

Institutional Investors and Loan Dynamics: Evidence from Loan Renegotiations

Mehdi Beyhaghi, Ca Nguyen, and John K. Wald*

September 19, 2017

Abstract

We examine how the participation of nonbank institutional investors in syndicated loans is related to the loan renegotiation process and loan contracting. Nonbank syndicate participants, particularly CLOs, closed-end funds, and open-end mutual funds, are more likely than bank lenders to exit the syndicate rather than to participate in the renegotiated loan. The addition of most nonbank institutions is associated with an increase in the cost of debt. We argue that higher funding liquidity risk and higher renegotiation costs can explain some of the relations between the participation of nonbank institutions and loan renegotiation results.

Keywords: Nonbank Institutional investors, loan renegotiation, loan path, syndicated loans, funding risk

JEL classification: G21, G23, G32

*The University of Texas at San Antonio, 1 UTSA Circle, San Antonio, TX 78249. Email addresses: mehdi.beyhaghi@utsa.edu; ca.nguyen@utsa.edu; john.wald@utsa.edu. Tel. (210) 458-8291. We thank Lamont Black, Bob DeYoung, David Dicks, Yunjeon Kim, Greg Nini, Gordon Roberts, and participants at the Federal Reserve Board of Governors, the World Bank Conference on Long-Term Lending: Determinants and Effects in Washington DC, the International Finance and Banking Society meeting at Oxford University, the Northern Finance Association Meetings in Halifax, the Midwest Finance Association Meetings in Chicago, and the Lone Star Finance Conference in Waco for helpful comments. This project was funded in-part by the University of Texas at San Antonio, Office of the Vice President for Research.

I. Introduction

An existing literature considers debt heterogeneity and seeks to understand its relevance to the borrowing firm (see, e.g., Diamond, 1991, 1993; Park, 2000; Bolton and Freixas, 2000; DeMarzo and Fishman, 2007; and Rauh and Sufi, 2010). We extend this literature by recognizing that not only can a firm have heterogeneous types of debt, but that each separate loan can be owned by heterogeneous investors. Our objective in this study is to understand how debt ownership structure matters to the borrower.

We focus on the syndicated loan market for three reasons. First, compared to corporate bonds, each syndicated loan is owned by a smaller number of lenders and these lenders can be easily identified. Second, a syndicated loan can be owned by banks or nonbank institutional investors with distinct institutional characteristics.¹ Third, there are often renegotiations during the life of the loan (the loan path) where we can observe changes in the loan ownership structure as well as subsequent revisions in the terms of the loan. An average syndicated loan is renegotiated multiple times over its life (Roberts and Sufi, 2009; Denis and Wang, 2014; Roberts, 2015). By tracking a loan contract over time, we investigate the relation between an addition or exit of a particular type of lender (loan owner) and the loan amount, the loan maturity, the cost of debt, and the tightness of covenants.²

We use detailed information that we manually cross-check based on a representative sample of over 4,369 loans that go through 7,408 rounds of loan renegotiations between 1987 and 2013. Our data analysis indicates that close to one fifth of all the syndicated loans that are eventually renegotiated have at least one type of nonbank institutional investor in their original lending syndicate.³ Nonbank institutions are added into the syndicate in approximately 10% of the renegotiations, and they drop out of 24% of the renegotiations. We examine the characteristics that are associated with a member exiting the loan syndicate before the first renegotiation is complete, and we examine how the amount, maturity, spread, and covenant tightness change with the addition or deletion of various types of nonbank institutions.

Focusing on loan paths instead of loans at origination is at the core of our analysis. The first advantage of this approach is that it addresses the selection issue in which certain lenders only extend loans to certain borrowers. Taylor and Sansone (2006) and Beyhaghi

¹Individual investors have a very small presence in the syndicated loan market.

²A lender exits a lending syndicate by assigning or transferring its share of the loan to another syndicate member, by selling its share to another loan owner on the secondary market or by requesting debt repayment from the borrower (see Gande and Saunders, 2012; and Beyhaghi and Ehsani, 2017). Transferring loan ownership is common in the syndicated loan market. Also see Taylor and Sansone (2006).

³In the rest of the paper, we use the term “nonbank institution” as shorthand for “nonbank institutional investor.”

and Ehsani (2016) show that nonbank institutions are more involved in non-investment grade borrowers. A second advantage is that this method addresses the selection issue in which some lenders are only involved in certain types of loans. Lim, Minton, and Weisbach (2014) and Nadauld and Weisbach (2012) show that within a loan package, the lending syndicates for the Revolvers and Term Loan As are composed of only banks and the lending syndicates for Term Loan B, C, etc. usually include nonbank lenders. These loans, although originated at the same time to the same borrower, have different initial costs, maturities, covenants, and collateral. Working with a loan path is advantageous because it allows us to study the implications of a change in loan ownership on how the loan contract is renegotiated.

In the equity market, where the role of nonbank institutional investors in corporate governance has been more intensely studied, it is commonly assumed that the amount of regulation faced by a nonbank institution and its funding liquidity determines the institutions choices of investment horizon, style or strategy, and activism. We argue that the validity of these issues can be better tested in the loan market for several reasons. First, the outcome of lender intervention, that is the revision in loan terms, is more directly observed in loans. Second, in the loan market, banks are the traditional lenders, hence they provide a base for comparison when measuring the marginal effect of a nonbank institutional lender. In contrast, in the equity market, nonbank institutional investors are generally compared with individual investors. In addition, studying the renegotiation process enables us to re-examine the results found in equity market studies regarding the investors choice to exit or to intervene during the life of an investment.⁴

Nonbank institutions in general face fewer regulations than banks. At the same time, they do not have access to the governments protective facilities such as the Federal Reserve System as the lender of last resort and to the FDIC as the insurer of liabilities. Banks are mainly financed by deposits whereas nonbank institutions are funded by a variety of non-deposit instruments ranging from redeemable shares and securities to insurance policies and limited partnerships. Supporting the notion that the type of lender matters, Stein (2013) suggests that open-end investment vehicles such as mutual funds are subject to demandable equity, and that therefore the loans owned by them are more likely to be sold in fire sales than loans held by banks. These sales are more likely to occur because investors in these vehicles can seek to withdraw their funds with very short notice. The literature suggests that the lenders funding liquidity will not only affect the fate of a loan, but will also have implications for corporate governance. Back, Li, and Ljungqvist (2014) and McCahery, Sautner, and Starks (2016) show that equity investors who are concerned about liquidity are more likely to exit their investments rather than to engage in disciplining the managers of the firms in which

⁴See for example, McCahery, Sautner, Starks (2016).

they invest. This issue is different for hedge funds, which are less regulated and which are typically financed with long-term lock-up periods by deep-pocket investors. Ivashina and Sun (2011), Massoud, Nandy, Saunders, and Song (2011) and Ivashina, Iverson, and Smith (2016) show how hedge funds use the information they gather through their lending relationship to trade in the borrowers stock. Jiang, Li, and Wang (2010) also show how hedge funds strategically affect the bankruptcy process with the intention of converting the acquired position into a controlling equity stake upon the firm’s emergence from Chapter 11.

We find that of the original lending syndicate members, nonbank institutions are significantly more likely to exit the syndicate than banks before the first round renegotiation of the loan is completed. We also find that the addition of a nonbank institution is associated with an increase in the cost of debt, while the addition of a bank is associated with no significant change in loan cost. While the addition of both types of lenders generally increases the amount of credit available to the borrower and extends loan maturity, new nonbanks (other than insurance companies) do not have a significant impact on covenant tightness. This finding is consistent with nonbank institutions being in general less adept than banks in renegotiating contract terms, or possibly renegotiations and monitoring are more costly for these institutions than for banks.⁵

To better understand how loan ownership by nonbank institutions matters to the borrower, we extend our analyses by distinguishing among various types of nonbank institutions. By identifying the differences among nonbank institution types and observing their marginal effects on loans, we can better understand what the main driving factors are behind a nonbank institutions impact. We consider the following types of nonbank institutions: finance companies, investment banks,⁶ hedge fund/private equity funds, open-end mutual funds, closed-end funds,⁷ insurance companies, collateralized loan obligations (CLO), and other.⁸

We find that open-end mutual funds, closed-end funds, investment banks, and CLOs are more likely to exit a syndicate than bank lenders. This result supports the role of funding liquidity on the investors exit decision as these institutions rely on redeemable shares or

⁵Consistent with higher costs of renegotiations for nonbank institutions, Berlin, Nini, and Yu (2017) find that the rise of nonbank institutional investors has made loan renegotiations more costly in general. They document that over the past few years there is a trend to change loan contracts in response to the increasing presence of nonbank institutions and to make renegotiation easier. An example is the development of covenant-lite loan deals (2% of total loan issuance) and split control rights (About zero percent in 2009 but rising sharply thereafter).

⁶A bank in our study means commercial bank, an institution that is primarily financed by deposits and is FDIC insured.

⁷Typical closed-end funds in our study are loan funds such as Van Kampen American Capital Prime Rate Income Trust, Prime Income Trust, and Morgan Stanley Dean Witter Prime Income Trust.

⁸Examples of other investors include Answett Worldwide Aviation Services, the Bill and Melinda Gates Foundation, Nortel Networks Inc., Textron, and the Whitehall Corporation.

security issuance for funding. Hedge funds and private equity funds are also more likely than commercial banks to exit the syndicate. Although hedge funds and private equity funds are generally financed by deep-pocket wealthy investors with long-term lockup periods, they also have a less diversified portfolio when compared to other nonbank institutions, and this lack of diversification may explain their willingness to exit. We do not find any significant differences between banks and the other types of nonbank institutions, which are less subject to funding liquidity risk. These other types of institutions include finance companies that are usually subsidiaries of a larger firm, and insurance companies that are financed by long-term policy holders.

We also find that the cost of debt increases significantly if investment banks or insurance companies are added to the syndicate. The finding for insurance companies is consistent with them reaching for yield as described by Becker and Ivashina (2015). Also the finding that commercial banks are less likely than nonbank institutions to demand higher interest rates is consistent with the notion that bank loan portfolios are far more diversified than the loan portfolios of most nonbank institutions. Hence, when a bank adds a loan to its portfolio, it is mainly pricing the systematic risk of the loan. But when nonbanks add a loan to their portfolio, they may also be pricing part of the idiosyncratic risk of the loan. In additional tests we use the change in loan share held by nonbank institutions instead of the change in the number of nonbanks in the syndicate. For the smaller sample where shares are available, our results are consistent with our main findings.

While we control for macroeconomic factors in our analyses, to examine whether our results are affected by major macroeconomic shifts, in additional tests, we decompose the sample period into three sub-periods: January 1987 to December 2000, January 2001 to July 2007 and August 2007 to December 2013. Ivashina and Scharfstein (2010) mark August 2007 as the start of the global banking crisis, and Ivashina and Scharfstein note that loan originations dropped significantly in the banking crisis. While many of our results are consistent across different time periods, we find that finance companies and insurance companies have significantly higher likelihoods of withdrawal during the post-2007 period. We also find that the addition of nonbank institutions during the pre-2001 period led to a relatively bigger increase in total principal, while nonbank investors were associated with a longer extension in loan maturity before the financial crisis. Regarding loan spreads, our results show that the participation of nonbank institutions corresponds to an increase in spreads in the first and the third sub-periods. In contrast, an increase in the number of banks is not associated with changes in spreads.

In general, our results support the notion that investors funding risk affects their decision to exit their investments. In terms of how actively nonbank institutions affect loan

terms during renegotiations, we do not find support for the notion that hedge funds/private equity firms or mutual funds play a more significant role than banks. Other institutions such as investment banks and finance companies appear to be actively involved in covenant renegotiations but still less than commercial banks. This result supports the arguments by Sufi (2007) and Drucker and Puri (2009) that nonbank institutions may not be as adept at collecting private information as banks and suggests that nonbank institutional investors are less engaged in corporate governance than commercial banks.

The presence of nonbank institutions in the syndicated loan market is no longer a new phenomenon. However, as new regulations including risk retention rules under the Dodd-Frank Act of 2010 (effective in December of 2016) are being implemented, nonbank institutions are expected to expand their participation in syndicated lending at a much faster pace than before. This expansion is because the numerous reforms and regulations that followed the global financial crisis have put tougher restrictions on banks activities in the syndicated loan market (both in terms of involvement in loan origination and in loan securitization).⁹ Taking into account the rise in demand for credit after the crisis, these new rules mean that nonbank institutions are taking an increasing share of loans to fill the void left by banks.¹⁰ Our study contributes to the literature in several ways. First, it extends the literature on the role of lenders in corporate governance and on the disciplining role of debt (Diamond, 1984; Ramakrishnan and Thakor, 1984; Fama, 1985; James, 1987; Lummer and McConnell, 1989; Petersen and Rajan, 1994; Nini, Smith, Sufi, 2012). Second, it provides new insights on how nonbank institutional investors affect financial markets and corporate finance when compared to the traditional players in these markets, namely commercial banks. Specifically, we show that nonbank institutions with higher funding liquidity are more likely to exit investments than to engage in disciplining managers.

The rest of this study is structured as follows: Section II provides a review of the literature. Section III details the construction of our data set. Section IV presents our empirical findings, and Section V concludes.

⁹The Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System, and the Federal Deposit Insurance Corporation (FDIC) jointly published new strict guidance on leveraged lending on March 22, 2013. Further on December 10, 2013, these agencies approved regulations implementing the Bank Holding Company Act, commonly known as the “Volcker Rule.”

¹⁰The Shared National Credit (SNC) program reports that loan commitments of at least \$20 million in the United States totaled more than four trillion dollars in the first quarter of 2016. This is almost 40% higher than the level at the end of 2008. Of this amount around 23% of all commitments are made by nonbank financial institutions. Nini (2016) finds while firms have not significantly changed their capital structure (usage of debt versus equity) over the past few years, their debt ownership composition has changed dramatically, as banks are being replaced with nonbank institutions. SNC reports are available on the Federal Reserve Systems website: <https://www.federalreserve.gov>.

II. II. Literature

A. The relevance of the ownership structure of corporate debt

The ownership structure of corporate debt matters for several reasons. Prior research shows that not only is it potentially a key factor affecting the cost of debt for a firm (Ivashina, 2009; Ivashina and Sun, 2011; Nadauld, and Weisbach, 2012; Lim, Minton, and Weisbach, 2014), but it also affects the cost of financial distress and bankruptcy outcomes (Ivashina, Iverson, and Smith, 2016).¹¹ Most importantly, lenders influence future capital expenditures, cash holdings, payout policy, and financing decisions through collateral requirements, performance pricing, and the use of financial covenants on the loans they grant (Shleifer and Vishny, 1997; Chava and Roberts, 2008; Drucker and Puri, 2009; Nini, Smith, and Sufi, 2009; Bradley and Roberts, 2015; Roberts, 2015) and also by influencing the loan renegotiation process (Paligorova and Santos, 2016).

Despite the increasing presence of nonbank institutions in the syndicated loan market, the literature is mixed in predicting the additional effect of the inclusion of nonbank syndicate members into loan contracts.¹² For instance, Lim et al. (2014) find that loans with nonbank creditors pay a higher interest rate relative to loans with only bank creditors, consistent with the notion that banks provide discounts to borrowers for the potential to earn other fees from ongoing relationships. In contrast, Ivashina and Sun (2011a) find that higher institutional funding in 2001 to 2007, due to an increase in the supply of credit, caused interest rates on nonbank loans to be lower than similar loans funded by banks. Additionally, Sufi (2007) and Drucker and Puri (2009) argue that nonbank institutions may not be as adept at collecting private information as banks. Nonbank institutions may therefore take a passive approach in their relationship with the borrower and instead rely more heavily on public sources of information or the monitoring ability of the lead bank organizer.

Alternatively, the literature on institutional activism implies that some nonbank institutions invest particularly to use their rights to influence the borrowers either through constructive value-improving agendas and mitigating inefficiencies, as described in Brav, Jiang, Partnoy, and Thomas (2008), Giround and Mueller (2011), and Aslan and Kumar (2016), or through exploiting private information in the stock market (Ivashina and Sun, 2011; and Massoud et al., 2011), or by using their skills at the bankruptcy bargaining table (Ivashina et

¹¹Additionally, other studies argue that participation by nonbanks in a lending syndicate can affect the borrowers securities market in an indirect way. For example, Ivashina and Sun (2011) and Massoud et al. (2011) provide evidence on the exploitation of private information, disclosed by borrowers to nonbank lenders, in the borrowers equity market.

¹²Based on the SNC definition, nonbanks include securitization pools, hedge funds, insurance companies, and pension funds.

al., 2016; Jiang, Li, and Wang, 2010). This literature implies that activist investors may be better positioned to make use of covenants in loan agreements; thus we could alternatively see a positive correlation between the number of covenants or covenant tightness and the existence and type of nonbank investors.

B. Loan renegotiations are common

An extensive literature has discussed the role of the terms of a credit agreement, such as covenants and collateral, as a governance mechanism (see, for instance, Aghion and Bolton, 1992; Preece and Mullineaux, 1996; Garleanu and Zwiebel, 2009; Roberts and Sufi, 2009b; Dennis and Wang, 2014). A loan contract cannot feasibly address all contingencies and protect the creditor in every state of the world. Inherently imperfect contracts call for a mechanism to clarify the creditors rights (Grossman and Hart, 1986), and loan contract renegotiation provides the most frequently used mechanism (Hart and Moore, 1988, Gorton and Kahn, 2000), with litigation in bankruptcy court the more expensive alternative. Consistent with this argument, Roberts and Sufi (2009) show that more than 90% of long-term debt contracts are renegotiated prior to their stated maturity, and that only about 18% of renegotiations are directly or indirectly associated with a covenant violation or payment default. Denis and Wang (2014) also find even in the absence of covenant violations, debt covenants are frequently renegotiated. Renegotiation provides the lenders with the opportunity to improve the original contract when additional information arrives. Roberts and Sufi (2009b) also find that renegotiations arise when borrowing firms expect to implement changes in investing, financing, and distribution policies that are expected to affect the balance of corporate governance.

C. Lenders decision to exit the lending syndicate or to engage in renegotiations

When a need for change arises, an investor in general is faced with two choices: to exit the investment or to intervene (McCahery et al., 2016). A lender can liquidate their position in the secondary loan market, or through selling the participation to other syndicate members, or in some cases by calling the loan. Alternatively, if the lender decides to maintain the position, the lender can choose to take an active role by engaging in loan renegotiations. Renegotiations are costly for several reasons. Syndicate members face impediments to their activism because of the concerns over the “acting in concert” rule. This issue has been largely studied in the context of shareholder activism, where shareholders improvement plans can be shut down by other shareholders. There is also the “free rider” problem (Shleifer and

Vishney, 1986) based on which the costs of monitoring and research are imposed on the activist investor whereas the benefit of change is enjoyed by all syndicate members.

Prior studies indicate that investors who are concerned about liquidity are more likely to exit their investments rather than to engage in disciplining the managers of the firm they are investing in (Coffee, 1991; Back et al., 2014; McCahery et al., 2016). We hypothesize that nonbank institutions that are prone to funding shocks, such as open-end mutual funds, prefer exit to intervention. We expand our argument in Section II.E and in Internet Appendix I when we explain the differences among types of nonbank institutions.

D. Selection issues in lender-borrower relationship

We use loan renegotiations to study the effects of different types of nonbank institutions because comparing syndicated loans with nonbank participants against syndicated loans with only-bank participants is subject to a selection problem. Nonbank institutional investors are more likely than banks to finance high-yield risky loans, and the so-called “leveraged loan market” is dominated by nonbank institutions (Taylor and Sansone, 2006; Lim et al., 2014; Nini, 2016).¹³ The empirical studies by Lim et al. (2014) and Paligorova and Santos (2016) provide valuable insight into the differences between banks and nonbanks in their lending practices. In doing so, they design experiments to control for unobservable factors that are correlated with both the likelihood of there being a nonbank syndicate member and the contractual features, including the spread, of the loan they fund. For example, Lim et al. (2014) consider loan packages for one borrower that include a loan facility with at least a nonbank investor as well as a loan facility with only bank investors. Controlling for contractual differences, such as maturity, size, and covenants, between these loan facilities, they find that nonbank loans are priced with premiums relative to bank-only loans in the same loan package. While the objective of our paper is different, our approach also differs from Lim et al. (2014). Instead of providing a cross-sectional study across loans to the same borrower, we focus on events over time. That is, we analyze how the terms of a given loan change in response to changes in the lending syndicate composition. Hence, not only are we able to exclude the self-selection effects which occur from nonbanks lending more to certain types of borrowers, but we are also able to exclude the self-selection effects which occur from nonbanks participating in only certain types of loans.¹⁴

¹³Also see “leveraged loan monthly” reports by Thomson Reuters LPC, Bloomburgs “syndicated loans” product, and Standard and Poors Capital IQ Leveraged Commentary & Data (LCD) Quarterly Reviews. Additionally, SNC reports that in the first-quarter of 2016, U.S. nonbanks held over 60% of the riskiest loans, those classified as special mention and worse.

¹⁴Further, we extend Lim et al. (2014) by more finely categorizing nonbanks in our study, and by also considering credit agreement terms other than spread.

While Lim et al. (2014) focus on pricing data for new loans from DealScan, Paligorova and Santos (2016) use time series data from the Shared National Credit database (SNC) to track the annual change in the exposure of lenders to a particular borrower over time. Unlike the DealScan data, SNC does not contain information on loan pricing; however, it provides valuable information on the annual change in the share of lenders in a particular loan. Paligorova and Santos (2016) find that as the share of nonbanks in a loan syndicate increases, the likelihood that loans are renegotiated declines. Note that because of limitations to the SNC data, they only define a renegotiation as an increase in loan amount that is accompanied by a change in loan maturity. They also find that while nonbanks in general are more likely to decrease their shares in a loan over time, CLOs and mutual funds are more likely to increase their shares. These findings are largely complementary to the results which we present.

E. Differences among types of nonbank institutional investors and their implications

In this section, we discuss what drives nonbank institutional lenders approach in their lending behaviors. We focus on three main dimensions that differentiate these institutions: (1) the type of regulations governing them and (2) the sources and the structure of their funding or liquidity risk. A summary of these differences is provided in Table 1. In addition, we consider (3) nonbank institutions relative ability to gather and analyze borrowers information and their cost of monitoring borrowers.

Government regulation subjects financial institutions to certain requirements, restrictions, and guidelines that are designed to protect investors, to facilitate the flow of capital in the economy, and to reduce the risk of systemic failure. Some institutions are considered highly regulated, such as depository institutions, mutual funds, and insurance companies, while others are fairly unregulated, such as hedge funds and private equity firms. Regulations matter because they impose restrictions on the type of investments a financial institution can use and also on the sources of funding it can seek. Regulation also matters in terms of the disclosure requirements a financial institution needs to meet. In the United States, several federal organizations in addition to state regulatory agencies regulate depository institutions.¹⁵ Among depository institutions, commercial banks are the dominant player in the corporate loan market (over 90% share).¹⁶ On the other hand, the U.S. Securities

¹⁵These agencies include the Federal Reserve Board, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, National Credit Union Administration, the Office of Thrift Supervision, and the Federal Financial Institutions Examination Council (FFIEC).

¹⁶Others include credit unions and saving institutions.

and Exchange Commission (SEC) is the primary regulator for investment companies (e.g. mutual funds and closed-end funds). In general, issuers of securities (such as securitization pools or investment banks) and investment advisors (e.g. investment banks) are also regulated by the SEC. Additionally, the Department of Labor, Internal Revenue Agency (IRA), and state governments regulate insurance companies and pension plans.¹⁷ There are also nonbank institutions that are exempted from regulations. These can include private investment companies such as hedge funds that are not considered investment companies by the SEC under the Investment Company Act, or funds that are not investing in securities. Unlike stocks and bonds, loans are not considered securities. Therefore, if a funds portfolio is mainly composed of corporate loans, then by definition the fund is not subject to SEC supervision. We consider depository institutions (mainly commercial banks) as the base case for our study and analyze how the involvement of other types of financial institutions has different consequences.

In terms of funding, we expect the nonbank institutions that are more exposed to liquidity risk to lend differently than commercial banks.¹⁸ This is specifically true for institutions that rely on demandable short-term financing (such as mutual funds). We expect these institutions to invest in more liquid loans, and loans that are less complicated.¹⁹ We also predict that they avoid the costly and lengthy process of loan renegotiations. Other types of nonbank institutions rely on security issuance (closed-end funds and investment banks), while the rest rely on relatively longer term sources of capital such as insurance policies (insurance companies) and limited partnerships (hedge funds and private equity firms). Commercial banks, as the base case, rely heavily on deposits as the main source of capital. Most deposits must be available on demand. However, since deposits are insured by the FDIC, investors withdrawals are expected to be less sensitive to banks short-term performance. We discuss each type of financial institutions and the relevant differences in their sources of funding and amount of regulations faced in detail in Internet Appendix I.

In terms of information processing ability, banks arguably have an advantage over nonbanks. A considerable part of the banking literature highlights the special role of commercial banks in information production (see, for example, Diamond, 1984; Ramakrishnan and Thakor, 1984; Fama, 1985; Boyd and Prescott, 1986; Diamond, 1991; and Gande and Saunders, 2012). Banks are more likely to be better equipped with information for two reasons.

¹⁷As in Sialm, Starks, and Zhang (2015), we categorize pension plans in the open-end fund category.

¹⁸Liquidity risk is the risk that a sudden surge in withdrawals may leave a financial institution in the position of having to liquidate assets in a very short period of time and at low prices (Saunders and Cornett, 2014).

¹⁹One function of financial institutions is maturity transformation; that is, financial institutions transform illiquid long-term assets (such as loans) to liquid short-term liabilities (such as deposits or fund shares).

First, most syndicated loans are originated by commercial banks and then transferred to nonbanks (Drucker and Puri, 2009) or, if nonbanks are in the original lending syndicate, it is a commercial bank that assumes the role of the lead lender and thus is the conduit between the borrower and other syndicate participants. Sufi (2007) argues that participant lenders, having an “arms length” relationship with the borrowing firm through the lead lender, rarely directly negotiate with the borrowing firm. Therefore, it is more costly for nonbanks to engage in screening and monitoring. Second, commercial banks are considered relationship lenders whereas nonbank institutions are transaction-based lenders. Banks have an advantage over nonbanks through producing reusable borrower-specific information (see Diamond, 1984; Ramakrishnan and Thakor, 1984; and Fama, 1985; Bharath, Dahiya, Saunders, and Srinivasan, 2011; Beyhaghi, Massoud and Saunders, 2017). Drucker and Puri (2009) argue that nonbanks rely on banks when possible to monitor the borrower on their behalf.

The banking literature suggests that nonbank lenders take a passive approach in their relationship with the borrower and instead rely on the monitoring ability of the banks in the syndicate. This seems at odds with the “activism” literature in the equity market which suggests that some nonbank institutions take a relatively more active role than other investors. We argue that these two literatures are not necessarily contradictory because there is a fundamental difference between these two markets. In the loan market, commercial banks are the main player, whereas they are absent from the equity market. Therefore, in the loan market, nonbank institutions are less active relative to the main players, commercial banks, and in the equity market they are more active relative to other players such as individual investors. Because of banks expertise in information collection and monitoring, nonbank institutions rely on banks for these functions.

III. Data and Sample Selection

Our analysis consists of two types of tests. In the first type, our objective is to investigate whether nonbank institutions (or different types of nonbank institutions) are more likely to exit a lending syndicate or to engage in loan renegotiations relative to commercial banks. In the second type of tests, we aim to discover how loan terms and covenants are modified depending on whether different types of nonbank institutions enter or leave the loan syndicate, or alter their share in the loan. The dependent variable in our first group of tests is a lenders likelihood of exiting the lending syndicate. In our second group of tests, the dependent variables are the changes in the contractual features of the loan contract (amount, maturity, spread, and covenants) after the renegotiation.²⁰

²⁰We consider renegotiations outside financial distress or default.

We decompose the syndicate lenders into 9 categories: commercial banks and eight non-bank categories. We then analyze differences in each category's approach in choosing renegotiation over exit and the marginal effect of the entrance or exit of each nonbank category on loan terms. Further, we control for a host of variables including changes in borrowing firms characteristics, market conditions, and initial loan contract terms in addition to industry, time, loan type, and loan purpose fixed effects. We also conduct several tests to ascertain the robustness of our results. We use data on net fund inflows for the mutual funds in our sample to examine how funding shocks affect mutual fund loan portfolios.²¹ We also analyze the effects of the recent financial crisis by running our tests for separate time periods.

A. Sample selection

We start with the sample of all corporate loans in Loan Pricing Corporations Dealscan database that are initiated between 1984 and 2013 (276,862 loans). Dealscan contains loan deals between a borrower and either a syndicate of lenders or a single lender. Loan deals are typically composed of several individual loan facilities that can differ based on type (term loan versus line of credit), size, security, maturity, spread, covenants, and other loan characteristics. We focus on loans that belong to U.S. borrowers and are denominated in U.S. dollars (130,722 loans). We restrict the sample to loans belonging to nonfinancial, nonutility, public U.S. borrowers with available financial and market value data at the time of loan initiation and loan renegotiation. We also limit the sample to all borrowers with book assets greater than \$10 million. We use the DealscanCompustat link provided by Michael Roberts which extends through 2013 (Chava and Roberts, 2008) to acquire financial and stock price information from Standard & Poors Compustat data set (35,240 loans after this step). Next, we require all loan facilities to have non-missing, non-negative, non-zero loan amounts (principal), maturity, and interest spread (28,526 loans after this step). Lastly, we exclude loans less than \$1 million and those missing lender information. This leaves us with a sample of 28,302 loans. Details on all variables used in this study are provided in Table 2.

B. Loan path construction

As mentioned above, our paper differs from existing studies of institutional loan investors in that we consider the dynamic role of nonbank institutions for loans that are renegotiated. We obtain information on the terms of the renegotiation from one of two different methods. For our primary method, we search DealScan for any information that corresponds to renego-

²¹Among nonbank institutions, mutual funds are specifically regulated and are required to frequently report detailed information on funding flows and portfolio composition to the public.

tiated contracts. Dealscan reports information on loan amendments in the separate Facility Amendment Table. In addition to reporting quantitatively the magnitude of a change with respect to the loan amount, maturity, and interest spread, the Facility Amendment Table also provides a description of all the other modifications based on the information that Dealscan collects from, among other sources, the SEC filings and voluntary disclosures by lenders and borrowers. We carefully read and use all the descriptions provided in the comment column for all the loans in our final sample to construct our data.

To complement the first method, we also re-examine all the loans that are identified in Dealscan as new loans to check whether they are in fact renegotiated versions of another loan in the data. Using a sample of 1,000 loans within 1996-2005, Roberts and Sufi (2009) find that many of the loan renegotiations (47%) generate independent observations in Dealscan.²² Therefore, our second method involves re-examining loans to identify observations that correspond to renegotiated contracts. We identify the loan path built through the first method as *Amended loans*, and the loan path identified using the second method as *Refinanced loans*. Loan path construction through each method is explained in detail in Internet Appendix III. Figure 1 demonstrates an example of a loan with three renegotiation rounds. The final sample consists of 7,408 renegotiation rounds constituting 4,369 loan paths. The first method identifies 3,745 amendments, while the second method captures 3,663 refinanced loans that are classified as new loans by Dealscan. In comparison, Michael Roberts hand-collected data has 617 loan paths and 1,773 renegotiation rounds.

Figure 2 demonstrates the evolution in the lending structure of three loans with nonbank institutional lenders in their lending structure. The first example is a 5-year \$750 million term loan to Dean Foods Co., a milk and dairy product producer in August 2003 by a syndicate of lenders. Wachovia Bank was the lead bank and participated along with four other banks and one nonbank, GE Capital Corp. a Finance Company. The syndicate structure remained the same when a new loan negotiation occurred in December 2003. The second example is a 5-year \$75 million revolving credit granted to Cross Country Healthcare, a provider of healthcare recruiting and workforce solutions in November 2005. The next time the lending syndicate renegotiated with the borrower in September 2008, a new nonbank, Siemens Credit Corporation (a Finance Company) joined the syndicate. The third example is a \$22.4 million 15 month term loan granted to Ducommun Inc., a provider of transportation services, in November 2001. A nonbank lending syndicate member, Alpine Enterprises Ltd., a corporation, is present in the syndicate at the time of loan origination in November 2001

²²Most of the loans whose lending syndicate structure changes during renegotiations are reported as new loans in DealScan. On the other hand, most of the renegotiated loans whose lending syndicate remains the same are reported in the Amendment table in DealScan. An analysis of only the subsample reported as new loans provides results consistent with the reported tables, but potentially introduces a selection bias.

but exits the syndicate before the loan is renegotiated with the borrower in September 2002.

C. Lender identification

There are a total number of 3,046 unique lenders in our sample. Based on the discussion in Section II.C., we classify lenders initially into nine groups: (1) Commercial Bank; (2) Investment Bank; (3) Finance Company; (4) Insurance Company; (5) Open-end Mutual Fund; (6) Closed-end Fund; (7) Hedge Fund/Private Equity; (8) Collateralized Loan Obligations; and (9) Other, which includes lenders that do not belong to any of the above categories. Our identification strategy in general is similar to Lim et al. (2014) with the following three main exceptions. First, instead of putting all banks in one group, we distinguish between commercial banks and investment banks. The main reason is that in this paper we specifically care about the source of funding. Commercial banks rely on deposits as the primary source of financing, and they are eligible for FDIC insurance. Second, we distinguish between closed-end funds and open-end funds due to the higher vulnerability of open-end funds to financing shocks as described in Section II.E and discussed in detail in Internet Appendix I. Third, we identify CLOs as another main group because of their increasing importance in the corporate loan market.

To identify lender types, we first use the information provided by DealScan under “Institution Type.” Then we manually check lenders primary four-digit Standard Industrial Classification (SIC) codes to reclassify the few institutions that are misclassified by DealScan. We further manually check all the lender names and look for keywords that indicate lender type (e.g., “CLO” in the lender name). Lastly, we use Capital IQ, Moodys Investors Service (for CLOs), Bloomberg, SEC filings, and other news content (using Google search) to manually recheck those nonbank institutions. Internet Appendix II provides more details on our lender identification method.

IV. Methods and Empirical Results

A. Institutional types and the likelihood of exit: descriptive statistics

We perform our first group of tests, examining lenders exit decisions, by focusing on the first renegotiation round. That is, we consider each lenders exit from the syndicate between when the loan is originated and when the result of the first loan renegotiation is reported. If a lender is in the lending syndicate at the time of loan origination and is not present in

the lending syndicate at the time the renegotiation outcomes are reported, then we assume that the lender has exited the syndicate.

Table 3 presents the summary statistics for all the variables used in our exit analyses. The unit of observation is loan-lender. Panel A shows that on average 24% of lenders exit prior to the first renegotiation. Panel B exhibits the institutional profile of lenders participating in a loan syndicate at origination. As expected, commercial banks account for the largest group of lenders in the US syndicated loan market (83%). The most common types of nonbank institutions are finance companies, investment banks, and CLOs which account for, respectively, six, five and three percent of all lenders. Insurance companies, open-end funds, closed-end funds, hedge fund and private equity funds appear less frequently, with each group constituting approximately 1% or less of all lenders in the sample. Table 3 also shows that approximately 12% of the lenders are a part of the loan arranging team. A median lending syndicate includes 14 members, and the mean number of lenders is 17. Panel B of Table 3 also reports the net fund inflow for the sample of mutual funds lenders in our sample (in percentages). Net fund inflows are calculated using quarterly information from the CRSP Mutual Fund Database (details provided in the next subsection). There are 149 unique open-end mutual funds in our sample and we manually match 88 of these funds to CRSP data. Panel B reports that the mean fund flows for mutual funds range from -1.31% to 0.78% .

Panel C describes the original terms of each loan. Syndicated loans have an average of half a billion dollars in principal, maturity is 54.3 months on average, and average spread is 170.02 bps over LIBOR. More than half of the loans are secured. Around 77% of loans have at least one covenant. Only 7% of loans report what collateral is used to back the loan, and 66% of loan contracts include performance pricing provisions that automatically adjust the interest rate during the life of the loan based on the performance and financial health of the borrowing firms.

Panel D reports summary statistics on borrowing firm characteristics as reported in the quarter prior to loan origination. The book size of assets for an average firm in our sample is slightly more than six billion dollars. The average borrowers debt coverage ratio, measured as the ratio of earnings before interest, tax, depreciation and amortization (EBITDA) to total debt, is slightly less than half. Total debt accounts for approximately 36% of firm assets, while average Tobins Q is approximately 1.47. An average firm has a profitability ratio (net income to total assets) of 4% at the time of loan origination and an earnings volatility, calculated as the standard deviation of first differences in EBITDA/Assets, of two percent. Panel E shows the changes in borrowing firm characteristics between origination and the quarter before the first renegotiation round. In general, borrowing firms grow larger

and employ more debt in their capital structure. However, other performance measures such as EBITDA/Debt, Profitability, credit rating, and Tobins Q decrease on average at the time renegotiation results are out. The last panel (Panel F) demonstrates the changes in market conditions between loan origination and the first renegotiation. All macroeconomic factors, including GDP, stock market returns, banking sector leverage, and aggregate credit spread deteriorate slightly or remained unchanged during the sample period. Detailed descriptions of each variable are provided in Table 2.

B. Probability of exit: regression analysis

We estimate the probability of exit as a function of the institutional type of a lender, controlling for the changes in the borrowing firms financial health, the changes in macroeconomic environment, the initial loan features, and other controls. Model (1) demonstrates this specification.

$$\begin{aligned}
 Pr(Exit)_{L,B,C} = & \Phi\left(\alpha + \sum \beta_1 i \text{Lender Type}_i + \beta_2 \text{Loan Arranger}_{L,B,C} \right. \\
 & + \beta_3 \text{Loan characteristics}_{B,C} + \beta_4 \Delta \text{Firm characteristics}_{B,C} \\
 & + \beta_5 \Delta \text{Market conditions}_{B,C} + \text{Other Controls} \\
 & \left. + \epsilon_{L,B,C}\right)
 \end{aligned} \tag{1}$$

Here, Φ denotes the cumulative normal distribution and subscript L represents the L th lender in the syndicate. B represents the borrower id and C represents loan contract id among the borrowers portfolio of loans. i represents one of the nine possible lender types including commercial bank, investment bank, finance company, etc. The dependent variable is the probability that a lender withdraws from a loan syndicate. The variable of interest is the institutional type of the lender, with Commercial Banks, the reference group, omitted from the analysis. Loan Arranger L, B, C indicates whether lender L is among the loan arrangers for loan C . Loan characteristics B, C is the vector of Loan C initial terms. $\Delta \text{Firm characteristics}_{B,C}$ and $\Delta \text{Market conditions}_{B,C}$ are changes in firm characteristics and market conditions from loan C initiation to the time of the first loan renegotiation.

As control variables, we consider loan characteristics before renegotiation, including the loan amount, maturity, spread, security indicator, covenant indicator, borrowing base indicator, performance pricing indicator, and number of lenders. We also control for the levels of firm characteristics including the log of assets, coverage ratio, profitability, leverage and

earnings volatility at loan origination, as well as the changes in these firm characteristics between origination and the first renegotiation. Similar to firm characteristics, we include changes in market conditions (GDP, stock market, credit spread and bank leverage), represented by $\Delta\text{Market conditions}_t$ in our set of control variables. Detailed descriptions of all variables are provided in Table 2.

Table 4 presents the coefficients, marginal effects (in brackets) and standard errors (in parentheses) of variables based on the Probit estimation of Model (1). Specification (1) of Table 4 reports a general setting in which lenders are divided into either commercial banks or nonbanks. In Specification (2) we distinguish between each type of nonbank institution by using indicator variables for the specific lender types. The standard errors are clustered by borrowing firms. The analysis contains an extensive set of fixed effects including year, industry, and the credit rating of the borrowing firm.

The results show that controlling for other factors, a nonbank institution is more likely to exit a lending syndicate than a bank lender, and exiting nonbank institutions are most frequently replaced by commercial banks (see Table 8 below). The additional probability of exit for a nonbank in Specification (1) is 4.1%, and this coefficient is significant at the 1% level. The results also show that lenders that are a part of loan arranging team are less likely to exit a syndicate. Being a loan arranger decreases the probability of exit by around 50%, consistent with the notion that because of reputation and contractual obligations, these lenders are more committed to their loan arrangements than an average lender.

In terms of control variables, the results in Specification (1) of Table 4 suggest that a lender is actually more likely to exit if the characteristics of the borrower improve. That is, if the borrowers leverage declines, their profitability increases, and their size increases.

In Specification (2) of Table 4, we distinguish between each type of nonbank institution by using indicator variables. The results stay qualitatively similar when general identification of nonbank institutions is decomposed into specific types. Focusing on the marginal effects of institutional type indicators, we observe that all types of institutions are more likely to exit than commercial banks, although these results are not significant for finance companies, insurance companies, or other lenders. The results show that CLOs, closed-end funds, and open-end mutual funds have respectively 12.4%, 9.7%, and 8.4% higher chances of exiting a syndicate than commercial banks. The likelihood of exit is 8.1% greater for hedge funds/private equities and 2.2% for investment banks.

We next consider whether the probability of exit for open-end mutual funds varies with respect to net fund inflows. We focus on open-end mutual funds because they are the most regulated nonbank institutions, and because quarterly data for fund flows is available. There are 149 unique open-end mutual funds in our sample and we manually match 88 of these

funds to CRSP data. The net fund inflow is computed as the net growth in fund assets beyond reinvested dividends as in Sirri and Tufano (1998):

$$\text{Net fund inflow}_{i,t} = \frac{mtna_{i,t} - mtna_{i,t-1} (1 + mret_{i,t})}{mtna_{i,t-1}} \times 100 \quad (2)$$

where $mtna_{i,t}$ is the monthly total net assets of fund i at time t , and $mret_{i,t}$ are the total returns of fund i at the end of month t . We add the net fund inflows in the 3 month, 6 month, 9 month, and 12 month prior to the renegotiation data as additional explanatory variables and the results are presented in Table 5.

Consistent with the exit of mutual fund lenders being partly driven by fund flows, we find that greater net fund inflows in the prior 6 or 9 months imply significantly lower likelihoods of exiting the lending syndicate. A one percent increase in the net fund inflows in the prior 6 months implies a 0.71% decrease in the probability of exit (significant at the 1% level), while a one percent increase in the net fund inflow in the prior 9 months implies a 1.45% decrease in the probability of exit (significant at the 5% level).

We further examine whether the specific time period affects nonbank institutions behavior, especially since the financial crisis occurs during our sample period. In Table 6, we compare the probability of exit across nonbank institutions over three time periods: January 1987 to December 2000, January 2001 to July 2007, and August 2007 to December 2013. Ivashina and Scharfstein (2010) mark August 2007 as the start of the crisis, and according to them loan originations were significantly reduced after this time. The results in Table 7 show that there is no significant difference between the likelihood of exit among nonbanks in these three periods. Specifically focusing on the latter period that starts with the financial crisis and extends to the present time, only finance companies and insurance companies have significantly higher likelihoods of withdrawal relative to their pre-crisis situation.

The results of our exit analyses generally support the hypothesis that nonbank institutions are more likely to exit the lending syndicate than banks. We find partial support for the notion that institutions with higher liquidity risk, such as those dependent on redeemable capital or security issuance, are more likely to exit. As hedge funds/private equities are also more likely to exit, this does not support the notion that the amount of regulation faced by an institution affects the decision to exit. We are unable to reject the hypothesis that investment banks, finance companies, and insurance companies exit in a way that is similar to commercial banks. Lastly, we do not find strong evidence that all nonbank institutions change their exit strategy systematically after the crisis. Only finance companies and insurance companies have a significantly higher probability of exit after the crisis.

C. Institutional types and renegotiation results: descriptive statistics

Our second set of analyses focuses on the marginal effect of nonbank institutions on loan terms. We conduct these analyses at the renegotiation round level. Table 7 reports the descriptive statistics of the variables used in the analyses. Panel A of Table 7 shows that a loan in our sample is on average renegotiated 2.53 times during its life. Because we restrict the sample to loans that are renegotiated, the minimum number of renegotiations is 1 while the maximum number of renegotiations for a loan in our sample is 13. Similar to Table 3, Table 7 also provides descriptive statistics on prior loan characteristics (Panel B), which provide the base from which we measure the change in the contract variables following a renegotiation. Panel C of Table 7 describes the distribution of renegotiation results. On average, following a renegotiation, the size of a loan increases by 16% (or about \$56 million for the average loan of \$352.81 as reported in Panel B) and the maturity of the loan is extended by 25% (equivalent to 14 and half months for an average loan). Loan spread as a measure of cost of debt for the borrower and as a measure of required rate of return for the lender rises by an average of 18% (a 37 bps increase for the average spread over LIBOR).

We also consider various measures of covenant tightness. If a lender is actively engaged in monitoring the borrower, it is more likely that the lender will modify the covenants during renegotiations. We build two measures of covenant modifications.²³ The first measure is the overall change in the number of covenants. The second measure is a covenant tightening index that considers both the overall change in the number of covenants as well as the tightening of each covenant. We infer the tightening of covenants by comparing new minimum or maximum allowable levels and by reading all the comments on the covenant section of the contracts in Dealscan. This index is set to 1 if the covenants are looser relative to pre-renegotiation value, to 2 if they are the same, and to 3 if the covenants are tighter. On average the number of covenants increased by about 0.02 covenants (an average loan has 2.2 covenants with the median loan having exactly two covenants). The results show that while the number of covenants slightly increased, the covenant tightening index has a mean slightly under 2, implying that on average covenants were relaxed slightly during renegotiations. This observation is consistent with Dennis and Wangs (2014) finding that renegotiations are typically associated with a loosening of existing restrictions.

Panel C of Table 7 reports the summary statistics for changing participation of bank and nonbank institutions. A nonbank syndicate structure is a syndicate with at least one nonbank

²³The two most popular covenants are restrictions based on debt to EBITDA ratios and the interest coverage ratio.

institution, whereas an all-bank syndicate is a syndicate that only consists of commercial banks. Of the original lending syndicates with at least one nonbank, 46% retain their lending structure during renegotiations. Changing from an all-bank to nonbank syndicate (6% of renegotiations) or vice versa (5% of renegotiations) is considered an extreme case. Panel D of Table 7 reports details in the change in the number of each nonbank institution type during a renegotiation round. The net change in the number of commercial banks is -2.3% . The net change in the number of other types is less than 1%. The average number of lenders in a syndicate before renegotiation is 9 and this decreases slightly in the renegotiation.

Similar to Table 3, Table 7 also provides descriptive statistics on prior levels of firm characteristics (Panel E), changes in firm characteristics from the previous renegotiation to the current (Panel F), and changes in macroeconomic factors (Panel G). One key difference with Table 3 is that whereas Table 3 only covers the first renegotiation round for each loan, Table 7 covers all the renegotiation rounds. Moreover, Table 3 is at the loan-lender level while Table 7 is at the loan-renegotiation round level.

Table 8 provides a schematic representation of lending syndicate transformation during each renegotiation round. Each column in the matrix of Table 8 represents possible lending syndicate structure at the beginning of the renegotiation round and each row represents the possible outcome at the end of the renegotiation round. The possible structures include only commercial banks, or some combination of banks with various types of nonbank institutions, or only nonbank institutions. For example, Table 8 shows that of the syndicates that were originally only commercial banks, 3,188 remain only commercial banks, while 213 become commercial banks plus investment banks. This table shows that while the most common structure is commercial banks only, a nontrivial number of syndicates include nonbank institutions. Additionally, no change in the makeup of the syndicate structure is the most common outcome, although adding and removing other types of lenders occurs with sufficient frequency to provide an adequate sample for analysis.

D. Changes in the syndicate structure and subsequent changes in loan terms

We examine the changes in loan features as a function of changes in the lending syndicate structure, prior loan terms, changes in firm characteristics, and market conditions. We take two separate approaches in measuring the change in the lending syndicate structure. These approaches are described in Models (2), (3), and (4) below. In Model (2) the change in a lending syndicate can be one of four general forms: a transition from a bank-only syndicate to a syndicate with at least one nonbank institution (which we call a nonbank syndicate), a

transition from a nonbank to a bank-only syndicate, a transition from a bank-only syndicate to another bank-only syndicate, or a transition from a nonbank syndicate to another nonbank syndicate. We use all-bank to all-bank as the base case and use three dummies to measure the other transitions.

$$\begin{aligned}
\text{Renegotiation result}_{t,B,C,r} = & \beta_{11}\text{Nonbank to Nonbank}_{B,C,r} \\
& +\beta_{12}\text{All-bank to Nonbank}_{B,C,r} \\
& +\beta_{13}\text{Nonbank to all-bank}_{B,C,r} \\
& +\beta_2\text{Loan characteristics}_{B,C,r} + \beta_3\Delta\text{Firm characteristics}_{B,C,r} \\
& +\beta_4\Delta\text{Market conditions}_{B,C,r} + \text{Other Controls} \\
& +\epsilon_{B,C,r}
\end{aligned} \tag{3}$$

Subscript r represents renegotiation round, where round 1 starts from loan initiation and ends in the first renegotiation. t represents one of the loan terms including spread, amount, maturity, and covenant tightness. Renegotiation result t, B, C, r is the change in loan term t as a result of the renegotiation round r for borrower B 's contract C . The coefficients of interest are $\beta_{11}, \beta_{12}, \beta_{13}$. They measure the marginal effect of each form of transition on the renegotiation outcome. Loan characteristics $_{B,C,r}$ is the vector of Loan C initial terms at the beginning of round r . $\Delta\text{Firm characteristics}_{B,C,r}$ and $\Delta\text{Market conditions}_{B,C,r}$ are changes in firm characteristics and market conditions from the beginning of round r until round r renegotiation is completed. To estimate Model (2), we employ an Ordinary Least Square regression where the dependent variables are the percentage changes in loan amount, maturity, spread, or change in the number of covenants. We also examine three measures of covenant tightness using an Ordered Probit regression (these ranks refer to whether a renegotiated covenant is looser (1), unchanged (2), or tighter (3)).

In Model (3), we take a different approach in how we measure a change in a lending syndicate. For each of our nine types of lenders, we define a variable that shows the change in the number of that type of lender during a renegotiation. For example, if the number of commercial banks has gone up by two banks during a renegotiation, then the variable corresponding to commercial banks is assigned a value of 2. This model is as follow:

$$\begin{aligned}
\text{Renegotiation result}_{t,B,C,r} = & \sum_i \beta_{1i} (\Delta \text{Number of Lender Type}_i)_{B,C,r} \\
& + \beta_2 \text{Loan characteristics}_{B,C,r} + \beta_3 \Delta \text{Firm characteristics}_{B,C,r} \\
& + \beta_4 \Delta \text{Market conditions}_{B,C,r} + \text{Other Controls} \\
& + \epsilon_{B,C,r}
\end{aligned} \tag{4}$$

Where β_{1i} is the marginal effect of a one unit increase in the number of lender type i on the loan term t .

Lastly, in Model (4) we take advantage of the information available in Dealscan on the share of the loan held by each syndicate member. Dealscan reports information on the share of each lender for only about 30% of all lenders. The loan observations that have complete lender share information for all lenders in their lending syndicate are about 10% of the total sample. To that end, in Model (4), we define a variable that shows the change in the total share of nonbank institutions during a renegotiation. For example, if the share of nonbank institutions in a loan changes from 20% to 35%, then this variable is assigned a value of 10. This model is as follow:

$$\begin{aligned}
\text{Renegotiation result}_{t,B,C,r} = & \beta_1 (\Delta \text{Share of nonbank institutions in the loan}_i)_{B,C,r} \\
& + \beta_2 \text{Loan characteristics}_{B,C,r} + \beta_3 \Delta \text{Firm characteristics}_{B,C,r} \\
& + \beta_4 \Delta \text{Market conditions}_{B,C,r} + \text{Other Controls} \\
& + \epsilon_{B,C,r}
\end{aligned} \tag{5}$$

Where β_1 is the marginal effect of a one percent increase in the share of lender type i on the loan term t .

In Tables 9 and 10, the change in the lending structure means a transition from an all-bank syndicate to an all-bank or a nonbank syndicate and vice versa. In Tables 11, 13, 14, 15, and 16, the change in the lending structure is measured by the change in the number of each type of nonbank institution. In Table 12, the change in the lending structure is measured by the change in the total share of nonbank institutions in the loan.

The base case in Table 9 is all-bank to all-bank, which refers to the case where the only-

commercial bank syndicates remain with only-commercial banks after the renegotiation. Note that the number of commercial banks before and after the renegotiation might be different but in this base case there is no nonbank added to the syndicate. The results in Table 9 show that when at least one nonbank institution joins the syndicate, the loan amount and length on average increase by 7.9% (equivalent to \$28 million for an average loan) and 12.3% (equivalent to 7 months for an average loan). This transition comes at a higher cost for the borrower as the average loan spread increases by 6.6% (about 13 bps for an average loan). While it is not surprising that the amount or the maturity of a loan increases during renegotiations, focusing on the change in spread reveals that when the final syndicate structure includes at least one nonbank, the borrower is more likely to experience a higher loan spread.

The results for the firm and loan characteristics are consistent with expectations. Higher pre-existing loan amounts, maturities, and spreads are associated with downward adjustments as the loan contract is revised. Loans supported by a borrowing base such as account receivables and inventories are more likely to have lower spreads after renegotiation. Loans with larger syndicates are more likely to increase loan amount and maturity. However, they are less likely to increase loan spreads.

The results in Table 9 also show that borrowers that experience asset growth, borrowers who become more profitable, and borrowers whose credit ratings are positively updated experience decreases in the cost of debt as well as increases in the loan amount and maturity. Borrowers that become more leveraged are more likely to experience reductions in the maturity of their loan and increases in their loan spreads.

In Table 10, we examine the effect of a syndicate structure transition on covenants. The results in general do not suggest that the transitions as defined in Table 9 have any specific impact on covenants. Only one coefficient is significant at the 10 percent level and that is the negative coefficient of the indicator of nonbank to all-bank transition in Column (2).

In Tables 11, 13, 14, 15, and 16, instead of looking at extreme structural changes, we look at the change in the number of lenders from before the renegotiation started to after the renegotiation is completed. In Table 11, we categorize lenders into two main groups of commercial banks and nonbank institutions and we estimate their marginal impact on the change in loan terms (amount, maturity, and spread). The results show that an increase in the number of both types of lenders is accompanied by an increase in loan amount and maturity. This finding is consistent with the notion that the addition of lenders directly affects the supply of credit to the borrower. The results also show that only the addition of nonbank institutions is accompanied by an increase in spreads. This result is consistent with our prior findings and with the notion that it is more costly for nonbanks to participate

in renegotiations. It is also consistent with the findings of Lim et al. (2012) that nonbanks in general require a higher rate of return from their investments, while banks focus on relationship-making and the potential to make additional income from an ongoing relationship with the borrower. Alternatively, this finding could also reflect the lower diversification of most nonbank institutions relative to bank loan portfolios. Thus, when a bank adds a loan to its portfolio, it is mainly pricing the systematic risk of the loan. But when a nonbank institution adds a loan to their portfolio, they may also be pricing part of the idiosyncratic risk of the loan. All else equal, one additional nonbank institution implies a 2.1% increase in loan spread on average (over 4 bps).

In Table 12 we examine the robustness of the results in Table 11 by using the change in nonbank institutions share in a loan as the explanatory variable of interest. The share data is only available for a small fraction of the loans in Dealscan. The results in Table 12 confirm our previous findings for how spreads change. An increase in the share of nonbank institutions is significantly associated with an increase in loan spread. The estimated coefficients for the change in loan amount and the change in loan maturity are insignificant, which is not inconsistent with our previous findings: a 1% increase in the share of nonbank institutions implies 1% decrease in the share of commercial banks. The overall effect of this change on the supply of credit is insignificant because, as shown earlier, the addition of both banks and nonbank institutions is associated with an increase in the supply of credit.

We next divide the analysis into three subsamples. In Table 13, we run the regressions in Table 11 for each sub-sample and compare the coefficients to examine if a change in the number of lenders affects the loan terms differently across these sub-periods. The results are provided separately for change in amount, change in maturity, and change in spread. The findings show that the marginal effect of a one unit change in the number of bank lenders on loan amount, maturity, or spread is not significantly different across the sub-periods. In contrast, an increase in nonbank institutions has a larger impact on amounts in the first period than in the second or third period, and an increase in nonbank institutions implies a longer maturity in the first and second periods. We do not, however, find a significant change on nonbanks impact on spreads as we move from one sub-period to another. This result differs from Ivashina and Sun (2011b) who find that corporate credit expansion between 2001 and first half of 2007 by nonbanks led to lower spreads in corporate loans.

Table 14 reports the results of regressing the changes in covenant variables on the changes in the number of lenders. An increase in both types of lenders (commercial banks and nonbank institutions) increases the number of covenants on average as shown in Column (1). However, the results show that while an increase in the number of nonbanks has no significant effect on covenant tightness, an increase in the number of banks in the syndicate

increases the tightness of the loan, and this supports the notion that banks are more involved in covenant negotiations.

In Table 15, we provide regressions which include separate indicators for different types of nonbank institutions on loan amount, loan maturity, and loan spread. Specifically, we consider the change in the number of commercial banks, investment banks, finance companies, insurance companies, open-end mutual funds, closed-end funds, hedge funds/private equities, CLOs, and others. Consistent with our prior findings, we find that adding commercial banks, finance companies, or investment banks is associated with an increase in both the loan amount and maturity. Further, supporting our prior findings, we find that the cost of debt is not significantly affected by a change in the number of commercial banks. The results are different for investment banks and insurance companies for which we find that a one unit increase is associated with a 3.4% and 12.6% increase in spread, respectively. Considering that an average loan spread over LIBOR is 204 bps for this sample, these changes imply an average 7 bps and 26 bps increase in spreads for investment banks and insurance companies, respectively. The marginal effects are insignificant across other types of lenders such as open-end mutual funds, closed-end funds, hedge funds/private equities, and CLOs.²⁴

Table 16 presents the results of how covenants change with the number of different types of lenders. These results are consistent with the prior covenant analysis. We find that the addition of commercial banks is associated with both an increase in the number of covenants and an increase in covenant tightness. The results are significant at the 1% level. We also find that an increase in the number of finance companies is associated with an increase in the number of covenants and an increase in the number of insurance companies is accompanied by tighter covenants (both significant at the 10% level). While the results for banks are not surprising, we suspect that insurance companies require tighter covenants in renegotiations due to their higher standards of lending when compared to other nonbank institutions. The result for the finance company is also in line with the findings of Carey et al. (1998) who argues that while the loan portfolio of finance companies differs significantly in consumer and small business loans, finance companies are in direct and active competition with banks in providing corporate loans.

²⁴In additional unreported regressions, we consider an instrumental variable analysis for the effect of changes in mutual fund lenders only, where we use the net fund inflows as instruments. As with the OLS results reported in Table 14, the estimated coefficients from the second stage of the IV estimation show that the effect of a change in mutual fund lenders has no significant effect on debt cost, size, or maturity.

V. Conclusions

Nonbank institutions come from a variety of legal and regulatory backgrounds and they are exposed to different funding risks. Both nonbank institutions and commercial banks can be a part of one loan's lending syndicate. They can also join or exit a lending syndicate over the life of the loan and through loan renegotiations.

Taking advantage of an extensive data set on loan renegotiations that includes the evolution of lending syndicates as well as detailed renegotiation outcomes, we find that nonbank institutions are more likely than commercial banks to exit the lending syndicate rather than to engage in loan renegotiations. Consistent with the notion that loan renegotiations are costly and lengthy, we find that institutional loan owners with more funding liquidity risk, such as those that rely on redeemable capital or security issuance, are more likely to exit loan investments than engage in renegotiations. In particular, we directly show how mutual fund outflows imply an increase in the probability of exit by mutual fund syndicate members.

We also analyze how the presence and the change in the combination of nonbank institutional lenders in a syndicate affects corporate loans throughout the life of a loan. By examining the same loan over time, we reduce the selection bias from certain types of nonbank investors being more likely to participate in more risky loans. We find that the continuation or addition of nonbank investors, in general, is more likely to be associated with higher spreads on a particular loan relative to banks, and this finding holds for each sub-period we study. Additionally, commercial banks have a more diversified loan portfolio than most nonbank institutions. Thus, another potential explanation is that when adding a loan to its portfolio, a bank is mainly pricing the systematic risk of the loan. However, when a nonbank adds a loan, it may also be pricing the idiosyncratic risk of the loan.

We also examine how the presence of nonbank investors is associated with differences in covenants. If a nonbank is added to or continues to be a part of the lending syndicate, covenants usually do not significantly change. However, if commercial banks are added, covenants are more likely to become tighter. These findings are consistent with the following notions: commercial banks are in general more adept at information collection and monitoring in the loan market than nonbank institutions. Therefore, loan renegotiations are relatively less costly for commercial banks than nonbank lenders. In addition, a continuation of the same commercial banks in a syndicate implies greater trust, and therefore fewer changes in covenants, while the addition of new commercial banks implies a reduction in trust and an increase in covenant restrictions.

REFERENCES

- Arnold, L. G., and J. G. Riley (2009). On the possibility of credit rationing in the Stiglitz-Weiss model. *American Economic Review*, 2012-2021.
- Ackermann, C., McEnally, R., & Ravenscraft, D. (1999). The performance of hedge funds: Risk, return, and incentives. *The Journal of Finance* 54(3), 833-874.
- Aghion, P., & Bolton, P. (1992). An incomplete contracts approach to financial contracting. *The Review of Economic Studies* 59(3), 473-494.
- Alexander, G. J., Cici, G., & Gibson, S. (2007). Does motivation matter when assessing trade performance? An analysis of mutual funds. *Review of Financial Studies*, 20(1), 125-150.
- Aslan, H., & Kumar, P. (2016). The product market effects of hedge fund activism. *Journal of Financial Economics* 119(1), 226-248.
- Back, K., Li, T., & Ljungqvist, A. (2013). Liquidity and governance (No. w19669). National Bureau of Economic Research.
- Berk, J. B., & Stanton, R. (2007). Managerial ability, compensation, and the closedend fund discount. *The Journal of Finance*, 62(2), 529-556.
- Beyhaghi, M., & Ehsani, S. (2017). The cross-section of expected returns in the secondary corporate loan market. *Review of Asset Pricing Studies*. Forthcoming. DOI 10.1093/rapstu/raw010
- Beyhaghi, M., Massoud, N., & Saunders, A. (2017). Why and how do banks lay off credit risk? The choice between retention, loan sales and credit default swaps. *Journal of Corporate Finance*, 42, 335-355.
- Bharath, S. T., Dahiya, S., Saunders, A., & Srinivasan, A. (2011). Lending relationships and loan contract terms. *Review of Financial Studies*, 24(4), 1141-1203.
- Bradley, M., & Roberts, M. R. (2015). The structure and pricing of corporate debt covenants. *Quarterly Journal of Finance* 5(2), 1-37.
- Becker, B., & Ivashina, V. (2015). Reaching for yield in the bond market. *The Journal of Finance*, 70(5), 1863-1902.
- Bolton, P., & Freixas, X. (2000). Equity, bonds, and bank debt: Capital structure and financial market equilibrium under asymmetric information. *Journal of Political Economy*, 108(2), 324-351.
- Boyd, J. H., & Prescott, E. C. (1986). Financial intermediary-coalitions. *Journal of Economic Theory*, 38(2), 211-232.

- Brauer, G. A. (1988). Closed-End Fund Shares' Abnormal Returns and the Information Content of Discounts and Premiums. *The Journal of Finance*, 43(1), 113-127.
- Brav, A., Jiang, W., Partnoy, F., & Thomas, R. (2008). Hedge fund activism, corporate governance, and firm performance. *The Journal of Finance* 63(4), 1729-1775.
- Carey, M., Post, M., & Sharpe, S. A. (1998). Does corporate lending by banks and finance companies differ? Evidence on specialization in private debt contracting. *The Journal of Finance*, 53(3), 845-878.
- Chava, S., & Roberts, M. R. (2008). How does financing impact investment? The role of debt covenants. *The Journal of Finance* 63(5), 2085-2121.
- Christoffersen, S. E., Evans, R., & Musto, D. K. (2013). What do consumers fund flows maximize? Evidence from their brokers incentives. *The Journal of Finance*, 68(1), 201-235.
- Coval, J., & Stafford, E. (2007). Asset fire sales (and purchases) in equity markets. *Journal of Financial Economics*, 86(2), 479-512.
- DeMarzo, P. M., & Fishman, M. J. (2007). Optimal long-term financial contracting. *Review of Financial Studies*, 20(6), 2079-2128.
- Denis, D. J., & Wang, J. (2014). Debt covenant renegotiations and creditor control rights. *Journal of Financial Economics* 113(3), 348-367.
- Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *The Review of Economic Studies*, 51(3), 393-414.
- Diamond, D. W. (1991). Monitoring and reputation: The choice between bank loans and directly placed debt. *Journal of political Economy*, 99(4), 689-721.
- Diamond, D. W. (1993). Seniority and maturity of debt contracts. *Journal of financial Economics*, 33(3), 341-368.
- Drucker, S., & Puri, M. (2009). On loan sales, loan contracting, and lending relationships. *Review of Financial Studies* 22(7), 2835-2872.
- Edelen, R. M. (1999). Investor flows and the assessed performance of open-end mutual funds. *Journal of Financial Economics*, 53(3), 439-466.
- Fama, E. F. (1985). What's different about banks?. *Journal of monetary economics*, 15(1), 29-39.
- Flannery, M. J. (1998). Using market information in prudential bank supervision: A review of the US empirical evidence. *Journal of Money, Credit and Banking*, 273-305.
- Fung, W., & Hsieh, D. A. (1997). Empirical characteristics of dynamic trading strategies: The case of hedge funds. *Review of Financial Studies* 10(2), 275-302.

- Gande, A., & Saunders, A. (2012). Are banks still special when there is a secondary market for loans?. *The Journal of Finance*, 67(5), 1649-1684.
- Garleanu, N., & Zwiebel, J. (2009). Design and renegotiation of debt covenants. *Review of Financial Studies* 22(2), 749-781.
- Gemmill, G., & Thomas, D. C. (2002). Noise Trading, Costly Arbitrage, and Asset Prices: Evidence from Closed-end Funds. *The Journal of Finance*, 57(6), 2571-2594.
- Giroud, X., & Mueller, H. M. (2011). Corporate governance, product market competition, and equity prices. *The Journal of Finance* 66(2), 563-600.
- Gorton, G., & Kahn, J. (2000). The design of bank loan contracts. *Review of Financial Studies* 13(2), 331-364.
- Grossman, S. J., & Hart, O. D. (1986). The costs and benefits of ownership: A theory of vertical and lateral integration. *The Journal of Political Economy*, 691-719.
- Hart, O., & Moore, J. (1988). Incomplete contracts and renegotiation. *Econometrica: Journal of the Econometric Society*, 755-785.
- Ivashina, V. (2009). Asymmetric information effects on loan spreads. *Journal of Financial Economics*, 92(2), 300-319.
- Ivashina, V., Iverson, B., & Smith, D. C. (2016). The ownership and trading of debt claims in Chapter 11 restructurings. *Journal of Financial Economics*, 119(2), 316-335.
- Ivashina, V., & Sun, Z. (2011a). Institutional stock trading on loan market information. *Journal of Financial Economics*, 100(2), 284-303.
- Ivashina, V., & Sun, Z. (2011b). Institutional demand pressure and the cost of corporate loans. *Journal of Financial Economics*, 99(3), 500-522.
- Ivkovi, Z., & Weisbenner, S. (2009). Individual investor mutual fund flows. *Journal of Financial Economics*, 92(2), 223-237.
- Jiang, W., Li, K., & Wang, W. (2012). Hedge funds and Chapter 11. *The Journal of Finance*, 67(2), 513-560.
- Lee, C., Shleifer, A., & Thaler, R. H. (1991). Investor sentiment and the closedend fund puzzle. *The Journal of Finance*, 46(1), 75-109.
- Lim, J., Minton, B. A., & Weisbach, M. S. (2014). Syndicated loan spreads and the composition of the syndicate. *Journal of Financial Economics*, 111(1), 45-69.
- McCahery, J. A., Sautner, Z., & Starks, L. T. (2016). Behind the scenes: The corporate governance preferences of institutional investors. *The Journal of Finance*.
- Massoud, N., Nandy, D., Saunders, A., & Song, K. (2011). Do hedge funds trade on private information? Evidence from syndicated lending and short-selling. *Journal of Financial Economics*, 99(3), 477-499.

- Mishkin, F.S. and Eakins, S.G. (2015). Financial markets and institutions. Pearson Education India. Eighth edition.
- Nadauld, T. D., & Weisbach, M. S. (2012). Did securitization affect the cost of corporate debt? *Journal of Financial Economics*, 105(2), 332-352.
- Nini, G. (2016). Institutional investors in corporate loans. Available at SSRN 2349840.
- Nini, G., Smith, D. C., & Sufi, A. (2009). Creditor control rights and firm investment policy. *Journal of Financial Economics*, 92(3), 400-420.
- Nini, G., Smith, D. C., & Sufi, A. (2012). Creditor control rights, corporate governance, and firm value. *Review of Financial Studies*, 25(6), 1713-1761.
- Paligorova, T., & Santos, J. A. C. (2016). Nonbank investors and loan renegotiations. Working paper.
- Park, C. (2000). Monitoring and structure of debt contracts. *The Journal of Finance*, 55(5), 2157-2195.
- Pontiff, J. (1995). Closed-end fund premia and returns implications for financial market equilibrium. *Journal of Financial Economics*, 37(3), 341-370.
- Preece, D., & Mullineaux, D. J. (1996). Monitoring, loan renegotiability, and firm value: The role of lending syndicates. *Journal of Banking & Finance* 20(3), 577-593.
- Rauh, J. D., & Sufi, A. (2010). Capital structure and debt structure. *Review of Financial Studies*, 23 (12): 4242-4280.
- Roberts, M. R. (2015). The role of dynamic renegotiation and asymmetric information in financial contracting. *Journal of Financial Economics* 116(1), 61-81.
- Roberts, M. R., & Sufi, A. (2009). Control rights and capital structure: An empirical investigation. *The Journal of Finance* 64(4), 1657-1695.
- Roberts, M. R., & Sufi, A. (2009). Renegotiation of financial contracts: Evidence from private credit agreements. *Journal of Financial Economics* 93(2), 159-184.
- Saunders, A. and Cornett, M.M. (2014). Financial institutions management: A risk management approach. Irwin/McGraw-Hill. 8th edition.
- Shleifer, A., and Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance* 52(2), 737-783.
- Sirri, E., and Tufano, P. (1998). Costly search and mutual fund flows. *The Journal of Finance* 53(5), 1589-1622.
- Sialm, C., Starks, L. T., and Zhang, H. (2015). Defined contribution pension plans: Sticky or discerning money? *The Journal of Finance*, 70(2), 805-838.

Stein, J.C. (2013). Overheating in credit markets: origins, measurement, and policy responses. speech, February, 7.

Sufi, A. (2007). Information asymmetry and financing arrangements: Evidence from syndicated loans. *The Journal of Finance* 62(2), 629-668.

Taylor, A., & Sansone, A. (2006). *The Handbook of Loan Syndications and Trading*. McGraw Hill Professional.

Thompson, R. (1978). The information content of discounts and premiums on closed-end fund shares. *Journal of Financial Economics*, 6(2-3), 151-186.

Table 1: Institutional Investors as Lenders: Sources of Funding and Amount of Regulation

Type of Lender	Main Source of Funding	Relative Funding Liquidity Risk	Amount of Regulation
Commercial Banks (depository institutions)	Deposits (FDIC insured)	Moderate	High
Investment Banks	Securities	Moderate/High	Moderate
Finance Companies	Parent Company	Low	Low/Moderate
Insurance Companies	Policies/securities	Low	High
Open-end mutual funds	Redeemable shares	High	High
Closed-end funds	Securities	Moderate/High	Moderate/High
Hedge funds/mutual funds	Capital provided by deep-pocket investors with long-term lockup periods in forms of limited partnership	Low	Low
CLOs	Securities	Moderate/High	Low

Table 2: Variable Description

Variables	Description	Main Data source
Commercial Bank	An indicator variable that equals 1 if the lender is a commercial bank.	Dealscan, Other sources
Nonbank Institution	An indicator variable that equals 1 if the lender is not a commercial bank.	Dealscan, Other sources
Investment Bank	An indicator variable that equals 1 if the lender is an investment bank.	Dealscan, Other sources
Finance Company	An indicator variable that equals 1 if the lender is a finance company.	Dealscan, Other sources
Insurance Company	An indicator variable that equals 1 if the lender is an insurance company.	Dealscan, Other sources
Open-end Mutual Fund	An indicator variable that equals 1 if the lender is an open-end mutual fund.	Dealscan, Other sources
Closed-end Fund	An indicator variable that equals 1 if the lender is a closed-end fund.	Dealscan, Other sources
Hedge Fund/Private Equity	An indicator variable that equals 1 if the lender is a hedge fund or a private equity firm.	Dealscan, Other sources
CLO	An indicator variable that equals 1 if the lender is a CLO.	Dealscan, Other sources
Other	An indicator variable that equals 1 if the lender is not categorized as commercial banks, investment banks, finance companies, insurance companies, open-end mutual funds, closed-end funds, and CLOs. Example: Bill and Melinda Gates Foundation.	Dealscan, Other sources
Loan Arranger	An indicator that equals 1 if the lender is one of the original loan arrangers.	Dealscan,
Number of Lenders	The number of lenders in the syndicate	Dealscan,
Net Fund Inflows	Net growth in fund assets beyond reinvested dividends as in Sirri and Tufano (1998): Net fund inflow _{<i>i,t</i>} = $\frac{mtna_{i,t} - mtna_{i,t-1}(1 + mret_{i,t})}{mtna_{i,t-1}} * 100$ where <i>mtna_{i,t}</i> is the monthly total net assets of fund <i>i</i> at time <i>t</i> and <i>mret_{i,t}</i> is the total returns of fund <i>i</i> at the end of month <i>t</i> .	CRSP
All-bank to nonbank	An indicator variable that equals 1 if a lending syndicate with only commercial bank lenders transitions into a lending syndicate with at least one non-commercial bank lender.	Dealscan, Other sources
Nonbank to all-bank	An indicator variable that equals 1 if a lending syndicate with at least one non- commercial bank lender transitions into a lending syndicate with only commercial bank lenders.	Dealscan, Other sources
Nonbank to nonbank	An indicator variable that equals 1 if a lending syndicate with at least one non- commercial bank lender keeps its lender structure or transitions into a lending syndicate that still has a non-commercial bank lender.	Dealscan, Other sources
Changes in No of commercial banks	The difference between the number of commercial banks present in the lending syndicate when loans are renegotiated and the number of commercial banks in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of nonbank lenders	The difference between the number of non-commercial bank lenders present in the lending syndicate when loans are	Dealscan, Other sources

Changes in No of investment banks	renegotiated and the number of non-commercial bank lenders in the lending syndicate before the renegotiation takes place. The difference between the number of investment banks present in the lending syndicate when loans are renegotiated and the number of investment banks in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of finance companies	The difference between the number of finance companies present in the lending syndicate when loans are renegotiated and the number of finance companies in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of insurance companies	The difference between the number of insurance companies present in the lending syndicate when loans are renegotiated and the number of insurance companies in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of open-end mutual funds	The difference between the number of open-end mutual funds present in the lending syndicate when loans are renegotiated and the number of open-end mutual funds in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of closed-end funds	The difference between the number of closed-end funds present in the lending syndicate when loans are renegotiated and the number of closed-end funds in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of hedge funds/private equities	The difference between the number of hedge funds and private equity firms present in the lending syndicate when loans are renegotiated and the number of hedge funds and private equity firms in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of CLOs	The difference between the number of CLOs present in the lending syndicate when loans are renegotiated and the number of CLOs in the lending syndicate before the renegotiation takes place.	Dealscan, Other sources
Changes in No of other	The difference between the number of “other” lenders present in the lending syndicate when loans are renegotiated and the number of “other” lenders in the lending syndicate before the renegotiation takes place. The definition of “other” is provided above.	Dealscan, Other sources
No of Months Since Last Renegotiation	Number of months since the most recent renegotiation.	
Bank Loan Holdings	The percentage of loan amount committed by bank lenders present in the lending syndicate.	Dealscan
Nonbank Loan Holdings	The percentage of loan amount committed by nonbank lenders present in the lending syndicate.	Dealscan
Loan Terms		
Amount/Assets	Loan materiality computed as Loan facility size divided by borrowing firm's assets.	Dealscan
Borrowing Base	An indicator variable that equal 1 if the facility contains a borrowing base.	Dealscan
Covenant	An indicator variable that equal 1 if the facility has at least one net worth or financial covenant. Most common covenants in the loan credit agreements include: Maximum Net Worth, Maximum Tangible Net Worth, Maximum Capital Expenditures, Minimum Interest Coverage Ratio, Minimum Fixed Charge Coverage Ratio, and Maximum Debt-to-	Dealscan

	EBITDA.	
Number of covenants	Total number of covenants. See Covenants.	Dealscan
Maturity	Maturity of the facility in months.	Dealscan
No of Lenders	Number of lenders participating in the facility.	Dealscan
Performance Pricing	An indicator variable that equal 1 if the facility contains a performance pricing grid.	Dealscan
Revolver	An indicator variable that equal 1 if loan type is 364-day Facility, Revolver/Line<1 Yr., Revolver/Line>=1 Yr., Revolver/Term Loan, Bridge Loan, Guidance Line (Uncommitted), Limited Line, Multi-Option Facility or Standby Letter of Credit and 0 otherwise.	Dealscan
Secured Spread	An indicator variable that equal 1 if the facility is secured. Loan's all-in-drawn spread.	Dealscan Dealscan
Term Loan A	An indicator variable that equal 1 if term loan type is Term Loan A.	Dealscan
Term Loan B	An indicator variable that equal 1 if term loan type is Term Loan, Term Loan B, Term Loan C, Term Loan D, or term loans with higher letter designation and 0 otherwise.	Dealscan
Loan Purpose		
Corporate	An indicator variable that equal 1 if loan purpose is Corporate purposes, Capital expenditure, or Equip. Purchase.	Dealscan
Working Capital	An indicator variable that equal 1 if loan purpose is Work. cap., CP backup, Debtor-in-poss., Dividend Recap, Recap., Exit financing.	Dealscan
Debt Repayment	An indicator variable that equal 1 if loan purpose is Debt Repay.	Dealscan
Takeover	An indicator variable that equal 1 if loan purpose is Takeover, Acquis. Line, LBO and Merger.	Dealscan

Borrowing Firm Characteristics

Earnings Volatility	The standard deviation of changes in borrower's quarterly EBITDA/Assets over the past eight quarters.	Compustat
EBITDA/Debt	EBITDA to the total debt of the borrowing firm.	Compustat
Leverage	Total debt to assets of the borrowing firm.	Compustat
Log(Assets)	Natural log of the borrowing firm's assets.	Compustat
Profitability	Operating earnings to assets of the borrowing firm.	Compustat
Rating	S&P long term issuer credit rating (AAA, AA+, etc. and unrated).	Compustat
Tobin's Q	Market value (calculated by the sum of the book total debt and market value of equity) to assets of the borrowing firm.	Compustat

Market Conditions

Aggregate Credit Spread	Moody's Yield on seasoned BAA-rated bonds minus yield on AAA-rated bonds.	Federal Reserve Bank of St. Louis
Banking Sector Leverage	Total liabilities to total book assets for commercial banks in the United States.	FDIC
GDP	GDP growth rate (2009 dollar).	US. Bureau of Economic Analysis
Market Return	Quarterly return on the CRSP value weighted index.	CRSP

Dependent Variables		
ΔAmount (%)	The difference between loan amounts after and before renegotiation divided by loan amount before renegotiation.	
ΔMaturity (%)	The difference between loan maturities after and before renegotiation divided by loan maturity before renegotiation.	
ΔSpread (%)	The difference between loan spreads after and before renegotiation divided by loan spread before renegotiation.	
Change in number of covenants	The change in the number of covenants during a renegotiation round.	Dealscan
Covenant tightening index	The index receives a value of 1, 2 or 3 based on the overall change in loan covenants in a loan renegotiation from borrower perspective. If relatively more covenants become tighter then the index is assigned a value of 3. If relatively more covenants are loosened then the index receives a value of 1. If the number of loosened covenants equals the number of tightened covenants or the change is ambiguous then the index receives a value of zero. A new covenant is considered covenant tightness and removal of a covenant is considered loosening of that covenant.	DealScan
Exit	An indicator that equals one if a lender that was a lending syndicate member at the time of loan origination has exited the syndicate before the first round of renegotiations.	

Table 3: Summary Statistics for Probability of Exit

This table presents the summary statistics for the sample of 38,537 lenders before the first renegotiation is completed. The data ranges from 1987 to 2013. All continuous variables are winsorized at the 0.5% and 99.5% levels. Variable definitions are provided in Table 2.

	N	Mean	SD	Min	Median	Max
Panel A: Probability of Lender's Exit						
Exit	38,537	0.243	0.429			
Panel B: Lender Characteristics						
Commercial Bank	38,537	0.831	0.374			
Nonbank Institution	38,537	0.169	0.374			
Investment Bank	38,537	0.054	0.227			
Finance Company	38,537	0.056	0.229			
Insurance Company	38,537	0.006	0.079			
Open-end Mutual Fund	38,537	0.012	0.110			
Closed-end Fund	38,537	0.006	0.080			
Hedge Fund/Private Equity	38,537	0.006	0.075			
CLO	38,537	0.025	0.156			
Other	38,537	0.003	0.057			
Loan Arranger	38,537	0.115	0.319			
Number of Lenders	38,537	16.767	11.164	1	14	45
Net Fund Inflows in the Prior 3 Months	215	0.304	2.372	-4.355	-0.002	10.931
Net Fund Inflows in the Prior 6 Months	210	-1.306	12.244	-86.423	-0.049	16.659
Net Fund Inflows in the Prior 9 Months	210	0.783	3.462	-5.403	0.255	26.388
Net Fund Inflows in the Prior 12 Months	204	0.188	2.303	-6.242	-0.003	8.243
Panel C: Loan Characteristics at Origination						
Amount (mil)	38,537	566.442	926.789	1	300	24,000
Maturity (month)	38,537	54.3	22.092	9	60	156
Spread (bps)	38,537	170.019	114.221	15	150	700
Secured	38,537	0.551	0.497			
Borrowing Base	38,537	0.072	0.259			
Performance Pricing	38,537	0.663	0.473			
Covenant	38,537	0.765	0.424			
Panel D: Prior Level of Firm Characteristics						
Assets (bil)	38,537	6.045	26.005	0.012	1.712	781.818
EBITDA/Debt	38,537	0.483	2.966	-0.999	0.102	38.893
Leverage	38,537	0.358	0.225	0.001	0.329	1.376
Tobin's Q	38,537	1.469	0.942	0.229	1.189	6.193
Profitability	38,537	0.036	0.024	-0.103	0.035	0.133
Earnings Volatility	38,537	0.017	0.023	0.001	0.01	0.242
Panel E: Change in Firm Characteristics						
Log(Assets)	38,537	0.202	0.398	-0.898	0.1	1.566
EBITDA/Debt	38,537	-0.21	2.435	-29.676	-0.005	10.842
Leverage	38,537	0.029	0.141	-0.432	0.006	0.678
Tobin's Q	38,537	-0.155	0.667	-3.396	-0.042	2.161
Profitability	38,537	-0.004	0.025	-0.154	-0.002	0.129
Earnings Volatility	38,537	-0.001	0.011	-0.076	0	0.074
S&P Credit Rating	38,537	-0.186	0.928	-5	0	2
Panel F: Change in Macroeconomic factors						
GDP	38,537	-0.001	0.008	-0.028	-0.001	0.024

Market Return	38,537	-0.012	0.12	-0.322	-0.006	0.335
Banking Sector Leverage	38,537	-0.002	0.005	-0.019	-0.002	0.011
Aggregate Credit Spread	38,537	0.103	0.463	-2.02	0.02	2.47

Table 4: Probability of Exit

This table presents estimated coefficients from a Probit regression where the dependent variable is whether the lender exits before the first renegotiation round is completed. Marginal effects are reported in brackets, and standard errors are reported in parentheses. The analysis is conducted at the loan-lender level. Column (1) uses the general classification of nonbank lender and column (2) distinguishes nonbank lenders into 8 different types. The base case is commercial bank. All specifications include year fixed effects, industry fixed effects, and credit rating fixed effects. Standard errors are clustered by loan. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1) General Classification	(2) Lender Type
Lender Characteristics		
Nonbank Institution	0.161*** [0.041***] (0.043)	
Investment Bank		0.087** [0.022] (0.035)
Finance Company		0.069 [0.018] (0.044)
Insurance Company		0.177 [0.045] (0.128)
Open-end Mutual Fund		0.327*** [0.084] (0.080)
Closed-end Fund		0.378** [0.097] (0.158)
Hedge Fund/Private Equity		0.317** [0.081] (0.134)
CLO		0.486*** [0.124] (0.155)
Other		0.105 [0.027] (0.187)
Loan Arranger	-1.877*** [-0.481***] (0.068)	-1.876*** [-0.479***] (0.068)
Initial Loan Characteristics		
Amount/Assets	0.146 (0.145)	0.162 (0.143)
Log(Maturity)	-0.208*** (0.045)	-0.217*** (0.045)
Log(Spread)	-0.096** (0.046)	-0.105** (0.046)
Secured	-0.035 (0.067)	-0.029 (0.065)
Covenant	-0.252*** (0.068)	-0.265*** (0.068)

Borrowing Base	-0.297*** (0.083)	-0.285*** (0.083)
Performance Pricing	0.015 (0.065)	0.041 (0.066)
Log(Number of Lenders)	0.006 (0.004)	0.004 (0.003)
Change in Firm Characteristics		
Log(Assets)	0.195*** (0.075)	0.207*** (0.075)
EBITDA/Debt	-0.021 (0.013)	-0.021 (0.013)
Leverage	-0.990*** (0.201)	-0.998*** (0.202)
Tobin's Q	0.204*** (0.051)	0.204*** (0.050)
Profitability	2.695** (1.137)	2.663** (1.137)
Earnings Volatility	1.249 (2.008)	1.126 (2.001)
S&P Credit Rating	-0.020 (0.032)	-0.021 (0.032)
Change in Macroeconomic factors		
GDP	-1.097 (3.519)	-1.230 (3.519)
Market Return	0.340 (0.238)	0.342 (0.236)
Banking Sector Leverage	-66.687*** (6.509)	-66.960*** (6.432)
Aggregate Credit Spread	0.106 (0.096)	0.115 (0.094)
Observations	38,537	19,024
Year FE	Yes	Yes
Industry FE	Yes	Yes
Credit Rating FE	Yes	Yes
Prior Firm Characteristics	Yes	Yes

Table 5: Probability of Exit of Open-end Mutual Funds

This table presents estimated coefficients from a Probit regression where the dependent variable is whether an open-end mutual fund, which is a member of a lending syndicate exits before the first round of loan renegotiation between the lending syndicate and the borrower is completed. Marginal effects are reported in brackets, and standard errors are reported in parentheses. The variables of interest are the mutual fund's net fund inflows from 3 months, 6 months, 9 months, and 12 months prior to the renegotiation date. The analysis is conducted at the loan-lender level. All specifications include year fixed effects, industry fixed effects, and credit rating fixed effects. Standard errors are clustered by loan. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1)	(2)	(3)	(4)
	Pr(Exit)	Pr(Exit)	Pr(Exit)	Pr(Exit)
Net Fund Inflows in the Prior 3 Months	-0.0206 [-0.0035] (0.0526)			
Net Fund Inflows in the Prior 6 Months		-0.0440*** [-0.0071] (0.0159)		
Net Fund Inflows in the Prior 9 Months			-0.0888** [-0.0145] (0.0427)	
Net Fund Inflows in the Prior 12 Months				0.0238 [0.00359] (0.0674)
Observations	215	210	210	204
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes

Table 6: Probability of Exit across Time

This table presents estimated coefficients from Probit regression for different years. The dependent variable is the probability that a lender exits before the first renegotiation round is completed. The analysis is conducted at the loan-lender level. Columns (1), (2), and (3) report the results for 1987-2000 (P1), 2001-2007 (P2), and 2007-2013 (P3), respectively. Columns (4), (5), and (6) report the chi-squared test statistics when comparing the coefficients between P2 and P1, P3 and P1, and P3 and P2, respectively. All specifications include year fixed effects, industry fixed effects, and credit rating fixed effects. Standard errors are clustered by loan. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1)	(2)	(3)	(4)	(5)	(6)
	P1	P2	P3			
	Jan 1987–Dec 2000	Jan 2001–Jul 2007	Aug 2007–Dec 2013	Chi(P2-P1)	Chi(P3-P1)	Chi(P3-P2)
Panel A: General classification						
Nonbank Institution	0.013 (0.633)	0.033** (0.012)	0.049*** (0.000)	0.640	1.998	0.795
Panel B: Lender type						
Investment Bank	0.022 (0.401)	0.008 (0.506)	0.038*** (0.005)	0.157	0.558	2.522
Finance Company	0.010 (0.789)	-0.010 (0.419)	0.057*** (0.007)	0.305	1.626	7.526***
Insurance Company	-0.102 (0.178)	0.105*** (0.004)	-0.151* (0.079)	6.700***	0.339	7.687***
Open-end Mutual Fund	0.081* (0.088)	0.078*** (0.001)	0.112*** (0.004)	0.029	0.533	0.516
Hedge Fund/Private Equity	0.038 (0.574)	0.147*** (0.004)	-	2.167	-	-
CLO	0.101 (0.200)	0.067* (0.074)	0.129 (0.203)	0.065	0.112	0.317
Other	-0.073 (0.414)	0.142*** (0.000)	0.038 (0.717)	5.637**	0.604	0.881
Observations	9,772	17,448	9,988			
Year FE	Yes	Yes	Yes			
Industry FE	Yes	Yes	Yes			
Credit Rating FE	Yes	Yes	Yes			
Prior Firm Characteristics	Yes	Yes	Yes			
Other Controls	Yes	Yes	Yes			

Table 7: Summary Statistics for Loan Renegotiation

This table presents the summary statistics for the sample of 7,408 renegotiation rounds between 1987 and 2013. All continuous variables are winsorized at the 0.5% and 99.5% levels. Variable definitions are provided in Table 2.

	N	Mean	SD	Min	Median	Max
Panel A: Renegotiation Rounds						
Number of Renegotiation Rounds	7,408	2.529	0.496	1.000	2.000	13.000
Panel B: Prior Loan Characteristics						
Amount (mil)	7,408	352.813	0.496	1.000	165.000	24000
Maturity (month)	7,408	57.922	0.496	9.000	60.000	156.000
Spread (bps)	7,408	204.113	0.496	15.000	200.000	700.000
Secured	7,408	0.613	0.496			
Borrowing Base	7,408	0.156	0.496			
Performance Pricing	7,408	0.611	0.496			
Covenant	7,408	0.753	0.496			
Number of Covenants	7,408	2.188	0.496	0.000	2.000	8.000
Panel C: Renegotiation Result						
ΔAmount (%)	7,408	0.157	0.589	-0.821	0.000	4.000
ΔMaturity (%)	7,408	0.252	0.410	-0.567	0.009	2.167
ΔSpread (%)	7,408	0.175	0.686	-0.667	0.000	5.000
Change in Number of Covenants	7,408	0.019	1.016	-6.000	0.000	8.000
Covenant Index	5,806	1.992	0.496	1.000	2.000	3.000
Panel D: Lender Characteristics						
Nonbank to Nonbank	7,408	0.459	0.498			
All-bank to Nonbank	7,408	0.060	0.238			
Nonbank to All-bank	7,408	0.050	0.218			
Change in No of Commercial Banks	7,408	-0.023	4.014	-23.000	0.000	19.000
Change in No of Nonbank Institutions	7,408	0.010	0.956	-5.000	0.000	5.000
Change in No of Investment Banks	7,408	0.011	0.473	-2.000	0.000	2.000
Change in No of Finance Companies	7,408	-0.004	0.510	-3.000	0.000	3.000
Change in No of Insurance Companies	7,408	-0.000	0.108	-1.000	0.000	1.000
Change in No of Open-end Mutual Funds	7,408	0.001	0.204	-1.000	0.000	1.000
Change in No of Closed-end Mutual Funds	7,408	-0.001	0.094	-1.000	0.000	1.000
Change in No of Hedge Funds/Private Equities	7,408	-0.001	0.122	-1.000	0.000	1.000
Change in No of CLO	7,408	0.001	0.111	-1.000	0.000	1.000
Change in No of Other	7,408	0.006	0.077	0.000	0.000	1.000
Prior No of Lenders	7,408	9.082	8.305	1.000	7.000	45.000
Change in No of Lenders	7,408	-0.017	4.523	-25.000	0.000	22.000
Change in Bank Loan Holdings	616	-0.129	5.801	-37.500	0.000	24.000
Change in Nonbank Loan Holdings	616	0.352	5.853	-23.714	0.000	47.535
Prior Bank Loan Holdings	616	78.652	17.076	17.692	84.500	100.300
Prior Nonbank Loan Holdings	616	21.235	17.440	1.667	15.100	96.250

Panel E: Prior Level of Firm Characteristics

Assets (bil)	7,408	3.616	0.496	0.012	0.819	781.818
EBITDA/Debt	7,408	0.558	0.496	-0.999	0.092	38.893
Leverage	7,408	0.351	0.496	0.001	0.323	1.376
Tobin's Q	7,408	1.338	0.496	0.229	1.109	6.193
Profitability	7,408	0.032	0.496	-0.103	0.032	0.133
Earnings Volatility	7,408	0.019	0.496	0.001	0.012	0.242

Panel F: Change in Firm Characteristics

Log(Assets)	7,408	0.139	0.496	-0.898	0.061	1.566
EBITDA/Debt	7,408	-0.211	0.496	-29.676	-0.002	10.842
Leverage	7,408	0.024	0.496	-0.432	0.005	0.678
Tobin's Q	7,408	-0.089	0.496	-3.396	-0.016	2.161
Profitability	7,408	-0.003	0.496	-0.154	-0.001	0.129
Earnings Volatility	7,408	-0.000	0.496	-0.076	0.000	0.074
S&P Credit Rating	7,408	-0.129	0.496	-5.000	0.000	2.000

Panel G: Change in Macroeconomic factors

GDP	7,408	-0.001	0.496	-0.028	-0.000	0.024
Market Return	7,408	-0.005	0.496	-0.322	-0.003	0.335
Banking Sector Leverage	7,408	-0.002	0.496	-0.019	-0.001	0.011
Aggregate Credit Spread	7,408	0.084	0.496	-2.020	0.010	2.470

Table 8: Lending syndicate transformation matrix

			Syndicate Structure at t-1											
			Only Commercial Banks	Only Banks and									Only nonbanks	
				Investment Banks	Finance Companies	Insurance Companies	Mutual Funds	Closed-end Funds	Hedge Funds/Private Equities	CLOs	Other	More than one type		
Syndicate Structure at t	Only Commercial Banks	Only Commercial Banks	3,188	166	70	3	30	4	3	0	1	95	0	
	Only Commercial Banks and	Investment Banks	213	1,028	20	0	13	0	0	0	0	1	127	7
		Finance Companies	100	24	594	0	2	0	0	0	0	0	50	6
		Insurance Companies	4	0	0	6	0	0	0	0	0	0	0	0
		Mutual Funds	28	7	1	0	60	0	0	0	0	0	5	0
		Closed-end Funds	1	0	0	0	0	7	0	0	0	1	1	0
		Hedge Funds/Private Equities	2	0	0	0	0	0	4	0	0	0	3	0
		CLOs	0	0	0	0	0	0	0	0	0	0	0	0
		Others	11	1	0	0	0	0	0	0	0	9	0	0
	More than one type	88	90	49	0	3	1	1	1	2	1	1,009	13	
Only Nonbanks	Only nonbanks	0	3	2	0	0	0	0	0	0	0	5	245	

Table 9: Lending structure transition and impact on loan terms

This table presents the estimated coefficients from OLS regressions where the dependent variables are the percentage changes in amount, maturity, and spread, in Columns (1), (2), and (3), respectively. The variables of interest are indicators of transitions in lending structure: Nonbank-to-Nonbank, All bank-to-Nonbank, and Nonbank-to-All bank. The base case is All bank-to-All bank. The analysis is conducted at the loan renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm and are reported in parentheses. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1) ΔAmount (%)	(2) ΔMaturity (%)	(3) ΔSpread (%)
Lender Characteristics			
Nonbank to Nonbank	0.006 (0.016)	-0.013 (0.010)	0.081*** (0.019)
All-bank to Nonbank	0.079* (0.041)	0.123*** (0.019)	0.066* (0.037)
Nonbank to All-bank	0.013 (0.031)	0.066*** (0.019)	-0.002 (0.035)
No of Months Since Last Renegotiation	0.000 (0.001)	0.012*** (0.000)	0.007*** (0.001)
Prior Loan Characteristics			
Amount/Assets	-0.662*** (0.047)	-0.018 (0.022)	-0.015 (0.034)
Log(Maturity)	-0.027* (0.015)	-0.421*** (0.013)	0.045*** (0.014)
Log(Spread)	-0.010 (0.016)	0.011 (0.010)	-0.560*** (0.031)
Secured	-0.022 (0.020)	-0.023** (0.011)	0.032 (0.021)
Covenant	-0.020 (0.018)	-0.001 (0.013)	-0.063*** (0.017)
Borrowing Base	-0.032* (0.017)	0.002 (0.011)	0.015 (0.017)
Performance Pricing	-0.049** (0.024)	-0.016 (0.014)	0.020 (0.023)
Prior No of Lenders	0.004*** (0.001)	0.001** (0.001)	-0.003*** (0.001)
Change in No of Lenders	0.023*** (0.002)	0.003*** (0.001)	-0.001 (0.002)
Change in Firm Characteristics			
Log(Assets)	0.348*** (0.032)	0.012 (0.014)	-0.155*** (0.029)
EBITDA/Debt	-0.002 (0.005)	-0.001 (0.003)	0.001 (0.004)
Leverage	-0.018 (0.060)	-0.152*** (0.033)	0.305*** (0.066)
Tobin's Q	0.098*** (0.020)	0.034*** (0.009)	-0.153*** (0.017)
Profitability	0.915*** (0.268)	0.514*** (0.173)	-1.278*** (0.338)

Earnings Volatility	0.253 (0.592)	-0.267 (0.367)	1.019 (0.634)
S&P Credit Rating	0.016** (0.008)	0.011* (0.006)	-0.106*** (0.015)
Change in Macroeconomic factors			
GDP	-2.497** (1.069)	0.011 (0.618)	2.067* (1.083)
Market Return	0.052 (0.057)	-0.070* (0.036)	-0.127* (0.067)
Banking Sector Leverage	-2.905 (2.591)	-4.351*** (1.500)	16.419*** (3.097)
Aggregate Credit Spread	-0.035* (0.021)	-0.056*** (0.014)	0.044 (0.030)
Observations	7,408	7,408	7,408
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes
Prior Firm Characteristics	Yes	Yes	Yes

Table 10: Lending Structure Transition and Loan Covenants

This table presents the estimated coefficients and standard errors (in parentheses) of the covenant tightness regressions. In Column (1), the dependent variable is the change in number of covenants and the estimates are obtained from an OLS regression. Columns (2), (3), and (4) use Ordered Probit models to test the covenant indexes as the dependent variables. The variables of interest are indicators of transitions in lending structure: Nonbank to Nonbank, All-bank to Nonbank, and Nonbank to All bank. The base case is All-bank to All-bank. The analysis is conducted at the renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1)	(2)
	Change in Number of Covenants	Covenant Tightening Index
Model	OLS	Ordered Probit
Nonbank to Nonbank	-0.024 (0.029)	0.001 (0.046)
All-bank to Nonbank	0.055 (0.069)	-0.157 (0.139)
Nonbank to All-bank	0.014 (0.069)	-0.208* (0.119)
Prior Number of Covenants	-0.207*** (0.019)	
Observations	7,408	5,806
Year FE	Yes	Yes
Industry FE	Yes	Yes
Credit Rating FE	Yes	Yes
Loan Type FE	Yes	Yes
Loan Purpose FE	Yes	Yes
Prior Firm Characteristics	Yes	Yes
Other Controls	Yes	Yes

Table 11: Changes in the Lending Syndicate and Loan Terms

This table presents estimated coefficients from OLS regressions where the dependent variables are the percentage changes in amount, maturity, and spread in Columns (1), (2), and (3), respectively. The variables of interest are the change in number of commercial banks and nonbank lenders. The analysis is conducted at the renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm and are reported in parentheses. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1) Δ Amount (%)	(2) Δ Maturity (%)	(3) Δ Spread (%)
Change in No of Commercial Banks	0.024*** (0.003)	0.003*** (0.001)	-0.001 (0.002)
Change in No of Nonbank Institutions	0.031*** (0.009)	0.011*** (0.004)	0.021*** (0.007)
Observations	7,408	7,408	7,408
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes
Prior Firm Characteristics	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes

Table 12: Lender Share

This table presents estimated coefficients from OLS regressions where the dependent variables are the percentage changes in amount, maturity, and spread in Columns (1), (2), and (3), respectively. The variables of interest are the change in nonbank institution's share of the loan before and after renegotiation. Prior nonbank institutions' loan holdings are the level of loan allocation committed by nonbank institutions, respectively, in a loan syndicate before the renegotiation takes place. The analysis is conducted at the renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm and are reported in parentheses. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1)	(2)	(3)
	Δ Amount (%)	Δ Maturity (%)	Δ Spread (%)
Change in Nonbank Institutions' Loan Holdings	-0.006 (0.005)	0.003 (0.003)	0.008** (0.003)
Prior Nonbank Institutions' Loan Holdings	0.001 (0.001)	0.000 (0.001)	0.001* (0.001)
Observations	1486	1486	1486
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes
Prior Firm Characteristics	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes

Table 13: Loan term Modifications around Changes in Syndicate Structure across Time

This table presents estimated coefficients from OLS regressions where the dependent variables are the percentage changes in amount, maturity, and spread, corresponding to Panel A, Panel B, and Panel C, respectively. Columns (1), (2), and (3) report the results of 1987-2000 (P1), 2001-2007 (P2), and 2007-2013 (P3), respectively. Columns (4), (5), and (6) report the chi-squared test statistics when comparing the coefficients between P2 and P1, P3 and P1, and P3 and P2, respectively. The analysis is conducted at the renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm and are reported in parentheses. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1)	(2)	(3)	(4)	(5)	(6)
	P1	P2	P3			
	Jan 1987–Dec 2000	Jan 2001–Jul 2007	Aug 2007–Dec 2013	Chi(P2-P1)	Chi(P3-P1)	Chi(P3-P2)
Panel A: ΔAmount (%)						
Change in No of Commercial Banks	0.028*** (0.004)	0.023*** (0.004)	0.026*** (0.004)	0.773	0.094	0.300
Change in No of Nonbank Institutions	0.080*** (0.023)	0.021* (0.012)	0.007 (0.013)	5.511**	7.875***	0.708
Observations	1879	3401	2128			
Panel B: ΔMaturity (%)						
Change in No of Commercial Banks	0.003* (0.002)	0.004** (0.002)	0.004** (0.002)	0.164	0.441	0.078
Change in No of Nonbank Institutions	0.011 (0.008)	0.016*** (0.006)	-0.006 (0.008)	0.326	2.281	5.401**
Observations	1879	3401	2128			
Panel C: ΔSpread (%)						
Change in No of Commercial Banks	0.002 (0.003)	-0.005 (0.003)	-0.001 (0.005)	2.653	0.331	0.475
Change in No of Nonbank Institutions	0.034** (0.015)	0.014 (0.009)	0.046*** (0.018)	1.309	0.275	2.680
Observations	1879	3401	2128			

Table 14: Changes in the Lending Syndicate and Loan Covenants

This table presents the estimated coefficients and standard errors (in parentheses) of the covenant tightness regressions. In Column (1), the dependent variable is the change in number of covenants and the estimates are obtained from an OLS regression. Column (2) reports the results from an Ordered Probit model where the dependent variable is an index measuring whether the loan covenants became looser, stayed the same, or tighter. The variables of interest are the change in number of commercial banks and nonbank lenders. The analysis is conducted at the renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1)	(2)
	Change in Number of Covenants	Covenant Tightening Index
Model	OLS	Ordered Probit
Change in No of Commercial Banks	0.029*** (0.004)	0.020** (0.008)
Change in No of Nonbank Institutions	0.040** (0.019)	0.021 (0.030)
Prior Number of Covenants	-0.206*** (0.018)	
Observations	7,408	5,806
Year FE	Yes	Yes
Industry FE	Yes	Yes
Credit Rating FE	Yes	Yes
Loan Type FE	Yes	Yes
Loan Purpose FE	Yes	Yes
Prior Firm Characteristics	Yes	Yes
Other Controls	Yes	Yes

Table 15: Loan Term Modification by Type of Lender

This table presents estimated coefficients from OLS regressions where the dependent variables are the percentage changes in amount, maturity, and spread, corresponding to Columns (1), (2), and (3), respectively. The variables of interest are the change in number of commercial banks and different types of nonbank lenders. The analysis is conducted at the renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm and are reported in parentheses. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

	(1) ΔAmount (%)	(2) ΔMaturity (%)	(3) ΔSpread (%)
Change in No of Commercial Banks	0.024*** (0.003)	0.003*** (0.001)	-0.001 (0.002)
Change in No of Investment Banks	0.025 (0.018)	0.017** (0.007)	0.034** (0.014)
Change in No of Finance Companies	0.042** (0.017)	0.010 (0.008)	0.015 (0.015)
Change in No of Insurance Companies	-0.020 (0.130)	-0.027 (0.043)	0.126** (0.052)
Change in No of Open-end Mutual Funds	0.011 (0.042)	0.040* (0.021)	0.007 (0.046)
Change in No of Closed-end Funds	0.126 (0.101)	0.055 (0.045)	-0.045 (0.048)
Change in No of Hedge Funds/Private Equities	0.121 (0.075)	-0.020 (0.033)	-0.077 (0.071)
Change in No of CLO	-0.017 (0.100)	-0.030 (0.038)	0.027 (0.060)
Change in No of Other	-0.013 (0.135)	0.078 (0.058)	0.038 (0.083)
Observations	7,408	7,408	7,408
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes
Prior Firm Characteristics	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes

Table 16: Covenant Modification by Type of Lender

This table presents the estimated coefficients and standard errors (in parentheses) of the covenant tightness regressions. In Column (1), the dependent variable is the change in number of covenants and the estimates are obtained from an OLS regression. Columns (2), (3), and (4) use Ordered Probit models to test the covenant indexes as the dependent variables. The variables of interest are the change in number of commercial banks and different types of nonbank lenders. The analysis is conducted at the renegotiation round level. All specifications include year fixed effects, industry fixed effects, credit rating fixed effects, loan type fixed effects, and loan purpose fixed effects. Standard errors are calculated adjusting for clustering by borrowing firm. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% level, respectively. Variable definitions are provided in Table 2.

Model	(1)	(2)
	Change in Number of Covenants	Covenant Tightening Index
	OLS	Ordered Probit
Change in No of Commercial Banks	0.030*** (0.004)	0.022*** (0.009)
Change in No of Investment Banks	-0.025 (0.033)	-0.047 (0.060)
Change in No of Finance Companies	0.079* (0.044)	0.010 (0.058)
Change in No of Insurance Companies	0.176 (0.183)	0.427* (0.251)
Change in No of Open-end Mutual Funds	0.068 (0.070)	-0.038 (0.131)
Change in No of Closed-end Funds	0.068 (0.195)	0.003 (0.286)
Change in No of Hedge Funds/Private Equities	-0.132 (0.235)	0.206 (0.244)
Change in No of CLO	0.241 (0.225)	0.078 (0.266)
Change in No of Other	-0.315* (0.181)	-0.391 (0.372)
Prior Number of Covenants	-0.205*** (0.018)	
Observations	7,408	5,806
Year FE	Yes	Yes
Industry FE	Yes	Yes
Credit Rating FE	Yes	Yes
Loan Type FE	Yes	Yes
Loan Purpose FE	Yes	Yes
Prior Firm Characteristics	Yes	Yes

Figure 1: A Demonstration of how Loan Paths Are Created

This figure demonstrates a 5-year \$100 million revolving credit facility as it goes through three rounds of renegotiations. The loan facility was granted to NaviSite, a provider of hosting, application management and managed cloud services for enterprises on June 8, 2007.

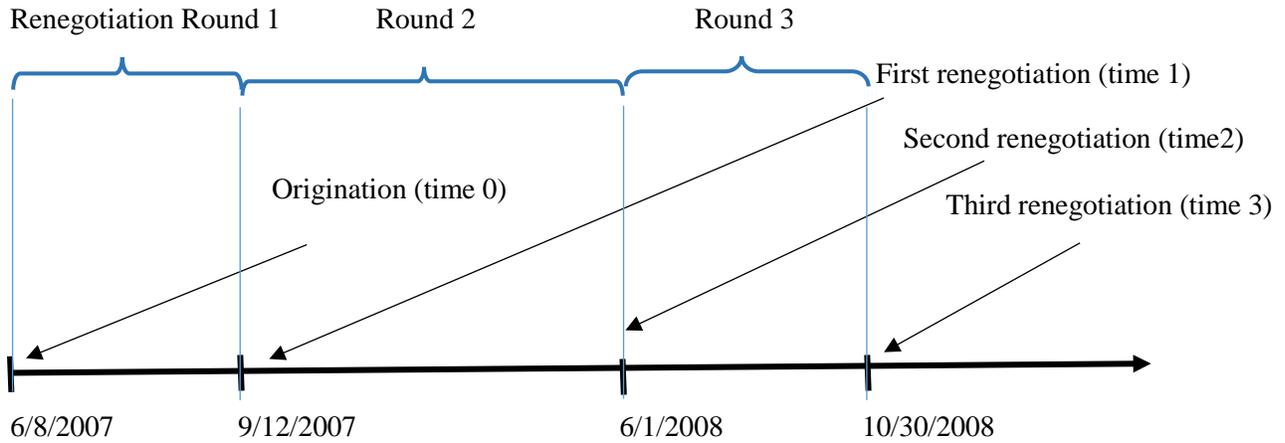


Figure 2: Three Examples of the Evolvement in the Lending Syndicate Structure over Time

Example 1: A 60-month \$750 million term loan was granted to Dean Foods Co, a food and beverage company on August 29, 2003. The lending syndicate structure does not change the next time lenders negotiate with the borrower.

	August 29, 2003	December 31, 2003
Lead Arranger	Wachovia Bank	Wachovia Bank
Banks	SunTrust Bank Fleet Bank Bank of Tokyo-Mitsubishi Bank One	SunTrust Bank Fleet Bank Bank of Tokyo-Mitsubishi Bank One
Nonbanks	General Electric Capital Corp	General Electric Capital Corp

Example 2: A 60-month \$75 million revolving credit was granted to Cross Country HealthCare Inc., a provider of healthcare recruiting and workforce solutions on November 10, 2005. In the next negotiation with the borrower a new nonbank is added.

	November 10, 2005	September 9, 2008
Lead Arranger	Wachovia Bank	Wachovia Bank
Banks	Bank of America Carolina First Bank Commercia Bank LaSalle Bank National City Bank US Bank	Bank of America Carolina First Bank Commercia Bank LaSalle Bank National City Bank US Bank
Nonbanks	General Electric Capital Corp	General Electric Capital Corp <i>Siemens Credit Corp</i>

Example 3: A 15-month \$22.44 million term loan was granted to Ducommun Inc, a provider of transportation services on November 9, 2001. In the next negotiation with the borrower, a nonbank is removed.

	November 9, 2001	September 27, 2002
Lead Arranger	Bank of America	Bank of America
Banks	Fleet Bank Bank of Nova Scotia Bank Austria Bank One	Fleet Bank Bank of Nova Scotia Bank Austria Bank One
Nonbanks	<i>Alpine Enterprises Ltd</i>	