Federal Reserve Bank of Philadelphia

Working Papers
Research Department

WP 19-41
October 2019
https://doi.org/10.21799/frbp.wp.2019.41

# Concentration of Control Rights in Leveraged Loan Syndicates

**Mitchell Berlin**
Federal Reserve Bank of Philadelphia Research Department

**Greg Nini**
Drexel University and
Visiting Scholar, Federal Reserve Bank of Philadelphia Research Department

**Edison G. Yu**
Federal Reserve Bank of Philadelphia Research Department

**ISSN:** 1962-5361

# Concentration of Control Rights in Leveraged Loan Syndicates*

Mitchell Berlin, Greg Nini, and Edison G. Yu**

First Draft: April 1, 2016

Printed: October 17, 2019

**Abstract**

We find that corporate loan contracts frequently concentrate control rights with a subset of lenders. Despite the rise in term loans without financial covenants—so-called covenant-lite loans—borrowing firms' revolving lines of credit almost always retain traditional financial covenants. This split structure gives revolving lenders the exclusive right and ability to monitor and to renegotiate the financial covenants, and we confirm that loans with split control rights are still subject to the discipline of financial covenants. We provide evidence that split control rights are designed to mitigate bargaining frictions that have arisen with the entry of nonbank lenders and became apparent during the financial crisis.

JEL codes: G21, G23, G29

Keywords: covenant, cov-lite, institutional loans, control rights, credit agreements

---

* Previously titled "Learning and contract evolution: the case of leveraged loans." We thank Viral Acharya, Christine Panasian (discussant), Christoph Herpfer (discussant), Yeejin Jang (discussant), Einar Kjenstad (discussant), Mark Leary (discussant), Gregor Matvos (discussant), Justin Murfin, Clemens Otto (discussant), Michael Roberts, Richard Rosen (discussant), Anjan Thakor, Greg Udell, and participants from several seminars and conferences for helpful comments and suggestions. We are solely responsible for any errors. We thank Matthew Accardi, Jordan Manes, and Michael Slonkosky for outstanding research assistance. The views expressed in this paper are our own and not necessarily those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

** Mitchell Berlin, Federal Reserve Bank of Philadelphia, Ten Independence Mall, Philadelphia, PA 19106, USA; Greg Nini, LeBow College of Business, Drexel University, Gerri C. LeBow Hall, Office 1129, 3141 Chestnut Street, Philadelphia, PA 19104, USA; and Edison Yu, Federal Reserve Bank of Philadelphia, Ten Independence Mall, Philadelphia, PA 19106, USA. Corresponding author: Fax: +12155744303, E-mail address: Edison.yu@phil.frb.org (E.Yu)

# 1. Introduction

One striking development in the $4 trillion syndicated loan market has been the marketing of bank-originated term loans to nonbank intermediaries such as hedge funds, collateralized loan obligations (CLOs), and mutual funds.[1] Another closely related development has been the marketing of so-called covenant-lite loans—loans without traditional financial covenants—first during the period of credit expansion in 2005-2007 and more recently as the pace of commercial lending quickened in recent years. Some observers, including bank regulators, have interpreted covenant-lite loans as a sign of a decline in the role of banks in monitoring and renegotiating contracts.[2] In March 2013, banking regulators issued "Interagency guidance on leveraged lending," which offered "sound practices for leveraged finance activities." The original guidance pointed to "the absence of meaningful maintenance covenants in loan agreements" and "the participation of unregulated investors" as factors motivating the new guidelines.[3]

In this paper, we examine a large sample of loan contracts to understand whether the leveraged loan market has evolved to supplant the role of banks in monitoring and renegotiating loan contracts. Our evidence shows that nearly all leveraged loan borrowers remain subject to financial covenants and banks have retained their traditional role as monitor of borrowing firms. Instead, as our evidence shows, contracts have evolved to facilitate bank monitoring while mitigating the bargaining frictions that have arisen with the entry of nonbank lenders.

We read the financial covenants in a large set of credit agreements governing leveraged loans issued during the years 2005 through 2014. Our first contribution is to measure covenants by carefully accounting for all of a firm's loans rather than looking at any single loan in isolation. This is essential because the typical leveraged loan borrower has multiple loans, most commonly a term loan and a revolving line of credit.[4] Examining covenants at the firm level by taking

[1] The league tables provided by Thomson Reuters report $4 trillion of syndicated loan issuance during 2016, with about one-half of the total coming from the United States.

[2] For examples from the academic literature, see Becker and Ivashina (2016) and Billett et al. (2016), which we discuss below. For bank regulators, see the February 18, 2015 speech by Jerome Powell titled "Financial institutions, financial markets, and financial stability." In the speech, Powell, then a governor on the Federal Reserve Board, notes that "[p]rice and nonprice terms in the syndicated leveraged loan market have been highly favorable to borrowers ... The share of loan agreements that lack traditional maintenance covenants increased to historic highs."

[3] See details on the leveraged lending guidance on the Federal Reserve's website.

[4] In our sample, 95% of leveraged loan borrowers with a term loan also have a line of credit. In some cases, the revolver was issued prior to the term loan but is still outstanding at the time of term loan issuance.

account of all loan tranches gives us a clearer picture of how a borrower is constrained by those covenants. We confirm a rise in term loan tranches lacking traditional financial covenants; however, we show that very few loan deals are issued without any financial covenants. Even if the term loan lacks financial covenants, the line of credit nearly always contains traditional financial covenants, a contract structure we refer to as split control rights. Fig.1 highlights the difference between deals with split control rights and deals that lack covenants entirely. The figure shows the annual fraction of deals that contain split control rights and the fraction of deals that contain exclusively covenant-lite tranches. The incidence of split control rights rose sharply after the financial crisis, from zero in 2009 to about 35% by 2014. However, the incidence of completely covenant-lite deals barely changed in recent years and has remained less than 2% across all deals in our sample.

Our second contribution is to confirm that borrowers with loans that have split control rights are still subject to the discipline of financial covenants. In these deals, the revolving lenders are given the unilateral right to renegotiate with the borrower, including to waive or amend the financial covenants, without consulting the term lenders.[5] We examine firms' disclosures of covenant violations and find that borrowers with split control rights violate covenants at the same rate as other firms. Moreover, the covenants are set reasonably strict ex-ante, and the syndicates are structured to facilitate monitoring and renegotiation by the revolving lenders. In deals with split control rights, the agent bank, who leads the negotiation on behalf of the syndicate lenders, typically has a large stake of the loan both absolutely and proportionally. The purpose of split control rights is not to diminish borrower monitoring but rather to concentrate control rights with the revolving lenders.

These results differ from recent research exploring covenant-lite loans that examine term loans in isolation. Billett et al. (2016) suggest that covenant-lite loans minimize ex-post conflicts of interest between syndicate members by removing banks from their role as monitors. This model is inconsistent with our evidence that firms with a covenant-lite term loan universally have a revolving loan that is governed by covenants, so the revolving lenders maintain significant ex-post control rights that are not granted to term lenders. Becker and Ivashina (2016) also suggest that covenant-

[5]The term loan will contain a cross-default or cross-acceleration clause. A cross-acceleration clause is triggered only if the revolving lenders accelerate outstanding loans, which happens if renegotiation fails. In our sample, the term loans are secured with a first lien on collateral and therefore share equal priority with the line of credit in the event of a default.

lite loans can minimize bargaining frictions by reducing the set of states in which borrowers and lenders renegotiate. Conversely, our evidence suggests that split control rights have little effect on the frequency of renegotiation but rather change the set of lenders who are involved in the renegotiation.

Our findings instead provide evidence for traditional models of bank lending with covenants and renegotiation as essential features. Following the classic paper by Smith and Warner (1979), a number of theoretical models show that covenants act as tripwires to trigger monitoring by the lender, who can either impose default or can renegotiate the terms of the contract.[6] Subsequently, a series of papers has established empirically that covenant violations occur frequently outside of serious financial distress and they typically trigger renegotiation.[7] Furthermore, covenant violations lead to significant ex-post changes in firm behavior, evidence that actual and prospective covenant violations act as a trigger for bank monitoring.[8] And the bank monitoring benefits nonbank claimants, including equity holders and bond holders.[9] We show that bank lenders maintain the incentive and ability to monitor their borrowers even in the presence of a covenant-lite term loan, which alleviates concerns that covenant-lite loans create a large number of unmonitored borrowers.

In our final contribution, we show that split control rights help minimize bargaining frictions within lending syndicates created by the presence of a large set of nonbank institutional investors.[10] Institutional tranches of leveraged loans have a larger and more diverse set of lenders, fewer repeated interactions to foster relationship benefits, and a secondary market that permits lenders to change during the life of the loan. Across our whole sample, the rate of split control rights is nearly four times as large among deals with an institutional tranche, and the increase in recent years is entirely concentrated in institutional deals. Similar to other research on nonbank lenders, we show that renegotiating an institutional loan was particularly costly during the financial crisis, which we conjecture prompted a change in the optimal contract to facilitate renegotiation.[11] For

[6]See, for example, Aghion and Bolton (1992), Berlin and Mester (1992), Gorton and Kahn (2000), and Garleanu and Zwiebel (2009).

[7]See, for example, Beneish and Press (1995), Dichev and Skinner (2002), Roberts and Sufi (2009), Denis and Wang (2014), and Roberts (2015).

[8]See, for example, Chava and Roberts (2008), Nini et al. (2009), Roberts and Sufi (2009), and Spyridopoulos (forthcoming).

[9]See, for example, Mikkelson and Partch (1986), James (1987), Datta et al. (1999), Nini et al. (2012), Ongena et al. (2014), Carey and Gordy (2016), and Feldhütter et al. (2016).

[10]Using a different empirical approach in contemporaneous research, Becker and Ivashina (2016) draw the conclusion that covenant-lite loans mitigate bargaining frictions by removing the need to renegotiate financial covenants.

[11]Demiroglu and James (2015), Osborn (2014), Beyhaghi et al. (2017), and Paligorova and Santos (2018) each

example, during 2006-2010, the average fee paid to amend a loan following a covenant violation was more than three times larger for borrowers with an institutional loan. Our reading of the loan agreements also uncovers the increased use of alternative contractual features designed to facilitate renegotiation of core loan terms. We show that these additional contract features also became more prevalent following the financial crisis, particularly for deals with an institutional tranche. Moreover, these renegotiation-related features frequently appear in deals with split control rights, leading us to conclude that this menu of contract changes is a response to the same underlying frictions.

We rule out several alternative explanations for the rise in split control rights for institutional deals. We find no evidence that the nature of leveraged loan borrowers has changed over time, which suggests that changes in the contract structure are not due to changes in loan demand or borrower composition. We also show that deals with institutional tranches have experienced no differential changes in other contract terms, including interest rate, amount, or maturity, that would suggest alternative supply-side explanations for the rise in split control rights. In the Online Appendix, we explain how to replicate our results using only data from Thomson-Reuters' LPC DealScan and show that split control rights comprise the majority of institutional loans through the middle of 2018, so our results are not due to the extraordinarily low level of interest rates that existed for our main sample period.

Our paper is related to the debate surrounding the marketing of corporate loans to institutional investors, particularly CLOs. There is conflicting evidence whether the rise of institutional investors allowed arranging banks to shirk their monitoring responsibilities by reducing their exposure to borrowers.[12] We show that bank lenders retain significant control rights and agent banks retain significant exposure to the borrowing firm, inconsistent with the view that the rise of institutional lending or covenant-lite loans has led banks to have less "skin in the game."

Our results are consistent with canonical models of corporate debt structure that justify giving bank lenders unilateral control rights in certain states of the world. These models were designed to

provide some evidence that institutional loans are more difficult to renegotiate.

[12]For example, Wang and Xia (2014) argue that banks that were the most active in the CLO market monitored less than other banks, and Bord and Santos (2015) find that loans sold to CLOs were more likely to default than loans never sold to CLOs. In contrast, Benmelech et al. (2012) provide evidence that firms funded by CLOs had no worse outcomes than other similar loans, and Shivdasani and Wang (2011) show that leveraged buyouts financed by CLOs did not underperform other leveraged buyouts.

explain the commonly observed debt structure of a senior bank loan with strong control rights and subordinated bonds with much weaker rights.[13] We show that a similar structure has developed in the leveraged loan market, with the notable difference that the covenant-lite term loan typically has equal seniority to the revolving loan. We discuss how our results relate to existing multi-creditor models in our concluding section.

Section 2 provides some background on the growth of the leveraged loan market and describes our data and sample construction. Section 3 defines split control rights and shows that almost all deals have maintenance covenants. In Section 4, we provide evidence that firms with split control rights are still monitored by covenants. Section 5 shows that the incidence and growth of split control rights are concentrated in deals with institutional investors and provides evidence that split control rights are designed to reduce bargaining frictions in institutional deals, which became apparent during the financial crisis. Section 6 examines the evolution of borrower characteristics and additional loan terms for the institutional market, and Section 7 offers some conclusions and directions for further research.

## 2. Background and data

### *2.1. Leveraged loan market*

A syndicated loan is characterized by a syndicate of lenders jointly providing funding to a single borrower. A typical deal is arranged by a single or small set of lead lenders who solicit the syndicate members and structure the lending arrangement. After the original financing, a single lender will facilitate coordination by serving as the agent for the syndicate, but each lender retains the authority to vote on any changes to the governing agreement during the life of the loan.

The leveraged loan market refers to syndicated loans made to relatively risky borrowers, much as the junk bond market is the portion of the corporate bond market for relatively risky bond issuers. Although there is no universal definition of a leveraged loan, the Loan Pricing Corporation (LPC) defines a leveraged loan as a syndicated loan that is rated BB+ or lower or an unrated loan with an interest rate spread larger than 150 basis points. We adopt this definition throughout the paper.

[13] See, for example, Berglof and von Thadden (1994) and additional citations in Section 7.

A unique feature of the leveraged loan market since the early 2000s has been the increase in participation of nonbank institutional investors such as CLOs and mutual funds.[14] According to the Shared National Credit (SNC) Program administered by US regulatory agencies, the fraction of all syndicated loans held by nonbanks increased from less than 10% in 2001 to nearly 20% by 2008 and almost 25% by 2016.[15]

In response to the emergence of institutional investors, the arrangers of leveraged loans began to design a tranche of the deal intended specifically for institutional investors. As described in Taylor et al. (2006), an "institutional term loan (term loan B, C, or D) is a term loan facility carved out for nonbank institutional investors." This tranche is different from the so-called pro-rata tranches that are traditionally funded by banks, which include a revolving credit facility and a "term loan A" that are funded in identical proportions by lenders. An institutional term loan typically does not amortize and often has a longer maturity than the pro-rata tranches.

As an example of a typical leveraged loan deal, consider the April 2014 $1.2 billion loan financing the spinoff of Time Inc. from Time Warner Inc. The deal was arranged by Citibank, JP Morgan, Morgan Stanley, and Wells Fargo. Each arranging bank helped underwrite the deal, and the loan agreement specified Citibank as the administrative agent. The deal included a $500 million revolver with a five-year maturity and a $700 million institutional term loan with a seven-year maturity. Each tranche offered a floating rate of interest tied to the London Inter-Bank Offered Rate; the revolver paid an additional spread of 225 basis points, and the term loan offered a spread of 325 basis points. Each is a senior, secured obligation of the borrower backed by a lien on all of Time Inc.'s assets. DealScan identifies the term loan as a tranche intended for institutional investors, and we confirm that CLOs owned more than $260 million of the term loan by the end of 2015.

Fig.2 shows the quarterly time series of syndicated loan issuance from 2003 through the end of 2017. Loan issuance fell sharply around the financial crisis and subsequent recession. Leveraged loans, in particular, show several periods of sharp growth, including from 2006 through 2007 and from 2012 through early 2014. Our analysis sample spans the years 2005 through 2014, but much of the analysis is a comparison of contract terms between 2005-2007 and 2011-2014, during which leveraged issuance was quite strong and institutional loans comprised about one-half of total lever-

[14] See Bord and Santos (2012) for evidence on the rise of various nonbank investors in the term loan market.
[15] Data available on the Federal Reserve Board of Governors Shared National Credit program website.

aged loan issuance. In more recent years, institutional loans have become an even larger share of total leveraged loan issuance.

### *2.2. Loan deals*

We construct a sample of loan deals using LPC's DealScan database, in which we define a deal as the set of loan facilities that are current on the same day to the same borrower.[16] We use the concept of a deal under the assumption that loan contracts are written with an understanding of all of the firm's borrowings. In most cases, separate facilities are governed by the same loan contract, and in cases of separate contracts we observe language that references other facilities. We examine only deals that contain at least one first-lien term loan facility and at least one facility considered a leveraged loan, as defined in DealScan.

Since we are uncertain about the quality of the covenant data in DealScan and we want to collect data on some loan terms that are not covered in DealScan, we attempt to collect the credit agreement that governs each of the facilities in our sample deals. To minimize the cost of this process, we limit our sample to the years from 2005 through 2014 and focus on borrowers that were likely public at the time of the loan since US Securities and Exchange Commission (SEC) filings are the ultimate source of the loan contracts. We define a likely public firm as one that we can merge with data from Compustat from the quarter-end immediately subsequent to the loan issue date. In total, we find the relevant contracts for 946 of the roughly 8,700 leveraged loan deals during this period.[17] The Appendix provides some additional details on the construction of the sample.

In 15% of the deals for which we find a corresponding contract, the contract governs only a term loan. For these deals, we search for a previously issued revolving credit agreement that is still outstanding at the time of the new term loan. In two-thirds of these cases, we find a previously issued credit agreement and code the contract, and any intervening amendments, as part of the same deal. For the remaining 5% of deals, we cannot find a revolving loan contract and believe that these firms truly do not have a line of credit.[18] These term loan-only deals are excluded from

[16] In terms of fields in DealScan, we identify a deal using facilityStartDate and borrowerCompanyID. A deal does not correspond perfectly to a loan package since a borrower can have multiple packages beginning on the same date.

[17] Much of our analysis is based on data compiled directly from the credit agreements, but we show in the Online Appendix how to approximate some of our results using just data from DealScan.

[18] The small fraction of deals without a line of credit should not be surprising. Sufi (2009) finds that roughly 85% of public firms have a line of credit and this fraction is even higher for firms that have debt outstanding, as all firms in our sample do.

our contract sample of 946 deals, but based on our reading of the contracts, fewer than 5% of these term loans are covenant-lite, which is less than one-half of the rate for deals that include a revolver. Based on the small fraction of deals without a revolver and the small fraction of term loan-only deals that are covenant-lite, including these deals would not change the conclusion that there are very few leveraged loan borrowers that completely lack financial covenants.

Since we have a credit agreement for only about 11% of the full deal sample, Table 1 provides some summary statistics to assess the representativeness of our sample based exclusively on data from DealScan.[19] Column (1) provides sample means for the set of deals for which we have a contract, and column (2) provides sample means for all other deals. Comparing the sample means, the deals with a contract are significantly larger and less risky, based on the differences in loan amounts and interest rate spreads. The most notable difference, however, is that deals without a contract are significantly less likely to have a borrower with data in Compustat.[20] Nearly 90% of deals without a contract are for borrowers that were likely private at the time of the loan. Based on this evidence, we conclude that the predominant reason we fail to find a loan contract is that the borrower was not a public firm at the time of borrowing, so the agreement is not publicly available.

Column (3) of Table 1 provides sample means for the set of deals without a contract but for which the firm has Compustat data. Within the set of firms with Compustat data, we have a contract for about one-half of deals. Moreover, the means for loan spreads and loan amounts are quite close in columns (1) and (3), suggesting that the set of loans for which we have a contract is representative of the set of loans to public borrowers. Finally, according to DealScan's measure of whether a loan is covenant-lite, our sample of deals with contracts has a similar fraction of covenant-lite term loans and revolvers as does the sample of firms without contracts. We conclude that our results concerning the prevalence of financial covenants are not driven by the fact that we only observe contracts for a subset of firms.

[19] We use DealScan to obtain data on the amount, maturity, and pricing of the individual tranches. Almost all of the loans have a floating interest rate tied to LIBOR, and DealScan provides information on the spread over LIBOR that the borrower must pay. We collect this information for all term loan tranches and all revolving tranches separately. DealScan also provides information on whether the term loan is marketed to institutional investors.

[20] Thank you to Michael Roberts for providing the updated GVKEY link data used in Chava and Roberts (2008).

# 3. Deal-level financial covenants

For each of the leveraged loan deals for which we have a contract, we manually read all of the contracts related to the deal, including any previously issued revolving loans. The advantage of the hand-collected data is that we have more accurate and more complete data than are available in DealScan. In the Appendix, we compare our hand-collected data with what could be constructed from DealScan and show that DealScan is frequently missing data on financial covenants.

## *3.1. Financial covenants*

Financial covenants refer to accounting-based conditions that test the borrower's financial position or recent performance. Failure to comply with a financial covenant leads to an event of default, which provides the lenders with additional legal rights, including the right to call the loan.[21]

Financial covenants can be one of two types, depending on when the firm needs to be in compliance with the test. Incurrence covenants are triggered only if some contractually specified event actually occurs. For example, a widely used incurrence covenant limits the leverage ratio of the borrower in the event that the borrower issues new debt. Absent the occurrence of a triggering event, the incurrence-based financial covenants do not apply. Maintenance covenants, on the other hand, require the borrower to maintain compliance at periodic intervals over the life of the loan, regardless of whether any events occur. Financial maintenance covenants are typically monitored quarterly, but the monitoring frequency is determined by the contracting parties. Maintenance covenants distinguish bank loans from other types of debt, which typically have incurrence covenants.[22]

Financial covenants can refer to almost any item on a firm's balance sheet or income statement, but a few standard covenants appear in many contracts. The most common covenants are tied to an agreed-upon definition of the borrower's cash flow available for debt service, typically defined as earnings before the deduction of interest, taxes, depreciation, and amortization (EBITDA).[23] Other types of financial maintenance covenants are based on net worth, asset coverage, and various

[21] See Wight et al. (2009) for an additional discussion of loan covenants and the rights granted in the event of a default.

[22] A common definition of a covenant-lite loan is a loan that lacks financial maintenance covenants. As noted in Becker and Ivashina (2016), covenant-lite term loans often have incurrence-based financial covenants.

[23] In many cases, the definition of EBITDA for the purpose of loan covenants is different than the Generally Accepted Accounting Principles (GAAP) definition.

liquidity measures. When reading the agreements, we collect data on the existence of any financial maintenance covenants and the level of five of the most standard cash flow covenants.[24]

In some cases, the monitoring of the maintenance covenants depends on the utilization of the borrower's line of credit, so-called springing covenants. We treat these as maintenance covenants and collect data on whether the covenants are springing and the level of utilization that triggers the covenants to spring. We discuss these further in Section 4.

### *3.2. Split control rights*

As we discovered in the process of reading credit agreements, the provisions of a loan contract can be different for separate tranches in the same deal. In particular, the financial covenants in a deal may apply to only a subset of the tranches. We refer to these cases as split control rights, since the arrangement means that any financial covenants can be waived or modified by only a subset of the lenders. In the event of a covenant violation, these lenders have the unilateral right to negotiate with the borrower about how to cure the default.

Split control rights can be accomplished through two means. First, a single credit agreement that contains financial maintenance covenants can give the lenders in a specific tranche the unilateral right to decide whether to waive or modify the financial covenants. In the credit agreement governing the Time Inc. loan described above, the borrower is bound by a maximum senior leverage ratio covenant, which prohibits Time Inc. from having a "Consolidated Secured Net Leverage Ratio as of the last day of any Test Period to be higher than 2.75 to 1.00."[25] However, the next paragraph in the credit agreement states:

> The provisions of this Section 7.08 are for the benefit of the Revolving Credit Lenders only and the Required Class Lenders for the Revolving Credit Facility may amend, waive or otherwise modify this Section 7.08 or the defined terms used for purposes of this Section 7.08 (but solely for such purposes) or waive any Default resulting from a breach of this Section 7.08 without the consent of any Lenders other than such Required

[24] We focus on the level of the five most common covenants: leverage ratio, senior leverage ratio, interest coverage ratio, fixed charge coverage ratio, and minimum EBITDA. Conditional on having at least one maintenance covenant, 97% of the agreements have at least one of the five types.

[25] The complete credit agreement is available in Time Inc.'s Form 10-12B filed with the SEC on May 8, 2014 and is available in EDGAR.

Class Lenders in accordance with the provisions of clause (iv) of the second proviso of Section 10.01(a).

The contract makes clear that the borrower will renegotiate exclusively with the revolving lenders regarding the financial covenant.[26] Roughly two-thirds of deals with split control rights are accomplished within a single contract.

Second, the deal can be governed by multiple credit agreements that have different financial covenants. For example, a firm with a preexisting line of credit that has financial covenants may issue a new term loan that does not have any financial maintenance covenants. Roughly one-third of deals with split control rights are accomplished through multiple contracts.

In some cases, we find that the types of covenants or the level of a specific covenant is different across the tranches in a deal, which happens when the tranches are governed by separate credit agreements. For example, the revolving loan may contain a fixed charge coverage ratio, and the term loan may contain a maximum leverage covenant.[27] Since control is allocated differently for different covenants, we choose not to define these deals as having split control rights.[28]

In our sample of deals with split control rights, we did not find a single case in which the revolving lenders were excluded from control, so reference to split control rights should be interpreted as a provision that excludes a term loan tranche from the control provided by covenants.[29]

### *3.3. Covenant-lite is really split control rights*

Using our deal-level data on financial covenants, we can show that very few deals are completely void of maintenance covenants. Fig.1 presents the annual time series of the frequency of deals with no maintenance covenants and deals with split control rights. The figure shows that nearly every deal contains at least one maintenance covenant, meaning the vast majority of borrowers must be

[26] In cases in which split control rights are accomplished within a single agreement, the agreement typically modifies the definition of "required lenders," which is the number of lenders required to modify terms in the contract. In a credit agreement covering multiple tranches without split control rights, the required lenders would include lenders from all of the tranches. In a credit agreement with split control rights, only the lenders from a specific tranche are required to waive or modify a default on the financial covenants.

[27] In about 2% of deals, we find that the tranches have the same covenant set at different levels. In each of these cases, the covenant is tighter for the revolving loan.

[28] All of our results are qualitatively similar and tend to be quantitatively stronger if we define these deals as having split control rights.

[29] Some deals include more than two tranches, typically a revolver and multiple term loan tranches. In some of these cases, the term loan A retains control rights, and the term loan B is excluded.

in regular compliance with some financial covenant. Across the entire sample, the frequency of deals with no maintenance covenant is only 1% and has not risen in recent years. This striking fact is at odds with the typical interpretation of covenant-lite loans and can only be known by properly accounting for all of the loans that a borrower has. Instead of removing financial covenants from the standard loan contract, covenant-lite loans concentrate control rights with the revolving lenders.

The frequency of split control rights shows two periods of growth that coincide with the booms in leveraged lending. Across the ten-year sample, 12% of deals have split control rights, but this masks considerable heterogeneity over time. The incidence increased from 1% in 2005 to 12% in 2007 before falling to 0% in 2008 and 2009. Since the financial crisis, the frequency of split control rights has risen sharply, reaching more than one-third of the sample in 2014. In Section 5 we show that the growth in split control rights has been concentrated in the institutional segment of the market, which means that contracts with split control rights are primarily excluding institutional lenders from the control rights provided by covenants.

## 4. Split control rights and lender monitoring

In this section we ask whether the control rights granted to revolving lenders seem particularly weak in deals that have split control rights. Although Section 2.3 shows that deals with a covenant-lite tranche still have maintenance covenants, it could be that financial covenants are not "meaningful," in the words of the Leveraged lending guidance referenced in the introduction. To examine this hypothesis, we provide evidence on realized covenant violations, the ex-ante strictness of the financial covenants, and measures of the revolving lending syndicate that prior research has shown facilitate monitoring of the borrower.

### *4.1. Evidence from covenant violations*

We begin by examining the disclosures that firms make regarding loan covenants, including the disclosure that the borrower has violated a financial covenant. We borrow the methodology from Nini et al. (2012) and examine covenant-related disclosures in 10-K filings reported to the SEC.[30]

[30]We use the second 10-K following the loan issuance, which allows some seasoning of the loan and minimizes the chance that a disclosure refers to a prior loan. Within the 10-K, we search for the word "covenant" within 100 words of the following phrases: "waiv," "viol," "in default," "modif," and "not in compliance." Based on the discovered mentions of a covenant, we manually read the relevant passages to confirm whether or not the firm violated a covenant.

Across the full sample, we find a 10-K filing for about 90% of the deals.[31]

On average, we find 3.5 mentions of covenants per filing, and 7.8% of the firms report a covenant violation within two years of origination. For deals with split control rights, the comparable numbers are 3.5 mentions and 6.1% reported violations, providing direct evidence that firms with a covenant-lite term loan are still concerned with covenants and violate them at a similar frequency.[32] Indeed, more than 90% of our sample firms with split control rights have at least one mention of covenants, comparable to the set of firms without a covenant-lite term loan.

Table 2 reports an estimate of the correlation between split control rights and realized covenant-related disclosures, based on Ordinary Least Squares (OLS) regressions. Columns (1)-(3) report the results for covenant violations, and columns (4)-(6) report the results for covenant mentions. Specifications (2) and (4) include a full set of fixed effects for the combination of industry and quarter of issuance and for the combination of credit rating and quarter of issuance. Specifications (3) and (6) add borrower-specific measures of performance constructed from Compustat as of the 10-K filing date. We include the fixed effects and other controls to account for variation in the propensity to violate a covenant due to borrower risk and general economic conditions.[33]

The key independent variable is an indicator that a deal has split control rights. In each specification, the point estimate on the Split control rights variable is close to zero, and the estimated standard errors show that confidence intervals comfortably surround zero. We conclude that there is no significant relation between split control rights and covenant-related disclosures.

### *4.2. Evidence from ex-ante covenant strictness*

We next examine several measures of the strictness of the financial covenants that provide control rights to revolving lenders. We use the data that we draw from reading the underlying loan agreements and provide summary statistics in Table 3.

In our sample, 45% of the deals with split control rights have springing financial covenants. In

We record the number of mentions of the phrase "covenant" along with an indicator that the firm violated a covenant.

[31] We lose 10% of the sample because the borrower stops filing with the SEC.

[32] For example, US Ecology, Inc. disclosed in its 2015 10-K that its credit agreement included a financial maintenance covenant despite the presence of a covenant-lite term loan, writing, "The Credit Agreement also contains a financial maintenance covenant, which is a maximum Consolidated Senior Secured Leverage Ratio, as defined in the Credit Agreement, and is only applicable to the Revolving Credit Facility." The 10-K was filed on February 29, 2016 and is available in EDGAR.

[33] The number of observations reported in the table excludes all singletons within a fixed effect group.

principle, firms with springing covenants could evade bank monitoring by keeping their revolving balance below the springing threshold. However, one-half of deals with springing covenants (22.6% of all deals with split control rights) have a borrowing base, which limits the borrower's revolving borrowings to some percentage of the firm's acceptable collateral, typically receivables and inventories. Since the borrowing base is monitored at a regular interval, often weekly or monthly, such loans still grant the lender significant ability to monitor the borrower on a regular basis, whether or not the financial covenant is also triggered. Furthermore, any waiver or change to the borrowing base formula must be negotiated with the revolving lenders.[34]

For the remaining split control right deals with springing covenants and without a borrowing base, the levels of revolver utilization that cause the covenants to spring tend to be quite low, as shown in the middle portion of Table 3. In our sample, 40% have a threshold of zero, meaning that the covenants become standard maintenance covenants if the revolver is used at all. The median threshold is 17.5%, and all of the deals have a threshold no higher than 30%. Based on our examination of data from Capital IQ, it is quite rare that firms have such a low level of revolver usage. In our sample of firms, over one-third have positive utilization as of the quarter-end following the loan issuance, and nearly two-thirds have positive utilization after two years. Conditional on positive utilization, the mean level of utilization is over 70%, suggesting that the vast majority of firms would trigger their springing covenants.[35] We conclude that springing covenants offer only limited ability for borrowers to evade the scrutiny of financial covenants.[36]

The bottom portion of Table 3 provides summary statistics regarding the ex-ante strictness of the financial covenants. We use the methodology of Murfin (2012), who defines strictness as the estimated probability of covenant violation at the time of loan origination. We compute the measure using the covenant levels from the sample credit agreements and accounting ratios from Compustat as of the quarter-end immediately subsequent to issuance of the loan.[37] According to

[34]Since the borrowing base is monitored at a regular interval and exceeding the limit is an event of default, one could consider a borrowing base as a type of financial maintenance covenant. If we did so, the frequency of deals with springing covenants would fall by half.

[35]We find similar statistics using the random sample of firms that comprise the data used in Sufi (2009). In that sample, 65% of firms have positive utilization, and the average conditional utilization level is 46%. Thanks to Amir Sufi for making the data available.

[36]Revolver utilization also tends to increase as firms experience distress, which means that covenants spring when they are most valuable. Fitch Ratings, in "Revolving credit facility performance in bankruptcy," reports that the median utilization rate for revolvers exceeds 90%, and assumes that revolvers are fully drawn in their recovery rate forecasts.

[37]As in Murfin (2012), we assume that the logged values of the accounting ratios are normally distributed and

this measure, Table 3 shows that deals with split control rights have somewhat looser covenants than the other deals in our sample; the difference in means across the groups is roughly one-half of the standard deviation of strictness. However, deals with split control rights still have fairly strict covenants. The mean strictness is nearly identical to the mean strictness reported in Murfin (2012), who examines a broader set of syndicated loans beyond leveraged loans. Moreover, there is significant variation in the strictness of covenants for deals with split control rights, suggesting that the inclusion of covenants is not just pro forma. Indeed, the distribution of strictness appears remarkably similar to the distribution reported in Murfin (2012).

### *4.3. Evidence from the syndicate structure of the revolving facility*

Our last piece of evidence is based on the structure of the revolving lending syndicate. The analysis is similar to that in Sufi (2009), who examines the syndicate structure of a broad sample of loans to understand the delegation of duties between lead lenders and participant banks. Sufi (2009) finds that borrowers requiring more monitoring and due diligence have more concentrated syndicates and the agent bank retains a larger share of the loan, suggesting syndicates are structured to increase the agent bank's incentive to monitor and negotiate earnestly on behalf of other syndicate members. We ask whether deals with split control rights have syndicates that seem similarly structured to facilitate monitoring.

We construct measures of the syndicate structure using confidential data from the SNC program.[38] The information available includes the commitment size and the agent bank's and other lenders' commitments. We manually merge our sample and the SNC data using issuance date, the borrower's name, and characteristics of the loan. The matched sample covers about 55% of our sample, and all statistics refer to syndicate structure at year-end following the initiation of the loan.

Table 4 shows that, although the typical commitment size is comparable across the group, deals with split control rights have somewhat more concentrated lending syndicates. Revolving

estimate the covariances among the ratios using quarterly changes from Compustat for the sample of firms in the borrower's same one-digit Standard Industrial Classification (SIC) code. We thank Justin Murfin for sharing code to facilitate the computation of the strictness measure in Murfin (2012).

[38]The SNC Program is an annual review of large syndicated bank loans in the United States conducted by the Board of Governors of the Federal Reserve, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency. During our sample period, the program covered any loan with a commitment of at least $20 million that is shared by three or more regulated institutions. In 2018, the minimum commitment size was raised to $100 million.

loan commitments with split control rights have less than ten lenders, on average, and the average lender has a larger commitment. More importantly, in deals with split control rights, the agent bank retains a large dollar commitment (over $40 million) and funds a large share of the total commitment (over 26%), which is larger than for the other deals. According to these measures, there is no evidence that the agent bank's incentive to monitor and negotiate with care is lessened for deals with split control rights.[39]

Based on the collection of evidence in Tables 2, 3, and 4, we believe that the control rights granted to revolving lenders in deals with split control rights are indeed meaningful. The structure of the lending syndicates and covenant levels suggest that revolving lenders retain significant tools to monitor their borrowers, and the realized violations show that monitoring actually happens. We conclude that the primary purpose of split control rights is to concentrate control rights with revolving lenders so that financial covenants can be set and renegotiated independently from the term loan lenders.

We conclude this section by noting that efficient monitoring does not require that the interests of revolving lenders be aligned with those of the term lenders ex-post. Indeed, canonical multi-creditor models permit the monitoring lender to expropriate other lenders when it monitors efficiently.[40] In these models, expropriated lenders are compensated ex-ante in the pricing of the loan, but the benefit of concentrating control rights is more efficient monitoring and renegotiation outcomes.[41]

## 5. Split control rights and renegotiation costs

In this section, we provide evidence that the recent rise in split control rights is designed to mitigate bargaining frictions in loan deals with institutional lenders. We examine four types of evidence. First, we provide evidence that the presence of institutional lenders, rather than some other factors, is the primary determinant of whether a deal has split control rights. Next we show

[39] Following the argument in Sufi (2009), we might reason that the agent's larger exposure is designed to enhance its incentive to monitor. For our purposes, it is sufficient to note that the agent bank's exposure is not small for deals with split control rights.

[40] In Diamond (1993) and Park (2000), ex-post expropriation improves the ex-ante incentives to monitor. In Berglof and von Thadden (1994), ex-post expropriation strengthens the monitoring creditor's bargaining power in negotiations with the borrower.

[41] The extent to which the revolving lenders' and term loan lenders' interests are aligned ex-post is an interesting question for future research, but our analysis of split control rights as optimal contractual practice only requires that any ex-post misalignment be priced ex-ante.

that institutional loan syndicates have characteristics that make them subject to larger bargaining frictions. Third, we offer evidence that institutional deals experienced more acute bargaining frictions during the financial crisis, a period prior to the widespread adoption of split control rights. Finally, we show that split control rights are part of a menu of contractual terms that have been explicitly designed to mitigate bargaining frictions following the experience of the financial crisis.

### *5.1. Institutional deals and split control rights*

Fig. 3 provides initial evidence that the rise of institutional investors is important for understanding split control rights, particularly the growth in recent years. The figure shows the annual frequency of split control rights for the set of deals with an institutional tranche and for those without and highlights the sharp difference between the experience of the two groups. We think the intended set of investors is the important distinction since the loan contract will be tailored with the intended investors in mind. For deals without an institutional tranche, split control rights are very uncommon and have not become more common in recent years. For deals with an institutional tranche, however, split control rights have become much more common over time.

To ensure that the relation between split control rights and the institutional indicator is not due to some other characteristics of the loans or borrowers, we estimate regressions to control for other differences between the deals. We estimate the following probit model:

$$Split_{it} = 1\left(\alpha \cdot Institutional_{it} + X'_{it}\beta + \varepsilon_{it} > 0\right), \tag{1}$$

where $Split_{it}$ is an indicator that a deal has split control rights, 1() is the indicator function that the expression is positive, *Institutional* is a dummy variable indicating that the deal has an institutional tranche, $X$ is a set of covariates that might affect the probability that a deal has split control rights, and $\varepsilon$ is a standard normal random variable with unit variance. The subscript $i$ indexes deals and $t$ indexes calendar quarter, and we create firm-level covariates using balance sheet and income statement data as of the quarter-end immediately after the loan was issued. Although some borrowers appear multiple times in the data, the incidence of repeat borrowing is infrequent enough that we do not exploit the panel nature of the data. Because our sample includes only two

deals with split control rights during the 2008-2010 period, we estimate the model on two separate periods: 2005-2007 and 2011-2014.

The coefficient estimates from the probit regressions are shown in Table 5. The table reports a version of model (1) with no control variables and a version with a set of borrower-specific controls. In Table OA.1 of the Online Appendix, we show that deals with an institutional tranche are used by borrowers that are much larger and have higher leverage, so we control for these characteristics in the regressions. We include the natural log of the borrower's assets to control for firm size, the borrower's operating income scaled by assets to control for profitability, and several measures of the borrower's credit risk, including credit rating dummy variables. The regressions with controls also include calendar-quarter fixed effects and industry fixed effects based on the Fama-French 30 classification of the borrower's SIC code.

As shown in columns (1) and (2), there is no relation between the institutional tranche indicator and split control rights during the years 2005-2007. With no controls, the estimated marginal effect of the deal containing an institutional tranche is only 3.4%, and the point estimate becomes negative when including controls. Neither of the estimates is significantly different from zero. During the early period, larger borrowers, more profitable borrowers, and borrowers with more debt were more likely to have split control rights, and since these are also the borrowers more likely to have an institutional tranche, the estimated relation between an institutional deal and split control rights is largely driven by these observable characteristics.

During the later period, however, there is a very strong relation between the institutional tranche indicator and split control rights. Without controls, the estimated marginal effect is a statistically significant 36.6%, and adding control variables only reduces the estimate to 34.7%, as shown in column (4). The included control variables have a much weaker relation with split control rights during the latter period, suggesting that the underlying motivation to include split control rights shifted between the periods. The presence of an institutional tranche became much more important during the years following the crisis.

One concern with the evidence in Table 5 is that unobservable factors may explain both the presence of an institutional tranche and split control rights in the same deal. In the Online Appendix, we address this possibility formally using the insights and methodology of Altonji et al. (2005). Based on several different approaches, we conclude that there is a large, positive relation

between a deal containing an institutional tranche and the use of split control rights, which can at most be partially attributed to unobserved factors. The robustness of the conclusion reflects two features of the data: (i) the statistical relation between the presence of an institutional tranche and split control rights is very strong, as reflected in the large $t$-statistics implied by the estimates in columns (3) and (4) of Table 5; and (ii) accounting for observable factors that affect the likelihood that a deal has an institutional tranche has no impact on the estimated value of $\alpha$ in Eq. (1), as reflected in the near-identical marginal effects reported in columns (3) and (4). For instance, we show in the Online Appendix that our results are robust to an implausibly high degree of correlation between omitted factors captured in $\varepsilon_{it}$ in Eq. (1) and the institutional tranche indicator. The estimated marginal effect of a loan having an institutional tranche on split control rights is only somewhat sensitive to our different estimation strategies and is consistently above 20%.

### *5.2. Institutional term loan syndicates*

Bargaining frictions can arise from a number of causes. Most immediately, as originally suggested by Bolton and Scharfstein (1996), a larger lending syndicate likely raises bargaining costs and results in harsher outcomes for borrowers in renegotiation. It is also possible that syndicate members may have different preferred bargaining outcomes because they have different incentives due to different financial claims or existing financial pressures.[42]

Existing empirical evidence largely confirms these logical arguments in the context of institutional investors in lending syndicates.[43] Demiroglu and James (2015) and Osborn (2014) show that the presence of a CLO is positively related to the likelihood that a borrower enters Chapter 11 rather than restructures outside of bankruptcy, which we confirm in our sample that we describe below. Beyhaghi et al. (2017) show that nonbank lenders are more likely to exit a syndicate than participate in a renegotiated loan, and Paligorova and Santos (2018) show that a larger share of unaffiliated nonbank investors reduces the likelihood of a loan being renegotiated.

We contribute to this stream of research by showing that institutional deals have much larger

[42]Becker and Ivashina (2016) argue that CLOs and mutual funds might disagree because of different liability structures. Billett et al. (2016) argue that the agent bank may have concerns about maintaining a relationship that is not shared by other syndicate members and Chodorow-Reich and Falato (2017) show that lenders in worse financial health demand more concessions from borrowers who violate a covenant.

[43]Gilson et al. (1990) provide early evidence that distressed borrowers with a larger variety of debt claims were more likely to end up in bankruptcy.

and more diverse lending syndicates. We prefer to use the institutional indicator rather than the actual composition of the syndicate since the indicator captures the expectation of the contracting parties at origination and because we have no reason to believe that CLOs, rather than other institutional investors, create relatively high renegotiation costs.

Table 6 provides summary statistics for the number and types of lenders for the term loans in our sample, with data from SNC for the set of loans that we successfully merge and data from CLO-i for deals issued since 2011.[44] On average, institutional term loans have about nine times as many lenders as other leveraged term loans. Moreover, nearly two-thirds of institutional tranches are funded by at least one CLO, which is more than twice the rate of noninstitutional tranches, and CLOs fund a significantly larger share of the typical institutional loan as compared to other term loans. The evidence in Table 6 shows that the institutional indicator is strongly related to realized differences in actual loan syndicates, which was likely expected at the time the contract was written. We conclude that larger and more diverse lending syndicates represent a fundamental difference between institutional and noninstitutional deals that is ultimately reflected in different loan contracts.

### *5.3. Negotiation frictions during the financial crisis*

We hypothesize that the rise in split control rights for institutional deals reflects a response to the experience of the financial crisis, which made clear the costs of bargaining frictions. The financial crisis created the first need for widespread renegotiations in the era with large syndicates of institutional investors, which offered market participants the opportunity to learn about renegotiation costs. For example, a 2010 article from The Secured Lender highlights the difficulties faced by lenders in large syndicates:

> "In 2009, the lending industry departed even further from the halcyon days when syndicates of lenders functioned in a unified and cooperative way. In an increasing number of situations, some lenders have found that their most troublesome conflicts were not with their borrower, but with other co-lenders in the facility."[45]

[44] CLO-i is a product of Creditflux that provides data on the portfolio of loans owned by CLOs. We collect the holdings of each loan in our sample as of the earliest year-end period following the origination of the loan that is also at least 6 months after origination. These data are only available for loans issued since 2011.

[45] Taken from "Ten assumptions that secured lenders should not make in 2010" in the March 2010 issue of The

We also note that much of the prior academic research documenting renegotiation costs created by nonbank lenders either explicitly focuses on the financial crisis (e.g. Osborn, 2014) or is driven by observations during the financial crisis period (e.g. Demiroglu and James, 2015 and Beyhaghi et al., 2017). Focusing on the financial crisis years, we reproduce some existing results and also examine other evidence for bargaining frictions.

We begin with the full sample of firms that issued a leveraged loan prior to the end of 2008 for which we have a link to Compustat. We then search SEC filings for evidence of a reported financial covenant violation for the period following the latest loan issue date through the end of 2010. We restrict attention to new covenant violations, defined as a reported violation following four quarters of no reported violations, and confirm that the violation is related to the leveraged loan in our sample. This results in a sample of 112 unique firms that violated a covenant during the years 2006 through 2010, which we view as a sample of distressed firms that were forced into a covenant-related renegotiation during the period prior to the extensive use of split control rights.[46] We describe the sample construction further in the Online Appendix.

We next track all changes to the loan contract as a result of renegotiations. Specifically, we show all amendments to the loan following the violation until one of three outcomes is achieved: (i) contract terms are amended to cure the violation; (ii) the firm repays the loan, with either a different loan or some other source of funds; or (iii) the firm enters bankruptcy.

In our sample, 8% of the violators paid off the loan, and 5% of the violators filed for bankruptcy. Among institutional deals, 8% subsequently filed for Chapter 11, and only 2% of noninstitutional deals filed for Chapter 11 during the same period, evidence consistent with the findings of Demiroglu and James (2015) and Osborn (2014). For the remaining 87% of firms, the violation resulted in amended contract terms to cure the violation. In 18% of our sample, we observe a contractual waiver of the covenant violation prior to resolution. These waivers do not represent forbearance but rather temporary relief from the default that seems designed to give the parties breathing room to renegotiate the contract terms.[47] Since waivers expire and do not permanently cure the default,

Secured Lender.

[46] We identify violations using the same process as in Section 3.1 and find a new violation for about 15% of the full sample. This rate is higher than the sample examined in Table 2 because of the experience of the financial crisis.

[47] In many cases, a loan amendment is accompanied by a waiver in which the lender formally relinquishes any rights granted by the event of default. In such cases, we record the outcome as an amended contract. The 18% refers to cases in which a waiver is not contemporaneously accompanied with any of the three outcomes.

we do not view a waiver as a resolution and continue searching until the covenant violation is cured via an amendment, repayment, or bankruptcy.[48] The Online Appendix provides an example of a waiver.

Table 7 reports coefficient estimates of OLS regressions that relate various measures of renegotiation outcomes to an indicator that the deal has an institutional tranche, which is the OLS version of Eq. (1). For each of six different outcomes, we report a specification with no borrower-specific control variables and a version with the same set of borrower-specific controls as in Table 5, measured as of the violation quarter. Each regression includes fixed effects for the quarter of the violation to account for aggregate trends in renegotiation outcomes.

Table 7 shows that, conditional on a covenant violation, the likelihood of an amendment, as opposed to loan repayment or bankruptcy filing, was significantly lower for institutional deals. Moreover, institutional deals were more likely to need a waiver prior to resolving the violation, although the difference is partly attributable to other differences between the deals. Institutional deals also required more time to reach an amendment, measured as the number of days between the quarter-end of the reported violation and the date of the amendment, although the difference is measured with some error. Despite the small sample size, the evidence suggests that borrowers with institutional loans had more difficulty reaching an agreement to amend the existing loan following a covenant violation.

Table 7 also suggests that institutional borrowers paid higher costs in the event of a completed amendment. Bolton and Scharfstein (1996) predict that bargaining frictions among multiple creditors will lead to outcomes in which the borrower pays higher compensation to the lenders to escape default following a covenant violation. In the course of reading loan documents, we noticed that, in addition to imposing a higher interest rate on the borrower as part of the amendment, the borrower frequently paid a fee to the lenders, which we view as another means of compensation in exchange for amending the loan. For 96% of the amendments, we can identify the fee paid by the borrower to the lender in exchange for the amendment.[49] Table 7 shows that amendment fees paid by institutional borrowers were nearly 80% larger than those paid by noninstitutional borrowers.

[48] No waiver in our sample is followed by a reduction in the spread or an increase in the size of the revolver.

[49] In the remaining 4% of amendments, we know that the borrower paid an amendment fee, but the amount was not disclosed. For the 12% of cases in which the amendment had no discussion of a fee, we are confident that the fee was zero.

For changes in loan spreads, we find no cases when the interest rate decreased in our sample. In about one-half of amendments, the interest rate increased, and the average increase was 81 basis points. Comparing institutional and noninstitutional loans, the incidence of an increase in spreads was about 20 percentage points higher for institutional loans, and the average change in spreads was roughly 45 basis points larger for institutional deals.

To summarize, there is clear evidence that institutional deals have been subject to more negotiation frictions during the period following the financial crisis but prior to the accelerated use of split control rights. We believe this experience provided the impetus for loan contracts to evolve to reduce renegotiation costs, and institutional deals have subsequently been much more likely to incorporate split control rights.

### *5.4. Institutional loans and additional renegotiation features*

Split control rights are only one of a number of contractual mechanisms that expanded rapidly for institutional loans following the financial crisis. We examine two additional contractual provisions that allow the renegotiation of a core contract term with less than the traditionally required unanimous consent from the lenders. We provide evidence that these provisions frequently appear as a package of terms along with split control rights.

1. Amend and extend. This provision allows a borrower to extend the maturity of a portion of a loan without having to obtain the consent of all lenders at the time of the extension, which is required in standard loan agreements. Without this provision, even a small minority of lenders can stop a firm from extending the maturity of any portion of the loan. In the Online Appendix, we provide an example of the specific language in an amend and extend provision.

2. Refinancing facility. This provision permits the borrower to add a new loan tranche using an existing credit agreement provided that the proceeds are used to refinance a portion of the existing loan. A credit agreement without a refinancing facility requires that any prepayments be made on a pro-rata basis to all existing lenders, but a refinancing provision permits the borrower to refinance with a subset of lenders, usually to obtain a lower interest rate. The Online Appendix contains an example of a credit agreement that permits a refinancing facility.

These provisions have been incorporated into loan contracts following the experience of the financial

crisis. The Loan Syndication and Trading Association (LSTA) produces a guide to writing credit agreements, incorporating the experience of borrowers and lenders using various contractual clauses. The most recent LSTA Complete Credit Agreement Guide, which revises and updates the 2009 edition, describes the evolution of amend and extend, as follows:

> Following the occurrence of the financial crisis, borrowers faced uncertain and illiquid loan market conditions... As a refinancing alternative, borrowers sought to extend the maturities of their existing loans... If the amendment provisions of the applicable credit agreement required a unanimous rather than required lender vote, as a practical matter an amend and extend transaction would likely not be possible... Over time, new credit agreements started to include mechanics that are referred to as amend and extend transactions that permit the required amendments to be effected with the consent of only the extending lenders.[50]

For each of the loan contracts in our sample, we determine if the term loan includes either an amend and extend provision or a refinancing facility, which we interpret as an indicator that the term loan is designed to facilitate renegotiation. Fig. 4 plots the annual frequency of deals that have at least one of these provisions for deals with an institutional tranche and other deals. These provisions were extremely rare prior to 2008; we find only a handful of contracts that permitted an amend and extend provision. Since the crisis, however, the frequency of these provisions has risen steadily over time, particularly for deals with an institutional tranche. Although deals without an institutional tranche sometimes include these provisions, the rate of inclusion has been about twice as large for institutional deals. We think this evidence supports the conclusion that loan contracts–particularly those for institutional investors–have been redesigned following the financial crisis to facilitate renegotiation.[51]

We conclude this section by examining whether split control rights are more likely to be used in deals with these renegotiation features, as would be expected if split control rights are also meant to facilitate renegotiation. Table 8 shows a cross-tabulation of the two provisions during the 2011-2014

[50] Quote taken from pages 63 and 64 of Bellucci and McCluskey (2017).

[51] The evidence in Fig. 4 could also reflect an increase in actual renegotiation costs. Becker and Ivashina (2016) suggest that renegotiation costs increased due to the rise of mutual fund investors, which may have different incentives than other institutional investors. However, the description from the LSTA suggests to us that the contractual changes reflect a solution to a preexisting problem that became evident during the crisis.

period, when each of the provisions was used quite frequently. Among deals without an amend and extend or refinancing provision, which are deals for which renegotiation costs are likely low, only 9.7% include split control rights. However, among deals with an amend and extend or refinancing provision, the frequency of split control rights increases to 38%. A chi-squared test strongly rejects the hypothesis that the provisions are independent, which we take as evidence that the provisions are addressing the same underlying friction.[52]

## 6. Changes in other characteristics of the institutional market

In this section, we examine if other characteristics of the institutional loan market have changed coincidentally with the explosion of split control rights during the years 2011-2014. Our goal is to assess whether the concentration of control rights with revolving lenders reflects a change in the preference of institutional lenders, who perhaps have become more willing to accept looser loan terms. Such a change could reflect an increase in the supply of credit from institutional lenders, as growth in CLOs and mutual funds has accelerated in recent years, or the consequences of extraordinary monetary policy, including a long period of low risk-free interest rates. A long stream of theory has suggested that monetary policy may operate by inducing risk-taking, and recent theory has suggested that agency issues or other frictions may exacerbate this tendency.[53] Empirically, Aramonte et al. (forthcoming) provide some evidence that institutional investors in the syndicated loan market take higher credit risk when interest rates are likely to remain low.

We stress that the rise in split control rights begs an explanation that differentially affects the institutional segment of the market. To our knowledge, there is no existing theory predicting that low interest rates would affect institutional lenders–primarily mutual funds and CLOs–differently than banks. Indeed, much of the existing literature on "reach for yield" suggests that banks are particularly subject to this behavior.[54]

[52] We note that the inference from Table 8 is not solely due to the impact of institutional investors. If we repeat the test within the sets of deals with and without an institutional tranche, we reject the hypothesis that the provisions are independent in each of the subsamples.

[53] See Dell'Ariccia et al. (2017) for a review of the existing theory.

[54] Dell'Ariccia et al. (2017) and Maddaloni and Peydró (2011) provide evidence that low interest rates encourage banks to take more risk.

### *6.1. Changes in composition of borrowers*

The evidence in Aramonte et al. (forthcoming) suggests that the primary mechanism for increased risk-taking is a change in the riskiness of borrowers rather than changes in loan terms. Although controlling for observable borrower characteristics in Table 5 does little to affect the estimated relation between the presence of institutional investors and split control rights, we examine explicitly whether the composition of borrowers has changed over time for the institutional segment of the market.

To do so, we estimate a series of the following difference-in-difference regressions:

$$y_{it} = \alpha + X'_{it}\beta + \delta_t + \phi Institutional_{it} + \gamma Institutional_{it} \cdot I\left(t > 2010\right), \tag{2}$$

where $y_{it}$ is a characteristic of firm $i$ during quarter $t$, $X$ is a vector of control variables, $\delta_t$ is a calendar-quarter fixed effect, $Institutional$ is an indicator that the deal has an institutional tranche, and $I\left(t > 2010\right)$ is an indicator that the deal was issued after 2010. In this specification, the parameter $\phi$ measures the impact of a loan having an institutional tranche, and $\gamma$ measures the additional impact during the years 2011-2014. We use the estimate of $\gamma$ to assess whether the characteristics of institutional deals changed during the 2011-2014 period. Since this analysis does not require data from loan contracts, we use the full sample of leveraged loan deals merged with Compustat, which includes the samples in columns (1) and (3) of Table 1.

We examine three borrower characteristics that we show in the Online Appendix are correlated with the use of an institutional tranche–firm size, credit risk, and rating status–and the ratio of the borrower's term loan debt to total debt, which provides an additional measure of credit risk specific to the term loan. Fig. 5 plots the time series of the averages of these borrower characteristics for deals with and without an institutional tranche. The figure confirms that larger firms, more highly leveraged borrowers, and rated borrowers are significantly more likely to use an institutional tranche and term debt comprises a larger share of total debt for institutional borrowers. However, the differences show no discernible pattern over time, other than perhaps a slight narrowing of the difference in size and an increase in the term loan debt share for noninstitutional loans during recent years.

Table 9 shows the coefficient estimates of $\phi$ and $\gamma$ from Eq. (2). These regressions include industry and calendar-quarter fixed effects but no other control variables.[55] The coefficient estimates confirm that borrowers with an institutional tranche are significantly larger, more highly leveraged, much less likely to be unrated, and have more term debt. However, only the coefficient on borrower size shows a significant difference during the 2011-2014 period when split control rights boomed, and institutional borrowers remain significantly larger than noninstitutional borrowers. There is no evidence that the institutional market expanded to include more highly leveraged borrowers or more unrated borrowers, and there is no evidence that term debt became a larger share of total debt for institutional borrowers.

### *6.2. Changes in loan terms*

We next examine changes in some other loan terms for institutional deals relative to other deals. If the rise in split control rights reflects a change in the preferences of institutional lenders, we would expect other loan terms to reflect these preferences during the 2011-2014 period.

We begin by plotting the time series of several additional deal characteristics in Fig. 6. The top left panel plots the frequency of our sample deals that contain an institutional tranche. Compared with the years 2005-2007, a smaller share of leveraged loan deals contained an institutional tranche during the 2011-2014 period, providing initial evidence that supply of credit from institutional lenders did not increase relative to traditional bank lenders.

The remainder of Fig. 6 again compares deals with and without an institutional tranche. The top right panel examines the difference in interest rate spreads between the term loan tranche and the revolving tranche in the same deal. Even within the same deal, the term loan typically pays a higher spread, often more than 50 basis points larger for institutional deals. If the rise in split control rights was due to an increase in the supply of credit from institutional lenders, we would expect that the spread differential would compress. In recent years, however, the differential between institutional and noninstitutional deals has remained about constant.

The bottom left panel examines the difference in the maturity of the term loan compared with the revolver in the same deal. Term loans typically have a longer maturity, and this is particularly

[55] Since the indicator variable $I(t > 2010)$ does not vary across loans in a given calendar quarter, we follow the advice of Abadie et al. (2017) and cluster standard errors by calendar quarter when estimating Eq. (2).

true for institutional tranches, where the term loans are 1 to 1.5 years longer. In recent years, the difference in maturity has widened for institutional deals, which could reflect an increase in the willingness of institutional lenders to make riskier loans. However, lengthening the maturity of a loan also reduces the frequency of renegotiations, which makes the trend also consistent with minimizing renegotiation costs for institutional deals.

Finally, we examine the share of the total deal amount comprised by the term loan tranche. For institutional deals, term loans typically comprise about 70% of the total deal amount, which is about 20 percentage points more than that of deals without an institutional tranche. The difference in term loans shares has not grown over time, again suggesting that there has not been a large increase in the supply of institutional term loans.

Table 10 shows the coefficient estimates of the difference-in-difference type regressions in Eq. (2) for the same variables presented in Fig. 6. The regressions include controls for borrower size, profitability, and leverage. We also include a variable indicating the revolving loan has a borrowing base, which dramatically reduces the risk of the revolving loan relative to the term loan. The estimated coefficients confirm that deals with an institutional tranche tend to have term loans that comprise a larger share of the deal, have a longer maturity, and have higher spreads, on average. There is no evidence, however, that the term loan share of the deal increased or the difference in spreads decreased in recent years, as would be consistent with an increase in the supply of institutional loans. The relative maturity of term loans did increase for institutional tranches by more than five months, on average, which we interpret as an additional margin through which renegotiation costs were reduced for institutional tranches.

In total, we do not find changes in the composition of borrowers or changes in other loan terms consistent with a large increase in the supply of credit from institutional investors. We also note that institutional loans have continued to use split control rights in the years subsequent to our sample period, as interest rates have risen from their historic lows. Indeed, we show in the Online Appendix that split control rights have been more common for institutional deals during 2015-2018.

# 7. Conclusions

In this paper we explore the economics of so-called covenant-lite loans using a unique data set of contractual provisions in a large sample of leveraged loan deals for the years 2005 through 2014. In contrast to the conventional narrative that covenant-lite loans reflect a fundamental transformation in the role of banks as diligent monitors of their borrowers, we find that covenant-lite term loans are almost always paired with a revolving loan that contains traditional financial maintenance covenants. This arrangement, which we term split control rights, delegates to the banks who hold the revolving credit the exclusive right to monitor and renegotiate covenants. We provide evidence that these contractual changes are designed to alleviate the coordination problems that arise with the presence of institutional loan lenders that fund the term loan.

The delegation of control rights to bank lenders is not a new phenomenon. Financial covenants have long provided banks with unique monitoring ability relative to other creditors. Corporate bonds, for example, rarely have financial maintenance covenants, and yet the issuers of bonds typically maintain a bank loan with maintenance covenants and priority over the bond holders. Indeed, this priority structure is a key prediction of canonical models of multi-creditor lending.[56] Relative to this more traditional capital structure, the covenant-lite term loan is unique because it has equal priority with the bank lenders, whereas bonds are typically junior to the line of credit. This structure raises questions for multi-creditor models in which the priority of the bank's claim over other creditor's claims is key to promoting efficient monitoring and renegotiation.[57] In the leveraged loan market, we find that contracts are designed to concentrate control rights with the revolving lenders despite the term loan being senior and secured. A useful direction for future research is to revisit the question as to how the priority of cash flow claims affects borrower monitoring in models with multiple creditor classes.

Although delegation is not new, our results do suggest that the loan contracts observed in practice have evolved as market participants learned and adjusted to experience. The syndication of term loans to nonbank intermediaries was an innovation that expanded the supply of credit but also raised the costs of renegotiating loan contracts. In turn, loan contracts adjusted to facilitate

[56] See, for example, Berglof and von Thadden (1994).

[57] These models include Park (2000), Diamond (1993), Rajan and Winton (1995), and Repullo and Suarez (1998).

renegotiation by treating traditional bank lenders differently from the nonbank intermediaries. This evidence is inconsistent with models where high renegotiation costs are a feature of lending arrangements designed to minimize strategic default, such as Bolton and Scharfstein (1996). In the leveraged loan market, bargaining frictions are not a positive feature of nonbank lenders but rather a cost to be minimized through contract design.

One possible extension to our results would be to provide direct evidence that split control rights, or the introduction of amend and extend or refinancing provisions, actually work to reduce renegotiation costs. One alternative is that differential treatment of revolving and term lenders could lead to additional intra-syndicate conflicts. We suspect that a few more years of experience, including a spate of corporate defaults, are necessary to generate enough data to answer these questions properly.

# Appendix

The first two parts of the Appendix describe the construction of the leveraged loan sample and the process through which we collect loan contracts. The subsequent section provides a comparison of the covenant data we collected with that available from DealScan.

### *A.1. Leveraged loan sample*

We construct our sample of leveraged loan deals using the market segment identified in DealScan. We begin by identifying all term loan facilities (using the loan type field in DealScan) with a market segment marked as "Leveraged." We define a loan deal as all loan facilities with the same facility start date, which we later amend to include a previously issued and still outstanding line of credit. Although excluding deals comprised exclusively of a line of credit removes about 30% of the leveraged loan sample, this restriction concentrates the sample on the most relevant loans. According to DealScan, fewer than 1% of the revolver-only deals are intended for the institutional market, whereas about 50% of the deals with a term loan are intended for the institutional market, which we measure as facilities marked as "Institutional" in the market segment table.

To examine a fairly homogeneous set of deals, we make the following restrictions on the sample: (i) we include only deals in which all of the facilities are secured with collateral and syndicated in the US, (ii) we exclude all deals that contain only second-lien term loans, (iii) we exclude deals that include a loan type other than a term loan or a revolving loan, and (iv) we exclude all loans to borrowers with an SIC code indicating that the borrower is a financial firm or government related, meaning we drop borrowers with a DealScan one-digit SIC code of six or nine.

Roughly 80% of the deals include a revolving loan issued on the same day as the term loan. However, if we search DealScan for a revolving loan issued previously by the same borrower with a maturity date after the start date of the term loan, we find that about two-thirds of the term loan borrowers previously issued a revolver that was likely outstanding at the time the term loan was issued. This leaves fewer than 7% of term loan issuers that potentially have only a term loan. For the sample for which we have a loan contract, we manually search for a previously issued revolver and confirm in Capital IQ that it was still outstanding at the time the term loan was issued. We also account for any amendments made to the revolver prior to issuance of the term loan deal. For

95% of the deals with a contract, we find a corresponding revolver either issued on the same day or still outstanding on the issuance date of the term loan. For the loan contract sample, we drop the remaining 5% of deals that do not have a revolving loan.

Table 1 provides summary statistics for the set of deals for which we have data on both the term loan and a revolver. For the deals without a contract, we use data for the most recently issued revolver that has a maturity after the issuance date of the term loan.

### *A.2. Loan contract data*

We attempt to collect the credit agreements that govern each of the facilities in the loan deals. We gather the agreements from three secondary sources. First, we use LPC's LoanConnector website, which provides credit agreements along with a link to the underlying deal as identified by the borrower's name and issuance date. Second, we collect credit agreements from Practical Law's comprehensive deal database, which we merge to the deal data using the borrower's Central Index Key (CIK) code and the date of the deal. Finally, we use S&P's Capital IQ system to manually search for any remaining contracts.

Because filings with the SEC are the ultimate source of the credit agreements, we search for agreements only among public firms. We classify a firm as public if we are able to merge the borrower with quarterly data in Compustat from the fiscal quarter immediately after the deal date of the loan. Roughly 20% of the deals are for public firms, which generates the set of deals that we search for a contract.

For the deals for which we have a credit agreement, we manually confirm that the agreement includes a term loan and search the agreement for a revolving line of credit. For the contracts governing only a term loan, we search in Capital IQ and EDGAR for a previously issued revolving credit agreement that is still outstanding at the time of the new term loan. In two-thirds of these cases, we find a previous credit agreement and code the contract as if it was issued on the same day. Our underlying assumption is that the term loan credit agreement is determined with complete knowledge of the existing revolving agreement. For the remaining deals, we cannot find a revolving loan contract and exclude the term loan from our sample.

*A.3. Comparison with DealScan*

We read the credit agreements to produce data on the number and level of financial maintenance covenants and the tranches to which the covenants apply. DealScan also produces data on financial covenants, so we assess the accuracy of the DealScan data and provide some guidance on how to best use the DealScan covenant data.

DealScan provides covenant-related data in two tables. First, DealScan includes two financial covenant tables (named "financialcovenant" and "networthcovenant") that include the level of many common financial covenants. The data in these tables are provided at the package level, where a package is close to the level of a deal that we use in our analysis, except that a firm may issue multiple packages on a single day, and a package does not include any previously issued facilities. However, a package often includes multiple facilities, typically a term loan and a revolver, and the DealScan covenant data do not account for any differential treatment across facilities in the same package. In our sample, about two-thirds of the deals with split control rights are accomplished within a single contract. Since the covenant data in DealScan do not differentiate across facilities in the same package, these data cannot be used to identify split control rights.

The DealScan covenant data are missing for many loans that actually have financial covenants. In our sample, 98% of the deals contain at least one financial covenant. However, only 74% of these deals have financial covenant data available in DealScan, meaning that DealScan lacks covenant data for roughly one-quarter of the loans that actually have covenants. In the cases in which DealScan does have financial covenant data, we find that the level of covenants is quite accurate, at least as of the original credit agreement. For the small fraction of deals that we confirm have no financial covenants, DealScan reports no information of financial covenants.

Based on this evidence, we believe that it is best to view the DealScan covenant data as accurate when it is available but to treat missing data with care. In particular, we do not support treating missing covenant data as evidence that the loan package is covenant-lite.

The second place where DealScan provides covenant data is in the market segment file. These data are at the facility level and include a segment called "Covenant lite," which can be used to create an indicator that an individual facility has no financial covenants.

Across our loan contract sample, DealScan identifies 4.2% of the deals as having a covenant-lite

revolving loan, which overstates the frequency of revolving loans that truly lack financial covenants. Based on our reading of the contracts, only 1.5% of revolving loans lack financial covenants, which are the deals labeled "Deal without covenants" in Fig. 1. Although DealScan correctly denotes nearly all of the revolving loans that truly lack financial covenants, it incorrectly classifies some revolving loans as covenant-lite. In nearly all of these cases, the term loan in the same package is denoted as covenant-lite, so it seems likely that the revolving loan has been incorrectly included with the term loan. Based on our reading of the contracts, we believe it is best to assume that all revolving facilities contain covenants. Although this will misclassify a small fraction of facilities, the mistakes are far fewer than treating the market segment data as accurate for revolving loans.[58]

The market segment data are more informative for term loans. In our contract sample, 13.6% of deals have a term loan without covenants, which include the deals with split control rights and the deals with no maintenance covenants reported in Fig. 1. In 65% of these deals, DealScan correctly denotes the term loan as covenant-lite. However, in recent years, the false-negative rate is much lower than 35%. In the last two years of our sample, more than 85% of deals without financial covenants for the term loan have been identified by DealScan as covenant-lite. The false-positive rate is also extremely low. In the 86% of deals with covenants that do apply to the term loan, DealScan classifies fewer than 2% of the term loans as covenant-lite.

Finally, in the Online Appendix, we examine the underlying credit agreements for ten deals issued in 2017. We choose ten leveraged term loans that DealScan denotes as covenant-lite and read the underlying credit agreement from EDGAR. In each case, we confirm that the term loan does indeed not have financial covenants, confirming that DealScan remains quite accurate in recent years. We also find that each of the borrowers has a revolving loan that does contain financial covenants, confirming covenant-lite remains best interpreted as split control rights.

Based on this evidence, we suggest treating the market segment data as accurate for term loans, with the caveat that some term loans not designated as covenant-lite truly do not have financial covenants. Although this approach understates the prevalence of covenant-lite term loans, it is the preferable way to identify covenant-lite term loans, particularly for recent years when the false-negative rate is quite low.

[58] It is not the case that DealScan is classifying revolving loans with springing covenants as covenant-lite. Within the set of revolving loans that we determine to have springing covenants, only 13% are classified by DealScan as covenant-lite.

In the Online Appendix, we replicate the primary results of Section 5 using data exclusively from DealScan. We create an indicator for split control rights using only the market segment data. If the term loan in a deal is identified as covenant-lite, we assume that the revolver has maintenance covenants and identify the deal as having split control rights. This approach does not require reading the underlying loan contract and permits analyses of the broader DealScan sample, potentially including private firms.

## References


Abadie, A., Athey, S., Imbens, G. W., Wooldridge, J., 2017. When should you adjust standard errors for clustering? Unpublished working paper, National Bureau of Economic Research.

Aghion, P., Bolton, P., 1992. An incomplete contracts approach to financial contracting. Review of Economic Studies 59, 473–494.

Altonji, J. G., Elder, T. E., Taber, C. R., 2005. Selection on observed and unobserved variables: assessing the effectiveness of Catholic schools. Journal of Political Economy 113, 151–184.

Aramonte, S., Lee, S. J., Stebunovs, V., forthcoming. Risk taking and low longer-term interest rates: evidence from the US syndicated loan market. Journal of Banking and Finance .

Becker, B., Ivashina, V., 2016. Covenant-light contracts and creditor coordination. Unpublished working paper, Stockholm School of Economics and Harvard University.

Bellucci, M., McCluskey, J., 2017. The LSTA's Complete Credit Agreement Guide. Second Edition. McGraw Hill Education, New York.

Beneish, M. D., Press, E., 1995. The resolution of technical default. Accounting Review pp. 337–353.

Benmelech, E., Dlugosz, J., Ivashina, V., 2012. Securitization without adverse selection: the case of CLOs. Journal of Financial Economics 106, 91–113.

Berglof, E., von Thadden, E.-L., 1994. Short-term versus long-term interests: capital structure with multiple investors. Quarterly Journal of Economics 109, 1055–1084.

Berlin, M., Mester, L. J., 1992. Debt covenants and renegotiation. Journal of Financial Intermediation 2, 95–133.

Beyhaghi, M., Nguyen, C., Wald, J. K., 2017. Institutional investors and loan dynamics: evidence from loan renegotiations. Unpublished working paper, University of Texas at San Antonio and Federal Reserve Bank of Richmond.

Billett, M. T., Elkamhi, R., Popov, L., Pungaliya, R. S., 2016. Bank skin in the game and loan contract design: evidence from covenant-lite loans. Journal of Financial and Quantitative Analysis 51, 893–873.

Bolton, P., Scharfstein, D. S., 1996. Optimal debt structure and the number of creditors. Journal of Political Economy pp. 1–25.

Bord, V. M., Santos, J. A., 2015. Does securitization of corporate loans lead to riskier lending? Journal of Money, Credit and Banking 47, 415–444.

Bord, V. M., Santos, J. a. A. C., 2012. The rise of the originate-to-distribute model and the role of banks in financial intermediation. Federal Reserve Bank of New York Economic Policy Review pp. 21–34.

Carey, M. S., Gordy, M. B., 2016. The bank as grim reaper: debt composition and bankruptcy thresholds. Unpublished working paper 2016-069, Board of Governors of the Federal Reserve System.

Chava, S., Roberts, M. R., 2008. How does financing impact investment? The role of debt covenants. Journal of Finance 63, 2085–2121.

Chodorow-Reich, G., Falato, A., 2017. The loan covenant channel: how bank health transmits to the real economy. Unpublished working paper, National Bureau of Economic Research.

Datta, S., Iskandar-Datta, M., Patel, A., 1999. Bank monitoring and the pricing of corporate public debt. Journal of Financial Economics 51, 435–449.

Dell'Ariccia, G., Laeven, L., Suarez, G. A., 2017. Bank leverage and monetary policy's risk-taking channel: evidence from the United States. Journal of Finance 72, 613–654.

Demiroglu, C., James, C., 2015. Bank loans and troubled debt restructurings. Journal of Financial Economics 118, 192–210.

Denis, D. J., Wang, J., 2014. Debt covenant renegotiations and creditor control rights. Journal of Financial Economics 113, 348–367.

Diamond, D. W., 1993. Seniority and maturity of debt contracts. Journal of Financial Economics 33, 341–368.

Dichev, I. D., Skinner, D. J., 2002. Large-sample evidence on the debt covenant hypothesis. Journal of Accounting Research 40, 1091–1123.

Feldhütter, P., Hotchkiss, E., Karakaş, O., 2016. The value of creditor control in corporate bonds. Journal of Financial Economics 121, 1–27.

Garleanu, N., Zwiebel, J., 2009. Design and renegotiation of debt covenants. Review of Financial Studies 22, 749–781.

Gilson, S. C., John, K., Lang, L. H. P., 1990. Troubled debt restructurings: an empirical study of private reorganization of firms in default. Journal of Financial Economics 27, 315–353.

Gorton, G., Kahn, J., 2000. The design of bank loan contracts. Review of Financial Studies 13, 331–364.

James, C., 1987. Some evidence on the uniqueness of bank loans. Journal of Financial Economics 19, 217–235.

Maddaloni, A., Peydró, J.-L., 2011. Bank risk-taking, securitization, supervision, and low interest rates: evidence from the Euro-area and the US lending standards. Review of Financial Studies 24, 2121–2165.

Mavisakalyan, A., Meinecke, J., 2016. The labor market return to academic fraud. European Economic Review 82, 212–230.

Mikkelson, W. H., Partch, M. M., 1986. Valuation effects of security offerings and the issuance process. Journal of Financial Economics 15, 31–60.

Murfin, J., 2012. The supply-side determinants of loan contract strictness. Journal of Finance 67, 1565–1601.

Nini, G., Smith, D. C., Sufi, A., 2009. Creditor control rights and firm investment policy. Journal of Financial Economics 92, 400–420.

Nini, G., Smith, D. C., Sufi, A., 2012. Creditor control rights, corporate governance, and firm value. Review of Financial Studies 25, 1713–1761.

Ongena, S., Roşcovan, V., Song, W.-L., Werker, B. J., 2014. Banks and bonds: the impact of bank loan announcements on bond and equity prices. Journal of Financial Management, Markets and Institutions 2, 131–156.

Osborn, M. G., 2014. The cost of easy credit: loan contracting with non-bank investors. Unpublished working paper, Cornerstone Research.

Paligorova, T., Santos, J. A., 2018. Non-bank investors and loan renegotiations. Unpublished working paper, Board of Governors of the Federal Reserve System and Federal Reserve Bank of New York.

Park, C., 2000. Monitoring and structure of debt contracts. Journal of Finance 55, 2157–2195.

Rajan, R., Winton, A., 1995. Covenants and collateral as incentives to monitor. Journal of Finance 50, 1113–1146.

Repullo, R., Suarez, J., 1998. Monitoring, liquidation, and security design. Review of Financial Studies 11, 163–187.

Roberts, M. R., 2015. The role of dynamic renegotiation and asymmetric information in financial contracting. Journal of Financial Economics 116, 61–81.

Roberts, M. R., Sufi, A., 2009. Control rights and capital structure: an empirical investigation. Journal of Finance 64, 1657–1695.

Shivdasani, A., Wang, Y., 2011. Did structured credit fuel the LBO boom? The Journal of Finance 66, 1291–1328.

Smith, C. W., Warner, J. B., 1979. On financial contracting: an analysis of bond covenants. Journal of Financial Economics 7, 117–161.

Spyridopoulos, I., forthcoming. Tough love: the causal effects of debt covenants on firm performance. Review of Corporate Finance Studies .

Sufi, A., 2009. Bank lines of credit in corporate finance: an empirical analysis. Review of Financial Studies 22, 1057–1088.

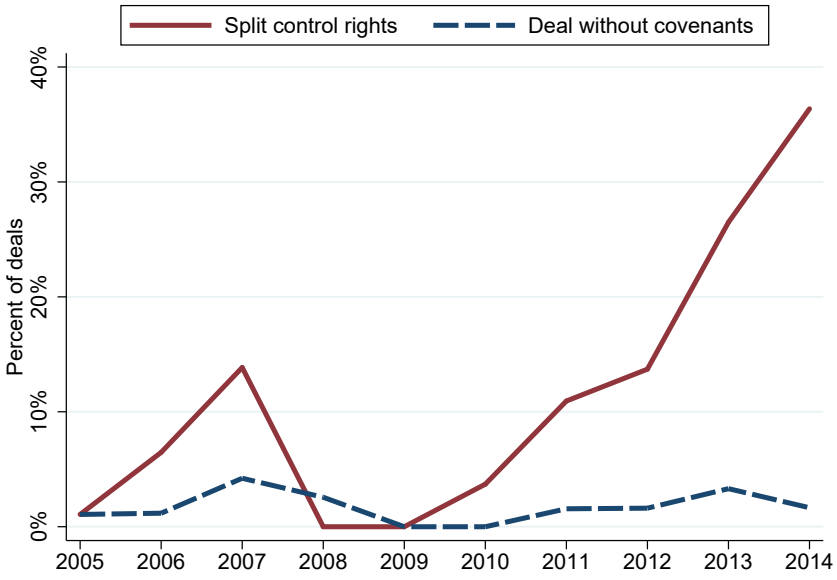
Taylor, A., Sansone, A., et al., 2006. The Handbook of Loan Syndications and Trading. McGraw Hill Professional, New York.

Wang, Y., Xia, H., 2014. Do lenders still monitor when they can securitize loans? Review of Financial Studies 27, 2354–2391.

Wight, R., Cooke, W., Gray, R., 2009. The LSTA's Complete Credit Agreement Guide. McGraw Hill Professional, New York.

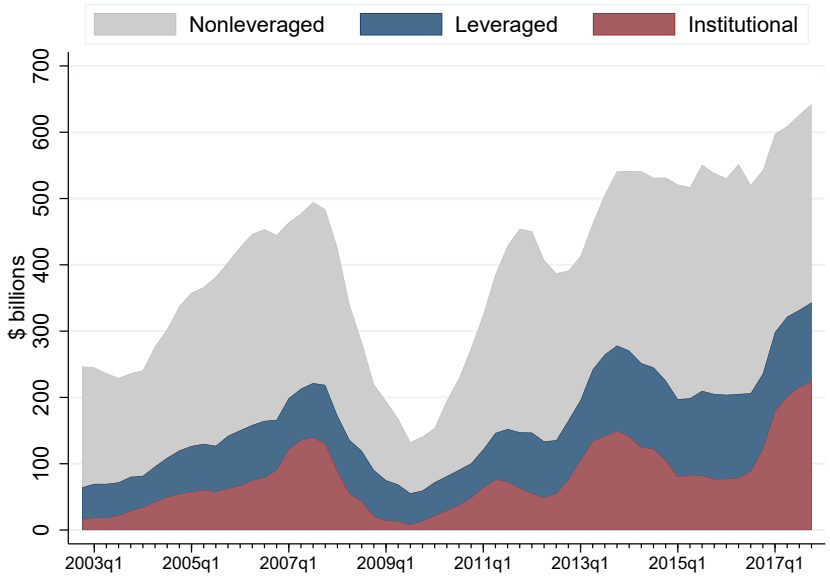
# Figures and Tables

Figure 1: Covenant-lite tranches and deals



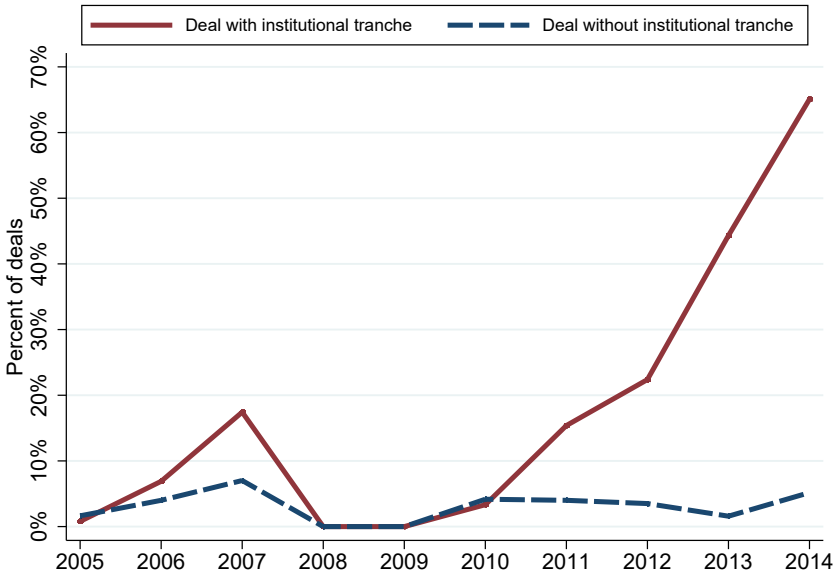

**Note:** The figure shows the annual proportion of leveraged loan deals that contain no financial maintenance covenants in any tranche (blue dashed line) and contain split control rights (red solid line). The sample includes only deals that include both a term loan and revolving line of credit, and the data have been compiled from the credit agreements governing the loans.

Figure 2: Issuance of syndicated loans



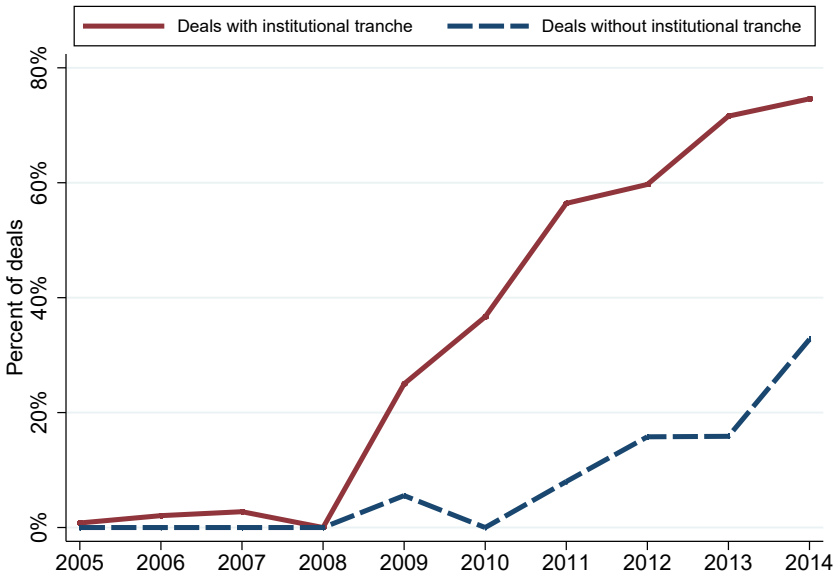

**Note:** The figure shows the four-quarter moving averages of issuance of syndicated loans. The sample is from DealScan from 2003:Q4 through 2017:Q4, and the determinant of Leveraged and Institutional loans is based on data from DealScan. All other syndicated loans are classified as nonleveraged.

Figure 3: Split control rights and institutional investors



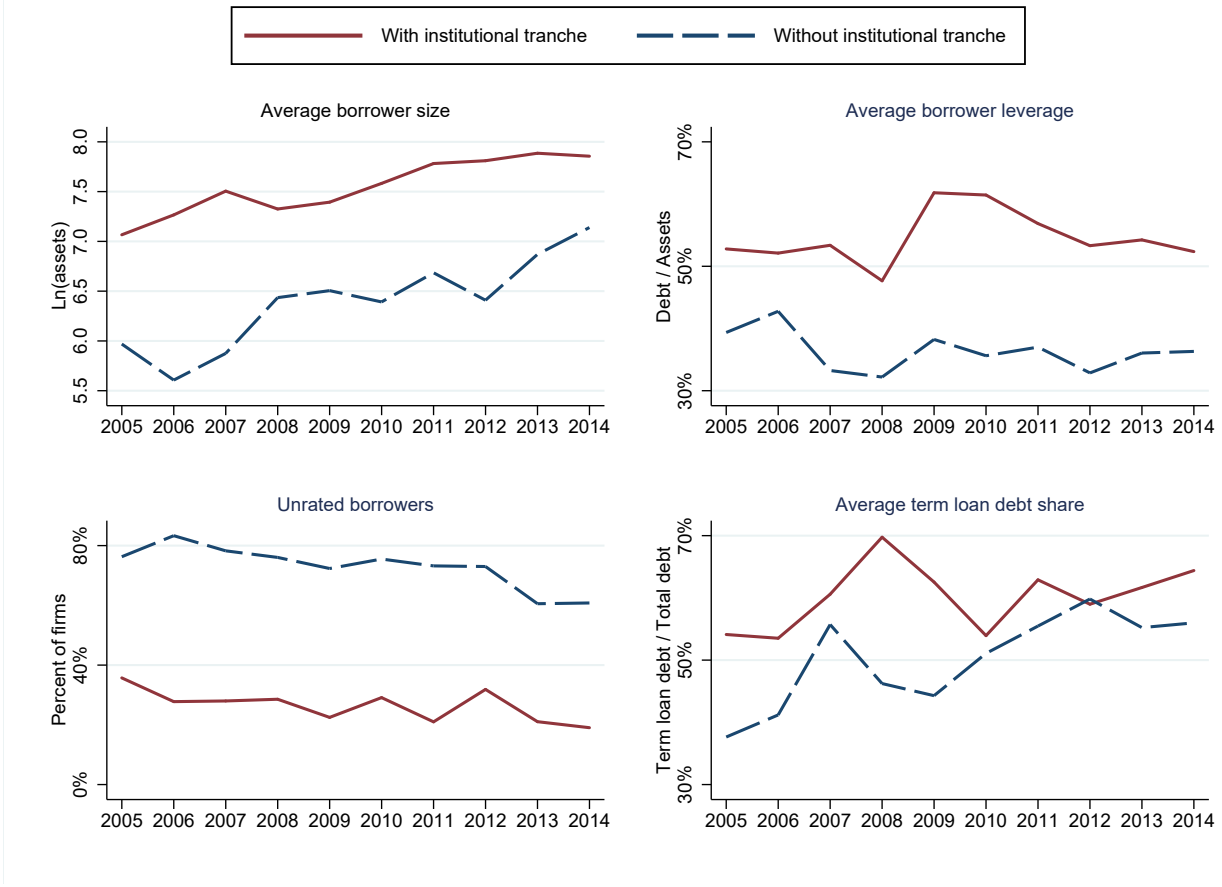

**Note:** The figure shows the annual proportion of leveraged loan deals that contain split control rights. The red solid line is for deals with an institutional tranche, and the blue dashed line is for deals without an institutional tranche, as determined by DealScan. The data on split control rights have been compiled from the credit agreements governing the loans.

Figure 4: Institutional investors and renegotiation provisions



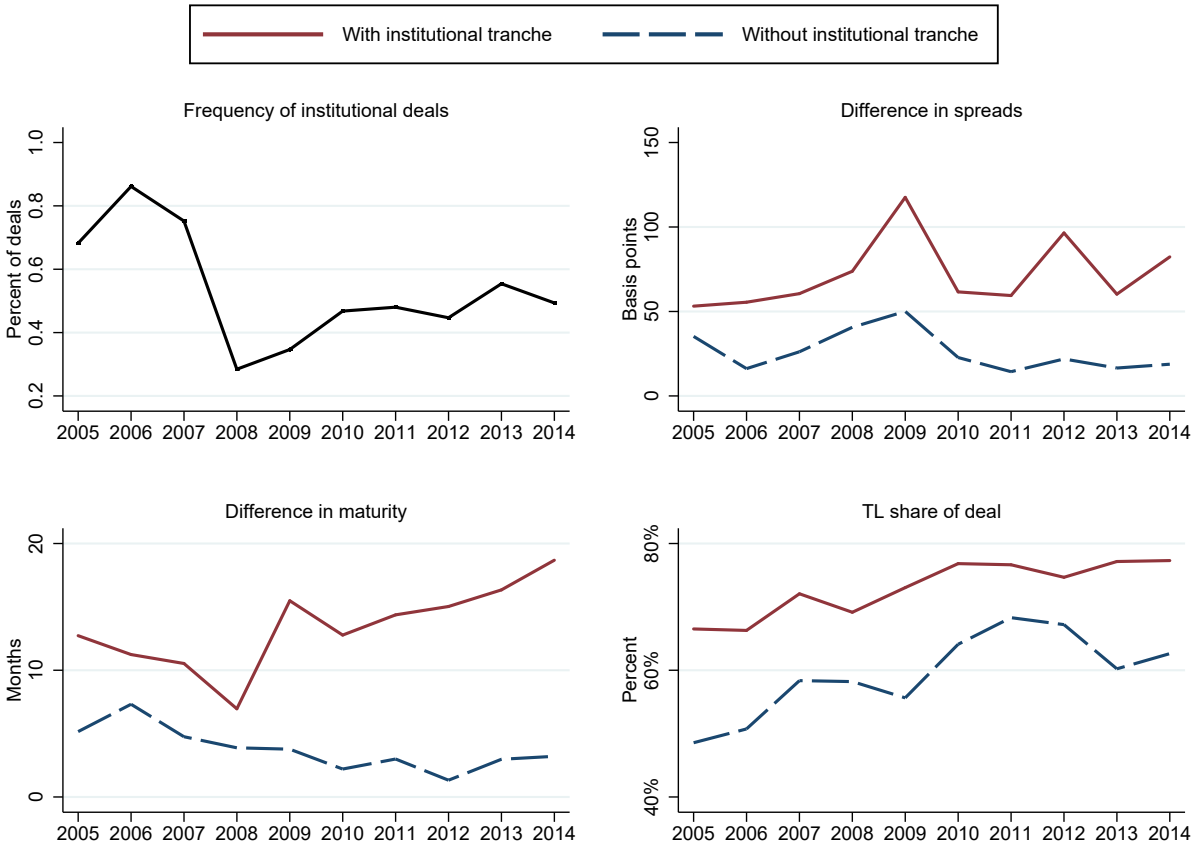

**Note:** The figure shows the annual proportion of leveraged loan deals that contain an amend and extend or refinancing provision. The red solid line is for deals with an institutional tranche, and the blue dashed line is for deals without an institutional tranche, as determined by DealScan. The data on split control rights, amend and extend, and refinancing provisions have been compiled from the credit agreements governing the loans.

Figure 5: Borrower characteristics and institutional deals




**Note:** The figure shows annual sample means for borrower characteristics compiled from Compustat and Capital IQ as of the fiscal quarter following the issuance date of the loan. Borrower size is defined as the natural log of total assets in 2009 dollars, Borrower leverage is defined as the ratio of the book value of debt to total assets, and Term loan debt share is defined as the ratio of term loan debt to total debt. In each graph, the red solid line is for deals with an institutional tranche, and the blue dashed line is for deals without an institutional tranche, as determined by DealScan.

Figure 6: Other loan terms and institutional investors




**Note:** The upper left panel shows the annual frequency of deals with an institutional tranche. The remainder of the figure shows the annual sample means for differences in loan terms between term loans and revolvers in the same deal. The Difference in spreads is the term loan spread minus the revolver spread, the Difference in maturity is the maturity of the term loan minus the maturity of the revolver, and the TL share of deal is the ratio of the term loan tranche to the total amount of the deal. The loan data are from DealScan. In each graph, the red solid line is for deals with an institutional tranche, and the blue dashed line is for deals without an institutional tranche, as determined by DealScan.

Table 1: Comparison of deals with and without a contract

| | (1) | (2) | (3) |
|---|---|---|---|
| | Deals with a contract (N=946) | Deals without a contract (N=7,089) | Deals without a contract, public firm (N=837) |
| Number of term loan tranches | 1.3 | 1.4 | 1.3 |
| Spread on term loan (bps) | 321 | 403 | 321 |
| Spread on revolver (bps) | 270 | 351 | 279 |
| Maturity of term loan (months) | 66 | 63 | 64 |
| Maturity of revolver (months) | 55 | 54 | 50 |
| Amount of term loan ($ millions) | 371 | 212 | 462 |
| Amount of revolver ($ millions) | 224 | 97 | 290 |
| Covenant-lite term loan (%) | 10 | 9 | 8 |
| Covenant-lite revolver (%) | 4 | 4 | 2 |
| Institutional term loan (%) | 61 | 57 | 69 |
| Institutional revolver (%) | 0 | 1 | 0 |
| Borrower in Compustat (%) | 100 | 12 | 100 |

**Note**: This table reports summary statistics for the full set of leveraged loan deals. A loan deal refers to all facilities current on the same date. A "Deal with a contract" is one for which we have the governing loan agreement; a "Deal without a contract" is all other issues. A "Deal without a contract, public Firm" is the subset of deals for which we find a Compustat observation from the quarter-end following issuance. The data are from DealScan.

Table 2: Realized covenant-related disclosures

| | Covenant violations (Sample mean = 0.078) | | | Covenant mentions (Sample mean = 3.5) | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Split control rights | –0.019 | 0.043 | 0.052 | 0.037 | 0.082 | –0.207 |
| | (0.026) | (0.056) | (0.056) | (0.381) | (0.639) | (0.602) |
| Ln(Assets) | | | –0.058*** | | | 0.568** |
| | | | (0.016) | | | (0.251) |
| Debt / Assets | | | 0.080 | | | 2.273** |
| | | | (0.069) | | | (1.082) |
| OIBDP / Assets | | | –0.608** | | | –5.153 |
| | | | (0.236) | | | (3.792) |
| Industry x Quarter FE | No | Yes | Yes | No | Yes | Yes |
| Rating x Quarter FE | No | Yes | Yes | No | Yes | Yes |
| N | 842 | 518 | 513 | 842 | 518 | 513 |
| r2 | 0.001 | 0.468 | 0.503 | 0.000 | 0.541 | 0.564 |

**Note**: This table displays coefficient estimates from OLS regressions of covenant-related disclosures on an indicator that the deal has split control rights. The disclosures are from the second 10-K following the issuance of the loan. "Covenant violations" is an indicator that the firm violated a financial covenant, and "Covenant mentions" is the frequency that the word "covenant" appears in the filing. "OIBDP" stands for operating income before depreciation and is measured over four quarters. "Industry x Quarter FE" refers to fixed effects for the industry of the borrower interacted with the calendar quarter the deal was originated, and "Rating x Quarter FE" refers to fixed effects for the credit rating of the borrower interacted with the calendar quarter the deal was originated. Firm-level variables are measured as of the 10-K filing date. Standard errors, reported in parentheses, are robust to arbitrary heteroskedasticity.
* $p< 0.05$, ** $p< 0.01$, *** $p< 0.001$

Table 3: Financial covenants in revolving loans

| | Split control rights (N=115) | Other deals (N=831) | |
|---|---|---|---|
| Share with springing covenants (%) | 45.2 | 7.9 | |
| With borrowing base | 22.6 | 7.2 | |
| Without borrowing base | 22.6 | 0.7 | |
| Springing threshold (%) | | | |
| 10th percentile | 0.0 | | |
| 25th percentile | 0.0 | | |
| 50th percentile | 17.5 | | |
| 75th percentile | 25.0 | | |
| 90th percentile | 30.0 | | |
| Covenant strictness (%) | | | Murfin (2012) |
| Mean | 21.5 | 29.8 | 22.5 |
| 10th percentile | 0.1 | 4.2 | 0.0 |
| 25th percentile | 3.5 | 17.3 | |
| 50th percentile | 21.4 | 31.9 | 17.5 |
| 75th percentile | 35.8 | 42.6 | |
| 90th percentile | 44.2 | 49.2 | 52.0 |

**Note**: This table reports summary statistics for the revolving loans in the sample of leveraged loan deals that include both a term loan and a revolver, split on whether the deal has split control rights. "Springing covenants" apply only if the borrower's line of credit is used beyond a contractually determined threshold. A "borrowing base" limits the borrower's revolving borrowings to a contractually determined percentage of the firm's acceptable collateral. The distribution of springing thresholds is for deals without a borrowing base and is not shown for Other Deals due to the small sample size. "Covenant strictness" is computed as in Murfin (2012), and the column labeled "Murfin (2012)" reports summary statistics from Table II in Murfin (2012). The data have been compiled from the credit agreements governing the loans.

Table 4: Syndicate structure of revolving loans

| | Split control rights (N=77) | Other deals (N=469) |
|---|---|---|
| Mean commitment size ($ millions) | 245.1 | 230.8 |
| Mean number of lenders | 9.4 | 15.3 |
| Mean average commitment ($ millions) | 24.0 | 17.8 |
| Mean agent commitment ($ millions) | 40.4 | 29.6 |
| Mean agent share of commitment (%) | 26.2 | 18.6 |

**Note**: This table reports summary statistics for the revolving loans in the sample of leveraged loan deals that include both a term loan and a revolver, split on whether the deal has split control rights. The data are from the Shared National Credits program for the subset of deals that could be matched to the broader set of deals with a contract.

Table 5: Split control rights and institutional tranches

| | Dependent variable: split control rights | | | |
|---|---|---|---|---|
| | 2005 - 2007 (Mean = 0.061) | | 2011 - 2014 (Mean = 0.222) | |
| | (1) | (2) | (3) | (4) |
| Institutional tranche | 0.283 | –0.461 | 1.519*** | 1.878*** |
| | (0.229) | (0.408) | (0.201) | (0.325) |
| Ln(Assets) | | 0.305** | | –0.056 |
| | | (0.132) | | (0.103) |
| Debt / Assets | | –0.814 | | –0.211 |
| | | (0.910) | | (0.844) |
| Debt / OIBDP | | 0.228** | | 0.136 |
| | | (0.110) | | (0.098) |
| OIBDP / Assets | | 10.415** | | 4.878 |
| | | (5.202) | | (4.518) |
| M.E. of institutional tranche | 0.034 | –0.059 | 0.366*** | 0.347*** |
| | (0.028) | (0.052) | (0.040) | (0.051) |
| Year-Quarter FE | No | Yes | No | Yes |
| Industry FE | No | Yes | No | Yes |
| Rating FE | No | Yes | No | Yes |
| N | 441 | 260 | 388 | 356 |
| r2 | 0.008 | 0.285 | 0.190 | 0.402 |

**Note**: This table displays coefficient estimates from probit regressions where the dependent variable is an indicator that a deal has split control rights, as determined by reading the governing credit agreements. The borrower data are compiled from Compustat as of the fiscal quarter following the issuance date of the loan. "OIBDP" stands for operating income before depreciation and is measured over four quarters. "M.E. of institutional tranche" reports the marginal effect of a discrete change in Institutional tranche from zero to one, computed with control variables at their sample means. "Year-quarter FE" refers to fixed effects for the calendar quarter the deal was originated, and "Industry FE" is constructed using the Fama-French 30 industry classification based on the SIC code. "r2" is the pseudo-$R^2$. Standard errors are reported in parentheses.
* $p< 0.10$, ** $p< 0.05$, *** $p< 0.01$

Table 6: The number of term loan lenders

| | Institutional Term Loans | | Other Term Loans | | p-value |
|---|---|---|---|---|---|
| | N | Mean | N | Mean | for difference |
| Number of lenders | 326 | 191 | 176 | 20 | 0% |
| Some CLO lender | 211 | 0.64 | 177 | 0.25 | 0% |
| Number of CLO lenders | 211 | 155 | 177 | 12 | 0% |
| CLO share of deal | 211 | 0.30 | 177 | 0.12 | 0% |

**Note**: This table reports summary statistics for term loan lenders for the set of leveraged loan deals with a loan contract, split on whether the deal contains an institutional tranche. The data on the number of lenders are from the Shared National Credits program and are based on the sample of matched deals, and the data on CLO lenders are compiled from CLO-i for the years 2011-2014.

Table 7: Institutional tranche and covenant violation outcomes during the financial crisis

| | Coefficient | Standard error | Borrower characteristics | r2 |
|---|---|---|---|---|
| I(Amendment) | –0.197*** | (0.082) | No | 0.194 |
| | –0.194*** | (0.095) | Yes | 0.206 |
| I(Waiver) | 0.146* | (0.078) | No | 0.235 |
| | 0.052 | (0.089) | Yes | 0.257 |
| Time to amendment (days) | 5.850 | (15.951) | No | 0.290 |
| | 35.847* | (19.995) | Yes | 0.359 |
| Ln(Amendment fee) | 0.799*** | (0.167) | No | 0.481 |
| | 0.345** | (0.177) | Yes | 0.658 |
| I(Spread increase) | 0.207* | (0.117) | No | 0.360 |
| | 0.230 | (0.155) | Yes | 0.369 |
| Change in Spread (basis points) | 45.415* | (23.757) | No | 0.424 |
| | 51.020 | (31.100) | Yes | 0.444 |

**Note**: This table displays coefficient estimates from OLS regressions that relate measures of renegotiation outcomes to an indicator that the deal contains a tranche marketed to institutional investors, Institutional Tranche, as determined in DealScan. The sample includes 112 unique firms that issued a leveraged loan prior to the end of 2008 and reported a new covenant violation at some point through the end of 2010. Each row reports the coefficient estimate and associated standard error for Institutional Tranche, plus the r-squared, for a single regression. Each of the six outcomes is repeated twice, with and without borrower characteristics as additional explanatory variables. Borrower characteristics include the same variables as in the regressions in Table 5: Ln(assets), Debt/Assets, Debt/OIBDP, and OIBDP/Assets. "OIBDP" stands for operating income before depreciation. The control variables are compiled from Compustat as of the calendar quarter of the violation. Each regression includes fixed effects for the calendar quarter of the violation.
* $p< 0.10$, ** $p< 0.05$, *** $p< 0.01$

Table 8: Split control rights and alternative renegotiation provisions

| | Without split control rights | With split control rights | Total |
|---|---|---|---|
| Without amend and extend or refinancing | 196 | 21 | 217 |
| | (90.3%) | (9.7%) | |
| With amend and extend or refinancing | 106 | 65 | 171 |
| | (62.0%) | (38.0%) | |
| Total | 302 | 86 | 388 |
| | (77.8%) | (22.2%) | |
| Chi-squared statistic | | | 44.5 |
| p-value | | | 0.000 |

**Note**: The table shows the count of deals with and without split control rights based on whether the deal contains an amend and extend or refinancing provision or not. The data are compiled from the governing credit agreements for the sample of leveraged loans that contain both a term loan and revolver. The numbers in parentheses report percentages of the row totals. The chi-squared statistic is for a test of the independence of the indicator variables for split control rights and amend and extend or refinancing provision. The sample includes only deals issued during 2011-2014.

Table 9: Institutional tranche and borrower characteristics

| | Ln(Assets) | Leverage | I(Unrated) | TL debt / Total debt |
|---|---|---|---|---|
| Institutional tranche | 1.271*** | 0.134*** | –0.450*** | 0.135*** |
| | (0.097) | (0.019) | (0.032) | (0.024) |
| Institutional tranche x Post-2010 | –0.314* | 0.042 | 0.016 | –0.077** |
| | (0.161) | (0.027) | (0.048) | (0.037) |
| Year-quarter FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| N | 1,768 | 1,768 | 1,765 | 1,701 |
| r2 | 0.280.0.222 | 0.248.0.128 | | |

**Note**: This table displays coefficient estimates from OLS regressions that relate borrower characteristics to an indicator that the deal contains a tranche marketed to institutional investors, Institutional tranche, as determined in DealScan. The borrower data are compiled from Compustat as of the fiscal quarter following the issuance date of the loan. Year-quarter FE refers to fixed effects for the calendar quarter the deal was originated, and Industry FE refers to the Fama-French 30 industry classification based on the SIC code. The sample includes all leveraged loan deals merged with Compustat, and the reported number of observations excludes all singletons within a fixed effect group. Robust standard errors, reported in parentheses, are clustered by calendar quarter.

* $p< 0.10$, ** $p< 0.05$, *** $p< 0.01$

Table 10: Institutional tranche and loan terms

| | Difference in spreads | Difference in maturity | TL share of deal |
|---|---|---|---|
| Institutional tranche | 28.984*** | 6.485*** | 0.179*** |
| | (7.465) | (1.499) | (0.017) |
| Institutional tranche x Post-2010 | 8.280 | 5.466** | –0.008 |
| | (10.917) | (1.869) | (0.023) |
| Borrowing base revolver | 105.671*** | 0.977 | –0.122*** |
| | (12.609) | (1.710) | (0.015) |
| Borrower characteristics | Yes | Yes | Yes |
| Year-quarter FE | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes |
| N | 1,685 | 1,729 | 1,757 |
| r2 | 0.272.0.209 | 0.363. | |

**Note**: This table displays coefficient estimates from OLS regressions that relate loan characteristics to an indicator that the deal contains a tranche marketed to institutional investors, Institutional tranche, as determined in DealScan. The Difference in Spreads is the term loan spread minus the revolver spread, measured in basis points; the Difference in maturity is the maturity of the term loan minus the maturity of the revolver, measured in months; and the TL share of deal is the ratio of the term loan tranche to the total amount of the deal. All loan characteristics are from DealScan. Borrower characteristics include the same variables as in the regressions in Table 5 and are compiled from Compustat as of the fiscal quarter following the issuance date of the loan. A "borrowing base" limits the borrower's revolving borrowings to a contractually determined percentage of the firm's acceptable collateral. Year-quarter FE refers to fixed effects for the calendar quarter the deal was originated, and Industry FE refers to the Fama-French 30 industry classification based on the SIC code. The sample includes all leveraged loan deals merged with Compustat, and the reported number of observations excludes all singletons within a fixed effect group. Robust standard errors, reported in parentheses, are clustered by calendar quarter. * $p< 0.10$, ** $p< 0.05$, *** $p< 0.01$