasing firm with three successful-bid-*non*-repurchasing firm and failed-bid-*non*-repurchasing firm, respectively, in the same SIC 4-digit industry and quarter as outlined in section 4.3. In panel A we focus on open market repurchases of future acquirers; therefore the matched sample tracks treated and control firms $\pm$ 2-years around repurchase events. The dependent variables in the below difference-in-differences regressions in columns (1)-(5) are average covenant restrictions on all outstanding bond issues in a quarter. *Post-Open Market* indicates quarters after the repurchase event. *Successful Bid* identifies firm-quarters that are within 8 quarters of a future successful M&A bid. All regressions control for the firm's previous quarter total assets, leverage, and firm and quarter fixed effects. In panel B we replicate the analysis of Panel A for future target firms. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

Panel A: Successful and failed bids by acquirers

	(1) Merger	(2) Investment	(3) Dividend	(4) Subsequent Financing	(5) Change in Control
Post-Open Market	0.001	0.004**	-0.003**	0.005***	0.001
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)
Successful Bid	0.014***	0.013***	-0.008***	0.010***	0.004*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Post-Open Market × Successful Bid	-0.001	-0.003	0.004*	-0.001	-0.001
	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)
Obs.	43371	43371	43371	43371	43371
$Adj. - R^2$	0.879	0.877	0.949	0.879	0.939
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Panel B: Successful and failed bids on targets

	(1) Merger	(2) Investment	(3) Dividend	(4) Subsequent Financing	(5) Change in Control
Post-Open Market	-0.002	0.001	-0.008***	-0.002	0.001
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)
Successful Bid	-0.006**	-0.011***	0.003	-0.005	0.011***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Post-Open Market × Successful Bid	0.014***	0.013***	0.004	0.011***	0.004
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Obs.	27912	27912	27912	27912	27912
$Adj. - R^2$	0.898	0.895	0.951	0.901	0.948
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Table IA.5: Predictive power of bond repurchases for future M&A activity

This table reports results of cross-sectional Logit regressions that investigate the link between covenant redesign and the likelihood of a firm engaging in an M&A transaction within two years of a repurchase after controlling for the endogenous bond repurchase decision. This is alternative method of testing the predictions outlined in section 4.4. We use all Compustat firms with at least one outstanding bond between 1990 to 2017 for this analysis. Next, within each industry-quarter strata, we run a propensity score matching (PSM) process to match a repurchasing firm (treated) with a non-repurchasing firm (control) based on the previous quarter's (that is, $t-1$) total assets, Tobin's Q, leverage, cash holdings, and the 12-month stock return. We then take the PSM sample and divide it into two subsamples: (i) acquirers vs. non-acquirers within the next two years and (ii) targets vs. non-targets within the next two years. Finally, we take all issues outstanding for each acquirer (target) and non-acquirer (non-target) firm-quarter and run cross-sectional regressions of M&A activity in the post-period on covenant redesign covariates.

The dependent variable in columns (1)-(2) is Acquirer, which is a binary variable that indicates whether the company attempted an acquisition within two years of a tender offer repurchase quarter. The dependent variable in columns (3)-(4) is Target, which indicates whether the company was targeted for acquisition within two years of a tender offer repurchase firm-quarter. The covenant restriction variables are indicators for restrictions on bond issue. *Repurchasing Firm* indicates whether a firm repurchased any bond issue in quarter 't'. All the regressions control for total assets and leverage, and repurchase quarter and industry fixed effects. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively. The coefficients reported below are exponentiated odds ratio from Logit regressions.

	Acquirer		Targets	
	(1)	(2)	(3)	(4)
Repurchasing Firm	76.334***	62.763***	28.461***	31.461***
	(22.323)	(16.000)	(7.646)	(8.545)
Investment × Repurchasing Firm	0.790		1.857	
	(0.312)		(0.971)	
Merger × Repurchasing Firm		4.298***		1.478
		(1.488)		(0.823)
Direct Inv. × Repurchasing Firm		2.425		0.001
		(1.785)		(0.001)
Other Investment × Repurchasing Firm		0.930		1.934**
		(0.208)		(0.562)
Dividend × Repurchasing Firm	3.478***	1.314	26.300***	2.010
	(1.186)	(0.711)	(16.772)	(1.604)
Subsequent Financing × Repurchasing Firm	0.994	0.209***	0.603	0.648
	(0.374)	(0.087)	(0.339)	(0.397)
Event-related × Repurchasing Firm	0.864		2.544***	
	(0.198)		(0.591)	
Change in Control × Repurchasing Firm		3.036***		7.105***
		(0.990)		(2.831)
Other Event × Repurchasing Firm		0.815		1.456
		(0.193)		(0.343)
Obs.	9529	9529	6443	5775
$Adj.-R^2$	0.496	0.503	0.507	0.482
Repurchase Qtr. F.E.	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓

Table IA.6: Covenant redesign via open market repurchase and M&A activity controlling for selection effects

This table is the open market repurchase counterpart to the analysis in table 9. This table reports results of regressions that study the link between covenant redesign and M&A activity after controlling for the endogenous decisions of repurchasing a bond via open market and engaging in M&A market as acquirers or targets. This table similar to Table 6 but here, we do not restrict our sample to firms that have repurchased a bond issue. For panel A, we use the propensity score matching method outlined in section 5.1 to match *Open-Market-Acquirers* (treated), that is acquirers who used tender offer method to repurchase bonds with *Non-repurchasing-Non-Acquirers* (control), that is firms that did not engage in both the M&A market and bond repurchase market who are in the same industry and similar observables. We track the treated and control firms for 2 years before and after the repurchase event and run a two-step Heckman (1976) model. We calculate the Inverse Mills Ratio in the first step by regressing total assets, market-to-book ratio and leverage on the repurchase indicator. We use the calculated IMR to control for selection effects in the second step reported below. The dependent variables in columns (1)-(5) are average covenant restrictions on all outstanding bond issues of a firm in each quarter. *Post Open Market* identifies quarters after the tender offer repurchase for Open-Market-Acquirers and their corresponding control firms. In Panel B, we repeat the analysis using *Open Market-Targets*, that is, targets who repurchased a bond via open market as the treated sample. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

Panel A: Open-Market-Acquirers vs. Non-repurchasing-Non-Acquirers

	(1) Merger	(2) Investment	(3) Dividend	(4) Subsequent Financing	(5) Change in Control
Open Market-Acquirer	0.009**	-0.007*	0.015***	-0.009**	0.132***
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)
Post Open Market	0.019***	0.017***	0.025***	-0.008	0.084***
	(0.007)	(0.007)	(0.008)	(0.007)	(0.008)
Open Market-Acquirer × Post Open Market	-0.011	-0.003	-0.048***	0.014*	0.020**
	(0.008)	(0.008)	(0.010)	(0.008)	(0.010)
Inverse Mills Ratio	-0.000	-0.001	0.006**	0.001	0.003
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
Obs.	47110	47110	47110	47110	47110
$Adj. - R^2$	0.508	0.474	0.592	0.469	0.646
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Panel B: Open-Market-Targets vs. Non-repurchasing-Non-Targets

	(1) Merger	(2) Investment	(3) Dividend	(4) Subsequent Financing	(5) Change in Control
Open Market-Target	-0.004	-0.014***	-0.001	-0.027***	0.130***
	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)
Post Open Market	0.042***	0.031***	0.069***	0.019**	0.192***
	(0.009)	(0.009)	(0.011)	(0.009)	(0.011)
Open Market-Target × Post Open Market	-0.027***	-0.013	-0.061***	0.011	0.0082***
	(0.010)	(0.010)	(0.013)	(0.010)	(0.012)
Inverse Mills Ratio	-0.001	-0.001	0.005	-0.003	0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Obs.	35187	35187	35187	35187	35187
$Adj. - R^2$	0.502	0.464	0.584	0.472	0.664
Qtr. F.E.	✓	✓	✓	✓	✓
Firm F.E.	✓	✓	✓	✓	✓

Table IA.7: Falsification tests for covenant redesign via open market repurchase in matched M&A firms

This table reports falsification tests that support results tabulated in Panel B of Table 5, which studies the link between covenant redesign via open market repurchases and M&A activity 2 years following the repurchase event. The dependent variables in columns (1)-(5) are differences in average covenant restrictions during the two years after an event compared to one quarter before the event. The unit of observation is repurchase event. As explained in section 5.2 *Placebo Acquirer (Target)* identifies firms that were randomly assigned the acquirer flag value of '1' following open market repurchases made in *"Non M&A wave"* years. M&A waves are identified by adopting the Harford (2005) methodology. We control for the firm's total assets and leverage in the previous quarter, and repurchase quarter and industry fixed effects in all regressions. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
	Δ Merger	Δ Investment	Δ Dividend	Δ Subsequent Financing	Δ Change in Control
Placebo Acquirer	0.001	-0.001	0.001	0.002	0.000
	(0.006)	(0.005)	(0.004)	(0.005)	(0.005)
Placebo Target	0.002	0.003	-0.001	0.002	-0.001
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)
Obs.	1584	1584	1584	1584	1584
$Adj. - R^2$	0.141	0.130	0.142	0.104	0.137
Repurchase Qtr. F.E.	✓	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓	✓

Table IA.8: Cross-sectional analysis of CDS Spreads around open market repurchase events

This table reports results of regressions that study the link between covenant redesign via open market and corporate CDS spreads, the counterpart to analysis in Table 12. To be included in this analysis, a firm should have at least one outstanding bond issue when the company's CDS is traded in the market. The treated event is open market repurchase. For each treated event in year 't', we match the bond repurchasing firm with a firm that did not repurchase a bond in the same industry and financial in 't-1' using the propensity score matching methodology outlined in section 6.2. The dependent variable *5-yr Spread [-30,30]* is the average of the 5-year CDS spread $\pm$30 days around a repurchasing event for treated and control firms. *5 minus 1 yr [-30,30]* is the difference between average 5-year and 1-year CDS spreads $\pm$30 days around a repurchasing event. We define similar variables for $\pm$60 days window also. *Tender Offer* identifies treated firms. *Acquirer* and *Target* are binary variables that identify firms that become acquisition bidders or target of bids within 8 quarters of the repurchase event. We control for total assets and leverage of the firm in the previous quarter, and repurchase quarter and industry fixed effects in all regressions. Heteroskedasticity robust standard errors are reported in parentheses. We use ***, **, and * to denote statistical significance at 1%, 5% and 10% levels, respectively.

Panel A: Open Market Repurchasing Firm vs. Non-repurchasing Firm

	(1)	(2)	(3)	(4)
	5-yr Spread [-30,30]	5 minus 1 yr [-30,30]	5-yr Spread [-60,60]	5 minus 1 yr [-60,60]
Open Market	0.025***	0.001	0.025***	0.001
	(0.008)	(0.007)	(0.008)	(0.007)
Acquirer	-0.008	-0.002	-0.008	-0.002
	(0.015)	(0.012)	(0.015)	(0.012)
Target	-0.004	-0.003	-0.004	-0.003
	(0.017)	(0.014)	(0.017)	(0.014)
Open Market $\times$ Acquirer	-0.008	0.004	-0.009	0.004
	(0.018)	(0.014)	(0.018)	(0.014)
Open Market $\times$ Target	0.013	-0.006	0.015	-0.007
	(0.020)	(0.016)	(0.020)	(0.016)
Obs.	501	481	501	484
$Adj. - R^2$	0.151	-0.045	0.147	-0.044
Repurchase Qtr. F.E.	✓	✓	✓	✓
Industry F.E.	✓	✓	✓	✓