Contracting Costs and Reputational Contracts

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Abstract

Reputational capital is a frequently cited attribute of private equity transactions. In this paper we construct a simple model to illustrate the relationship between reputational capital, covenants and loan spreads in the leveraged loan market. Our model predicts that reliance on reputational capital varies inversely with a sponsor's past loan performance and the efficiency of the enforcement formal contracts terms. Our model also predicts that for sponsored deals, spreads will be lower on Cov-Lite loans than loans with maintenance covenants. Using a large sample of leveraged loans originated between 2005 and 2018, we find evidence consistent with these predictions.

Key Words: Cov-Lite Loans, Institutional Loans, Private Equity Firms, Reputational Contracting

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1. Introduction

Covenants are generally seen as an important source of state contingent creditor control rights. Theoretical models in the contracting literature predict that, assigning state-contingent control rights to creditors can enhance firm value (see, for example, Aghion and Bolton (1992) and Dewatripont and Tirole (1994)). The idea behind these models is that financial covenants enable a shift of control rights from shareholders to creditors when a borrower's performance falls below certain accounting thresholds. Recent studies show that lenders actively use these control rights to protect their interests and that stronger covenant protection is associated with lower loan spreads.[1]

Given this literature, the widespread adoption of covenant-lite (Cov-Lite) loan structures in the leveraged loan market over the last decade would seem to imply a significant weakening in lender control rights, and thus an increase in credit risk exposure.[2] However, despite these concerns Cov-Lite structures continued to be utilized even with the sharp downturn in economic activity during the second quarter of 2020. For example, from March 15 through June 30, 2020 the proportion of Cov-Lite loans to sponsored (i.e. private equity backed) firms was 70% of total deal volume; about the same as the average proportion of Cov-Lite loans during the 2015 through 2019 period.

Most explanations for the growth and persistence of Cov-Lite lending point to the increased participation of non-bank institutions in the levered loan market. As shown in Figure 1, over 90% of all leveraged loan deals at the end of 2018 had at least one loan tranche with funding from non-bank institutional investors.[3] In contrast to traditional bank lenders, non-bank institutional lenders, such as mutual funds and collateralized loan obligations (CLOs), are assumed to lack either the ability or willingness to engage in intensive monitoring. In addition, bargaining frictions and incentive conflicts between lenders are likely to be greater in loan syndicates that include both

[1] See for example, Bradley and Roberts (2015), Chava and Roberts (2008), Roberts and Sufi (2009), Nini, Smith, and Sufi (2009, 2012) and Matvos (2013).

[2] Unlike traditional bank loans, Cov-Lite loans do not have maintenance covenants. But like bonds they have incurrence covenants. Maintenance covenants require borrowers to maintain compliance and are typically monitored on a monthly basis. In contrast, incurrence covenants are covenants that the borrower must comply with only upon the occurrence of certain actions such as a debt issuance, dividend payment, share repurchase, merger, acquisition or divestiture.

[3] Figure 1 is based on S&P's definition of institutional loans which consists of all non-pro-rata loans (Term B and C and second-lien loans). Pro-rata loans include revolving credits lines and Term A loans that are typically (although not exclusively) bank funded.

bank and non-bank lenders. Thus, Cov-Lite structures result in a trade-off of lower contracting and renegotiation frictions at the expense of increased credit risk.[4]

Given this trade-off one would expect, controlling for loan and borrower characteristics, the spreads on Cov-Lite loans to be *higher* than the spreads charged on institutional loans with maintenance covenants. However, as shown in Figure 2 (and discussed in detail later), we find that spreads on Cov-Lite term loans are, on average, significantly *lower* than institutional term loans with maintenance covenants. One potential explanation for this finding is selection bias; firms facing high agency costs of debt are unable to borrow without maintenance covenants and the lower spreads we observe on Cov-Lite loans are the result of an omitted variable bias. The question then becomes what are omitted factors are that are positively correlated with the propensity to use Cov-Lite and negatively correlated with the agency costs of lending?

In this paper we hypothesize that the reputational capital of private equity (PE) sponsors is one such omitted factor. Specifically, we argue that the reputation of the PE sponsors can serve as substitute for maintenance covenants in mitigating the agency costs of lending to sponsors' portfolio firms, especially in instances where the costs associated with monitoring and enforcing maintenance covenants are particularly high. As a result, borrowers backed by PE sponsors with valuable reputational capital will more likely be able to borrow without maintenance covenants, relative to borrowers backed by sponsors that lack significant reputational capital. The ability to borrow without maintenance covenants, in turn, reduces loan spreads because it avoids the costs associated with the monitoring and enforcement of maintenance covenants which are based on noisy measures of credit quality.

To motivate our hypothesis and our empirical analysis, we construct a simple model to illustrate the relationship between reputational capital and maintenance covenants in the leveraged loan market. Our model is based on the extensive literature that examines how reputational contracts can serve as self-enforcing agreements, where the parties to the contract prefer to honor the agreement rather than renege and suffer a loss in reputational capital (see, for example,

[4] An example of the concerns raised by this trade-off is a recent article in the Economist that states: "For evidence of a deterioration in the quality of credit, the worriers point to the growing proportion of leveraged loans issued without "covenants"—agreements which require firms to keep their overall level of debt under control. So-called "covenant-light" loans have grown hand in hand with CLOs; today they make up around 85% of new issuance in America". See https://www.economist.com/briefing/2019/03/14/should-the-world-worry-about-americas-corporate-debt-mountain

MacLeod (2007) and Sobel (2006)).[5] This literature predicts that the extent to which reputational contracts provide a substitute for formal written contracts depends on the costs of enforcing written contracts through the courts or intermediaries, the expected gains from repeat transactions, and the penalties associated with breaching contracts. In addition, our model also draws on the earlier work of Diamond (1989) that argues that reputational capital can mitigate the agency costs of lending.

In our model, private equity firms conduct acquisitions of target firms that are financed through the leveraged loan market. Reputational capital is created because PE firms expect to engage in repeated acquisitions and require access to the leveraged loan market for funding these acquisitions.[6] We model the costs and benefits of maintenance covenants by assuming that they permit lenders to intervene upon the receipt of a noisy signal of the realized state of the world and limit PE firms' ability to divert resources for their private benefit.[7] Covenants therefore reduce the agency costs associated with lending and permit PE firms without reputational capital to use higher leverage. However, the use of maintenance covenants is costly because it may lead to inefficient liquidation. This occurs because lenders' actions are based on a noisy signal of the firm's cash flows. In the context of the leveraged loan market, inefficient liquidation occurs when a covenant violation provides a false signal that the firm is distressed, and creditors are unable or unwilling to restructure or modify the loan to avoid a default.[8]

We derive several testable implications from our model: First, the greater a PE sponsor's reputational capital, the greater the propensity of its portfolio firms to borrow using Cov-Lite loan structures. Second, controlling for the likelihood of default, loan spreads will be lower for borrowing based on reputation than when borrowing is supported by maintenance covenants because the likelihood of inefficient liquidation is priced into loans with covenants. Third, since

[5] Halac (2012), Baker, Gibbons, and Murphy (2002) use the term relational contracts for agreements that are self-enforcing in that they rely on the value of future dealings for their enforcement. Relational contracts are sometimes referred to as self-enforcing (Telser (1981), implicit (MacLeod and Malcomson (1989)), or informal contracts (Klein and Leffler (1981)). We prefer to use the term reputational contracts for two reasons: (i) the terms implicit or informal suggest vagueness in the terms of the contracts, and (ii), to highlight that the loss of reputational capital limits future dealings.

[6] This assumption is a common one in the literature. See, for example, Malenko and Malenko (2015), Demiroglu and James (2010), and Ivashina and Kovner (2011).

[7] Our modeling of the cost and benefits of covenants follows the approach of earlier work by Berlin and Loeys (1988) and Rajan and Winton (1995),

[8] In a recent paper, Berlin, Nini and Yu (2019) argue that while Cov-Lite loans do not contain covenants almost all firms that borrow Cov-Lite also have revolving credit agreements that contain maintenance covenant. However, as we discuss later, the incentives of revolving credit lenders to monitor and enforce covenants are likely to be different from the incentives of lenders when all loans have maintenance covenants. This difference, in turn, will affect the enforcement of maintenance covenants.

maintenance covenants are a substitute for reputational capital, the lower the signal-to-noise ratio associated with covenants, the lower the reputational capital needed to borrow without covenants. Thus, we expect reliance on reputational capital to vary directly with the potential costs of contract renegotiation.

We test these implications using a large sample of leveraged loan originations that occurred between 2005 and 2018 based on S&P's Leveraged Commentary and Data (LCD) database, which we supplement data from DealScan and Moody's Default and Recovery Database. We focus our main analysis on loans used to fund leveraged buyouts (LBOs) (both public-to-private as well as private-to-private deals) and mergers and acquisitions (M&A) because, for these deals, we are most likely observing the first loan in a potentially long loan path. As Roberts (2015) shows, loans are frequently renegotiated, even in the absence of covenant violations. By focusing on transactions at the beginning of a potential loan path, we can better isolate the influence of PE sponsors' reputation on loan structures from other potentially path-dependent factors that influence the structure of renegotiated loans.[9] In addition, by focusing on the start of the loan path we can identify any covenant heavy (Cov-Heavy) revolving credit agreements that may provide term loan lenders with the benefits of delegated monitoring (see Berlin, Nini, and Yu (2019)).

Because the value of a private equity sponsor's reputation is unobservable, we construct several different measures that proxy for the reputational capital of private equity sponsors based on their leveraged loan market and fund raising activities. Our main, and preferred, measure is the market share of the private equity sponsor in the leveraged loan market. However, all our measures are positively correlated with each other and our main findings are robust to the different measures. In addition, to further isolate the impact of reputation, we use variation in the performance of loans to sponsor-backed companies to identify negative shocks to the reputational capital of PE sponsors. This allows us to examine whether a default or bankruptcy of a sponsor' portfolio company negatively affects the structure and pricing of future loans obtained by other portfolio companies of the PE sponsor.

An important challenge in testing the predictions of our model is to distinguish the impact of reputation from other factors that may affect the structure and pricing of loans. In the context of

[9] Our main results are robust to including all types of transactions. Our concern with including refinancing and restructured loans is that the identity of the lenders and the structure of the refinancing is likely to depend on the lenders and the structure of the original loan. Moreover, in the case of LBO's it is less likely that the structure of the deal is influenced by other loans that the firm has outstanding.

our model, reputational capital represents the expected value of rents arising from future acquisitions financed with leverage. The value of reputation therefore depends, in part, on the skill of the PE firm in terms of its ability to add value to target firms. Thus, reputation is likely to be correlated with the credit risk of the sponsored firm. In addition, as Ivashina and Kovner (2011) point out, reputation is also likely to be related to the sponsor's relationship with the lead banks in the syndicate. They argue that a bank relationship serves to reduce information asymmetries between the sponsor or borrowing firm and bank, and therefore leads to less restrictive covenants (see, for example, Gârleanu and Zwiebel (2009) and Prilmeier (2017)). Because the borrower's credit risk, the sponsor's reputation, as well as banking relationships may affect loan terms we control for these factors in our empirical tests. In addition, it is important to note that, in the context of our model, the effects of reputation and banking relationships on loan contracting work in different ways. Reputation works by serving as a form of "outside collateral" that is not specific to the borrowing firm or the lender, whereas banking relationships work through reducing information asymmetries between the PE firm or borrower and a specific lender.

Since our primary focus is on loans to PE backed firms, most of the loans in our sample are to private firms. We therefore control for differences in the credit quality of borrowing firms through S&P firm-level (i.e. corporate) rating fixed effects.[10] One obvious concern is that credit ratings may not fully capture differences in the credit quality of the borrowing firms in our sample. This would be particularly concerning if, when determining corporate ratings, S&P did not consider the identity of the firm's sponsor. However, in describing their ratings methodology S&P explicitly states that it considers whether the firm is owned by a PE firm and the PE firm's management and financial strategies.[11]

We begin our empirical analysis by examining the relationship between the covenant structure of leveraged loans used to finance LBOs and acquisitions, and our measures of PE reputation. Because borrowers often obtain several loans which are part of the same deal, we begin

[10] Our main results are robust to using loan rating fixed effects.

[11] For example, S&P states "We differentiate between financial sponsors and other types of controlling shareholders and companies that do not have controlling shareholders." See, https://www.spratings.com/scenario-builder-portlet/pdfs/CorporateMethodology.pdf (November 19, 2013, page 46). However, based on S&P's description it is unclear whether sponsored firms are rated systematically higher or lower than non-sponsored firms. However, Huang, Ritter and Zhang (2016) provide evidence that the reputation of private equity firms has a positive impact on the ratings of previously sponsored firms.

our analysis at the deal level.[12] Consistent with the predictions of our model we find that, controlling for credit quality, bank lending relationships, and year fixed effects, the inclusion of loan tranches with of Cov-Lite structures in deals is positively and significantly related to our various measures of PE firm reputation. Importantly, this finding does not appear to be driven by institutional lenders delegating monitoring to bank lenders that hold the Cov-Heavy revolving lines of credit (as in the context of Berlin, Nini, and Yu (2019)). Indeed, we document that firms backed by sponsors with higher reputation are also significantly more likely to borrow using Cov-Lite structures that do not contain Cov-Heavy revolvers. Moreover, consistent with the importance of monitoring incentives and creditor coordination problems, we find that the propensity to use Cov-Lite provisions in deals is significantly related to the size of the lending syndicate and whether the loan trades in the secondary market.

A potential concern with the deal-level results is that they are conditional upon obtaining financing and sponsors suffering a shock to their reputation might have difficulty obtaining financing. To mitigate this concern, we examine how our measures of reputation, and shocks to sponsors' reputation, are related to sponsors' annual propensity to use Cov-Lite loan structures. To isolate shocks to reputational capital we examine whether defaults and bankruptcies of a sponsor' portfolio companies negatively affect the structure of future loans obtained by other portfolio companies of the same PE sponsor. In our model the value of reputational capital is based on the sponsor's skill in improving the performance of acquired companies as well as their proven track-record of not diverting resources for their private benefit. Therefore, we expect an increased default rate among a sponsor's portfolio companies to result in a negative shock to the sponsor's reputational capital which, in turn, should reduce the sponsor's ability to use Cov-Lite loan structures in their future deals.

Consistent with this notion, and controlling for trends in the leveraged loan market and year fixed effects, we find a negative and significant relationship between a sponsor's future market share and the lagged default rate among the sponsor's portfolio companies. In addition, we find that the annual proportion of Cov-Lite loan structures across all of a sponsor's deals is positively and significantly related to their market share, but negatively and significantly related

[12] Deals in LCD generally consist of several loan tranches. As such they are similar to loan packages in DealScan. One important difference however, is that in LCD the individual loans in a deal can have different covenants structures, whereas in DealScan all loans in a package a subject to the same covenants.

to the default rate among their portfolio companies. Finally, and most importantly, we find that the likelihood that a sponsor switches from Cov-Lite to Cov-Heavy borrowing is significantly related to the past loan performance of their other portfolio companies.

Next, we examine the relationship between all-in-drawn spreads and covenant structure. As mentioned above, if reputational capital substitutes for covenants, our model predicts that among sponsored loans Cov-Lite loans will have *lower* credit spreads than covenant heavy loans, controlling for borrower credit risk and other loan characteristics. Consistent with the predictions of our model we find this relationship between loan spreads at both the loan-tranche and at the deal level.[13] Specifically, we document that for LBOs and acquisitions within the same firm-level rating category all-in-drawn spreads on the institutional tranches are about 12% *lower* for Cov-Lite loans relative to the spreads on loans with maintenance covenants.

Because our prior results suggest that shocks to sponsors' reputational capital might lead them to switch between Cov-Lite and Cov-Heavy borrowing, in our final test we draw on recent work by Becker and Ivashina (2016) and examine how switching is related to changes in loan spreads. Consistent with the cross-sectional analyses, we find an increase in spreads when sponsors switch from Cov-Lite to Cov-Heavy structures and a decrease for sponsors that switch from Cov-Heavy to Cov-Lite loan structures.

Overall, our results are consistent with the hypothesis that PE firm reputation and covenants are substitutes for controlling agency problems associated with the use of leverage. Our findings are also in line with previous studies that document that wider loan syndication and diverse incentives of non-bank and bank lenders are associated with weaker covenant structures, and are also consistent with previous papers that document that PE reputation and banking relationships affect the structure of loans to portfolio companies. We add to the literature on loan contracting by highlighting the link between PE sponsors' reputation, the use of maintenance covenants, and the pricing differences between Cov-Lite and Cov-Heavy loans. In particular, we provide evidence that the structure of loans to PE backed firms is linked to measures of their reputational capital as well as to the performance of loans of other firms backed by the same sponsor, and that reputational contracts reduce the overall cost of borrowing. Our findings suggest that the influence of PE reputational capital on loan structure and pricing extends beyond a PE firm's relationship with a specific bank.

[13] Loan-tranche level results can be found in the Internet Appendix.

The rest of the paper is organized as follows. In section 2 we present our model of the relationship between PE reputation and covenant structure and develop our hypotheses. Section 3 describes data sources and provides summary statistics. Section 4 contains our empirical results and Section 5 provides a brief summary, our conclusions, as well as a discussion of potential concerns that arise from lending based on reputational capital.

2. Model of Private Equity Reputational Capital and Covenants

As discussed earlier, our model is intended to illustrate the interplay between reputation and written contracts. Specifically, it predicts that reputational capital and covenants are substitutes for one another and that the reliance on reputational capital to mitigate agency problems depends on the cost and efficiency of enforcing written contract provisions designed to mitigate agency problems. Additionally, the model illustrates how the expected value of future rents from borrowing in the leveraged loan market to finance acquisitions can serve as a source of reputational capital. In this respect our model is similar to Klein and Leffler (1982) and recent work by Malenko and Malenko (2015). Since maintenance covenants (or more generally state contingent lender control rights) also enable firms to increase their leverage, covenants and reputational capital are substitutes for one another. As a result, as the difficulty enforcing covenants declines (i.e. the signal to noise ratio deteriorates), ceteris paribus, the amount of reputational needed to support borrowing without covenants declines as well.[14]

The set-up of the model is as follows. There are three types of agents: creditors, PE firms, and standalone firms who are also potential target firms. PE firms are distinguished from standalone firms by three features. First, PE firms are assumed to have the ability to make operational improvements to the firms they acquire. Second, PE firms are repeat players in the acquisition market. Third, PE firms hold a portfolio of companies that borrow based on their own assets and potentially the reputation of the PE firm that holds equity in the borrower. In our model the key difference between standalone firms and PE sponsored firms is reputational capital.

Our model is based on Malenko and Malenko (2015)'s model of PE reputation. Time is discrete and indexed by integer values t=0,1,… There is a continuum of target or standalone firms

[14] In this respect our model is similar to one proposed by MacLeod (2007) in which formal contracts crowd out reputational contracts when the costs of formal contracting are low.

$\gamma \epsilon [0,1]$ each period and a continuum of PE firms with measure 1. Each target firm is assumed to live for one period and is randomly assigned one PE firms that can bid for the target. [15] We assume that PE firms are endowed with skill which determines the likelihood that a given PE firm can add value to a target by making operational improvements at the start of each period. We assume that if a PE firm cannot add value through operational improvements it will not bid and the target will remain independent.[16]

In any period, there are two possible states (B, G) that determine the cash flows realized by the target firm at the end of the period. We assume the value of the target is X_B in the bad state and $X_G + g(D)$ in the good state, where $X_G > X_B$ and $g(D)$ is the value of the debt used by the target firm. As in Malenko and Malenko (2015), the function $g(D)$ reflects the net benefit of debt financing. If a given target remains independent, we assume that the likelihood of the good state is given by $q_T \sim U(0, \bar{q})$ where $0 < \bar{q} < 1$. If it gets acquired by PE firm i, and the PE firm can add operation value. The value added occurs through an increase in the likelihood of the good state to $q_i = q_T + \Delta q_i$ where $\Delta q_i \sim U(0,1 - \bar{q} - \varphi)$ and $0 < \varphi < 1 - \bar{q}$. We assume that the probability that PE firm i can add value for the target it is assigned is p_i. In the context of our model, p_i is a measure of the skill of the PE firm. Higher values of p_i lead to higher expected rents from acquisitions and increase the value of reputational capital. Figure 3 below illustrates the timeline associated with our model.

[15] We assume each PE firm is randomly assigned to a target for simplicity. An alternative would be to model competition among PE firms of differing skill for a given target through a competitive auction process. Adding a competitive auction process reduces the expected rents earned by individual PE firms and can lead to additional equilibria where the use of covenants can depend on PE skill, but does not change the basic predictions of our reputation building model.

[16] One justification for this assumption is that the PE firm must arrange financing prior to acquiring the target and as part of the due diligence process reveal to the lender the operational changes that it expects to make.

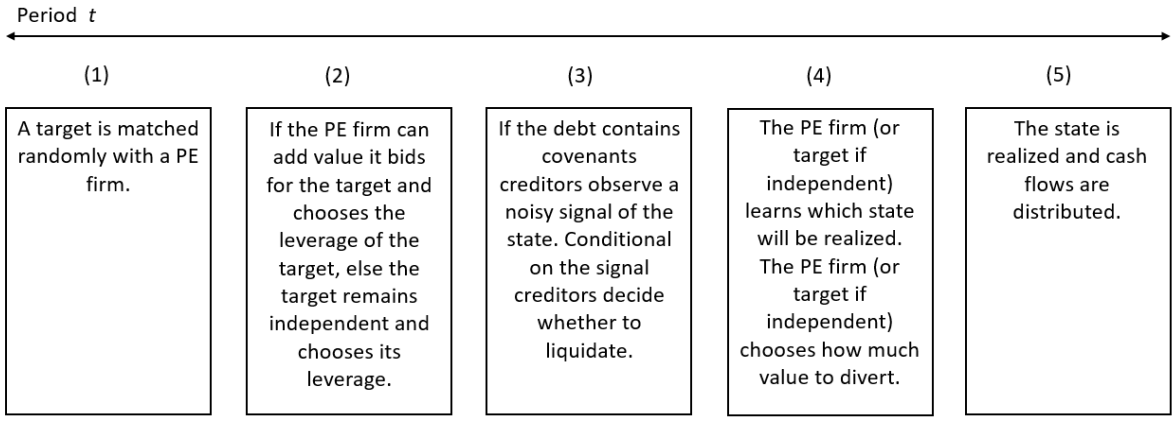

Figure 3. Timeline of the model.

We model the shareholder-creditor conflict by assuming that shareholders (referring to shareholders of standalone firms and the PE firm if the firm is sponsored) can divert a portion of the cash flows earned in each state. However, diversion is inefficient in the sense that for an amount x that is diverted shareholders only receive λx where $0 < \lambda < 1$. Diversion is assumed to be observable but not verifiable so that it cannot be contracted away.

We model the costs and benefits of debt financing in a way that provides shareholders with an incentive to take on risky debt.[17] Specifically, similar to Malenko and Malenko (2015), we make the following assumptions about g:

$$g(0) = 0 \text{ and } g'(D) \geq 0 \text{ for } D \in [0, X_B]$$

$$g(D) = g\big((1-\lambda)X_B\big) = g_0 \text{ for } D \in [(1-\lambda)X_B, X_B]$$

$g'(D) > 0$ for $D > X_B$ and $g'(D^*) = 0$ for some $D^* > X_B$ and $g''(D) < 0$ for $D \in (X_B, D^*)$.

We further assume that agents are risk neutral, that the period discount rate is r, and that shareholders only have an incentive to divert in the bad state by imposing:

$$D^* \leq (1-\lambda)\big(X_G + g(D^*)\big) \qquad (1)$$

Note that our conditions further imply that given debt D^* diversion is always optimal for shareholders in the bad state since $(1-\lambda)X_B < D^*$.

[17] Relaxing this assumption can lead to additional equilibria where PE firms take on risk-free debt. Our focus is on outcomes that involve taking on risky debt, since most acquisitions and LBOs by PE firms involve taking on at least some risky debt.

2.1 Base Case without Covenants

2.1.1 Standalone Independent Firm

We begin by examining the debt policy of standalone firms. Because the independent firms cannot acquire reputational capital, creditors will assume that shareholders will divert anytime the firm chooses $D > (1-\lambda)X_B$. As a result, creditors will price protect themselves against diversion and target shareholders will only choose leverage exceeding $(1-\lambda)X_B$ if the benefits of higher leverage outweigh the deadweight costs of diversion. Specifically, suppose target shareholders take $D > (1-\lambda)X_B$ then creditors will only provide

$$\frac{q_T \min(X_g + g(D), D)}{1+r}.$$

The value of the target's equity is thus

$$\frac{q_T \max(X_G + g(D) - D, 0) + (1-q_T)\lambda X_B}{1+r} + \frac{q_T \min(X_g + g(D), D)}{1+r}.$$

Which equals

$$\frac{q_T\big(X_G + g(D)\big) + (1-q_T)X_B}{1+r} - \frac{(1-q_T)(1-\lambda)X_B}{1+r}.$$

Given our assumptions about g, the value of the target's equity is maximized at D^*. Consequently, for the target to choose $D = (1-\lambda)X_B$ the deadweight costs of diversion must be sufficiently large. We therefore assume the deadweight costs of diversion are sufficiently high such that

$$\frac{(1-\bar{q})(1-\lambda)X_B}{\bar{q}} \geq g(D^*) - g_0. \qquad (2)$$

Under this assumption, the target will find it optimal to take $D = (1-\lambda)X_B$ and therefore the value of the independent target will be:

$$V_0 = \frac{q_T(X_G + g_0) + (1-q_T)X_B}{1+r} \qquad (3)$$

2.1.2 Single Deal by a PE Firm

Suppose a PE firm can add operational value and can commit to not diverting value from creditors. Then, the rents that the PE firm will be able to extract will be the difference between the standalone value of the target and the valuation of the PE firm for a given level of debt D:

$$\frac{\Delta q_i \cdot \Delta X + q_i \cdot g(D) - q_T g_0}{1+r}, \text{ where } \Delta X = (X_G - X_B).$$

Given our assumptions about g the PE firm will find it optimal to take on debt of D^* in this case. If the PE firm is able to add value but is unable to commit to no diversion, creditors will assume that it will divert whenever $D > (1-\lambda)X_B$. As a result, the rents that the PE firm can extract when $D > (1-\lambda)X_B$ will be reduced by the deadweight costs of diversion as follows:

$$\frac{\Delta q_i \cdot \Delta X + q_i \cdot g(D) - q_T g_0}{1+r} - \frac{(1-q_i)(1-\lambda)X_B}{1+r}.$$

Given our assumptions, these rents are maximized for D^*. However, if the PE firm chooses $D = (1-\lambda)X_B$ it will not have to bear the deadweight costs and can therefor earn rents of

$$\frac{\Delta q_i \cdot \Delta X + q_i \cdot g_0 - q_T g_0}{1+r}.$$

As a result, the PE firm will find it optimal to choose $D = (1-\lambda)X_B$ instead of D^* if

$$\frac{(1-q_i)(1-\lambda)X_B}{q_i} \geq g(D^*) - g_0.$$

Given that the ~~right hand~~right-hand side of this inequality is declining in q_i, we will assume that the deadweight costs are large enough such that both the standalone and PE backed firm will find it optimal to choose $D = (1-\lambda)X_B$. This can be satisfied by assuming that

$$\frac{\varphi(1-\lambda)X_B}{(1-\varphi)} \geq g(D^*) - g_0 \qquad (4)$$

The left had side of (4) is simply the expected deadweight loss from diversion and the right hand side of (4) is the value gain increasing leverage from $(1-\lambda)X_B$ to D^*.

2.2 Borrowing with Reputational Capital

In a repeated game setting the present value of future rents that the PE firm can extract will depend on its ability to add value through operational improvements as well as its ability to add value through leverage. Its ability to add value through leverage will be determined by its

reputation for not diverting. In this context, following Malenko and Malenko (2015), we assume that creditors follow a grim trigger strategy such that if a PE firm diverts value, creditors assume that it will divert in the future whenever it takes on debt $D > (1-\lambda)X_B$. In this setting, Proposition 1 below describes the conditions under which PE firms will value reputation.

Proposition 1 A given PE firm i will value its reputation for non-diversion and take on debt D^* to finance each of its future acquisitions if

$$\lambda X_B < \frac{\gamma}{r} p_i E[q_i](g(D^*) - g_0). \qquad (5)$$

The left-hand side of (5) is the gain from diversion and the right hand side of 5 is the present value of future expected rents generated using debt of D^* rather than debt equal to $(1-\lambda)X_B$.
Proof: See Appendix A.

Proposition 1 demonstrates how reputation can serve as a commitment mechanism for PE firms not to divert value from creditors. If the expected future rents from using the optimal amount of leverage of D^* exceed the onetime benefit of diverting PE firms will prefer not to divert value from creditors. Additionally, Proposition 1 further predicts that a PE firm will value its reputational capital more when the benefits from leverage are larger, its skill is higher, and the competition for targets is lower.

2.3 Borrowing with Covenants

In the case with covenants borrowers can choose between a debt contract with covenants and one without covenants. Following Berlin and Loeys (1988), we assume that covenants provide lenders with a noisy signal of the state of the world (Y_G, Y_B). Based on the noisy signal the covenants shift control rights to creditors which allows them to liquidate the firm. If the firm is liquidated, the payoff at the end of the period is X_B. We assume that $P[Y_G] = q_i$ so that likelihood of a positive signal varies with the ex-ante likelihood of the good state. We model the accuracy of the signal as follows $P[X_G|Y_G] = \rho + q_i(1-\rho)$ and $P[X_G|Y_B] = q_i(1-\rho)$ where $0 < \rho < 1$. The parameter ρ measures the informativeness of the signal that creditors receive, with higher levels of ρ corresponding to a more informative signal of the actual state of the world.

While the covenants limit shareholders' ability to divert in the bad state, covenants are costly because they can lead to inefficient liquidation in the good state. Intuitively, two conditions must be met for covenants to add value. First, the deadweight loss from diversion with covenants must be small relative to the expected gain from additional leverage. Since covenants prevent diversion conditional a bad signal, diversion will only occur when a good signal is received by creditors but the bad state occurs. This occurs with probability $P[X_B|Y_G] = 1 - \rho - q_i(1-\rho)$. Second, the cost of inefficient liquidation must be small relative to the gains from taking on the additional leverage by using covenants. Inefficient liquidation occurs when creditors receive a bad signal but the good state occurs. The probability of this occurring is $q_i(1-\rho)$. Note that, both the likelihood of a loss from diversion and from inefficient liquidation are decreasing in ρ.Therefore, as we demonstrate below, whether covenants will add value will depend on the quality of the signal as measured by ρ.

2.3.1 Standalone Firms

Because the standalone firms (targets) cannot commit to not diverting value in the bad state, the use of covenants can increase their debt capacity if the signal lenders receive from a covenant violation is sufficiently informative. For a given level of debt, an independent firm will be able to borrow the following amount when covenants are used

$$\frac{q_T\big(\rho + q_T(1-\rho)\big)\min(X_G + g(D), D) + (1-q_T)\min(X_B, D)}{1+r}.$$

Therefore, the value of the target's equity is

$$\frac{q_T\big(\rho + q_T(1-\rho)\big)\max(X_G + g(D) - D, 0) + q_T\big(1-\rho-q_T(1-\rho)\big)\lambda X_B + (1-q_T)\max(X_B - D, 0)}{1+r}$$

$$+ \frac{q_T\big(\rho + q_T(1-\rho)\big)\min(X_G + g(D), D) + (1-q_T)\min(X_B, D)}{1+r}$$

$$= \frac{q_T\big(\rho + q_T(1-\rho)\big)\big(X_G + g(D)\big) + (1-q_T)X_B + q_T\big(1-\rho-q_T(1-\rho)\big)\lambda X_B}{1+r}.$$

Which can be rewritten as

$$V_0 + \tfrac{1}{1+r} q_T\big[\big(\rho + q_T(1-\rho)\big)\big(X_G + g(D)\big) + \big(1-\rho-q_T(1-\rho)\big)\lambda X_B - (X_G + g_0)\big] \quad (6)$$

Equation (6) states that the value of the independent firm when it can borrow with covenants is equal to its standalone value without covenants plus the net benefits of borrowing with covenants. Given our assumptions, the net benefits of borrowing with covenants are maximized at D^*.

Lemma 1 Covenants will add to the borrowing capacity of the standalone firm if $\rho > \rho_T$ where

$$\rho_T \equiv \frac{X_G + g_0 - \lambda X_B}{X_G + g(D^*) - \lambda X_B}. \qquad (7)$$

Proof: See Appendix A.

Lemma 1 shows that whether covenants add value will depend on the precision of the signal that creditors observe. The minimum required precision of the signal, in turn, will depend on the value gained from taking on additional leverage. The greater the value gained from additional leverage, the lower the required precision of the signal for covenants to add value.

2.3.2 Single Deal by PE Firm

In the case where a PE firm can add operational value but otherwise cannot commit to not diverting value covenants can similarly add to the PE firm's borrowing capacity if ρ is sufficiently large. As we prove in the Appendix, if standalone firms prefer borrowing with covenants, PE firms will also prefer borrowing through covenants. We formulate this in Corollary 1.

Corollary 1 When a standalone firm prefers borrowing through covenants (i.e. $\rho > \rho_T$), so will the PE firm that is able to bid for the standalone firm. Moreover, the PE firm will borrow D^*.

Proof: See Appendix A.

2.4 Repeat Deals, Reputation, and Covenants

In a repeated game setting the PE firm can borrow without covenants if it has a reputation for non-diversion. We assume that $\rho > \rho_T$ so that in the absence of reputation both standalone firms and PE firms will prefer to borrow with covenants. Creditors follow a grim trigger strategy such that if a PE firm diverts value, they assume that it will divert in the future whenever the firm

borrows $D > (1-\lambda)X_B$ without covenants.[18] This implies that once a PE firm diverts, the only way it will be able to borrow $D > (1-\lambda)X_B$ is through debt contracts that contain covenants.

However, because borrowing with covenants is also optimal for target firms, PE firms' expected rents will be diminished relative to the case without covenants. Proposition 2 below describes the conditions under which PE firms will value reputation in this setting.

Proposition 2 In the case where PE firms can borrow through covenants and $\rho > \rho_T$, a given PE firm i will value its reputation for non-diversion and take on debt D^* to finance each of its future acquisitions if

$$\lambda X_B < \frac{\gamma}{r} p_i E\big[q_i(X_G + g(D^*)) - \big(q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D^*)\big) + q_i\big(1-\rho - q_i(1-\rho)\big)\lambda X_B\big)\big]. \quad (8)$$

Proof: For a given level of debt D a PE firm i will find reputation valuable and will not divert if:

$$\begin{aligned}\lambda X_B - \max(X_B - D, 0) &< \frac{\gamma}{r} p_i E\big[\Delta q_i \Delta X + q_i g(D) - q_T g_0 \\ &- \big(q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D^*)\big) + (1-q_i)X_B + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B \\ &- q_T(X_G + g_0) - (1-q_T)X_B\big)\big]\end{aligned}$$

Given our assumptions about g and $\rho > \rho_T$, the expectation of the term in brackets will be negative for $D < X_B$ and the inequality will not hold. Moreover, for risky debt the expectation is maximized for D^*, and therefore the proposition follows.

□

As in the case without covenants in Proposition 1, Proposition 2 implies that a PE firm will value reputation more when its skill is higher and the competition for targets is lower. Moreover, as shown in Corollary 2 below, the required level of skill for a PE firm to value reputation is higher in the case of covenants because the rents are diminished when target firms can also borrow with covenants.

[18] Malenko and Malenko (2015) also make this assumption.

Corollary 2 For a given PE firm let $p_{no\ cov}$ denote the lowest level of skill such that Equation (5) is satisfied, and let p_{cov} be the lowest level of skill such that Equation (8) is satisfied. Then $p_{cov} > p_{no\ cov}$.

Proof: See Appendix A

Corollary 3 Reputation will be less valuable if the signal that creditors receive is more informative (i.e. if ρ is higher).

Proof: Note that the expectation in Equation (8) is declining in ρ. Consequently, the more informative the signal creditors receive, the lower the rents of borrowing without covenants based on reputation.

□

An additional implication of Corollary 3 is that the noisier the signal, the lower the required skill level of PE firms will need to be for them to value reputation.

Finally, while our model implies that whether PE firms can borrow relying on only reputation will depend, in part, on their skill at implementing operational improvements, both PE firms with a relatively low level of skill ($p_i < p_{cov}$) and those with a relatively high level of skill ($p_{cov} < p_i$) will borrow the same amount D^*. However, as shown in Corollary 4 below, for a given target, PE firms that rely on covenants will pay a higher interest rate when they can add the same value through operational improvements.

Corollary 4 For a given target, assume that both low-skilled PE firms ($p_i < p_{cov}$) and high-skilled PE firms ($p_{cov} < p_i$) can add the same value through operational improvements. Low-skilled PE firms will borrow D^* with covenants and pay a higher interest rate than high-skilled PE firms which will borrow D^* without covenants using reputation.

Proof: A low-skilled PE firms will not value reputation and will borrow D^* with covenants. Consequently, it will be able to raise the following amount from creditors

$$\frac{q_i\big(\rho + q_i(1-\rho)\big)\min(X_G + g(D^*), D^*) + (1-q_i)\min(X_B, D^*)}{1+r}.$$

A high skilled PE firm, on the other hand, will value its reputation and will be able to borrow the following amount from creditors without covenants

$$\frac{q_i \min(X_G + g(D^*), D^*) + (1 - q_i) \min(X_B, D^*)}{1 + r}.$$

And because $\big(\rho + q_i(1 - \rho)\big) < 1$ the corollary follows.

□

2.5 Hypotheses

Our model leads to three testable hypotheses concerning the relationship between loan structure and PE firm reputation.

Hypothesis 1 (H1): Ceteris paribus, the greater a PE sponsor's reputational capital, the greater its propensity to borrow using Cov-Lite structures.

As discussed later, we test H1 using several measures of PE reputational capital based primarily on a sponsor's activity in the leveraged loan market. Since reputational capital is based on the frequency and profitably of expected future acquisitions, the use of reputational capital is also expected to vary with the overall level of leveraged loan market activity. As a result, when empirically testing H1 we control for market conditions that may affect the value of PE firms' reputations and, in some specifications, we include year fixed effects. We also expect reputational capital to vary with the past performance of loans to firms backed by a sponsor. We therefore also test H1 at the sponsor level by examining the propensity of a sponsor to use Cov-Lite structures and the past performance of loans to firms backed by the same sponsor.

Our second hypothesis is based on Corollary 4, which suggests that, holding credit risk constant, the all-in-drawn spread associated with Cov-Lite loans will be lower than on covenant heavy loans.

Hypothesis 2 (H2): If reputational capital serves as a substitute for maintenance covenants, Cov-Lite loans to PE sponsors are expected to have lower spreads that covenant heavy loans.

As shown in Corollary 2, the degree to which reputational capital substitutes for covenants depends on the informativeness of covenants. While research in accounting suggests that the informativeness of various types of covenants may vary over time, we conjecture that the cost of covenant enforcement is likely to vary with the size and diversity of the lending syndicate.[19]

[19] For example, Demerjian (2011) argues that the decline in frequency of loans with covenants based on balance sheet variables (so called capital covenants) is related to changes in the focus of accounting standard setting. Specifically, he argues that the objective of standard setting has shifted from the determination of net income to the valuation of

Specifically, as discussed earlier, wider syndication is likely to reduce the incentives of syndicate members to monitor, and is also likely to generate bargaining frictions that impair the efficient enforcement of covenants in the event of a violation. Additionally, while borrowers may have revolving credit agreements with maintenance covenants, the protection afforded to term loan lenders is likely to be less than when the term loans have the same covenants. As Billet et. al. (2016) argue, relationship considerations are likely to lead banks with a relatively small stake in a syndicated loan to enforce covenants less rigorously than term loan lenders without ongoing relationships with the borrower. As shown below, the revolver and pro-rata share of the total loan package tends to be relatively small for leveraged loan deals (the median for PE sponsored loans is 6.25%). This leads to our third hypothesis.

Hypothesis 3 (H3): Controlling for the reputation of the PE sponsor, the propensity to use Cov-Lite structures is increasing in the diversity of the lending syndicate.

3. Data and Summary Statistics

3.1 Data Sources

Our main data source is S&P's Leveraged Commentary and Data (LCD). Similar to DealScan, LCD provides information on all-in-drawn spreads, the size, and the maturity of each tranche in a leveraged loan deal. We rely on LCD because it provides comprehensive information on whether a deal has a loan tranche with a Cov-Lite structure, it allows us to identify high-yield bond offerings associated with a loan deal as well as whether the issuing firm is backed by a PE sponsor. [20] Using information from PE firms' websites, we manually assign the sponsor identified by LCD to a "parent-level" sponsor entity.[21] LCD also provides information on break prices (the price at which a loan first trades in the secondary market), the time between origination and the start of trading, and S&P credit ratings at both the corporate as well as loan tranche level. Because

assets and liabilities. This shift has potentially diminished the importance of balance sheet variables in debt contracts because borrowers have greater discretion in determining the value of assets and liabilities for reporting purposes.

[20] Billett et. al. (2016) and Becker and Ivashina (2016) also rely on LCD data to identify Cov-Lite structures. In contrast, covenant information from Dealscan is often missing. Christensen and Nikolaev (2012) report that 50% of deals in DealScan lack of covenant information.

[21] For example, "KPS Capital Partners" and "KPS Special Situations Fund, LP" are assigned to a same parent, which is "KPS Capital Partners". "Morgan Stanley Capital Partners" and "Morgan Stanley Real Estate Fund" are assigned to "Morgan Stanley Capital Partners", etc. LCD provides the name of the lead PE firm. We manually checked the lead identified by LCD has the largest investment share using information on each PE's share using Pitchbook.

DealScan has better coverage of syndicate composition and lender information we supplement our LCD data set with information from DealScan for some of our empirical tests.[22]

For our empirical analysis we obtain all U.S. Dollar denominated deals by U.S. companies that are sponsored by PE firms and that are completed between January 1, 2005 and December 31, 2018 from S&P's LCD database. We exclude loans to firms that operate in financial, not-for-profit, utility, or government related industries.[23] We further require deals to have non-missing information on the amount, spread, and maturity for each tranche.[24] While LCD's coverage starts in 2000, we being our empirical analysis in 2005 because Cov-Lite loan structures were not widely employed prior to 2005 and because information on high-yield bond offerings associated with leveraged loan deals is unavailable in LCD prior to 2005. Even though our main analysis is based on deals during the 2005 through 2018, we use data starting in 2000 to compute our PE sponsor reputation, bank relationship and default propensity measures.

We proxy for the value of a sponsor's reputational capital in several ways. Our first, and preferred, measure is a sponsor's market share, calculated as each sponsor's total number of deals in the leveraged loan market over the prior three calendar years and divided by the total number of sponsored deals in the leveraged loan market over the same time period. Our second measure is the natural logarithm of one plus the number of deals the sponsor has undertaken in the leveraged loan market over the past three calendar years. Our third measure is an indicator variable for whether the PE sponsor is ranked within the top 30 sponsors based on Private Equity International's (PEI) global 300 Private Equity Firm Ranking. While the first two measures are directly based on sponsors' past activity in the leveraged loan market, the PEI ranking is based on how much equity capital sponsors raised over the last five years and is an indication of their potential future activity in the leveraged loan market.[25]

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[22] Please see Appendix B for a description of the matching procedure.

[23] LCD's industry classification does not contain a separate category for financial firms. We excluded all firms that are in the "Insurance" industry. We also manually went over firms that are classified as "Services & Leasing" and dropped financial firms. Some examples of "Services & Leasing" Firms that we dropped contain NASDAQ Inc, Guggenheim Partners LLC, The Mutual Fund Store, and TD Ameritrade Holding Corp.

[24] We adjusted all amounts to 2018 dollars using the Consumer Price Index ('CPIAUCSL'), obtained from the Federal Reserve Bank of St. Louis' FRED platform.

[25] We do not have annual PEI rankings for the period before 2009 as well as for the years 2011 and 2014. For these years, we backfilled the data with the rankings of the closest preceding year. As PEI rankings consider the prior 5-year capital raising activity, they tend to be stationary. In addition, we manually match sponsor names in the PEI data to LCD's sponsor names. See: https://www.privateequityinternational.com/pei-300/

In addition to measures of loan market activity, we also measure shocks to sponsors' reputation by how their portfolio firms have performed in the past. Specifically, using information from S&P, Moody's, and LCD we identify bankruptcies and defaults involving sponsored firms. For each sponsor we then define the past default rate as the number of bankruptcies or defaults of their portfolio firms in the prior calendar year relative to the number of leveraged loan deals by the sponsor over the three-year period preceding the default year. A detailed description of our sources for information on defaults and how we construct our default measure is contained in Appendix B.

As discussed earlier, in some of our tests we control for the number of lenders in a loan syndicate and the sponsor's as well as the borrower's relationship with the lead banks in the loan syndicate. For these controls we rely on syndicate information in DealScan. We construct two sets of relationship measures (i.e. borrower-bank and sponsor-bank relations) following the methodology in Bharath, Dahiya, Saunders, and Srinisavan (2007). We measure borrower-bank (sponsor-bank) relationship as the number of loans a borrower (sponsor) raised from same lead bank in prior three years relative to all of the borrower's (sponsor's) loans over the same time period.

3.2. Summary Statistics

Our empirical analysis is based on two primary data sets. The first data set consists of an unbalanced panel of annual deal activity by sponsor. We use this data set to examine overall sponsor activity in the leveraged loan market, to calculate our measures of sponsors' market share, and to examine how the loan terms offered to sponsors change in response to bankruptcies and defaults by sponsors' portfolio firms. The second data set is at the individual deal level. This data set allows us to take a more detailed look at deal and tranche level relationships between loan characteristics and borrower, sponsor and loan syndicate characteristics.

Panel A of Table 1 displays summary statistics for the unbalanced panel of annual sponsor activity in the leverage loan market. For comparison, we also provide similar summary statistics at the issuer level for private and public firms that borrow in the leveraged loan market. To distinguish between public and private borrowers, we identify issuers in LCD that are also in Compustat through the DealScan-Compustat link file provided by Chava and Roberts (2008) as

well as manual name matching. We classify a borrower in LCD as a public firm if it can be linked to Compustat for the year prior to the loan launch date in LCD.

Note that the data in Panel A are conditional upon at least one deal taking place in a given sponsor- or issuer-year. As shown, conditional on at least one deal taking place, the average annual deal volume for sponsors is significantly higher than the annual volume for standalone private and public firms. On average, the annual sponsor borrowing is almost three times larger than the average for private firms and over 60% larger than the volume for public firms. The higher deal volume arises from more frequent transactions by sponsored firms since, on average, the deal size is smaller than the deal size for private and public standalone issuers.

In terms of deal characteristics, the percentage of sponsored deals that contain a Cov-Lite loan tranche is significantly higher for sponsored deals relative to standalone borrowers, and sponsored deals are also more likely to contain loan tranches held by institutional investors as well as loan tranches that are subsequently traded in the secondary market. Since the summary statistics in Table 1 are based on the entire sample period and the frequency of Cov-Lite transactions has increased over our sample period, the summary statistics understate the frequency of Cov-Lite transactions in recent years. For example, over the period from 2015 through 2018 the proportion of sponsored deals with Co-Lite Structures is 76% and significantly greater than the proportion of private (non-sponsored), and public firm Cov-Lite deals (43%, and 51%, respectively).

As shown in Panel B of Table 1 all of our measures of sponsor reputation are positively and significantly correlated and the correlations range from 0.86 to 0.42. Given that all of the measures are highly correlated, in the interest of brevity, we report most of our results using only the sponsor market share measure. However, as shown in the Internet Appendix, all our results are robust to using the alternative measures. As discussed later, we also examine the relation between forward looking measures of a sponsor's market share and the propensity of default on past loans to portfolio companies.

Another way to compare sponsor loan market activity to activity of standalone firms is to examine the number of loan market transactions following an LBO or M&A transaction. We use loans obtained for acquisition purposes as the starting point for this analysis, because unlike refinancing transactions or renegotiated loans, these transactions likely represent the first loan in a potentially long loan path. For sponsors we identify deals for LBO or M&A financing between 2005 and 2015 and aggregate the total number of deals done by the same sponsor regardless of

their purpose over the following three years. For standalone borrowers we identify deals for M&A financing between 2005 and 2015 and aggregate the total number of deals by the same borrower regardless of their purpose over the following three years. In both cases we exclude the original LBO or M&A deal from the total number of deals, and to avoid double counting deals in the event that sponsors or standalone borrowers have multiple deals for acquisition financing, we restrict our sample to non-overlapping three-year periods.

Panel C of Table 1 shows the results of this analysis. We find that sponsors are far more active in the leveraged loan market following acquisitions than standalone borrowers. For example, sponsors, on average, transact about five additional times in the leveraged loan market over the three years following an acquisition, whereas both private and public issuers have almost no follow-on transactions over the same time period. Overall, the summary statistics in Table 1 indicate that sponsors are, on average, repeat players in the leveraged loan market.

Table 2 provides summary statistics for sponsored deals. Because we require data from DealScan for our tests at the deal level, the number of deals in this table is slightly lower than in Table 1. As shown, about 40% of sponsored deals use Cov-Lite structures and 95% of sponsored deals have an institutional loan tranche. For acquisition related financing about 72% of sponsored deals also have a pro-rata tranche which typically includes a revolving line of credit, compared with about 54% across all sponsored deals. Consistent with the findings of Berlin, Nini, and Yu (2019), all revolving credit agreements are classified as having maintenance covenants by LCD.[26] Conditional on having a revolving credit agreement in the deal, the revolving portion of the deal represents on average between 21% and 24% of the total deal amount. Interestingly, about 17% of the sponsored acquisition related deals are completely free of tranches that contain maintenance covenants in that these deals consist solely of Cov-Lite term loans.

About a quarter of LBO/M&As deals contain a second-lien loan. To calculate the credit enhancement provided by subordinated creditors to first-lien lenders we calculate the amount of the total deal that consists of second-lien loans and high-yield bonds. We refer to the amount of subordination relative to the total deal amount as the deal cushion. As shown, the average cushion in LBO/M&A deals is about 10%. In our subsequent analyses we control for the deal cushion, as

[26] While not tabulated for brevity, conditional on a deal containing a revolving line of credit all revolving lines of credit to sponsored firms are classified as covenant heavy by LCD.

Badoer, Dudley, and James (2020) find that loss given default on secured loans is significantly related to cushion provided by unsecured and second-lien creditors.

4. Empirical Results

4.1 Reputation and the propensity to use Cov-Lite: deal-level analysis

In this section we present the first tests of Hypothesis 1, which states that reputational capital is positively related to the propensity to use cove-lite loan structures. To examine the relationship between propensity to use Cov-Lite and sponsor reputation, we estimate linear probability models of the propensity to use a Cov-Lite structure for deals used to finance M&As or LBOs and our various PE reputation measures.[27]

Table 3 presents our tests of Hypothesis 1 using deal-level data. In the first two columns we examine the deal structure for loans obtained for LBO and M&A transactions by sponsored firms. In the first column we only include our measure of reputation and year, industry, firm ratings, and loan size quartile fixed effects. Because a quarter of deals is to unrated firms, the ratings fixed effects include a category for unrated firms. However, our results are robust to excluding unrated firms from the sample. In the second column we include bank relationship measures at both the firm and sponsor level as well as proxies for bargaining frictions.

As shown in columns 1 and 2 of Table 3, and consistent with Hypothesis 1, we find a positive and significant relation between the propensity to use Cov-Lite structures and our main measure of PE sponsor reputation. Additionally, as shown in column 2, we find a positive and significant relation between the propensity to use Cov-Lite and the size of the syndicate as well as whether the deal has a loan tranche that is subsequently traded in the secondary market. Interestingly, we find no relation between the propensity to use Cov-Lite and the borrower- or sponsor-bank relationship measures. This finding is consistent with reputational capital and not bank-specific relationships determining the use of Cov-Lite structures. Specifically, at the initiation of a loan path, sponsors' reputation and not borrower-bank or sponsor-bank specific information acquired from past dealings appears to affect the propensity to use Cov-Lite.

In columns 3 and 4 we re-estimate the model using all sponsored deals in our sample. The advantage of using all deals is that we can observe whether the effect of our reputation or

[27] We also estimate the propensity to use Cov-Lite using a logistic regression. The results using a logistics regression are similar to the linear probability model.

relationship measures changes as the borrower progresses down a loan path. The disadvantage is that deal structure is not likely to be independent but rather may be related to prior loans that are being refinanced or restructured. As shown, we continue to find a positive and significant relationship between the use of Cov-Lite structures and our measure of sponsor reputation.

Given the findings by Berlin, Nini, and Yu (2019), we next examine the extent to which our results can be explained by bank lenders monitoring on behalf of institutional investors in Cov-Lite loans. As shown in Table 2, about 17% of deals associated with LBOs and M&As consist of only Cov-Lite tranches. We therefore distinguish between deals that contain both Cov-Lite loans and a Cov-Heavy revolver and deals that contain only Cov-Lite tranches and examine whether, conditional on borrowing with at least one Cov-Lite tranche, sponsor reputation is related to the inclusion of Cov-Heavy revolvers. These results are displayed in Table 4. As shown, consistent with our hypothesis, but inconsistent with a bank monitoring argument, we find a negative and significant relationship between the reputation of PE sponsors and the propensity to include a Cov-Heavy revolver as part of the deal.

4.3 Reputation and the propensity to use Cov-Lite: sponsor-level analysis

We next turn to our second set of tests of Hypothesis 1. Specifically, we analyze the propensity to use Cov-Lite at the annual sponsor level. The advantage of examining covenant structure at the annual sponsor level is that we can better isolate shocks to sponsors' reputational capital by examining how the past performance of loans to a sponsor's overall portfolio of companies is related to the ability of the sponsor to borrow using Cov-Lite.

We begin this analysis by examining whether a sponsor's past default rate is related to their future market share. This analysis is conducted at the annual sponsor level. Specifically, we estimate a regression relating a sponsor's market share from time *t+1* through *t+3* (*Market Share* $_{t+1\text{-}t+3}$) to defaults in year *t-1* relative to their total number of deals for the period *t-2* through *t-4* (*Default* $_{t-1}$).[28] To control for market conditions we include in the regression year fixed effect.

The regression estimates are as follows:

Market Share $_{t+1\text{-}t+3}$ = -0.367** *Default* $_{t-1}$ + Controls R^2 = .01 N=939

[28] We exclude year t to exclude deals that may have been in the pipeline when the default occurred. Our results are similar we include year *t* and measure market share over the period *t* through *t+2.*

Consistent with the notion that past defaults of sponsors' portfolio companies reduce sponsors' reputational capital the coefficient estimate on *Default* $_{t-1}$ is negative and significant .

We next examine how our measure of sponsors' reputation and their past loan performance affect their overall propensity to borrow using Cov-Lite loan structures. For this analysis, we calculate for each sponsor in our sample the propensity to borrow Cov-Lite as the number of deals with Cov-Lite tranches in a given year relative to the total number of deals by the sponsor over the same time period. Since the analysis is conducted at the sponsor level and not at the deal level, we do not include controls for loan characteristics or credit rating fixed effects. However, we control for market conditions that are likely correlated with the propensity of Cov-Lite lending. Specifically, we include the lagged share of institutional loans in the leveraged loan market as well as an indicator for the years of the financial crisis (2008 and 2009). Additionally, in some specifications, we include year fixed effects.

Table 5 provides OLS estimates of the relation between sponsors' propensity to borrow Cov-Lite and their reputation. As shown in columns 1 and 2, we find a positive and highly significant relation between the propensity to use Cov-Lite loan structures and our measure of sponsor reputation. As shown in the Internet Appendix, we find similar results using our other measures of sponsor reputational capital. In columns 3 and 4, we also examine the relation between the sponsors' propensity to use Cov-Lite structures and the default rate of portfolio companies of the sponsor. As shown, we find a negative and statistically significant relationship between a sponsor's propensity to borrow using Cov-Lite structures and past loan performance. Specifically, depending on the specification, the coefficient estimates imply that for a 1% increase in the default rate is associated with a decline in the propensity in the sponsor's use of Cov-Lite structures by between 6% and 9%. Note that, since we exclude debtor-in-possession loans from our sample the findings in columns 3 and 4 suggest that poor performance of past loans to firms impact their sponsor's ability to borrow Cov-Lite for other firms that it backs. Overall, these findings are consistent with Hypothesis 1 that sponsor reputational capital is related to covenant structure.

One concern with the analysis contained in Table 5 is that changes in the propensity to borrow Cov-Lite may be correlated with other sponsor-level changes in borrowing (such as loan size or the riskiness of the borrowing firm). As a result, there is a potential omitted variable bias. To address this concern, we examine whether the likelihood of sponsors switching from Cov-Lite to Cov-Heavy borrowing is related to defaults among their portfolio firms. For this analysis we

compare sponsors that switch from Cov-Lite borrowing to Cov-Heavy borrowing to sponsors that keep borrowing Cov-Lite, as presumably both types of sponsors had sufficient reputational capital to borrow Cov-Lite in prior years. If defaults among a sponsor's portfolio of companies diminishes their reputational capital, we would expect a positive relation between the likelihood of switching and the frequency of defaults in past years. To identify switching and non-switching sponsors we only focus on prior deals which contained a loan tranche that was Cov-Lite. We define switchers (non-switchers) as sponsors whose current deal is cov-heavy (Cov-Lite) and the last deal in the prior calendar year was Cov-Lite.[29]

Panel A of Table 6 provides summary statistics concerning switchers and non-switchers. Loan information is for the current loan. As shown, average default rates in the prior year are significantly greater for switchers than for non-switchers. We also find that average deal size is smaller, term to maturity shorter and average all-in-drawn spreads are higher for switchers than for non-switchers. Additionally, switchers tend to seek financing for riskier portfolio firms, as shown by the higher average numerical credit rating.

In Panel B of Table 6 we present estimates of a linear probability model of the propensity to switch. We include in the regression controls for differences in deal characteristics, differences in firm-level credit ratings of the borrowing firm. Moreover, we control for changing market conditions through changes in the share of institutional loans to total leveraged loans. As shown in column 1, consistent with defaults diminishing reputational capital we find that the likelihood of a sponsor switching from a Cov-Lite to cov-heavy loan structure is positively related to the prior year default rate among portfolio companies. Furthermore, in column 2, we find similar results when we include controls for changes in the sponsor's reputation, deal characteristics, and firm-level credit ratings.

4.4 All-in-drawn spreads and covenant structure.

Previous studies examine the relation between all-in-drawn spreads and Cov-Lite loan structure by pooling institutional and pro-rata loan tranches (see, for example, Billett et al. (2016)

[29] As a robustness, we alternatively define switchers (non-switchers) as sponsors whose first deal in a calendar year is cov-heavy (Cov-Lite) and the last deal in the prior calendar year is Cov-Lite in the Online Appendix. For both definitions, if a sponsor did not access the leverage loan market in the prior year, we use the last available deal prior to the current year. Additionally, if there are multiple deals on the same date that qualify as the last (first) deal we pick one at random.

and Becker and Ivashina (2016)). These studies generally find significantly higher spreads for Cov-Lite loan tranches. However, in our sample Cov-Lite structures are almost exclusively associated with institutional tranches (among all Cov-Lite loans in our sample only 3% are pro-rata loans). As a result, it is unclear whether finding higher spreads for Cov-Lite loans reflects differences between the covenant structure alone or also reflects other differences between deals with institutional tranches and pro-rata tranches.[30] Moreover, even if all-in-drawn spreads for Cov-Lite institutional loans are higher than for covenant-heavy pro-rata loans, the total cost of borrowing may still be lower for deals with a Cov-Lite structure, if among institutional loans Cov-Lite structures have lower spreads. Finally, prior studies are based on samples that generally end in 2013, before the widespread use of Cov-Lite structures and include periods with less institutional activity in the loan market.

Hypothesis 2 predicts that spreads will be lower for Cov-Lite loans if reputational capital substitutes for maintenance covenants, and covenant violations involve, in some states, inefficient liquidation. To test Hypothesis 2 we examine the relation between all-in-drawn spreads and Cov-Lite structures. In our first set of tests we limit the analysis to deals that include a first-lien institutional term loan tranche since Cov-Lite features are rare in deals with only pro-rata tranches. We include in the regression analysis controls for sponsor reputation, borrower and sponsor banking relationships, syndicate composition and maturity. In addition, since some deals include a second-lien tranche and for some LBOs and M&As senior unsecured or subordinated bonds, we include in some specifications a variable denoted as *Cushion*, which is the dollar amount of debt junior to first-lien loans relative to the total dollar amount of debt issued. We include in all of the regressions year, industry, ratings and deal size quartile fixed effects.[31]

Table 7 presents our results for sponsored deals using our deal-level sample related to acquisition financing. In columns 1 to 2 the dependent variable is the natural logarithm of the value-weighted all-in-drawn spread across all term loan B tranches of a deal.[32] The variable of interest is a dummy variable for whether the institutional loan is Cov-Lite. As shown, consistent with Hypothesis 2, we find that spreads on Cov-Lite loans are significantly lower than spreads on

[30] For example, Lim, Minton and Weisbach (2014), find that, on average, institutional tranches have higher spreads compared to pro-rata term loan tranches in the same deal. They conjecture that this difference arises from greater information asymmetries associated with institutional tranches.

[31] As mentioned before, we include an unrated category as part of the ratings fixed effect. However, our results are robust to excluding unrated firms.

[32] We also value-weight the maturity across all term loan B tranches and include this variable as a control.

institutional loans with maintenance covenants. For example, for term B loans, we find controlling for credit rating, loan size, spreads on cov lite loans are about 12% lower than the spread on term B loans with covenants.

While the propensity to use Cov-lite is a function of the reputation of the sponsor, sponsor reputation may be also directly related to loan spreads since it can also reflect the skill of the PE firm. In columns 3 and 4 we therefore include the measure of sponsor reputation in our model. As shown, we find that spreads are negatively and significantly related to sponsor reputation and we continue to find lower spreads on Cov-Lite loans. Consistent with prior studies we also find that stronger borrower-bank relationships are associated with lower all-in-drawn spreads. In contrast, for term B loans we find no significant relation between spreads and sponsor bank relationships.

In columns 5 to 8 we examine the relation between the total first-lien borrowing cost and Cov-Lite structures. For this analysis the dependent variable represents the natural logarithm of the value-weighed all-in-drawn spread across all first-lien loan tranches in a deal. We conduct this second test of Hypothesis 2, to rule out the possibility that pro-rata tranches, which are typically held by bank lenders, earn higher spreads associated with Cov-Lite deals. As shown, consistent with Hypothesis 2, we find that first-lien borrowing costs are significantly lower for deals with Cov-Lite tranches than deals without a Cov-Lite tranche. These findings suggest that the lower spreads associated with Cov-Lite institutional tranches are not offset by higher spreads for the pro-rata tranches in Cov-Lite deals.

Finally, because our analysis in Section 4.3 suggests that shocks to sponsors' reputational capital might lead them to switch between Cov-Lite and Cov-Heavy borrowing, we also examine how switching from Cov-Lite (Cov-Heavy) to Cov-Heavy (Cov-Lite) borrowing is related to changes in loan spreads. These results are displayed in Table 8. In columns 1 through 2 we compare how the loans spreads change for sponsors that switch from borrowing Cov-Lite to borrowing Cov-Heavy, compared to sponsors that keep borrowing Cov-Lite based on the assumption that both types of sponsors had sufficient reputational capital to borrow Cov-Lite in prior years. As shown, sponsors that switch to Cov-Heavy structures face increased borrowing costs relative to sponsors that continue to borrow Cov-Lite, even when controlling for differences in loan characteristics and credit risk. In contrast, in columns 3 through 4 we compare how the loans spreads change for sponsors that switch from borrowing Cov-Heavy to borrowing Cov-Lite, compared to sponsors that keep borrowing Cov-Heavy based on the assumption that both types of

sponsors had insufficient reputational capital to borrow Cov-Lite in prior years. As shown, we find that sponsors that switch to Cov-Lite structures are able to reduce their borrowing costs relative to sponsors that continue to borrow Cov-Heavy.

5. Summary and Conclusion

In this paper we construct a simple model to illustrate how a PE firm's reputational capital can serve as a substitute for maintenance covenants in mitigating the agency cost of lending. The key insight of the model is that that reliance on reputational capital varies with the costs of covenant enforcement. Our model leads to several testable hypotheses concerning the use of Cov-Lite loan structures and the relationship between loan spreads and covenant structure. Using a large database of leveraged loans, we find that the propensity to use Cov-Lite loan structures is related to PE sponsors activity in the loan market. More important, we find that poor performance of loans to firms backed by a PE sponsors is associated with an increase in the frequency of switching from Cov-Lite to Cov-Heavy loan structures for future loans backed by the same sponsor. Thus, we provide new evidence of sponsor-level reputational harm as a consequence of poor loan performance. Consistent with the importance of reputational capital we also find that loan spreads are lower on Cov-Lite term loans relative to term loans with maintenance covenants.

We conclude with a word of caution. While our results suggest that reputational capital and covenant are substitutes, the effectiveness of reputation in mitigating moral hazard is likely to vary over the business cycle. The value of reputational capital depends on the future expected rents from access to the levered loan market and is therefore likely to be least valuable during economic downturns when expected future deal flow is low. As a result, the value of covenant protection is likely to be counter cyclical.

REFERENCES

Baker, George, Robert Gibbons, and Kevin J. Murphy, 2002, Relational Contracts and the Theory of the Firm, The Quarterly Journal of Economics, 117(1), 39-84

Becker, Bo, and Victoria Ivashina, 2016, Covenant-light Contracts and Creditor Coordination, Working Paper, Stockholm School of Economics and Harvard University

Berlin, Mitchell, and Jan Loeys, 1988, Bond Covenants and Delegated Monitoring, The Journal of Finance, 43(2), 397-412

Berlin, Mitchell, Greg Nini, and Edison Yu, 2019, Concentration of Control Rights in Leveraged Loan Syndicates, Forthcoming Journal of Financial Economics

Bharath, Sreedhar T., Sandeep Dahiya, Anthony Saunders, and Anand Srinivasan, 2007, So What Do I Get? The Bank's View of Lending Relationships, Journal of Financial Economics, 85(2), 368-419

Billett, Matthew T., Redouane Elkamhi, Latchezar Popov, and Raunaq S. Pungaliya, 2016, Bank Skin in the Game and Loan Contract Design: Evidence from Covenant-Lite Loans, Journal of Financial and Quantitative Analysis, 51(3), 839-873

Bulow, Jeremy and Kenneth Rogoff, 2015, Why Sovereigns Repay Debts to External Creditors and Why it Matters, https://voxeu.org/article/why-sovereigns-repay-debts-external-creditors-and-why-it-matters

Chava, Sudheer, and Michael R. Roberts, 2008, How Does Financing Impact Investment? The Role of Debt Covenants, The Journal of Finance, 63(5), 2085-2121

Christensen, Hans B., and Valeri V. Nikolaev, 2012, Capital versus Performance Covenants in Debt Contracts, Journal of Accounting Research, 50(1), 75-116

Demerjian, Peter R., 2011, Accounting Standards and Debt Covenants: Has the 'Balance Sheet Approach' Led to a Decline in the Use of Balance Sheet Covenants?, Journal of Financial and Quantitative Analysis, 52(2-3), 178-202

Davis, Steven J, John Haltiwanger, Kyle Handley, Ben Lipsius, Josh Lerner, and Javier Miranda, 2019, The Economic Effects of Private Equity Buyouts, Working Paper, Harvard University.

Diamond, Douglas W., 1989, Reputation Acquisition in Debt Markets, Journal of Political Economy, 97(4), 828-862

Eaton, Jonathan, and Mark Gersovitz, 1981, Debt with Potential Repudiation: Theoretical and Empirical Analysis, The Review of Economic Studies, 48(2), 289-309

Grossman, Herschel and J Van Huyck, 1988, Sovereign Default as a Contingent Claim: Excusable Default, Repudiation, and Reputation, 78 (4) , 1088-1097.

Gârleanu, Nicolae, and Jeffrey Zwiebel, 2008, Design and Renegotiation of Debt Covenants, The Review of Financial Studies, 22(2), 749–781

Halac, Marina, 2012, Relational Contracts and the Value of Relationships, American Economic Review, 102(2), 750-779

Huang, Rongbing, Jay R. Ritter, and Donghang Zhang, 2016, Private Equity Firms' Reputational Concerns and the Costs of Debt Financing, Journal of Financial and Quantitative Analysis, 51(1), 29-54

Ivashina, Victoria, and Anna Kovner, 2011, The Private Equity Advantage: Leveraged Buyout Firms and Relationship Banking, The Review of Financial Studies, 24(7), 2462–2498

Klein, Benjamin, and Keith Leffler, 1981, the Role of Market Forces in Assuring Contractual Performance, Journal of Political Economy, 89(4), 615-641

Lim, Jongha, Bernadette A. Minton and Michael Weisbach, 2014, Syndicated Loan Spreads and the Composition of the Syndicate, Journal of Financial Economics, 111(1), 45-69

MacLeod, Bentley, 2007, Reputations, Relationships, and Contract Enforcement, Journal of Economic Literature, 45(3), 595-628

MacLeod, Bentley, and James Malcomson, 1998, Motivation and Markets, American Economic Review, 88(3), 388-411

Malenko, Andrey, and Nadya Malenko, 2015, A Theory of LBO Activity Based on Repeated Debt-Equity Conflicts, Journal of Financial Economics, 117, 607-627

Posner, Eric A., 2003, Economic Analysis of Contract Law after Three Decades: Success or Failure? The Yale Law Journal, 112(4), 829-880

Prilmeier, Robert, 2017, Why Do Loans Contain Covenants? Evidence from Lending Relationships, Journal of Financial Economics, 123, 558-579

Prilmeier, Robert and Rene Stulz, 2019, Securities laws and the choice between loans and bonds for highly levered firms, NBER working paper.

Rajan, Raghuram, and Andrew Winton, 1995, Covenants and Collateral as Incentives to Monitor, The Journal of Finance, 50(4), 1113-1146

Roberts, Michael R., 2015, the Role of Dynamic Renegotiation and Asymmetric Information in Financial Contracting, Journal of Financial Economics, 116(1), 61-81

Sobel, Joel, 2006, For Better or Forever: Formal versus Informal Enforcement, Journal of Labor Economics, 24(2), 271-297

Telser, Lester, 1981, A Theory of Self-Enforcing Agreements, Journal of Business, 53(1), 27-44

Appendix A

Proof of Proposition 1: If a PE firm chooses to stick with a strategy where it does not divert value in the bad state and uses the same level of debt $D > (1-\lambda)X_B$ for all its targets it will expect to extract rents of

$$\max(X_B - D, 0) + \frac{\gamma}{r} p_i E[\Delta q_i \cdot \Delta X + q_i \cdot g(D) - q_T g_0].$$

Alternatively, if a PE firm chooses to divert it can only expect to extract rents of

$$\lambda X_B + \frac{\gamma}{r} p_i E[\Delta q_i \cdot \Delta X + q_i \cdot g_0 - q_T g_0].$$

Thus, a PE firm will value reputation if

$$\lambda X_B - \max(X_B - D, 0) < \frac{\gamma}{r} p_i E[q_i](g(D) - g_0).$$

And given our assumptions about g a PE firm will value reputation if

$$\lambda X_B < \frac{\gamma}{r} p_i E[q_i](g(D^*) - g_0)$$

□

Proof of Lemma 1: Note that the net benefits of borrowing with covenants are increasing in ρ and that they are positive for $\rho = 1$. Therefore, it will be sufficient to solve the following inequality for ρ

$$\big(\rho + q_T(1-\rho)\big)\big(X_G + g(D^*)\big) + \big(1 - \rho - q_T(1-\rho)\big)\lambda X_B - (X_G + g_0) > 0.$$

This leads to

$$\rho > \frac{X_g + g_0 - q_T\big(X_G + g(D^*)\big) - (1-q_T)\lambda X_B}{(1-q_T)\big(X_G + g(D^*)\big) - (1-q_T)\lambda X_B}.$$

The right hand side of the inequality is declining in q_T and thus is maximized at $q_T = 0$.

□

Proof of Corollary 1: Similar to the case of the target as an independent firm, for a given target and level of debt the PE firm i will be able to raise the following amount from creditors

$$\frac{q_i\big(\rho + q_i(1-\rho)\big)\min(X_G + g(D), D) + (1-q_i)\min(X_B, D)}{1+r}$$

Therefore, the present value of the firm's equity is

$$\frac{q_i\big(\rho + q_i(1-\rho)\big)\max(X_G + g(D) - D, 0) + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B + (1-q_i)\max(X_B - D, 0)}{1+r}$$

$$- \frac{q_i\big(\rho + q_i(1-\rho)\big)\min(X_G + g(D), D) + (1-q_i)\min(X_B, D)}{1+r}$$

$$= \frac{q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D)\big) + (1-q_i)X_B + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B}{1+r}.$$

Which can be rewritten as

$$V_0 + \frac{1}{1+r}\big[q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D)\big) + (1-q_i)X_B + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B - q_T(X_G + g_0) - (1-q_T)X_B\big]$$

As before, the net benefits of borrowing with covenants are maximized at D^*. However, for PE firms to prefer covenants over borrowing without covenants it must also be the case that the net benefits of borrowing D^* with covenants must exceed the benefits of borrowing $D = (1-\lambda)X_B$ without covenants:

$$\Delta q_i \cdot \Delta X + q_i \cdot g_0 - q_T g_0 < q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D)\big) + (1-q_i)X_B + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B - q_T(X_G + g_0) - (1-q_T)X_B$$

□

Proof of Corollary 2: Note that it is sufficient to prove that

$$E\big[q_i\big(X_G + g(D^*)\big) - \big(q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D^*)\big) + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B\big)\big] < E[q_i(g(D^*) - g_0)].$$

Or equivalently that

$$0 < E\big[q_i(g(D^*) - g_0) - q_i\big(X_G + g(D^*)\big) + \big(q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D^*)\big) + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B\big)\big].$$

Which can be rewritten as

$$0 < E\big[q_i\big(\rho + q_i(1-\rho)\big)\big(X_G + g(D^*)\big) + q_i\big(1-\rho-q_i(1-\rho)\big)\lambda X_B - q_i(X_G + g_0)\big].$$

And which, as we have established in the proof of Corollary 1, must hold if $\rho > \rho_T$.

□

Appendix B1: Variable Definitions

Table B1. Definitions of Variables used in this Study

Variable	Source	Definition
Deal Size (in $mn)	S&P LCD	Sum of amounts of RC, TLA, TLB, TLC, TLD, Second Lien tranches and Related Bonds amounts. Adjusted for inflation.
Deal has Cov-Lite Tranche	S&P LCD	Dummy = 1 if Deal contains a Cov-Lite tranche
Deal has Pro-Rata Tranche	S&P LCD	Dummy = 1 if Deal contains a RC or TLA tranche
Deal has Inst. Tranche	S&P LCD	Dummy = 1 if Deal contains a TLB, TLC, TLD or Second Lien tranche
Deal has Sec. Lien Tranche	S&P LCD	Dummy = 1 if Deal contains a Second Lien tranche
Deal has Traded Tranche	S&P LCD	Dummy = 1 if Deal has a break date and the break date is within 6 months from the launch date.
Deal is to Unrated Firm	S&P LCD	Dummy = 1 if S&P Corporate Credit Rating is "NA"
Perc. of Deal Cov-Lite	S&P LCD	Ratio of Cov-Lite Amount to Deal Size
Perc. of Deal Pro-Rata	S&P LCD	Ratio of Sum of Amounts of RC and TLA tranches to Deal Size
Cushion (in %)	S&P LCD	Ratio of Sum of Amounts of Second Lien Tranche and Related Bond to Deal Size
First Lien Term	S&P LCD	Value-weighted Term of First Lien Tranches (i.e. RC, TLA, TLB, TLC, TLD)
Pro-Rata Term	S&P LCD	Value-weighted Term of Pro-Rata Tranches (i.e. RC and TLA)
TLB-Term	S&P LCD	Value-weighted Term of TLB, TLC, and TLD Tranches
First Lien Spread	S&P LCD	Value-weighted Spread of First Lien Tranches (i.e. RC, TLA, TLB, TLC, TLD)
Pro-Rata Spread	S&P LCD	Value-weighted Spread of Pro-Rata Tranches (i.e. RC and TLA)
TLB-Spread	S&P LCD	Value-weighted Spread of TLB, TLC, and TLD Tranches
No. of Lenders	DealScan	Number of Distinct Lenders in LenderShares file in DealScan for each deal (We aggregated distinct facility lenders at package level when the package is issued. We then winsorized the variable at 1%.)
Issuer-Bank Relationship	DealScan	We used the Bharath et al (2007)'s methodology to calculate the relationship measure. For each facility at package initiation, we identified distinct leads (i.e. lenders without "Participant" role). Then, for each deal, we look back up-to 3 years and identify all loans of same firm. We flagged facilities that are underwritten by one of current deal's leads as "relationship loan". We defined issuer-lead bank relationship measure as ratio of number of relationship loans in prior 3 years to number of loans issuer raised in prior 3 years.
Sponsor-Bank Relationship	DealScan	Similar to Bharath et al (2007), for each sponsored package, we identified sponsor-lead bank (i.e. bank with role other than "Participant"). Then, for each deal-sponsor pair, we look back up-to 3 years and identify all loans of same sponsor. We flagged facilities that are underwritten by one of current deal's leads as "relationship loan". We defined sponsor-lead bank relationship measure as ratio of number of relationship loans in prior 3 years to number of loans a sponsor raised in prior 3 years. If there are multiple sponsors in a deal, we use the relationship measure of the sponsor that is reported in S&P LCD.
Sponsor Market Share	S&P LCD	100 x (Ratio of Sponsors Number of Deals in prior 3 years to Total Sponsored Number of Deals in prior 3 Years)
Log(1+Number of Deals)	S&P LCD	Logarithm of 1 + Number of Sponsor's Deals in Prior 3 Years
PEI Top 30 Ranking	PEI	Dummy = 1 if sponsor is ranked in the top 30 in the PEI ranking in a given year. For robustness check, we also generate this dummy for top 10 and top 50.
Public Issuer	S&P LCD & Compustat	Dummy = 1 if the issuer is linked to Compustat. (in order to avoid misclassify public to private LBO deals as a public deal, we use one year lag. We define an issuer as public issuer if the issuer is matched to Compustat a year before the deal date)
Default Rate	S&P, Moody's Default Risk	Ratio of Number of Sponsor's Defaulted Firms in (t-1) to Total Number of Sponsor's Loan Deals at (t-2), (t-3), and (t-4).
Sponsored Firm	S&P LCD	Dummy = 1 if deal has a sponsor
Institutional Share	S&P LCD	Annual Institutional Loan Issuance / (Annual Institutional & ProRata Loan Issuance)
Crisis	S&P LCD	Dummy = 1 if year is 2008 or 2009

Appendix B2. Default and Bankruptcy Measure

For issuers in non-regulated industries (i.e. excluding financial services and utilities) that are active in the leveraged loan market we obtain data on defaults from three sources. Our main data source is Moody's Default Risk database for which we have data on payment defaults, bankruptcies, and other debt restructurings from 2004 through 2014. We supplement the Moody's data with data on bankruptcies involving leveraged loans from S&P's LCD database from 2004 to 2018, as well as with data on payment defaults, bankruptcies, and other restructurings obtained from S&P's Annual Global Corporate Default Studies and Rating Transitions from 2010 through 2018.[33] We combine these three data sources and define defaults to include payment defaults, bankruptcies, distressed exchanges, and other restructurings.

We next identify whether the defaulting issuers are sponsored by private equity firms. Out of the three data sources only S&P's LCD database identifies the sponsor of the issuer at the time of default. For the remaining default events from the two other data sources we assign the sponsor associated with the last leveraged loan or high-yield bond in S&P's LCD database that the issuer originated up to the two months prior to the default event.[34] A potential concern with this approach is that the ownership structure of the issuer might have changed between the last loan or bond issuance covered by S&P's LCD database and the time of the default. However, the time between the last prior debt issuance and the default date is relatively short with about three years at the median and about 5.5 years at the 90th percentile, compared to the median loan maturity by sponsored firms in our sample of about 5 years, which should help mitigate this concern.

Our final sample consists of 415 default events by 278 issuers and involving 146 distinct private equity sponsors. Out of the 415 default events, 199 are bankruptcies, 98 are payment defaults, 116 are distressed exchanges, and two are other restructurings. While the number of distinct sponsors that have at least one default is relatively large, the defaults are heavily concentrated among sponsors with the highest market shares. For example, over the sample period the average market share of private equity firms that have experienced 1 default or less was 0.28%, compared to 0.72% for private equity firms that experienced at least one default.

[33] S&P's Annual Global Corporate Default Studies and Rating Transitions were obtained from www.spratings.com
[34] We impose this filter to avoid assigning the sponsors associated with the financing in a restructuring.

Appendix B3: Matching DealScan and S&P's LCD Data Sets

In order to match LCD to DealScan we followed a multi-step matching approach. We initially link firms in S&P LCD to firms in DealScan. In the second step, we matched deals in LCD to deals in DealScan.

We first create a mapping between firms in two data sets. We followed the steps below.

- We initially match firms that have same deal characteristics (i.e. deal amount, tranche amount, spreads on tranches, and tranche maturities) in similar time periods. Specifically, LCD provides deal's launch date while DealScan provides loan start date. As there might be a gap between launch date and loan start date, we try to match LCD deals to DealScan deals that are started within [-3,+3] months interval of LCD's launch date. Based on deal characteristics, we linked firms in LCD to firms in DealScan. This step enable us to match firms with different names in both data sets. For example, we were able to match "CiCi Enterprises LP" in LCD to "Awesome Acquisition Co Lp" in DealScan, which is a parent entity of Cici's Pizza.
- In the next step, we match firms that have a deal in similar time periods and have same sponsor-lead bank pair. LCD provides only one sponsor and one lead bank for each deal. As long as the sponsor-lead bank pair was identified in DealScan, we flagged matches to manually check for the accuracy. Note that DealScan and LCD might have different names for banks or sponsors. For example, as bank name, DealScan reports "HSBC Banking Group" while LCD reports "Hongkong and Shanghai Banking". Another example, as sponsor name, DealScan reports "Apollo Global Management" or "Apollo Investment Corp" etc. while LCD reports "Apollo Management". We manually linked DealScan bank and sponsor names to LCD's bank and sponsor names. We manually checked the accuracy of firm matches.
- In the final step, we perform fuzz name matching algorithm using SAS's SPEDIS and COMPGED commands separately. We manually check the accuracy of matches.

We were able to map 93% of LCD firms to DealScan firms following the above matching steps. In the second step, we try to match deals/loans using our firm level mapping.

In the following exercise, using our firm level mapping between DealScan and LCD, we matched deals. The advantage of this method was that if certain loan characteristics are missing in DealScan or LCD, we can still match the deals using deal dates and firm matches. In addition, we are also able to match deals that have slightly different loan type and loan amount information in both data sets. The matching rate in our deal-level sample is 76%.

Figure 1. This figure presents the time series of the percentage of deals in our database of leveraged loans that have an institutional tranche (solid line) and the percentage of deals that have at least one Cov-Lite tranche (dashed line).

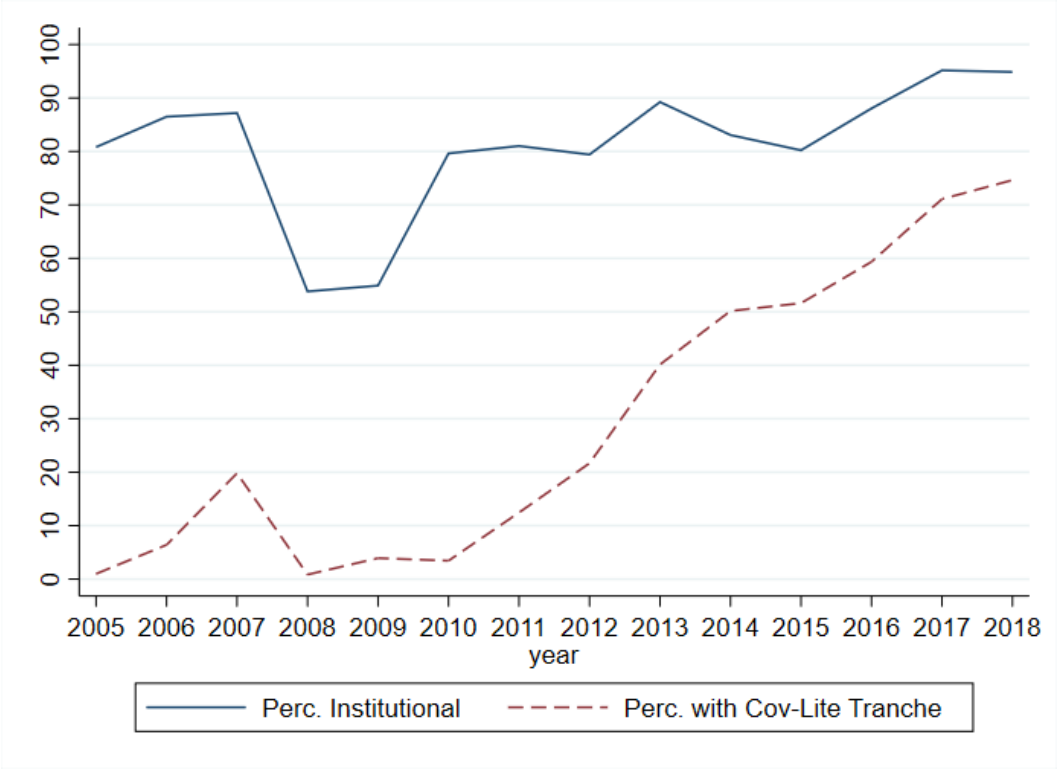

Figure 2: Cov-Lite Discount/Premium: Cross-Sectional Evidence.
This figure presents quarterly estimates of the difference between loan spreads on Cov-Heavy and Cov-Lite institutional term loans. Each bar in the figure displays the coefficient estimate on a cov-lite dummy from quarterly cross-sectional regressions in which loan spread is the dependent variable. The sample consists entirely of first-lien term B loans. The cross-Sectional regressions contain the following control variables: the natural logarithm of the inflation adjusted loan amount, the natural logarithm of the loan maturity, S&P's loan level rating fixed effects and loan purpose fixed effects. Standard errors are heteroscedasticity robust.

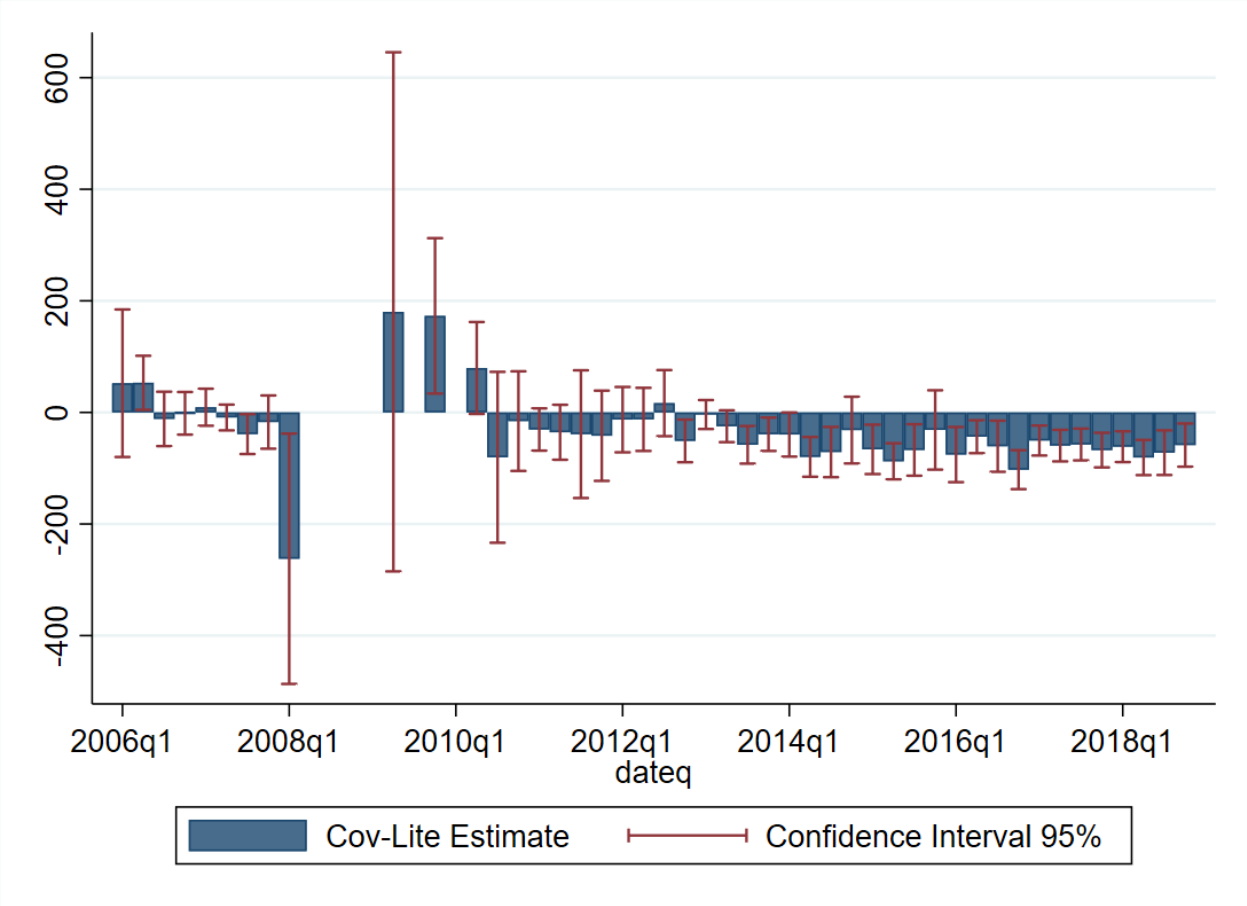

Table 1. Summary Statistics of Annual Activity in the Leveraged Loan Market

This table presents annual summary statistics of the loan market activity of sponsors and standalone borrowers. Panel A displays summary statistics where deals are aggregated by year for each sponsors or standalone borrower. Stars indicate whether the means are significantly different to the means of deals backed by private equity sponsors from a *t*-test assuming unequal variances. Panel B displays the correlations of our measures of reputation for private equity sponsors. Panel C displays summary statistics for the number of follow-on deals by sponsors and standalone issuers after a deal obtained for acquisition financing. The reputation measures are defined in Table B1. Statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% level, respectively.

Panel A: Summary Statistics						
	PE Sponsors		Private Issuers		Public Issuers	
	Mean	Median	Mean	Median	Mean	Median
Annual Deal Volume and Numbers						
Total $-Volume of Deals	1814.04	618.55	711.39***	405.10	1132.73***	637.72
Average $-Volume of Deals	595.60	361.78	639.79	383.40	1005.67***	607.14
Number Deals	2.60	2.00	1.09***	1.00	1.10***	1.00
Number LBOs Deals	0.65	0.00	0.00***	0.00	0.00***	0.00
Number M&A Deals	0.53	0.00	0.25***	0.00	0.31***	0.00
Number Recap Deals	0.41	0.00	0.13***	0.00	0.04***	0.00
Number Refi Deals	0.91	0.00	0.55***	1.00	0.66***	1.00
Annual Deal Characteristics						
% of Deals with Cov-lite Tranche	29.14	0.00	21.84***	0.00	23.22***	0.00
% of Deals with Inst. Tranche	92.39	100.00	86.08***	100.00	64.53***	100.00
% of Deals with Traded Tranche	58.54	66.67	55.99	100.00	48.91***	41.67
% of Deals to Unrated Firms	28.35	0.00	35.21***	0.00	22.78***	0.00
Annual Sponsor Reputation Measures						
Market Share (in %)	0.62	0.35				
LN(1+No. Deals)	1.39	1.39				
PEI Top 30	0.17	0.00				
Default Rate	0.02	0.00				
No. Observations	1658		632		2004	
No. Unique Sponsors/Issuers	399		424		1021	

Panel B: Correlations between Loan Market Activity Measures			
	Market Share (in %)	LN(1+No. Deals)	PEI Top 30
Market Share (in %)	1.00		
LN(1+No. Deals)	0.86	1.00	
PEI Top 30	0.52	0.42	1.00

Panel C: Number of Deals over 3 Years Following LBO or M&A			
	Mean No. of Deals	Median No. Deals	N
PE Sponsors	5.50	3.00	484
Private Issuers	0.04	0.00	147
Public Issuers	0.19	0.00	451

Table 2. Summary Statistics for Sponsored Deals

This table presents summary statistics for the sponsored deals in our sample. The sample is partitioned into deals that are related to acquisition financing (columns 1-3) and into all deals regardless of their purpose (columns 4-6). The number of observations for *% Of Deal Cov-Lite* and *% Of Deal Pro-Rata* are lower because these measures are conditional on deals having a Cov-Lite or pro-rata tranche, respectively. The number of observations for the spreads and terms of different tranches is slightly lower than the overall number of observations displayed in the Table because not all deals have both pro-rata and term loan tranches. All variables are defined in Table B1.

	LBO & M&A			All Deals		
	(1)	(2)	(3)	(4)	(5)	(6)
	Mean	Median	N	Mean	Median	N
Deal Size	702.07	335.46	1955	698.49	379.73	4306
Deal has Cov-Lite Tranche	0.39***	0.00	1955	0.41	0.00	4306
Deal consists of only Cov-Lite Tranche	0.17	0.00	1955	0.27	0.00	4306
Deal has Pro-Rata Tranche	0.72***	1.00	1955	0.55	1.00	4306
Deal has RC Tranche	0.72***	1.00	1955	0.54	1.00	4306
Deal has Inst. Tranche	0.95*	1.00	1955	0.95	1.00	4306
Deal has Sec. Lien Tranche	0.26***	0.00	1955	0.19	0.00	4306
Deal has Traded Tranche	0.62***	1.00	1955	0.65	1.00	4306
Deal is to Unrated Firm	0.25***	0.00	1955	0.20	0.00	4306
% Of Deal Cov-Lite	78.07***	81.17	762	84.44	100.00	1777
% Of Deal Pro-Rata	21.32***	13.10	1410	24.49	13.64	2362
Cushion (in %)	10.36***	0.00	1955	7.91	0.00	4306
First-Lien Maturity (in years)	6.03***	6.04	1949	5.80	5.91	4274
Pro-Rata Maturity (in years)	5.18***	5.00	1410	5.07	5.00	2362
Term Loan B Maturity (in years)	6.23***	6.40	1846	5.97	6.00	4027
First-Lien Spread (in bps)	384.47***	375.00	1949	376.77	356.09	4274
Pro-Rata Spread (in bps)	359.94	350.00	1410	357.23	350.00	2362
Term Loan B Spread (in bps)	393.15***	375.00	1846	385.19	375.00	4027
No. of Lenders	5.09*	4.00	1955	4.97	4.00	4306
Issuer-Bank Relationship	0.45***	0.00	1955	0.60	1.00	4306
Sponsor-Bank Relationship	0.32***	0.31	1955	0.34	0.33	4306

Table 3. PE Sponsor Reputation and the Propensity of using Cov-Lite Structures in Deals

This table presents linear probability models where the dependent variable takes a value of one if a deal contains a covenant-lite loan tranche and zero otherwise. The sample consists of deals by sponsored firms. Columns 1 and 2 restrict the sample to deals for acquisition financing (LBOs and M&A), while columns 3 and 4 contain all deals. All independent variables are defined in Table B1. Ratings fixed effects are based on firm ratings and include a category for unrated firms. Standard errors are clustered by sponsor. Absolute values of *t*-statistics are presented in parentheses and statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% level, respectively.

	LBO & M&A		All Deals	
	(1)	(2)	(3)	(4)
Market Share (in %)	0.049***	0.044***	0.050***	0.045***
	(3.88)	(3.46)	(4.67)	(4.14)
LN(No. Lenders)		0.041***		0.031***
		(2.82)		(2.72)
Borrower-Bank Relationship		0.013		0.018
		(0.73)		(1.43)
Sponsor-Bank Relationship		0.004		0.033
		(0.11)		(1.28)
Deal has Traded Tranche		0.065***		0.099***
		(2.82)		(6.05)
Ratings FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
Size Quartile FEs	Yes	Yes	Yes	Yes
Adj. R2	0.52	0.53	0.48	0.49
N	1955	1955	4306	4306

Table 4. PE Sponsor Reputation and the Propensity of including Cov-Heavy Revolvers

This table presents linear probability models where the dependent variable takes a value of one if a deal contains a RC tranche and zero otherwise. The sample consists of Cov-Lite deals by sponsored firms. Columns 1 and 2 restrict the sample to deals for acquisition financing (LBOs and M&A), while columns 3 and 4 contain all deals. All independent variables are defined in Table B1. Standard errors are clustered at the sponsor level. Absolute values of *t*-statistics are presented in parentheses and statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% level, respectively.

	LBO & M&A		All Deals	
	(1)	(2)	(3)	(4)
Market Share (in %)	-0.042***	-0.033***	-0.050***	-0.039***
	(3.84)	(3.13)	(5.57)	(4.28)
LN(No. Lenders)		-0.025		0.097***
		(1.19)		(6.31)
Borrower-Bank Relationship		-0.256***		-0.416***
		(7.78)		(15.68)
Sponsor-Bank Relationship		-0.049		-0.100***
		(0.80)		(2.64)
Deal has Traded Tranche		0.050		0.096***
		(1.62)		(4.04)
Ratings FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
Size Quartile Fes	Yes	Yes	Yes	Yes
Adj. R2	0.43	0.49	0.21	0.35
N	762	762	1777	1777

Table 5. Propensity to Use Cov-Lite Structures at the Annual Sponsor Level

This table presents linear models where the dependent variable is the annual fraction of deals with a cov-lite tranche relative to all deals by a sponsor. The sample is conditional on at least one deal by the sponsor over the last four years. *L1 Inst. Share* the institutional share lagged by one year. All other independent variables are defined in Table B1. Standard errors are heteroscedasticity robust. Absolute values of *t*-statistics are presented in parentheses and statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
Market Share (in %)	0.109***	0.093***		
	(9.29)	(10.05)		
Default Rate			-0.096**	-0.060*
			(2.40)	(1.75)
L1 Inst. Share	2.200***		2.185***	
	(19.58)		(19.15)	
Crisis	-0.255***		-0.245***	
	(7.23)		(6.87)	
Year FEs	No	Yes	No	Yes
Adj. R^2	0.26	0.47	0.22	0.44
N	1268	1268	1268	1268

Table 6. Propensity to Switch to Cov-Heavy Structures

We define switching (non-switching) sponsors as sponsors whose current deal is cov-heavy (cov-lite) and the last deal in the prior calendar year is cov-lite. The sample is limited to deals with an institutional term loan tranche. if there is no deal in the prior year we benchmark against the last deal before the current year. Panel A of this table displays the mean characteristics associated with deals in the current year and Panel B present the results of a linear probability model of switching. All independent variables are defined in Table B1. Standard errors are heteroscedasticity robust. Absolute values of *t*-statistics are presented in parentheses and statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% level, respectively.

Panel A: Summary Statistics for Current Deals (Mean Values)			
	Switchers	Non-Switchers	Diff.
Default Rate	0.05	0.03	0.02**
Market Share	1.62	1.64	-0.01
LN(Deal Size)	5.73	6.13	-0.40***
Rating	8.68	7.9	0.78***
LN(First Lien Spread)	6.03	5.89	0.14***
LN(First Lien Term)	1.68	1.77	-0.09***
Deal Has Traded Tranche	0.67	0.84	-0.16***
Panel B: Regression Model for Propensity to Switch			
		(1)	(2)
Default Rate		0.383***	0.395***
		(2.85)	(2.96)
Δ Market Share			0.013
			(0.51)
Δ LN(Deal Size)			0.003
			(0.38)
Δ Rating			0.027***
			(3.35)
Δ LN(First Lien Spread)			0.164***
			(3.66)
Δ LN(First Lien Term)			-0.108***
			(2.6)
Δ Deal has Traded Tranche			-0.065***
			(2.94)
Δ Deal Inst. Share		-0.13	-0.082
		-0.93	(0.61)
Adj. R^2		0.01	0.06
N		1537	1537

Table 7. All-in-Drawn Spreads and Cov-Lite Structures

This table presents linear models where the dependent variable are various measures of all-in-drawn spreads. The sample consists of all sponsored deals associated with acquisition financing (LBOs and M&A) that have at least one term loan B tranche. In the first 4 columns the dependent variable is the natural logarithm of the value-weighted all-in-drawn spread across all term loan B tranches of a deal. In the second 4 columns the dependent variable is the natural logarithm of the value-weighted all-in-drawn spread across all first-lien loan tranches of a deal. All independent variables are defined in Table B1. Ratings fixed effects are based on firm ratings and include a category for unrated firms. Standard errors are clustered by sponsor. Absolute values of *t*-statistics are presented in parentheses and statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% level, respectively.

	(1) TLB Spread	(2) TLB Spread	(3) TLB Spread	(4) TLB Spread	(5) First Lien Spread	(6) First Lien Spread	(7) First Lien Spread	(8) First Lien Spread
Dummy =1 if TLB is CovLite	-0.137***	-0.122***	-0.127***	-0.114***	-0.147***	-0.133***	-0.138***	-0.127***
	(9.37)	(8.71)	(8.87)	(8.26)	(10.11)	(9.52)	(9.79)	(9.22)
Market Share (in %)			-0.029***	-0.024***			-0.025***	-0.019**
			(3.49)	(2.86)			(3.01)	(2.34)
LN(No. Lenders)		-0.053***		-0.049***		-0.058***		-0.055***
		(6.37)		(6.10)		(6.84)		(6.65)
Borrower-Bank Relationship		-0.047***		-0.045***		-0.048***		-0.046***
		(5.02)		(4.65)		(5.02)		(4.70)
Sponsor-Bank Relationship		0.026		0.029		0.035*		0.038*
		(1.26)		(1.41)		(1.74)		(1.86)
Deal has Traded Tranche		-0.058***		-0.056***		-0.046***		-0.044***
		(4.66)		(4.56)		(3.88)		(3.78)
Cushion (in %)		-0.001*		-0.001*		-0.000		-0.000
		(1.82)		(1.86)		(1.10)		(1.12)
LN(First-Lien Term)						0.012		0.011
						(0.24)		(0.22)
LN(TLB Term)		0.006		0.004				
		(0.12)		(0.08)				
Ratings FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal-Size Quartile FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.63	0.65	0.64	0.66	0.65	0.67	0.66	0.68
N	1846	1846	1846	1846	1846	1846	1846	1846

Table 8. Changes in Spread for Covenant Structure Switchers

This table presents linear models where the dependent variable is the change in the natural logarithm of the value-weighted all-in-drawn spread across all first-lien loans (i.e. Revolver, Term Loan A and Term Loan B) of a deal. The sample consists of all sponsored deals with at least one institutional tranche. Switching to Heavy (to Lite) is a dummy variable, which takes value of 1 if a sponsor's current deal is Cov-Heavy (Cov-Lite) and a sponsor's last deal in the prior year is Cov-Lite (Cov-Heavy). The dummy is zero if both a sponsor's current deal and the last deal in the prior year is Cov-Lite (Cov-Heavy). If there is no deal in the prior year we benchmark against the last deal before the current year. All independent variables are defined in Table B1. Standard errors are heteroscedasticity robust. Absolute values of *t*-statistics are presented in parentheses and statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% level, respectively.

	(1) To Cov-Heavy	(2) To Cov-Heavy	(3) To Cov-Lite	(4) To Cov-Lite
Switching to Heavy	0.130***	0.055**		
	(5.21)	(2.30)		
Switching to Lite			-0.144***	-0.121***
			(8.57)	(7.36)
Δ LN(Deal Size)		-0.045***		-0.038***
		(7.56)		(5.71)
Δ Rating		0.063***		0.028***
		(10.49)		(10.32)
Δ LN(First Lien Term)		0.108***		0.079**
		(3.30)		(2.06)
Δ Deal has Traded Tranche		-0.007		0.030**
		(0.48)		(2.36)
Δ Log(Inst Tranche Percentage)		-0.037		0.043
		(1.24)		(1.57)
Adj. R2	0.03	0.22	0.04	0.15
N	1403	1403	1747	1747