Institutional Investment in Syndicated Loans[·]

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Abstract

A recent development in the syndicated loan market has been the arrival of institutional investors, including hedge funds, private equity funds, and hybrid funds, as lenders. This paper asks several related questions regarding institutional participation in the syndicated loan market, and presents the first empirical analysis in the literature. We show that institutional investors participate in the syndicated loan market as it offers them a lucrative return. We find that institutional investors primarily lend to riskier borrowers, for riskier purposes such as leveraged buy-outs and takeovers, as opposed to commercial banks. Our results show that institutional loans have higher loan spreads (between 35 to 60 bps) than bank loans in the primary market, *ceteris paribus*. The higher riskiness of institutional loans however, does not fully explain this additional spread. Following information based theories, we argue and empirically show that this higher spread on institutional loans primarily serves as compensation to these investors for engaging in costly information production about borrowers, since institutions are uninformed investors in the syndicated loan market. This additional spread however disappears for loans to borrowers with very high levels of institutional equity ownership, suggesting that potential conflicts of interest could arise in those cases, if institutions trade on private information gathered from the loan market. Consistent with the information production argument, our results show that the secondary loan market is primarily driven by trading on institutional loans; while on average only 6% of bank loans are traded, 30% to 35% of institutional loans are traded in the secondary market. Institutional loans have shorter holding periods by their original lenders, have greater liquidity in the secondary market, and earn higher first trading day returns compared to bank loans.

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1 Introduction

The past decade has seen significant changes that have transformed the structure of the syndicated loan market, which has grown to about $1.7 trillion in 2006, in the United States alone. With the advent of the secondary loan trading market, syndicated loans as of now, are typically classified as liquid securities, which has led to a growing number of institutional investors, including hedge funds, private equity funds, prime funds, hybrid funds, and insurance companies to enter this market.[1] According to the Loan Pricing Corporation (LPC), the volume of institutional issuance has shifted from being a footnote in the early 1990s to being a considerable portion of the current syndicated leveraged loan market (as shown in Figure 1).[2] Additionally, the entrance of institutional investors has also been instrumental to the increased liquidity in the secondary loan market.

[Figure 1 here]

Despite the growing importance of institutional lending over the last decade (as seen from the above figure), to the best of our knowledge, there has been no academic research which documents and analyzes the emergence and growth of this sector within the syndicated loan market. This paper presents the first and an original analysis of institutional participation in the syndicated loan market in terms of their primary loan pricing and secondary market loan performance.[3] It has been argued that as the most active loan traders in the secondary market, institutional lenders promote mutual interaction between the primary and secondary loan markets and improve loan market efficiency. However, the impact of

[1] An article in the October 2005 issue of the *Business Week*, *"Hedges: The New Corporate ATMs,"* reported that hedge funds and other institutional investors were increasingly participating in the primary syndicated loan market as banks were increasingly avoiding smaller and riskier deals. Institutional investors are willing to cut deals quickly, without the red tape big banks require to meet regulator's demands. Additionally, big banks such as Bank of America has slashed its corporate loan portfolio from $110 billion in 2000 to $34 billion in 2004. Due to this trend, as of 2005, almost 50% of the market for riskier loans (also known as the leveraged loan market) was funded by institutional investors. Recent entrants to the primary syndicated loan market include hedge funds, BayStar Capital, Carlson Capital, hybrid private equity funds such as Black Diamond, Eton Park, TPG-Axon fund, and buyout firms like the Carlyle Group. Prominent firms that have sourced loans from such institutional lenders include U-Haul's parent firm AMERCO, Krispy Kreme, Aloha Airlines, and Salton Inc., makers of the George Foreman grills.

[2] As defined by LPC, the syndicated loan market comprises of the "investment grade" loan market, the "leveraged" loan market, and the "other" market. Nearly all institutional loans fall in the leveraged loan market segment. LPC classifies institutional loans as one of the key loan market segments and provides periodic analytical statistics for this segment.

[3] There are several papers that have analyzed loan sales and secondary market trading activities of syndicated loans, such as Cebenoyan and Strahan (2004), Gande and Saunders (2006), Drucker and Puri (2006), and Kamstra, Roberts and Shao (2007) to name a few. We discuss these papers in more detail later.

institutional participation on corporate borrowers remains an empirical question. This paper aims to fill this gap in the literature.

In this paper we ask several related questions. What drives institutional investor participation in the primary syndicated loan market? Are there differences in the loan contract terms between institutional loans and bank loans? Specifically, does the participation of institutional investors narrow or widen the spread on syndicated loans? And if so, why? What are the characteristics of borrowers that source loans from institutional investors? Do institutional investors selectively invest in loans with certain characteristics? Do institutional loans trade differently than bank loans on the secondary loan market? The answers to the above questions are empirical in nature. With regard to the all-in-drawn spread on loans in the primary market, while one can think of several reasons that may increase the spread on syndicated loans due to institutional investor participation; based on informational disadvantages of institutional investors vis-a-vis commercial banks, the opposite is also likely; based on either conflicts of interest that may arise when institutional investors participate in the syndicated loan market or due to a decrease in the agency cost of loan if institutional loans systematically have more institutional shareholders providing more efficient monitoring.[4]

The results of our empirical tests indicate that in the primary syndicated loan market, institutional loans have higher all-in-drawn spreads compared to bank loans, *ceteris paribus*. This finding raises the additional question as to why this may be the case? There are several alternative explanations.[5] First, institutional investors are uninformed investors compared to commercial banks in the primary loan market since they lack the private information on borrowers that commercial banks derive from their existing relationships (see, e.g., Petersen and Rajan, 1994). Institutional investors therefore primarily depend on third party certification to decide their investment policy (see, Sufi, 2006).[6] Therefore one can argue that the higher spread on institutional loans serves as compensation to such investors to engage in costly

[4] If exploiting private information gathered in the loan market is the driving force behind institutional investor participation, then in equilibrium, this should be anticipated by firms that source loans from institutions and the spread on such loans in the primary market should be lower than that of bank loans.

[5] In what follows, it should be noted, that all the proposed alternatives are not always mutually exclusive and therefore in some cases multiple explanations may exist. The objective of this study is to identify which among these explanations may be the overall driving factor behind the recent surge in institutional participation in the primary syndicated loan market, and not to run a horse race amongst the possible alternatives.

[6] It is not surprising that institutional participation in the primary syndicated loan market started around 1995, when bank loan ratings were introduced by Moody's and Standard and Poor's. Anecdotal evidence suggests that the introduction of such loan ratings were primarily driven by the desire of institutional investors to participate in the syndicated loan market. Further, Mullineaux and Yi (2006) provide evidence that the introduction of syndicated loan ratings led to an increase in the availability of financing in the syndicated loan market.

information production. This argument is similar to that in the IPO underpricing literature (Chemmanur, 1993) on uninformed investors, namely, that the additional compensation provides incentives for such investors to produce information regarding the borrower which would in turn encourage their participation in the secondary loan market and ensure better secondary market performance of the loan, were it resold by the original lenders. Such participation by institutional investors in the secondary market, would lead to an increase in the liquidity of the secondary market, which in turn would allow banks to re-adjust their loan portfolios, thus freeing up capital and potentially lowering overall borrowing costs (see, Drucker and Puri, 2006). Second, the presence of institutional investors increases the scope of lending activity in the primary syndicated loan market. Borrowers or projects, that previously did not have access to bank loans, can now source loans either if banks can induce institutions to fund such loans jointly or if institutional investors fund such loans by themselves.[7] However, institutional lenders being uninformed investors face a bias in either sourcing or receiving allocations on such loans due to the presence of informed commercial banks in the market. Firms are therefore forced to pay more to these uninformed institutional investors for this adverse selection, since they would otherwise receive below average returns and withdraw from the primary loan market. Thus, the higher spread on institutional loans in the primary market is to encourage participation by institutional investors, particularly when there is a higher probability of syndication failure due to insufficient supply of loanable funds. The intuition behind this argument is similar to that in Rock (1986), in the IPO underpricing literature. Both the above notions are also consistent with information asymmetry in the syndication process.[8] Third, it can be argued that institutional investors receive a higher spread in the primary market since they fund riskier loans than commercial banks and also since many of their loans are "second lien" loans implying that in the event of a bankruptcy or liquidation they would have a claim that is junior to that of commercial banks on the assets of the firm. Fourth, anecdotal evidence suggests that the investment objectives of institutional lenders is very different from that of commercial banks.[9] Given this, it could be argued that negotiation (or renegotiation) costs for institutional investors

[7] Anecdotal evidence suggests that institutional investors such as hedge funds and private equity funds are willing to lend to borrowers and for projects that commercial banks are unwilling to do. IGN Entertainment Inc. an internet publishing company in Brisbane, California sourced a $35.5 million loan from Golden Tree Asset Management a New York fund for acquisition purposes after failing to raise such a loan from commercial banks.

[8] The presence of information asymmetry between lead lenders and syndicate participants has been widely discussed in the syndicated loan literature, see, Simons (1993), Dennis and Mullineaux (2000), Lee and Mullineaux (2004), Panyagometh and Roberts (2005), Ivashina (2005), and Sufi (2007), among others. In this paper, we extend the notion of information asymmetry between lead banks and syndicate members, to one between commercial banks and institutional lenders, since commercial banks on average possess superior information about the borrower compared to institutional investors.

[9] A recent article in the Pittsburgh Post-Gazette, *Hedge Funds shake up Lending Arena*, July 2005, mentiones that hedge funds often resist ammending loan agreements. Additionally, institutional investors are willing to consider non-traditional

are higher when other lenders are present in the syndicate, particularly commercial banks who are better informed. Thus the higher spread on institutional loans is a compensation to institutional investors for this additional negotiation cost when dealing with a syndicate of lenders. Fifth, since institutional investors generally hold an equity stake in firms, having them as the firm's debt-holders could decrease the agency cost arising due to moral hazard between equity and debt holders, thus leading to more efficient governance. Further, if institutions provide effective monitoring, their participation in a loan may provide certification regarding the quality of the firm's loan, thus potentially increasing firm value. It could therefore be argued that the additional spread on institutional loans is a compensation to institutional investors for providing certification and more efficient governance, thus increasing overall firm value.

Our results can be summarized as follows. Institutional investors participate in the syndicated loan market since on average it offers them a lucrative return. In 2004, institutional lenders earned approximately $2.68 million more in primary market spreads than what commercial banks would have earned on a deal of mean size in our sample. In total for 2004, this additional interest amounts to approximately $630 million dollars more for institutional investors compared to commercial banks. In addition, on the first trading day of the loan in the secondary market, institutional investors on average made approximately $2.08 million more than commercial banks in market adjusted return on a loan of mean size in our sample. Given these returns, it is therefore not surprising that institutional investors have started participating actively in the syndicated loan market over the last 5 years. As mentioned before, institutional loans have higher all-in-drawn spreads compared to bank loans in the primary loan market, *ceteris paribus*. Our analysis and results support the notion that this additional spread to institutional investors is primarily a compensation for producing information about the borrower, supporting the theoretical arguments regarding uninformed investor participation made in the IPO literature. Thus, given this higher spread, exploiting the private information gathered in the primary loan market does not appear to be the primary factor driving institutional investor participation in this market. This effect is however partially present; we establish that the additional spread on institutional loans compared to bank loans, decreases as the percentage of institutional equity ownership in the firm increases. Further, this additional spread ultimately vanishes at very high levels of institutional equity ownership, consistent with the argument

methods to provide financing, that commercial banks would avoid. For example, Salus Surgical, a firm that develops physician owned outpatient surgery facilities and hospitals, secured a $22 million loan from hedge fund Fortress Investment Group LLC, that was based on collateral that the company's existing bank lender did not accept: a portfolio of California workers compensation receivables.

that conflict of interest may be a significant factor at such levels of equity ownership (see, Ivashina and Sun, 2007). We also find that institutional investors lend to riskier borrowers and for riskier purposes compared to commercial banks, such as for leveraged buy-outs, takeovers, and recapitalizations, however this greater risk does not fully explain the additional spread on institutional loans. Institutional investors almost exclusively fund leveraged loans, with credit rating BBB and below. A greater percentage of institutional loans have financial covenants and the average number of financial covenants in institutional loans is also significantly greater than bank loans. Institutional loan borrowers are on average firms of similar size, with a higher percentage of their equity being held by institutional investors, and are very highly leveraged compared to commercial bank borrowers. Institutional loans on average have longer maturities, and are almost always secured compared to bank loans. The syndicate structure for institutional loans appear to be more concentrated than that of bank loans with institutional loans having lesser number of lead lenders. Finally, the supply of capital from institutional investors to the syndicated loan market is negatively correlated with the AAA spread and the corporate risk premium, indicating that institutional investment in the syndicated loan market is sensitive to alternative investment opportunities available to investors who invest their money with institutions such as private equity funds and hedge funds, consistent with the arguments made by Gompers and Lerner (2000).

Institutional loan borrowers and bank loan borrowers differ significantly, indicating that there maybe a potential selection problem and since this borrower-lender matching is nonrandom, this treatment may confound the effects of lender identity with the effects due to the loan and/or the borrower's characteristics. We use a switching regression model with endogenous switching that addresses this type of endogenous borrower-lender matching problem. The advantage of this model is that it allows us to answer the following "what-if" type of question: For an institutional loan what would the alternative spread be had it been funded by a commercial bank. The answer to this question holds the loan characteristics constant, and separates out the effect due to the lender's identity. We find that our results remain unchanged – even after accounting for the selection issue, institutional loans have higher all-in-drawn spreads in the primary market compared to bank loans. This analysis also allows us to empirically show that institutional investors indeed are the uninformed participants in the syndicated loan market and lack the prior relationship with borrowers (and therefore the private information) that commercial banks have, as documented in the previous literature. We find that if institutional investors were to initiate the loans that were made by banks they would charge a much higher spread than commercial banks, since they would have to engage

in costly information production for these borrowers also, due to their lack of prior relationships.

We find that in the secondary loan market, a significant portion of loans that are traded, are institutional loans. While on average 30% to 35% of institutional loans are traded, only 6% of commercial bank loans are traded on the secondary market. Moreover, the probability of an institutional loan being resold is on average 4 times more than that of a bank loan and the average holding period (from loan initiation to first trading day) for an institutional loan is 3 times less than a bank loan, indicating that institutions are more active participants in the secondary market compared to commercial banks. Further, our results indicate that institutional investors earn a higher market adjusted return compared to banks on the first trading day on the secondary market, since on average institutional loans trade above par, while bank loans trade below par. These results are consistent with the argument of information production leading to subsequent active participation by uninformed investors, made in Chemmanur (1993).

This paper is also related to the recent literature on loan sales and secondary market loan trading.[10] Cebenoyan and Strahan (2004) find that banks that actively participate in the loan sales market, tend to make more risky loans and earn higher profits than other banks. Our results, on institutional investors who exhibit the same characteristics as noted by them, are consistent with their findings. Drucker and Puri (2006) find that sold loans contain a greater number of covenants, about 60% are sold within one month of origination, and borrowers whose loans are sold have high leverage ratios. Our results show that institutional loans have a much higher probability of being resold and that a higher percentage of institutional loans have financial covenants as well as the average number of financial covenants in institutional loans are greater than that in bank loans. Further, the average holding period of institutional loans is significantly less than that of bank loans. All these results are consistent with their argument that covenants can help reduce agency problems in loan sales. Also consistent with their results, we find that institutional borrowers have higher leverage ratios and are of lower credit quality compared to bank borrowers. Gande and Saunders (2006) find that when a borrower's existing loans trade for the first time in the secondary market, it elicits a positive stock price response. They further argue that the secondary loan market may serve as an alternative source of information to that gathered by banks through loan monitoring activities, since an increase in trading activity is likely to result in the revision of the market price, part of which represents new information. Consistent with their arguments our results show that

[10] In addition, this paper is also tangentially related to the growing body of literature arguing that the supply of debt financing is an important determinant of capital structure. See, Leary (2005), Faulkender and Petersen (2006), and Tang (2006) for analysis on this issue.

institutional loans (which are more likely to be resold compared to bank loans) on average trade above par on the first day of trade in the secondary market, which indicates positive information production and thus could potentially lead to the positive stock price response that they find. Finally, Kamstra, Roberts, and Shao (2007) adopt a two stage econometric model to study the impact of loan resales on the cost of borrowing. They find that there is a strong positive association between the *ex ante* probability of loan resales and the all-in-drawn spread in the primary market. Our results are consistent with this finding, since institutional loans have a higher spread in the primary market and also a greater probability of being resold.

The rest of the paper is organized as follows. Section 2 discusses the related theoretical and empirical literature and develops testable hypotheses. Section 3 explains the sample selection, data, and methodology while Section 4 describes the empirical tests and discusses the results. Section 5 concludes.

2 Theory and Hypotheses Development

2.1 Information Asymmetry and Institutional Investors

In this section we generate several testable predictions drawing on various information based theories. The issue of information asymmetry between lead lenders and syndicate participants has been widely discussed in the literature. Simons (1993), Dennis and Mullineaux (2000), Panyagometh and Roberts (2005), Ivashina (2005), and Sufi (2007) among others, highlight the problem of information asymmetry in the primary loan syndication process and discuss how syndicated loans are structured to mitigate the problem. In the discussion that follows, we generalize this notion of information asymmetry between lead lenders and syndicate participants to one between bank lenders and non-bank institutional lenders. To gain additional insights we draw on the IPO underpricing literature, where several empirical and theoretical papers document and explain the existence of such underpricing in the presence of information asymmetry.[11] Chemmanur (1993) argues that in the presence of information asymmetry, informed participants such as firm insiders will motivate uninformed investors to produce information on the firm, and this additional information will be reflected in the secondary market price run-up of the firm's equity, thus increasing its expected value. However, since such information production is costly, firm insiders are willing to

[11] The enormous evidence on IPOs, has shown that new equity issues are generally underpriced, see, Ritter (1984) and Loughran and Ritter (2002) among others. Rock (1986) and Chemmanur (1993) propose theoretical models in the presence of information asymmetry to explain IPO underpricing.

compensate uninformed investors to produce this information by underpricing the issue. Based on this, we argue that firms and commercial banks, who are the informed participants in the syndicated loan market, will be willing to compensate uninformed institutional investors to engage in costly information production about the firm, since such information will be reflected in the secondary market trading of the loan, thus encouraging more institutional participation leading to an overall increase in secondary market liquidity.[12] As Drucker and Puri (2006) mention, this increase in liquidity is beneficial for both commercial banks, who are able to re-balance their loan portfolio, thus freeing up additional capital to invest in new loans and also for firms, who benefit from increased future loan availability. Based on this argument, the hypotheses are:

- *H1: The primary spread on institutional loans will be higher than that on commercial bank loans, ceteris paribus, as compensation to institutional investors for engaging in information production about borrowers.*
- *H2: Institutional loans will have shorter holding periods (from origination to first trade) and will trade more actively in the secondary loan market compared to bank loans.*
- *H3: On the secondary market, institutional loans should have higher prices, resulting in higher returns for institutional investors who sell such loans, compared to bank loans.*

Following the evidence provided by Mullineaux and Yi (2006), we argue that the presence of institutional investors has increased the scope of lending activity in the primary syndicated loan market. Borrowers or projects, that previously did not have access to bank loans, can now source loans either if banks induce institutions to participate and fund such loans jointly or if institutional investors fund such loans by themselves. However, institutional lenders being uninformed investors face a bias in either sourcing or receiving allocations on such loans due to the presence of informed commercial banks in the market. This argument follows Rock's (1986) adverse selection model which relies on the existence of information asymmetry between informed and uninformed investors in the IPO market. According to Rock (1986), informed investors, taking advantage of superior information, crowd out uninformed investor participation in the better quality IPOs, leaving uninformed investors only the lower quality issues. When pro rata rationing is adopted in the primary stock distribution process, the probability of receiving lower quality

[12] There is some indirect empirical evidence on this. Gande and Saunders (2006) find a positive stock price reaction to firms when their loans trade for the first time in the secondary market, which they cite as evidence on new information being generated in the secondary market.

issues surpasses the probability of receiving better quality issues for the uninformed investor. Realizing this "winner's curse", uninformed investors revise their valuations of new issues downward. As a result, firms are forced to underprice their shares to prevent uninformed investors from withdrawing from the IPO market. Thus, in this set-up, underpricing is a cost imposed on the issuing firm by informed investors. Applying the same reasoning to the syndicated loan market we develop the following hypotheses.

- *H4: Institutional loans will have a higher spread in the primary market to encourage continued participation by institutional investors, thus increasing the scope of lending activity in this market.*
- *H5: The larger the loan size (the higher the probability of syndication failure due to insufficient supply of loanable funds from commercial banks alone), the higher will be the spread offered to induce institutional participation in the syndicated loan market.*

2.2 Institutional Investors as Shareholders and Debtholders: Efficient Governance or Conflict of Interest?

Anecdotal evidence suggests that more than often, institutional investors hold both an equity as well as a debt position in the same firm. While on one hand, this could potentially decrease the agency cost arising from moral hazard between equity and debt holders due to more efficient monitoring and enhanced governance by institutional equity investors (Roberts and Yuan (2006)); on the other hand it could give rise to serious conflicts of interest if institutional investors take advantage of the private information gathered during the loan origination and negotiation process and utilize it by taking offsetting positions in the equity market (Ivashina and Sun (2007)). Both these however, would lead to a decline in primary market loan spreads for institutional loans. In the first case, a decrease in the agency cost would lead directly to a decline in the spread, while in the second case, borrowers realizing the potential conflict of interest would internalize the cost, and thus only be willing to pay a much lower spread to institutional lenders compared to commercial bank lenders. Based on this we develop the following hypotheses.

- *H6: Institutional loans will have a lower all-in-drawn spread compared to similar bank loans, either due to a decrease in agency cost between equity and debt holders or due to recognition by borrowers of a potential conflict of interest.*

- *H7: The higher the level of institutional equity ownership in a firm, the lower will be the primary market loan spread on institutional loans to such firms.*

The corporate governance literature suggests that institutional shareholders are active and efficient firm monitors and thus their participation in loan deals could be correlated with higher firm value. The impact of institutional shareholdings on firm value and the efficacy of shareholder activism as a corporate governance mechanism have been widely discussed in the literature. It has been argued that institutional involvement in an equity investment delivers a message about the company's health and financial future. Allen, Bernardo and Welch (2000) argue that institutional investors have advantages in detecting and thus certifying firm quality.[13] Despite the extensive discussion of the efficacy of institutional equity ownership as a corporate governance mechanism, very few papers have studied the role of institutional debt holdings. It is well accepted that lenders have both the incentive and the capability to act as effective firm monitors. Therefore, agency cost could also be reduced by debtholders' monitoring efforts, potentially leading to an increase in firm value due to the certification provided by institutional lenders regarding the quality of a firms' loans. Further, if institutions indeed provide certification regarding firm quality, it is expected that they should be long-term debtholders in the firm. This leads to the following hypotheses.

- *H8: Institutional loans will have a higher all-in-drawn spread compared to bank loans due to the potential certification effect of institutional lenders.*

- *H9: Institutional loans will have a lower probability of being resold in the secondary loan market and will have longer holding periods compared to bank loans.*

2.3 Risk and Negotiation Costs for Institutional Investors

Anecdotal evidence suggests that institutional lenders specialize on the highly leveraged and distressed segments of the syndicated loan market.[14] As a result, loans are being made to highly risky borrowers and

[13] Shleifer and Vishny (1986) and Gorton and Schmidt (2000), are among those who document a positive relationship between ownership concentration and firm performance. Hartzell and Starks (2003) argue that institutional shareholders play a monitoring role in alleviating agency problems, demonstrating the positive impact of institutional shareholdings on the pay-for-performance sensitivity of executive compensation.

[14] A recent article in July 2007, in Reuters, DealTalk, *Hedge Funds opt to be Lenders of last resort*, mentions that not only are hedge funds concentrating on lending to the highly leveraged sector, but in fact, funds that invest in this sector have outperformed the funds general index this year (2007), according to Credit Suisse/Tremont Hedge Fund Index. The general consensus among institutional lenders appears to be that by making loans to troubled companies, institutional lenders are betting that they have more patience than a company's creditors to wait out the storm and profit from a company's turnaround.

for riskier projects that would normally not receive bank financing. Moreover, in many cases these loans are "second lien" loans, implying that in the event of a bankruptcy or liquidation institutional lenders would have a claim that is junior to that of commercial banks on the assets of the firm. This implies the following hypothesis.

- *H10: Institutional loans will have a higher all-in-drawn spread since they are loans made to riskier borrowers and for riskier projects compared to bank loans.*

As mentioned earlier, the investment objectives of institutional lenders are very different from that of commercial banks. Anecdotal evidence suggests that institutional lenders are willing to make deals quickly and willing to consider more non-traditional methods of financing than commercial banks. Moreover, institutional lenders are also resistant to amending loan agreements. Given these anecdotal evidence, it could therefore be argued that in the presence of information asymmetry (since institutional lenders are uninformed) negotiation costs for institutional lenders will be higher than banks, specially so if other commercial banks are present in the lending syndicate. This leads to the following hypothesis.

- *H11: The spread on institutional loans will be higher than that of bank loans since institutional lenders have higher negotiation (renegotiation) costs compared to commercial banks.*

3 Data and Methodology

3.1 Sample Selection

Our sample of loans is obtained from the Dealscan database between 1995 and 2004. Our choice of 1995 follows from the recognition that institutional loans came into broad usage only from the mid-1990s along with the introduction of syndicated loan ratings. Our initial data consists of 58,821 U.S. loan facilities and after screening for missing observations on all-in-drawn spreads and loans based on LIBOR, we are left with a sample of 40,502 observations. Next we manually match our sample with the Compustat database by company name, ticker and the deal active date for each loan facility. Financial and accounting variables from Compustat are retrieved on the last fiscal year end prior to the year of deal origination. This effectively means we only retain the loan facilities of public companies. Our final sample includes 10,471 loan deals involving 2,932 firms. There is institutional participation in 915 (8.74%) of these deals. At the

facility level, there are 14,448 loan facilities, of which 945 tranches (6.54%) are identified by Dealscan as institutional loan tranches, designed to be syndicated to institutional investors only.[15]

To test our hypotheses on the secondary market, we combine Dealscan with the Secondary Mark-to-Market Pricing Services (SMPS) database to obtain first-day loan trading information for each loan facility. The SMPS database consists of daily loan bid-ask quotations and the number of quotes for each loan facility traded on the secondary market. Several papers have recently used this database to study the dynamics of this market and the efficiency of the loan resale market relative to other capital markets (see eg., Drucker and Puri (2006) and Gande and Saunders (2006), among others). Following convention, we use the average of the mean bid and mean ask quotes as a proxy for the real loan transaction price.[16] Our SMPS data contains the daily quote information of 5,101 traded loan facilities from 1998 to 2004. We extract the trading information on the first trading day for these 5,101 loan facilities and match with our Dealscan sample. Finally, in order to calculate market adjusted returns, we match this sample with the loan-market-index data by the first loan trading day.[17]

3.2 Methodology: Primary and Secondary Loan Markets

In our initial analysis we use OLS with year and industry fixed effects to test our hypotheses related to the primary loan market. We then use a more general model that takes into account the potential selection bias arising due to non-random borrower-lender matching. To account for this, we use switching regressions with endogenous switching, which we describe in detail in the following section. Following Petersen (2005), in all our regressions we report standard errors that are clustered either at the deal level or at the firm level. There is an extensive literature regarding the determinants of all-in-drawn spread in the syndicated loan market (see, Dennis, Nandy and Sharpe (2000) for a review).[18] We follow the same

[15] Various conversations with analysts at Loan Pricing Corporation, Loan Syndication Trading Association, and at Credit Suisse First Boston revealed that typically institutional loan tranches are designated as term loan B or higher, while bank loans are either various lines of credit facilities or term loan A's. Based on this, we also defined an alternative institutional loan dummy to equal 1 if the tranche had a term loan B or higher designation and 0 otherwise. The correlation in our sample between this variable and the indicator variable provided by Dealscan is 92%. Our results remain qualitatively unchanged irrespective of which definition we use to identify institutional loans.

[16] Transaction prices are not provided in the syndicated bank loan market data. However, LPC collects the bid and ask prices from major loan dealers on a daily basis. Loans are quoted on the secondary market with reference to par, i.e., 100. We therefore calculate the initial loan resale return on the first trading day as the difference between the loan price and 100, where price is the mean of average bid and ask quotation of a loan.

[17] We thank Ruth Young of Loan Syndication Trading Association for providing us with the information on Standard & Poor's/LSTA Leveraged Loan Index Returns. This index comprises all loans that are traded on the secondary loan market and fit the inclusion criteria of LSTA/LPC mark-to-market service.

[18] The determinants of initial loan pricing and other major loan contract terms have been widely studied in the literature which focuses on how asymmetric information, agency costs of debt, signaling, reputation effects, taxes, credit quality and

regression specifications as in the previous literature to control for all the borrower, lender, economy wide, and loan level variables that affect the initial all-in-drawn spread on syndicated loans. In addition, we augment this specification with an indicator variable that takes the value of 1 if the facility is funded by an institutional investor and 0 otherwise. The coefficient of interest to us is that on the institutional loan dummy after controlling for the other determinants of the loan spread. The regressions take the following form:

$$Spread = F\left[Inst\_Dummy, Borr\_characteristics, Loan\_characteristics, Macro\_vars\right] \qquad (1)$$

where the dependent variable *Spread* is the initial all-in-drawn spread obtained from the Dealscan database. *Borr_characteristics* include firm size, market to book ratio, tax to asset ratio, z-score, firm leverage, and borrower credit ratings. In some specifications we also control for various firm specific corporate governance measures such as the number of institutional shareholders, the percentage of shares outstanding held by institutions, the CEO's pay performance sensitivity, whether the firm has dual class shares, the GIM index, and whether the firm has a joint CEO and Chairman of the board. In addition we also control for the abnormal stock market performance of the borrower in the year of loan origination, using adjusted returns as in Daniel et. al. (1997) and Wermers (2004). *Loan_characteristics* include maturity, secured status, an indicator if second lien, an indicator if leveraged loan, the probability of the loan being resold, loan concentration, facility size, facility ratio, revolver, syndicated status, consent, assignment, the number of financial covenants, the number of lenders, and loan purpose dummies.[19] *Macro_vars* include LIBOR, the term premium, and interest volatility.[20] We also check the robustness of our results after accounting for the simultaneity of the loan contract terms.

To test our hypotheses regarding the secondary market performance of institutional loans, we examine the average initial loan resale price, the average holding period of the loan (from loan initiation to first trading day), the average aftermarket price volatility, and the liquidity of bank loans compared to institutional loans. We investigate whether the mean initial loan resale return on institutional loans is higher than that on bank loans controlling for other potential determinants of the initial return as follows:

lender-borrower relationships affect debt contract terms (see e.g., Diamond (1993), Peterson and Rajan (1994), Berger and Udell (1995), and Dennis, Nandy and Sharpe (2000), among others).

[19] Kamstra et al. (2007) compute the *ex ante* probability of a loan being resold using a logit analysis. We follow their methodology to construct the probability of loan resales in our sample. Please refer to Kamstra et al. (2007) for additional details.

[20] For space reasons we provide the definitions of all the variables used in our analysis in the table legends.

$$Returns = [Inst\_Dummy, Borr\_characteristics, Loan\_characteristics, Holding\_period] \quad (2)$$

$$Holding\_Period = [Inst\_Dummy, Borr\_characteristics, Loan\_characteristics, probability\_of\_resale] \quad (3)$$

We use both the raw initial loan resale return and the market index adjusted initial loan resale return as the dependent variables in the return regressions and the natural logarithm of the number of days in the holding period as the dependent variable in the holding period regressions. *Borr_characteristics* include firm size, market to book ratio, firm leverage, percentage of institutional shareholding, and borrower credit ratings. *Loan_characteristics* include all-in-drawn spread, maturity, secured status, an indicator if second lien, an indicator if leveraged loan, facility size, the number of financial covenants, loan price volatility, number of quotes on first trading day, the number of lenders, and loan purpose dummies. In addition, we also check the robustness of our results by jointly modelling the secondary market first day return and the holding period in a simultaneous decision framework. As before, in all regressions standard errors are clustered at the firm level.

4 Empirical Analysis and Discussion of Results

4.1 Univariate Analysis

[Insert Figure 1, Figure 2, and Figure 3 Here]

As discussed earlier, Figure 1 documents the tremendous growth of institutional investor participation in the primary syndicated loan market during our sample period of 1995 to 2004. Figure 2 shows that during the same period, there appears to be a constant difference in the average all-in-drawn spreads between institutional and bank loans, establishing that this is not just a recent phenomenon. Figure 3 shows the percentage of loans that have been resold on the secondary loan market as of year end 2004. From these figures, we observe that institutional loans have been steadily increasing in total dollar value since 1995. More interestingly, it appears that institutional loans are more likely to be resold on the secondary market. For example, from Figure 3, we find that 48.11% of the institutional loans issued in 1999 have been resold on the secondary market before December 2004, while only 7.17% of bank loans issued in

1999 have been resold over the same time.

[Insert Table 1 Here]

Table 1 reports the univariate comparisons for institutional and bank loans. We classify the variables into four categories: loan specific characteristics, borrower specific characteristics, secondary market specific characteristics, and borrower's stock market performance. The summary statistics for the variables in each category are reported in panels A to D respectively. The last column of the table presents the t-statistics for the difference in means test between institutional and non-institutional bank loans. The simple descriptive statistics reported in Panel A reveal that, on average, the spread on institutional loans is almost double that of non-institutional loans (305 basis points for institutional loans vs. 157 basis points for non-institutional loans). Further, institutional loans have longer maturities (2133 days vs. 1224 days) and compared to non-institutional loans (66.6%), a higher proportion (98.1%) of institutional loans are secured. Almost all (94%) institutional loans are leveraged loans, while only a third (36%) of bank loans fall into this category and further a higher percentage of institutional loans are second lien loans compared to non-institutional loans. On average, institutional loans are slightly larger in size, with slightly more restrictive loan resale constraints and a larger number of syndicated lenders. However, the number of lead lenders for institutional loans is smaller than that of non-institutional loans. Almost all institutional loans are syndicated and the mean loan concentration ratio for institutional loans (0.433) is higher than that for non-institutional loans (0.371). None of the institutional loans involve a line-of-credit (revolver) facility and a higher percentage of institutional loans are borrowed for riskier projects such as acquisitions and leveraged buy outs (LBOs). Overall, we find that a significantly larger percentage of institutional loans have financial covenants compared to non-institutional loans (73.3% vs. 62.7%) and the average number of financial covenants in each loan is also significantly higher for institutional loans (2.5 vs. 1.53). Finally, the average *ex ante* probability of institutional loans being resold (34.6%) is significantly higher than that of non-institutional loans (9.3%).[21] These results are generally consistent with *H1*, *H4*, *H8*, *H10*, and *H11*

[21] In unreported tests, we find that institutional loans seem to have stricter financial covenants than non-institutional loans for certain categories (six of the eleven), though the pattern is not pronounced. For example, the maximum debt to net worth ratio, the maximum leverage ratio, minimum cash interest, minimum EBITDA, minimum fix charge coverage, and minimum interest coverage all appear to be more restrictive for institutional loans compared to non-institutional loans. Drucker and Puri (2006) argue that loans with more restrictive financial covenants are more likely to be resold on the secondary market. Our results seem consistent with their arguments since we find that a higher percentage of institutional loans are resold. It should however be noted that their approach differs from ours in measuring the restrictiveness of a financial covenant. While we compare the raw cut-offs specified in the covenant, they measure restrictiveness with respect to the amount of slack that a borrower has, given the cut-off value, where slack is defined as the difference between the actual and the minimum or maximum

(all of which predict institutional loans to have higher spreads) and inconsistent with *H6* (predicts lower spreads) and *H9* (predicts lower resale probability).

Panel B shows the differences between the average institutional loan borrower and the average non-institutional loan borrower. Compared to the average non-institutional loan borrower, the average institutional loan borrower is of similar size, has lower market to book ratio, lower Altman's Z-score, higher leverage, lower tax to asset ratio, and lower credit rating with none of them having either AAA or AA rating. Institutional loan borrowers have a larger percentage of their shares held by institutional investors, but have a lower number of institutional shareholders compared to non-institutional loan borrowers. A slightly larger portion of the institutional loan borrowers have a dual class share system; the average GI index of the non-institutional loan borrowers is lower than that of institutional loan borrowers; and a smaller fraction of institutional loan borrowers have a joint CEO-Chairman. In general, the various indicators show mixed evidence on whether institutional loan borrowers have superior or inferior corporate governance mechanisms.

Panel C shows the secondary loan trading market characteristics for the two groups of loans. The average daily number of quotes of institutional loans is higher than that of bank loans, supporting *H2* (which predicts that institutional loans will be more liquid), and the average holding period (from loan initiation to first trading day) for an institutional loan is 3 times less than a bank loan, contradicting *H9* (which predicts that institutional loans will be held by their original lenders longer). Further, institutional loans are resold at a higher average price on the first trading day than non-institutional loans, consistent with *H3* (which predicts that institutional loans will have better secondary market returns).

Finally, Panel D examines the stock market performance of the two groups of borrowers. Following Daniel et al. (1997), we calculate the adjusted stock return of the borrowers in the year of the loan origination and for 1 year, 2 year, and 3 years afterwards. We find that the abnormal stock market performance for institutional loan borrowers is significantly higher in the year of loan origination and similar to bank loan borrowers in the long run. The momentum measure is also higher for institutional loan borrowers as well.

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that is specified in the loan contract. More specifically, they focus on 2 specific covenants, the level of net worth and the current ratio.

4.2 Multivariate Analysis – Primary Market Loan Pricing Regressions

Table 2 presents our initial analysis on the primary market all-in-drawn spread of institutional loans compared to bank loans, controlling for potential determinants of this spread, using OLS regressions with year and industry fixed effects, as discussed earlier. The variable of interest is the dummy variable Institutional Loan which takes the value of 1 if the loan is structured to be sold to institutional investors and 0 otherwise. In these regressions, we control for an array of determinants that have been shown in the prior literature to impact loan pricing. These control variables include maturity, security, firm size, borrower's credit rating, market-to-book ratio, leverage, and loan concentration among others. In addition, we also introduce the probability of the loan being resold as an additional control in several specifications. All regression specifications in Table 2 include loan purpose dummies and borrower specific credit rating dummies. In addition, some specifications also include year and industry (at the 2 digit SIC level) fixed effects. Following Petersen (2005), the robust standard errors are clustered at the deal level.

[Insert Table 2 Here]

As can be seen from Table 2 the institutional loan variable is positive and significant across several alternative regression specifications. The estimated coefficients on the institutional loan variable range from 0.301 to 0.584 implying that on average institutional loans are priced around 30% to 60% higher compared to bank loans. To confirm the effect of the institutional loan dummy, we exclude this variable in *Reg* 1 and reintroduce it in *Reg* 2. A comparison of these 2 regressions reveal that adding the institutional loan dummy does not significantly impact the magnitude and significance of any of the other coefficient estimates and increases the R-square by 1%, leading us to believe that the institutional loan dummy is therefore a complement, and not a substitute, for the other explanatory variables. The significance, magnitudes and signs of all the coefficient estimates are generally consistent across different models and the adjusted R-square is always higher than 59%, which is comparable with earlier studies (Dennis et al. (2000) among others). The results in Table 2 therefore support the hypotheses (*H1*, *H4*, *H8*, *H10*, and *H11*) that institutional loans have a higher spread than bank loans after controlling for loan and borrower characteristics. It appears that borrower and loan (project) specific risk characteristics do not completely explain the higher spread on institutional loans, contradicting *H10* (which predicts that the additional spread on institutional loans is due to higher risk levels), since even after accounting for such factors, the institutional loan dummy is positive and significant. In particular, consistent with our expectations, we

find that leveraged and second lien loans do indeed lead to a higher initial spread, but that does not fully explain the higher spread on institutional loans.

4.2.1 Primary Market Loan Pricing Controlling for Corporate Governance Factors

Table 3 reports the regression results for the loan pricing regressions controlling for a number of corporate governance factors including the number of institutional shareholders, percentage institutional shareholding, dual class dummy, pay-performance sensitivity, joint CEO-Chairman dummy, and GI index and also controlling for the abnormal (DGTW adjusted) stock return in the year of the loan origination. In addition, the interaction term between the institutional loan dummy and each of the above mentioned variables is also incorporated into the regressions. All specifications include loan purpose dummies, borrower specific credit rating dummies, year, and industry (at the 2 digit SIC level) fixed effects. As before, the robust standard errors are clustered at the deal level.

[Insert Table 3 Here]

However, after controlling for these corporate governance variables, we find that the estimated coefficient on the institutional loan variable is still positive, of similar magnitude as before, and significant in most specifications, while most of the corporate governance controls and all the interaction terms are insignificant except for the number of institutional shareholders and the percentage institutional shareholding. Even though, the negative and significant coefficient estimates associated with these two corporate governance controls are consistent with Roberts and Yuan's (2006) finding, they are not completely consistent with *H6*; the institutional loan dummy in *Reg* 2 is still positive and significant.[22] Thus, contrary to *H6*, recognition of the potential conflict of interest or a decrease in agency cost due to more efficient monitoring does not lead to an overall lower spread for institutional loans. The results however do show that a higher percentage of institutional equity ownership in firms is in general associated with a decrease in the loan spread. The results in Table 3 are also generally consistent with *H8* showing that institutional loans on average have a higher spread than bank loans which could potentially be driven by the certification effect of institutional lenders. We explore this in more detail and attempt to disentangle the alternative hypotheses in Section 4.3.[23]

[22] It should be noted that the insignificance of the institutional loan dummy in regression 1 could potentially be driven by the correlation between size and the number of institutional investors in that specification, which is around 80%.

[23] In unreported tests, we also control for the endogeneity in loan contract terms and allow loan spread, maturity, and secured status to be jointly determined (as in Dennis, Nandy, and Sharpe, 2000). Our results remain qualitatively unchanged;

4.3 Switching Regressions with Endogenous Switching

In this section we present evidence on the impact of private information of informed lenders (banks), on loan spreads to particular borrowers; specifically borrowers with whom they have prior relationships. Similarly, we will also show that institutional lenders are uninformed investors in the syndicated loan market and therefore lack the private information that banks have about borrowers and thus the additional spread on such loans is a compensation for producing information about the borrowers, as outlined in *H1*. Table 1 reveals that borrower and loan characteristics for institutional and bank loans are remarkably different. These differences between the borrowers and the loans funded by the two lender groups highlight the endogenous nature of the borrower-lender matching. It could be the case that institutional investors only lend to riskier borrowers who did not previously have access to the syndicated loan market, and hence charge them a higher spread as in *H4* and *H10*. Therefore to correctly identify the impact on loan spreads, we are interested in the following "what-if" type of question: For a firm funded by an institutional lender, what would the alternative loan spread be *had it been funded* by a commercial bank. Similarly, for a firm that received a loan from a commercial bank, what would the alternative loan spread be *had it received* the loan from an institutional investor. The answer to this question holds the impact loan spread due to selection constant, and separates out the impact of the lender's private information on loan spreads.

A switching regression model with endogenous switching consists of a binary outcome equation that reflects the selection or matching between the lenders and the borrower, and two regression equations on the variable of interest, in this case the *all-in-drawn spread*. Formally, we have:

$$I_i^* = Z_i^{'}\gamma + \varepsilon_i, \tag{4}$$

$$y_{1i} = x_i^{'}\beta_1 + u_{1i}, \text{ and} \tag{5}$$

$$y_{2i} = x_i^{'}\beta_2 + u_{2i}. \tag{6}$$

Equation (4) is the latent lender-borrower matching equation. To reflect binary outcomes, I^* is dis-

the positive and significant association between the institutional loan dummy and the loan spread is robust and has a slightly larger magnitude under the simultaneous framework, thus supporting our earlier results and consistent with *H1*, *H4*, *H8*, *H10*, and *H11*.

cretized as follows:

$$I_i = 1 \text{ iff } I_i^* > 0, \text{ and } I_i = 0 \text{ iff } I_i^* \leq 0. \tag{7}$$

[Insert Table 4 Here]

In other words, I_i equals one if and only if a firm receives the loan from an institutional investor. In this setup, the lender-borrower matching is modeled in reduced form. The dependent variable I_i indicates the outcome of whether a firm receives a loan from an institutional investor, which results from decisions of both the firm and the institutional investor and the selection criteria adopted by the institutional investor. Accordingly, in the empirical specification, the vector Z_i contains variables that might matter for either party. Firm-level characteristics that could affect the selection include firm size, institutional shareholding in the firm, the stock market performance of the firm in the year prior to receiving the loan, the market to book ratio of the firm, firm leverage, the credit rating of the firm, and the stock price momentum of the firm; loan specific characteristics include the purpose of the loan and the number of lead banks in the loan syndicate. In addition, we also include four instruments, the proportion of the average dollar amount of institutional loan issuance in the prior 3 years to the average dollar amount of total loan issuance over the same period, the corporate risk premium, the capital gains tax rate and the AAA spread, that affect the availability of funds to institutional investors. As shown by Gompers and Lerner (2000), capital gains tax rate and AAA spread, affect the ability of private equity funds to secure commitments from investors and thereby proxy the propensity of such funds to invest. A similar argument also holds for the corporate risk premium. Both the corporate risk premium and the AAA spread, captures the investment alternatives available to investors who may otherwise invest their money with institutional investors. An increase in these spreads may lead to a decline in commitments to institutional funds thus lowering overall institutional investments. These instruments provide us with a certain degree of exogenous variation in terms of supply of funds to institutional investors, which affects the matching equation but does not directly affect the loan spread charged by them. We estimate this first stage equation using a probit model where the dependent variable is a binary dummy, identifying whether a firm receives a loan from an institutional investor or not. The results presented in Table 4 show that institutional lenders are more likely to lend to highly

leveraged firms with credit rating BB and below. They are also more likely to fund LBOs, takeovers, and recapitalization loans. These results suggest that institutional lenders tend to lend to riskier firms and for riskier loan purposes. Interestingly, both the percentage of institutional shareholding and the number of institutional shareholders increases the probability of an institutional investor funding the loan, while a greater number of lead banks decreases the probability of institutional participation. As expected, the instruments, with the exception of the capital gains tax rate are significant determinants of institutional funding, suggesting that availability of funds to institutional investors is an important determinant of their lending activities.

Equation (5) analyzes the impact on loan spreads for institutional loans, while equation (6) analyzes the impact on loan spreads for the same borrowers had they received the loans from commercial banks. Similarly from these two equations, one can also compute the hypothetical loan spread for the borrowers that received loans from banks, had they received the loans from the institutional investors, using equation (5). Of course, for each loan, we only observe either y_{1i} or y_{2i}, depending on the outcome of I_i, so that the following observation rules hold:

$$y_i = y_{1i} \text{ iff } I_i = 1, \text{ and } y_i = y_{2i} \text{ iff } I_i = 0. \tag{8}$$

This model appears in Dunbar (1995) in his study on the use of warrants as underwriter compensation and more recently in Fang (2005) in her study on investment bank reputation and the price and quality of bond underwriting services provided by them. This is a generalization of the Heckman style two-stage model where instead of the two second stage equations, for the institutional investors and the commercial banks, there is one second-stage equation, which in effect restricts the beta coefficients in equations (5) and (6) to be the same across institutional and bank loans. Relaxing the equality of the beta coefficients makes this model more general.

To estimate the model, a key observation is that since either equation (5) or (6) is realized depending on the outcome of I^* (but never both), the observed loan spread is a conditional variable. Taking expectations of equation (5), we obtain:

$$
\begin{aligned}
E[y_{1i}] &= E[y_i \mid I_i = 1] \\
&= E[y_i \mid I_i^* > 0] \\
&= E[X_i^{'}\beta_1 + u_{1i} \mid Z_i^{'}\gamma + \varepsilon_i > 0] \\
&= X_i^{'}\beta_1 + E[u_{1i} \mid \varepsilon_i > -Z_i^{'}\gamma] \qquad (9)
\end{aligned}
$$

Because u_1 and ε are correlated, the last conditional expectation term in (9) does not have a zero mean, and OLS on equation (5) will generate inconsistent estimates. If, however, equation (5) is augmented with the Inverse Mills ratio from the first stage probit estimation, added to the regression as a right-hand-side variable, we can then use OLS to find consistent estimates. This procedure is discussed in detail in Heckman (1979) and Maddala (1983). Equation (4) is first estimated by a probit regression, yielding consistent estimates of γ. With this, the inverse Mills-ratio terms can be computed for equations (5) and (6). Both equations are then augmented with the inverse Mills ratios as additional regressors. These terms adjust for the conditional mean of u, and allow the equations to be consistently estimated by OLS. However, since we are also interested in comparing the coefficient estimates across the two regressions, we estimate them using a seemingly unrelated regression (SUR) framework which yields consistent standard errors.

[Insert Table 5 Here]

The second stage results presented in Table 5, show that the inverse Mill's ratios are significantly different between the two equations and while it is positive and significant for the institutional loans, it is negative and significant for the commercial bank loans. This suggests that the unobserved borrower/loan characteristics that increase the likelihood of choosing an institutional lender contribute to increases in the loan spread while the negative sign for the non-institutional loan equation, indicates that the unobserved borrower/loan characteristics and private information that increase the likelihood of choosing commercial banks contribute to decreases in the loan spread. The significance of the inverse Mill's ratios thus confirm that there is a premium in the loan spread charged by institutional lenders compared to banks beyond what is explained by observable characteristics. In general, the second stage empirical specification includes all the borrower and loan specific characteristics that affect loan pricing. We also control for year and industry

fixed effects. While many of the variables have the same sign in both equations, the pricing technology for the two groups of lenders appear to be different. In particular, firm size affects loan price negatively only for bank loans, while syndication affects institutional loans positively and bank loans negatively in accordance with the negotiation cost argument in *H11*. The results on the rated variable and the borrower credit rating dummies provide an interesting insight; as expected investment grade bank loans have a lower spread, while non-investment grade institutional loans have a lower spread, which shows that institutional lenders and banks have completely different investment objectives, with institutional lenders take much higher risks with an expectation of earning higher profits. Longer maturity and secured status affects loan price positively for bank loans, while they do not matter for institutional loans. Similarly loans for acquisitions and LBOs increase the loan spread for institutional lenders while it does not affect commercial bank lenders.

4.3.1 The Impact of Private Information on Loan Spreads

To infer the impact of private information and prior relationships on loan spreads, we compute the following difference:

$$\underbrace{y_{1i}}_{\text{actual}} - \underbrace{E[y_{2i} \mid I_i^* > 0]}_{\text{hypothetical}} \tag{10}$$

The first term in (10) is the actual loan spread of an institutional loan, while the second is the hypothetical loan spread that would be charged for the same loan facility to the same borrower, had it been issued by a commercial bank. Similarly, one can also compute the difference between the actual spread on a bank loan and the corresponding hypothetical spread to the same borrower, had the loan been issued by an institutional investor. If the difference is negative, then the impact on loan spreads due to the private information or relationship of the commercial bank lender is explicitly quantified, as the actual loan spread charged by the uninformed institutional lender is higher.

[Insert Table 6 Here]

Consistent with the insights obtained from the inverse Mills-ratios, the results presented in Panel A of Table 6 establish that institutional investors charge a higher spread compared to banks, for the same loan to the same borrower, consistent with *H1*, *H4*, *H8*, and *H11*, but contradicting *H10* which hypothesized

that differences in borrower risk explains the higher spread on institutional loans. This result also clearly contradicts *H6*, which hypothesized that the spread on institutional loans will be lower than that of bank loans. The mean actual spread charged by institutional lenders is 297 basis points, higher than the hypothetical average of 256 basis points that would have been charged by commercial banks for the same loans; the difference being statistically significant at the 1% level. Panel B of Table 6 also shows a qualitatively similar result. It shows that institutional lenders would have charged a much higher spread compared to the actual spread charged by commercial banks. The mean actual spread charged by commercial banks is 137 basis points which is significantly lower than the hypothetical average of 381 basis points that would have been charged had institutional investors funded the same loans. This number is even larger than what institutional investors actually obtain (297 bps) from their own lending activities. Thus, it seems that, the significantly lower spread on bank loans reflect the informational advantage of prior relationship of commercial banks with their borrowers. This result establishes that institutional lenders are in fact uninformed investors in the primary syndicated loan market. Since institutional investors are new entrants to the syndicated loan market they do not have such prior relationship and thus informational advantages, consistent with our hypotheses *H1* and *H4* (which predict that the higher spread on institutional loans serves as compensation to uninformed investors). The results also show that the hypothetical spreads charged by banks is much higher than the actual spreads charged by them. While part of this increased spread can be explained due to the added level of riskiness of institutional borrowers, it could also be the case that since these borrowers would not generally qualify for bank loans, banks may not have an existing relationship and thus an informational advantage for such borrowers.

4.3.2 The Impact of Institutional Equity Ownership on Loan Spreads

In order to disentangle the impact on loan spreads due to information production from that due to efficient monitoring of institutional lenders we analyze the differences between the actual and hypothetical loan spreads charged by institutional lenders and banks after categorizing borrowers into four quartiles based on the level of institutional equity ownership.

[Insert Table 7 Here]

The bottom quartile represents borrowers, with the lowest level of institutional equity ownership. Panel A presents the results for the institutional loans, while Panel B presents the results for the bank

loans. In both panels it can be seen that the actual spread charged by both institutions and banks fall by about 60 basis points as one moves from the bottom quartile to the top quartile, which may be consistent with the argument of Roberts and Yuan (2006). Our results from Panel A however, rejects our hypothesis *H6* which argues that institutional loans have lower spreads than bank loans either due to efficient monitoring by institutional investors or due to the recognition of the potential conflict of interest when institutional investors participate in the loan market. We do find support for *H7*, since our results show that the additional spread on institutional loans decreases as institutional equity ownership increases and completely vanishes at very high levels of ownership. These results therefore establish that borrower's concerns regarding the conflict of interest, when institutional investors participate in both the equity and loan markets, are valid at very high levels of institutional equity ownership, consistent with the analysis of Ivashina and Sun (2007). However, since this is not true for the other three quartiles of institutional equity ownership, where a significant additional spread exists on institutional loans, we conclude that taking advantage of private information gathered from the loan market is not the primary reason that is driving institutional investor participation in the syndicated loan market.

4.3.3 The Impact of Other Alternative Explanations on Loan Spreads

Finally we examine the other alternative explanations proposed by our hypotheses. Table 8 presents the results, where we again compare the actual spread on institutional loans to the hypothetical spread that commercial banks would have charged had they funded the same loans. Panel A of Table 8 categorizes institutional borrowers into 4 quartiles based on loan size; Panel B categorizes based on the percentage of the loan funded by the institutional lenders; while Panel C categorizes based on the syndicate size.

[Insert Table 8 Here]

The results in Panel A show that the additional spread on institutional loans decreases as the loan size increases, thus contradicting *H5*, which hypothesizes that larger the loan size, higher would be the additional spread to institutional investors, since higher is the probability of syndication failure. This result also contradicts *H4*, since if the additional spread on institutional loans was solely a compensation to invite and encourage continued institutional investor participation, such participation would be more critical for larger loans, since the supply of loanable funds solely from banks might not be sufficient to

meet the entire demand in these cases, and therefore the additional spread offered to institutions should be higher for larger loans. Our results show the exact opposite trend.

Panel B categorizes based on the percentage of the loan value held by institutional lenders. Since institutional investors often syndicate deals with commercial banks, and since banks are informed lenders while institutional investors are uninformed, this offers us the opportunity to test if information asymmetry is the primary factor explaining the additional spread on institutional loans. This would imply that the smaller the portion of the loan held by the institutional lender, the larger the potential information asymmetry and hence the higher the additional spread.[24] Unfortunately, we do not find any trend in the additional spread after conditioning on the portion of the loan held by institutional lenders. This leads us to conclude that the mere presence of information asymmetry alone does not fully explain the higher spread on institutional loans. Similarly, these results also contradict *H8*, which argues that the additional spread on institutional loans is due to the certification effect of institutional investors. If this were true, then higher the portion of the loan held by institutional lenders, higher the certification effect, and thus higher the additional spread, which is not supported by our results.

Panel C categorizes the loans based on the syndicate size which allows us to test *H11*, the negotiation cost hypothesis. Our results show that when institutions are the sole lenders the additional spread is approximately 45 basis points, however when they jointly lend with other banks or institutional lenders, we observe a decreasing trend in the additional spread on the institutional loans. This contradicts *H11*, since the higher the number of co-lenders, the higher would be the negotiation (renegotiation) costs and thus we would expect to see an increase in the spread with a greater number of syndicate members. Instead our results point to a decrease in spread due to the potential diversification effect of syndication.

In summary, the results presented in this section, therefore imply that the most likely cause for the higher spread on institutional loans is as hypothesized by *H1*. Since institutional investors are uninformed investors in the syndicated loan market, the higher additional spread on institutional loans is a compensation to institutional lenders to produce further information about borrowers. We test this notion further in Section 4.4 by analyzing the implications of information production and its subsequent impact on the secondary loan market, as hypothesized by *H2* and *H3*.

[24] This argument follows from the existing evidence which suggests that for borrowers with severe information asymmetry problems, lead banks retain a higher fraction of the loan.

4.4 The Secondary Loan Market Performance of Institutional Loans

The univariate analysis reported in Table 1 Panel D reveals that there are significant differences in the trading activity of bank loans and institutional loans with respect to the average initial (market-adjusted) loan resale price on the first trading day, the average holding period of the loans, and the intensity of the trading activity of the loans in the secondary loan market. The univariate results show that institutional loans have a greater number of quotations, i.e., they trade more actively than bank loans, consistent with *H2*; they have a significantly shorter holding period, consistent with *H2* and inconsistent with *H9*; and have a greater first trading day return, consistent with *H3*. In this section, we empirically investigate in a multivariate setting the differences in the trading activity between institutional and bank loans.

[Insert Table 9 Here]

Table 9 reports the results on the secondary market (first day) loan resale return regressions. In different specifications, we regress both the raw initial loan resale return and the market-adjusted initial loan resale return on a bunch of control variables respectively. Raw initial loan resale return is calculated as the first day trading price minus price at par, i.e., 100. The market adjusted initial loan resale return is the raw loan resale return minus the S&P/LSTA leveraged loan market index return over the same period. In the regression specifications, we control for the holding period, which is measured as the time in days between the loan origination and the first loan trading day, the number of quotations, which proxies for loan liquidity, and loan pricing volatility, which is the daily loan price volatility for each loan. We use the natural logarithm of all-in-drawn spread to proxy for the ex ante loan risks. In addition, maturity, secured status, firm size, market to book ratio, leverage, facility size, number of lenders, financial covenants as well as the interest rate risks (proxied by LIBOR, term premium, and interest rate volatility) are also present in the regressions as controls. The specifications also include loan purpose dummies, year and industry fixed effects, with robust standard errors that are clustered at the firm level.

The variable of interest in the regressions is the institutional loan dummy. The results show that it has a significant and positive impact on the first trading day loan resale returns across all alternative specifications after controlling for other factors, indicating that the loan resale return of institutional loans is much higher than that of bank loans. The holding period is significantly negatively related to raw returns, implying that loans that are held for a shorter time by their original lenders tend to earn a higher first day raw return; this relation is however not present for market adjusted returns. Interestingly, second

lien loans experience a higher first day market adjusted return, however that does not explain the higher return on institutional loans, since even after controlling for this, the institutional dummy remains positive and significant, consistent with our information production hypothesis *H2* and *H3* (which predict better aftermarket performance and higher aftermarket liquidity of institutional loans). Further, consistent with this argument, the results also show that loans with longer maturities (where information production is more beneficial) earn higher first day returns in the secondary market.

[Insert Table 10 Here]

In Table 10 we further investigate the differences in the holding periods between institutional and non-institutional loans. The results show that after controlling for loan and borrower specific factors that may influence the holding period of the loan, institutional loans on average have significantly shorter holding periods compared to bank loans. This result is consistent with our hypothesis *H2*, which argues that due to information production, institutions will be more active loan traders and therefore hold loans for shorter periods. The result is however not consistent with *H9*, suggesting that institutional lenders are not faithful long term debt holders. Interestingly, we also find that the higher the probability of a loan being resold, rated loans, and loans with greater institutional shareholdings have shorter holding periods.[25]

5 Conclusion

A recent development in the syndicated loan market has been the arrival of institutional investors, including hedge funds, private equity funds, and hybrid funds. This paper asks several related questions regarding institutional investor participation in the syndicated loan market, and presents the first empirical analysis in the literature. What factors drive institutional investor participation in the primary syndicated loan market? Are there differences in the loan contract terms between institutional loans and bank loans? Specifically, does the participation of institutional investors narrow or widen the spread on syndicated loans? And if so, why? What are the characteristics of borrowers that source loans from institutional investors? Do institutional investors selectively invest in loans with certain characteristics? Do institutional loan tranches trade differently than bank loan tranches on the secondary loan trading market?

[25] Since the length of the holding period could potentially influence the first day trading returns, in unreported tests, we jointly estimate the holding period and the first day returns in a simultaneous equation system. The results show that after controlling for this potential endogeneity, institutional loans have a higher first day market adjusted trading return and have shorter holding periods compared to bank loans, consistent with our hypotheses *H2* and *H3*.

We show that institutional investors participate in the syndicated loan market as it provides them with a lucrative return. In 2004, institutional lenders earned $2.68 million more in interest than commercial banks on a deal of mean size in our sample. In addition, on the first trading day in the secondary market, institutional investors made $2.08 million more than commercial banks in market adjusted return on a loan of mean size in our sample. Our results show that institutional loans have higher primary market loan spreads (between 35 to 60 bps) than bank loans, *ceteris paribus*. Following Chemmanur (1993) we argue that this higher spread on institutional loans primarily serves as compensation to these investors for engaging in costly information production about the borrower, since institutions are uninformed investors in the syndicated loan market. This information production in turn encourages institutional participation in the secondary loan market and ensures better secondary market performance of these loan if it were resold by the original lenders. Such participation by institutional investors in the secondary market, could potentially lead to an increase in the liquidity of the secondary market, which in turn would allow banks to re-adjust their loan portfolios, thus freeing up capital and potentially lowering overall borrowing costs, consistent with Drucker and Puri (2006). This additional spread however disappears for loans with very high levels of institutional equity ownership, suggesting that potential conflicts of interest could arise in those cases, if institutions trade on private information gathered from the loan market. We also find that institutional investors primarily lend to riskier borrowers, for riskier purposes such as leveraged buy-outs and takeovers, as opposed to commercial banks. Consistent with the information production argument, our results show that the secondary loan market is primarily driven by trading on institutional loans; while on average only 6% of bank loans are traded, 30% to 35% of institutional loans are traded on the secondary market. Institutional loans have shorter holding periods by their original lenders, have greater liquidity in the secondary market, and earn higher first trading day returns compared to bank loans.

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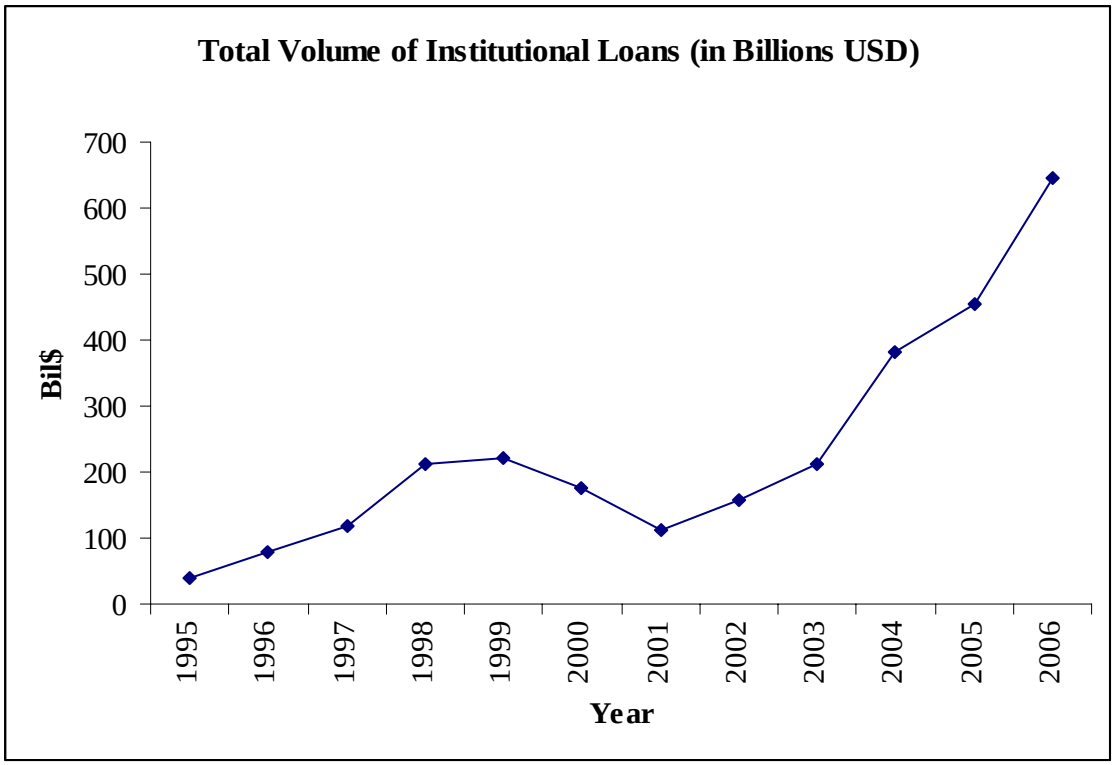
Figure 1: Total Volume of Loan Issuances Classified by Institutional Loans versus Bank Loans

The sample is collected from the Dealscan database. The top graph represents the growth in the total volume of institutional loans from 1995 to 2006, in billions of U.S. dollars. The bottom graph presents the total volume of loan issuances from 1995 to 2006 for institutional loans, bank loans and in total in the leveraged syndicated loan market. The classification of the leveraged loan market started from 1997. In the bottom graph, the white bars represent total volume of loan issuance, the black bars represent total volume of bank loan issuance, and the grey bars represent the total volume of institutional loan issuance in billions of U.S. dollars, in the leveraged loan market.



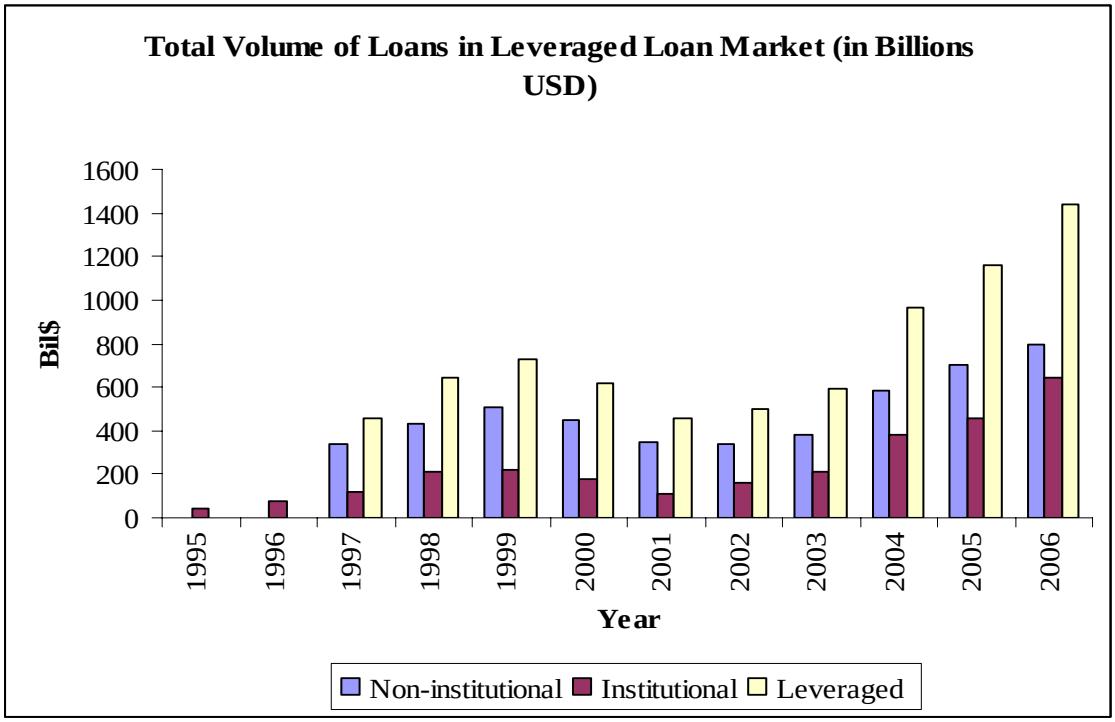


Figure 2: Annual distribution of Loan Spread for Institutional and Non-Institutional Lenders

This figure presents the annual distribution of the average all in drawn spread of loans held by institutional and non-institutional lenders over our sample period. The sample is collected from the Dealscan database. The mean annual loan spread in each category is plotted. The X- axis corresponds to the years and the Y-axis corresponds to the average annual loan spread of each category in basis points.

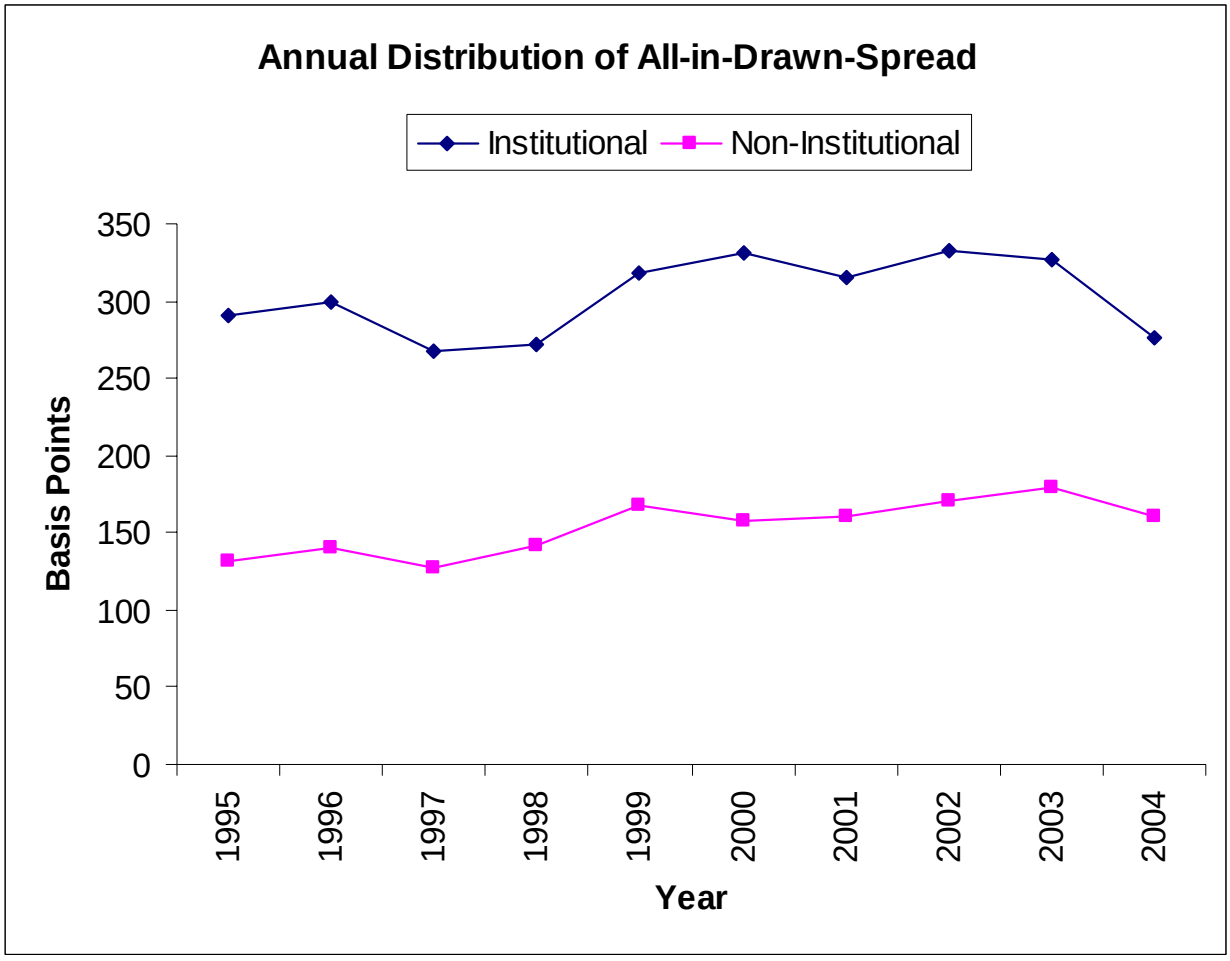


Figure 3: Percentages of Loans Being Resold.

This figure presents the percentages of total number of loans issued in a particular year that had been traded through the secondary market as of the end of the year 2004. The white bars represent the institutional loans and the black bars represent the non-institutional loans.

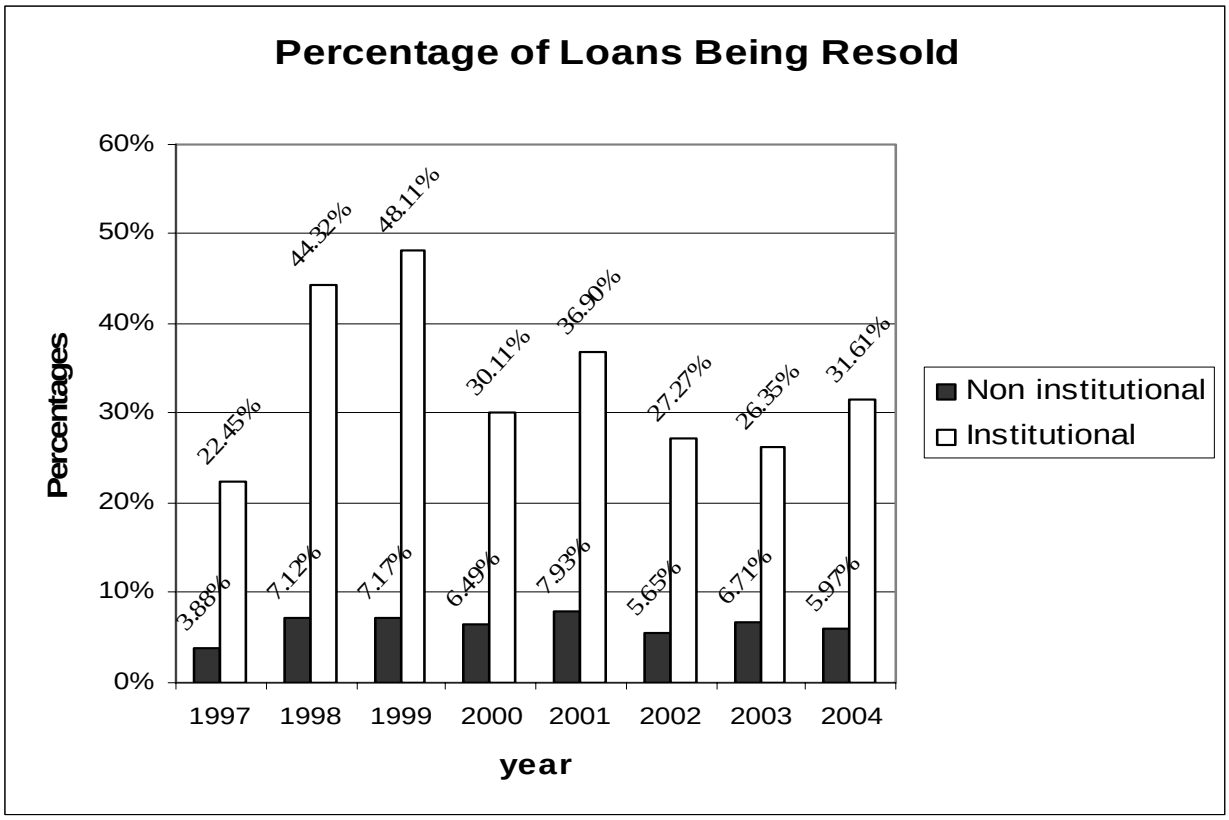


Table 1: Univariate Analysis

This table presents univariate results for differences in various characteristics between institutional loans and non-institutional loans. Loan specific, borrower specific, financial covenant specific, secondary market specific characteristics, as well as borrowers' stock market performance are reported in panels A-E respectively. All-in-drawn spread is the percentage coupon spread over LIBOR plus the annual fee and the upfront fee paid by borrowers for each dollar drawn down. Maturity is loan maturity in days. Has Secured Data is dummy variable taking the value of 1 for non-missing observations of secured status and 0 otherwise. Secured is a dummy variable taking the value of 1 for secured loans and 0 otherwise. Leveraged loan is a dummy variable that equals 1 if the loan is characterized by Dealscan as falling in the leveraged loan category and 0 otherwise. Second lien is a dummy variable that equals 1 if the loan is a second lien and 0 otherwise. Facility size is log of facility amount. Agent consent takes the value of 1 if the consent from lead banks is required for selling the loan or 0 otherwise. Company consent takes the value of 1 if the consent from borrower is required for selling the loan or 0 otherwise. Number of lenders is the total number of lenders in the loan syndication. Number of lead lenders is the total number of lead lenders in the loan syndication. Syndicate is a dummy variable taking a value of 1 if the loan is syndicated loan or 0 if it is a bilateral loan. Concentration is defined as deal amount /(deal amount +total debt of the borrower). Revolver is a dummy variable taking the value of 1 for credit revolver and 0 for term loan. Acquisition, LBO (leveraged buy out), working capital, general corporate, repayment, recapitalization, and others are all loan purposes dummies. Probability of being resold are predicted values obtained from regressing a binary variable (which takes a value of 1 if the loan is resold and 0 otherwise) on *ex-ante* firm and loan characteristics, calculated as discussed in Kamstra et al. (2007). Firm Size is loan borrower's log of total assets. Market Capitalization is the product of the number of shares outstanding and the share price at the end of the prior fiscal year. Market to book is defined as borrower's total assets minus book value of equity plus market value of equity over total assets. Tax-to-asset ratio is tax paid over total assets. Altman Z-score is calculated using the formula 3.3*EBIT/SALES+SALES/TA+1.4*RE/TA+1.2*WC/TA, where EBIT is the earning before interests and taxes, SALES is the total sales of the year, TA is the total assets, WC is the working capital and RE is the retained earning. Leverage is total debt over total assets. Percentage Institutional Shareholding is the percentage of shares held by institutional investors. Dual class is a dummy variable taking the value of 1 if the borrower has a dual class share structure and 0 otherwise. Pay performance sensitivity is a measure of the sensitivity of management compensation to firm performance. GI index is the Gompers-Ishi-Metrick corporate governance index. Joint CEO-Chairman is a dummy variable taking the value of 1 if CEO of the firm is also the Chairman and 0 otherwise. Rated is a dummy variable taking value of 1 if the borrower's S&P long-term senior debt rating is available and 0 otherwise. AAA to B are the other credit rating dummies. Has financial covenant is a dummy variable which equals 1 if the loan contract specifies at least one financial covenant and 0 otherwise. Number of financial covenants equals the total number of financial covenants that are present in the loan contract; it is 0 if none are specified. The specific financial covenants are specified as either a ratio or particular dollar amount if they are specified and 0 otherwise. Number of quotes is total number of quotations received on the first day of loan trading. Holding period is defined as the time (in days) between the first loan trading day and the loan's origination day. Loan price volatility is the standard deviation of daily loan prices over the entire data period. First-day raw return is calculated as the first day trading price-100. Market adjusted first-day return is calculated as the initial loan resale return minus the S&P/LSTA leveraged loan market index return during the same period. DGTW Adjusted Stock Return 0-3 is the abnormal stock return in the fiscal year (calculated based on Daniel et al. (1997)) of loan issuance, and in year+1, +2 and +3 respectively. Momentum is a measure of the borrower's stock price momentum in the fiscal year prior to the loan issuance.

Panel A: Loan Specific Characteristics

Variables	Type	Obs.	Mean	Median	Standard Deviation	*t*-statistics
All-in-Drawn Spread	Institutional	943	304.681	300.000	109.153	39.75***
	Non-institutional	13475	157.466	150.000	109.987	
Maturity	Institutional	907	2132.923	2192.000	622.260	37.86***
	Non-institutional	12869	1224.371	1096.000	703.511	
Secured	Institutional	756	0.981	1.000	0.135	18.32***
	Non-institutional	8723	0.666	1.000	0.472	
Leveraged Loan	Institutional	1160	0.943	1.000	0.232	40.64***
	Non-institutional	13288	0.363	0.000	0.481	
Second Lien	Institutional	818	0.016	0.000	0.125	10.42***
	Non-institutional	10627	0.001	0.000	0.024	
Facility Size	Institutional	945	19.601	19.659	1.124	11.75***
	Non-institutional	13503	19.031	19.114	1.461	
Agent Consent	Institutional	690	0.987	1.000	0.114	3.94***
	Non-institutional	8092	0.956	1.000	0.206	
Company Consent	Institutional	679	0.954	1.000	0.209	3.26***
	Non-institutional	8008	0.919	1.000	0.272	
Number of Lenders	Institutional	945	10.719	6.000	15.853	6.93***
	Non-institutional	13498	8.504	6.000	8.883	
Number of Lead Lenders	Institutional	725	3.414	3.000	1.831	-2.71***
	Non-institutional	9262	3.755	3.000	3.348	
Revolver	Institutional	945	0.000	0.000	0.000	-63.89***
	Non-institutional	13503	0.812	1.000	0.391	

Acquisition	Institutional	945	0.269	0.000	0.444	8.69***
	Non-institutional	13503	0.160	0.000	0.367	
LBO	Institutional	945	0.086	0.000	0.280	14.04***
	Non-institutional	13503	0.017	0.000	0.130	
Working Capital	Institutional	945	0.168	0.000	0.374	1.14
	Non-institutional	13503	0.154	0.000	0.361	
General Corporate	Institutional	945	0.218	0.000	0.413	-2.48**
	Non-institutional	13503	0.254	0.000	0.435	
Repayment	Institutional	945	0.183	0.000	0.387	-4.41***
	Non-institutional	13503	0.247	0.000	0.431	
Recapitalization	Institutional	945	0.029	0.000	0.167	1.45
	Non-institutional	13503	0.021	0.000	0.145	
Other	Institutional	945	0.048	0.000	0.213	-8.45***
	Non-institutional	13503	0.146	0.000	0.353	
Has Financial Covenant	Institutional	1160	0.733	1.000	0.443	7.18***
	Non-institutional	13288	0.627	1.000	0.484	
Number of Financial Covenants	Institutional	1160	2.500	3.000	1.770	21.43***
	Non-institutional	13288	1.533	2.000	1.446	
Probability of Being Resold	Institutional	344	0.346	0.302	0.258	27.49***
	Non-institutional	5501	0.093	0.029	0.158	

Panel B: Borrower Specific Characteristics

Variables	Type	Obs.	Mean	Median	Standard Deviation	*t*-statistics
Firm Size	Institutional	862	6.728	6.752	1.442	-1.65*
	Non-institutional	12849	6.840	6.740	1.939	
Market Capitalization	Institutional	746	1374.070	543.874	3778.980	-7.49***
	Non-institutional	11890	4303.570	733.045	10627.720	
Market to Book	Institutional	746	1.594	1.351	0.899	-3.54***
	Non-institutional	11879	1.730	1.387	1.024	
Tax to Asset Ratio	Institutional	855	0.017	0.012	0.031	-4.49***
	Non-institutional	12809	0.022	0.017	0.030	
Altman's Z Score	Institutional	714	1.607	1.534	0.894	-10.76***
	Non-institutional	10018	1.992	1.897	0.923	
Leverage	Institutional	701	0.442	0.430	0.200	12.13***
	Non-institutional	10064	0.350	0.332	0.194	
% Institutional Shareholding	Institutional	803	0.560	0.591	0.271	4.24***
	Non-institutional	12257	0.521	0.550	0.253	
No. of Institutional Shareholders	Institutional	806	97.460	82.000	78.318	-7.94***
	Non-institutional	12308	145.564	88.000	170.694	
Dual Class	Institutional	585	0.109	0.000	0.312	3.05***
	Non-institutional	10665	0.075	0.000	0.263	
Pay-Performance Sensitivity	Institutional	277	0.027	0.014	0.046	0.13
	Non-institutional	6128	0.027	0.009	0.052	
GI Index	Institutional	325	8.825	9.000	2.499	-3.28***
	Non-institutional	5999	9.314	9.000	2.625	
Joint CEO-Chairman	Institutional	281	0.359	0.000	0.481	-2.59***
	Non-institutional	6229	0.438	0.000	0.496	
Rated	Institutional	945	0.534	1.000	0.499	4.82***
	Non-institutional	13503	0.454	0.000	0.498	
AAA	Institutional	945	0.000	0.000	0.000	-2.26**
	Non-institutional	13503	0.005	0.000	0.073	

AA	Institutional	945	0.000	0.000	0.000	-4.88***
	Non-institutional	13503	0.025	0.000	0.155	
A	Institutional	945	0.011	0.000	0.102	-9.84***
	Non-institutional	13503	0.112	0.000	0.315	
BBB	Institutional	945	0.046	0.000	0.209	-8.95***
	Non-institutional	13503	0.151	0.000	0.358	
BB	Institutional	945	0.285	0.000	0.451	17.59***
	Non-institutional	13503	0.100	0.000	0.300	
B	Institutional	945	0.177	0.000	0.382	14.63***
	Non-institutional	13503	0.057	0.000	0.231	

Panel C. Secondary Market Specific Characteristics

Variables	Type	Obs.	Mean	Median	Standard Deviation	*t*-statistics
Number of Quotes	Institutional	298	1.587	1.000	1.261	4.06***
	Non-institutional	739	1.315	1.000	0.831	
Holding period	Institutional	298	81.601	12.000	168.143	-9.38***
	Non-institutional	739	281.315	138.000	351.430	
Loan price Volatility	Institutional	298	1.417	0.361	2.792	-0.99
	Non-institutional	739	1.617	0.411	2.974	
First-day Raw Return	Institutional	298	-0.009	0.250	2.035	7.56***
	Non-institutional	739	-2.231	-0.688	4.900	
First-day Market Adjusted Return	Institutional	298	0.423	0.483	2.270	3.75***
	Non-institutional	739	-0.747	-0.142	5.178	

Panel D. Borrower's Stock Market Performance

Variables	Type	Obs.	Mean	Median	Standard Deviation	*t*-statistics
DGTW Adjusted Stock Return Year 0	Institutional	664	0.127	0.062	0.537	3.49***
	Non-institutional	10803	0.060	0.002	0.478	
DGTW Adjusted Stock Return Year 1	Institutional	632	0.021	-0.050	0.478	1.26
	Non-institutional	10445	-0.001	-0.032	0.419	
DGTW Adjusted Stock Return Year 2	Institutional	464	0.029	-0.034	0.440	1.57
	Non-institutional	8910	-0.002	-0.032	0.420	
DGTW Adjusted Stock Return Year 3	Institutional	327	0.007	-0.067	0.470	0.13
	Non-institutional	7448	0.004	-0.030	0.424	
Momentum	Institutional	632	0.286	0.190	0.731	2.25**
	Non-institutional	10447	0.226	0.135	0.649	

Table 2: Primary Market Loan Pricing

This table reports OLS regressions with industry and year fixed effects for alternative loan pricing regressions. The loan agreements used in the regressions were originated during the period January 1995 - December 2004. The dependent variable is the natural logarithm of initial all-in-drawn spread which is defined as the percentage coupon spread over LIBOR plus the annual fee and the upfront fee paid by borrowers for each dollar drawn down. Institutional Loan is a dummy variable taking a value of 1 for institutional loans and 0 for bank loans. Maturity is log of loan maturity in days. Has Secured Data is dummy variable taking the value of 1 for non-missing observations of secured status and 0 otherwise. Secured is a dummy variable taking the value of 1 for secured loans or 0 otherwise. Second lien is a dummy variable that equals 1 if the loan is a second lien and 0 otherwise. Leveraged loan is a dummy variable that equals 1 if the loan is characterized by Dealscan as falling in the leveraged loan category and 0 otherwise. Probability of being resold are predicted values obtained from regressing a binary variable (which takes a value of 1 if the loan is resold and 0 otherwise) on *ex-ante* firm and loan characteristics, calculated as discussed in Kamstra et al. (2007). Firm Size is loan borrower's log of total assets. Market to book is defined as borrower's total assets minus book value of equity plus market value of equity over total assets. Tax-to-asset ratio is tax paid over total assets. Altman Z-score is calculated using the formula 3.3*EBIT/SALES+SALES/TA+1.4*RE/TA+1.2*WC/TA, where EBIT is the earning before interests and taxes, SALES is the total sales of the year, TA is the total assets, WC is the working capital and RE is the retained earning. Leverage is total debt over total assets. All the firm characteristics are acquired at the fiscal year end prior to the deal year. Loan Concentration is defined as ln(deal/(deal+TD)), where deal is deal amount and TD is total debt. Facility size is log of facility amount. Facility ratio is facility amount over deal amount. Revolver is a dummy variable taking the value of 1 for credit revolver and 0 for term loan. Syndicate is a dummy variable taking a value of 1 if the loan is a syndicated loan and 0 otherwise. LIBOR is the deal month end 3-month LIBOR rate. Term premium is the 12-month average for the deal year of the yield differential between 10 years and 1 year U.S. bonds. Interest volatility is a 12-month moving average of the standard deviation of the monthly yields on 10-year U.S. T-bonds at deal month. Consent takes the value of 1 if the consent from lead banks or the borrower is required for selling the loan or 0 otherwise. Assignment is the minimum assignment scaled by facility size, specified in the contract for the loan to be resold and 0 if none is specified. Number of lenders is log of number of lenders in the loan syndication. Financial covenant equals the total number of financial covenants that are present in the loan contract; it is 0 if none are specified. Loan purposes include acquisition, LBO (leverage buy out), repayment, recapitalization, general corporate, working capital and others. The omitted category is general corporate purpose. Rating dummies include dummy variables representing S&P long-term senior debt rating from AAA to B, and the omitted category is CCC or below. Heteroskadesticity corrected robust standard errors adjusted for clustering at the deal level is presented in parenthesis. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively.

	Reg 1	*Reg 2*	*Reg 3*	*Reg 4*	*Reg 5*	*Reg 6*	*Reg 7*	*Reg 8*	*Reg 9*	*Reg 10*	*Reg 11*	*Reg 12*
Institutional Loan		0.562***	0.584***	0.550***	0.456***	0.442***	0.459***	0.489***	0.301***	0.301***	0.311***	0.327***
		[0.053]	[0.055]	[0.052]	[0.063]	[0.063]	[0.063]	[0.065]	[0.064]	[0.063]	[0.064]	[0.065]
Ln Maturity	-0.044**	-0.056***	-0.057***	-0.057***	-0.049**	-0.099***	-0.046**	-0.066***	-0.065***	-0.094***	-0.063***	-0.082***
	[0.018]	[0.017]	[0.018]	[0.016]	[0.021]	[0.020]	[0.021]	[0.022]	[0.020]	[0.019]	[0.019]	[0.020]
Has Secured Data	-0.147***	-0.140***	-0.140***	-0.112***	-0.064**	-0.086***	-0.077***	-0.093***	-0.045*	-0.059**	-0.052**	-0.067**
	[0.027]	[0.027]	[0.027]	[0.028]	[0.029]	[0.030]	[0.028]	[0.029]	[0.026]	[0.026]	[0.026]	[0.027]
Secured	0.670***	0.653***	0.659***	0.655***	0.670***	0.706***	0.661***	0.685***	0.447***	0.445***	0.440***	0.444***
	[0.030]	[0.029]	[0.029]	[0.029]	[0.032]	[0.033]	[0.032]	[0.032]	[0.029]	[0.029]	[0.029]	[0.029]
Second Lien	3.541***	3.380***	3.388***	2.915***	3.594***	3.435***	3.489***	4.153***	3.559***	3.441***	3.476***	4.021***
	[0.551]	[0.554]	[0.558]	[0.531]	[0.701]	[0.673]	[0.706]	[0.688]	[0.712]	[0.690]	[0.718]	[0.689]
Leveraged Loan									0.765***	0.815***	0.759***	0.803***
									[0.031]	[0.031]	[0.030]	[0.032]
Probability of Being Resold					0.686***	0.871***	0.648***	0.635***	0.569***	0.568***	0.526***	0.494***
					[0.148]	[0.148]	[0.152]	[0.147]	[0.145]	[0.145]	[0.147]	[0.140]
Firm Size	-0.107***	-0.102***	-0.089***	-0.287***	-0.332***	-0.288***	-0.324***	-0.178***	-0.277***	-0.249***	-0.263***	-0.139***
	[0.033]	[0.033]	[0.033]	[0.030]	[0.035]	[0.037]	[0.035]	[0.040]	[0.033]	[0.034]	[0.033]	[0.038]
Market to Book	0.046***	0.045***	0.050***	-0.056***	-0.082***	-0.087***	-0.083***	-0.007	-0.059***	-0.058***	-0.057***	0.008
	[0.014]	[0.013]	[0.013]	[0.011]	[0.014]	[0.015]	[0.015]	[0.017]	[0.012]	[0.013]	[0.013]	[0.015]

Tax to Asset Ratio	-3.225***	-3.259***	-3.350***	-2.640***	-1.545**	-1.139	-1.158	-1.793***	-0.581	-0.361	-0.364	-0.795
	[0.456]	[0.449]	[0.460]	[0.529]	[0.692]	[0.743]	[0.736]	[0.621]	[0.659]	[0.697]	[0.701]	[0.582]
Altman's Z-score				-0.100***	-0.074***	-0.098***	-0.104***		-0.060***	-0.070***	-0.077***	
				[0.015]	[0.018]	[0.024]	[0.024]		[0.017]	[0.022]	[0.022]	
Leverage	1.085***	1.092***	1.149***					0.920***				0.753***
	[0.106]	[0.106]	[0.104]					[0.129]				[0.120]
Loan Concentration	-0.075	-0.068	-0.055	-0.354***	-0.458***	-0.397***	-0.427***	-0.152**	-0.403***	-0.358***	-0.364***	-0.134**
	[0.048]	[0.047]	[0.047]	[0.041]	[0.051]	[0.055]	[0.053]	[0.063]	[0.048]	[0.051]	[0.049]	[0.058]
Facility Size	0.009	-0.014	-0.053	0.176***	0.177***	0.119***	0.161***	0.023	0.166***	0.131***	0.143***	0.025
	[0.035]	[0.034]	[0.033]	[0.031]	[0.040]	[0.041]	[0.040]	[0.041]	[0.038]	[0.038]	[0.037]	[0.039]
Facility Ratio	-0.341***	-0.367***	-0.375***	-0.379***	-0.381***	-0.397***	-0.395***		-0.284***	-0.301***	-0.301***	
	[0.041]	[0.041]	[0.041]	[0.041]	[0.052]	[0.053]	[0.051]		[0.048]	[0.048]	[0.047]	
Revolver	-0.444***	-0.282***	-0.286***	-0.264***	-0.112***	-0.114***	-0.116***	-0.201***	-0.109***	-0.118***	-0.113***	-0.183***
	[0.026]	[0.029]	[0.029]	[0.028]	[0.037]	[0.037]	[0.036]	[0.037]	[0.034]	[0.034]	[0.034]	[0.035]
Syndicate	0.116**	0.115**	0.114**	0.108**	-0.05	0.087	-0.013	-0.096	-0.07	0.02	-0.032	-0.094
	[0.050]	[0.049]	[0.049]	[0.051]	[0.126]	[0.126]	[0.124]	[0.118]	[0.118]	[0.119]	[0.118]	[0.116]
LIBOR	-0.126***	-0.123***	-0.121***	-0.134***	-0.033	-0.122***	-0.031	-0.026	-0.018	-0.075***	-0.02	-0.015
	[0.010]	[0.010]	[0.010]	[0.010]	[0.030]	[0.012]	[0.029]	[0.030]	[0.027]	[0.011]	[0.027]	[0.027]
Term Premium	-0.098***	-0.103***	-0.103***	-0.123***	-0.031	-0.106***	-0.027	-0.063	-0.002	-0.036	-0.004	-0.038
	[0.021]	[0.021]	[0.021]	[0.021]	[0.059]	[0.026]	[0.057]	[0.057]	[0.055]	[0.024]	[0.052]	[0.053]
Interest Volatility	0.059	0.089	0.052	0.172	1.348***	0.604***	1.508***	1.821***	1.300***	1.398***	1.449***	1.660***
	[0.119]	[0.117]	[0.119]	[0.118]	[0.362]	[0.147]	[0.352]	[0.360]	[0.334]	[0.132]	[0.321]	[0.325]
Consent	-0.029	-0.031	-0.045	-0.05	-0.098**	-0.038	-0.097**	-0.096**	-0.085**	-0.063	-0.087**	-0.083**
	[0.035]	[0.035]	[0.035]	[0.034]	[0.042]	[0.043]	[0.042]	[0.043]	[0.040]	[0.040]	[0.040]	[0.040]
Assignment	-0.574***	-0.483***	-0.441***	-0.426**	-0.291	-0.401**	-0.294	0.338**	-0.239	-0.291	-0.223	0.252*
	[0.172]	[0.170]	[0.170]	[0.175]	[0.198]	[0.204]	[0.195]	[0.159]	[0.185]	[0.184]	[0.182]	[0.147]
Ln Number Lender	-0.096***	-0.081***		-0.098***	-0.101***	-0.112***	-0.095***		-0.085***	-0.084***	-0.075***	
	[0.020]	[0.019]		[0.019]	[0.025]	[0.025]	[0.024]		[0.023]	[0.022]	[0.022]	
Financial Covenant	0.048***	0.041***	0.040***	0.036***	0.073***	0.085***	0.060***	0.070***	0.059***	0.061***	0.049***	0.054***
	[0.011]	[0.011]	[0.011]	[0.012]	[0.014]	[0.014]	[0.014]	[0.014]	[0.013]	[0.013]	[0.013]	[0.013]
Loan Purpose Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rating Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Industry Fixed Effects	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	8089	8089	8089	7584	4397	4397	4397	4549	4397	4397	4397	4549
Adjusted R-square	0.599	0.609	0.605	0.61	0.667	0.659	0.681	0.67	0.717	0.721	0.728	0.721

Table 3: Primary Market Loan Pricing Controlling for Corporate Governance Factors

This table reports OLS regressions with industry and year fixed effects for loan pricing after controlling for a series of corporate governance factors. The loan agreements used in the regressions were originated during the period January 1995 - December 2004. The dependent variable is the initial all-in-drawn spread which is defined as the percentage coupon spread over LIBOR plus the annual fee and the upfront fee paid by borrowers for each dollar drawn down. Institutional Loan is a dummy variable taking a value of 1 for institutional loans and 0 for bank loans. Maturity is log of loan maturity in days. Has Secured Data is dummy variable taking the value of 1 for non-missing observations of secured status and 0 otherwise. Secured is a dummy variable taking the value of 1 for secured loans and 0 otherwise. Second lien is a dummy variable that equals 1 if the loan is a second lien and 0 otherwise. Leveraged loan is a dummy variable that equals 1 if the loan is characterized by Dealscan as falling in the leveraged loan category and 0 otherwise. Probability of being resold are predicted values obtained from regressing a binary variable (which takes a value of 1 if the loan is resold and 0 otherwise) on *ex-ante* firm and loan characteristics, calculated as discussed in Kamstra et al. (2007). Log number of institutional shareholders is the log of total number of institutional shareholders who held the borrower's stock as of the year prior to loan issuance. Percentage Institutional Shareholding is the percentage of shares held by institutional investors. Pay performance sensitivity is a measure of the sensitivity of management compensation to firm performance. Dual class is a dummy variable taking the value of 1 if the borrower has a dual class share structure and 0 otherwise. GI index is the Gompers-Ishi-Metrick corporate governance index. Joint CEO-Chairman is a dummy variable taking the value of 1 if CEO of the firm is also the Chairman and 0 otherwise. DGTW Adjusted Stock Return 0 is the abnormal stock return in the fiscal year (calculated based on Daniel et al. (1997)) of loan issuance. Firm size is loan borrower's log of total assets. Market to book is defined as borrower's total assets minus book value of equity plus market value of equity over total assets. Tax-to-asset ratio is tax paid over total assets. Leverage is total debt over total assets. All the firm characteristics are acquired at the fiscal year end prior to the deal year. Loan Concentration is defined as ln(deal/(deal+TD)), where deal is deal amount and TD is total debt. Facility size is log of facility amount. Revolver is a dummy variable taking the value of 1 for credit revolver and 0 for term loan. Syndicate is a dummy variable taking a value of 1 if the loan is syndicated loan or 0 if it is a bilateral loan. LIBOR is the deal month end 3-month LIBOR rate. Term premium is the 12-month average for the deal year of the yield differential between 10 years and 1 year U.S. bonds. Interest volatility is a 12-month moving average of the standard deviation of the monthly yields on 10-year U.S. T-bonds at deal month. Consent takes the value of 1 if the consent from lead banks or the borrower is required for selling the loan or 0 otherwise. Assignment is the minimum assignment scaled by facility size, specified in the contract for the loan to be resold and 0 if none is specified. Financial covenant equals the total number of financial covenants that are present in the loan contract; it is 0 if none are specified. Loan purposes include acquisition, LBO (leverage buy out), repayment, recapitalization, general corporate, working capital and others. The omitted category is general corporate purpose. Rating dummies include dummy variables representing S&P long-term senior debt rating from AAA to B, and omitted category is CCC or below. Heteroskadesticity corrected robust standard errors adjusted for clustering at the deal level is presented in parenthesis. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively.

	Reg 1	*Reg 2*	*Reg 3*	*Reg 4*	*Reg 5*	*Reg 6*	*Reg 7*
Institutional Loan	0.061	0.352***	0.420***	0.374***	-0.127	0.307***	0.336***
	[0.234]	[0.127]	[0.110]	[0.054]	[0.329]	[0.093]	[0.069]
Ln Maturity	-0.077***	-0.077***	-0.019	-0.073***	-0.024	-0.02	-0.067***
	[0.021]	[0.021]	[0.016]	[0.020]	[0.022]	[0.016]	[0.019]
Has Secured Data	-0.070**	-0.073***	-0.026	-0.093***	-0.028	-0.023	-0.060**
	[0.027]	[0.027]	[0.024]	[0.030]	[0.031]	[0.024]	[0.025]
Secured	0.438***	0.444***	0.409***	0.476***	0.372***	0.410***	0.423***
	[0.030]	[0.030]	[0.033]	[0.032]	[0.041]	[0.033]	[0.028]
Second Lien	4.005***	4.006***	2.206***	1.426***	3.593***	2.214***	3.724***
	[0.693]	[0.687]	[0.647]	[0.112]	[0.821]	[0.648]	[0.853]
Leveraged Loan	0.791***	0.800***	0.784***	0.783***	0.872***	0.792***	0.798***
	[0.032]	[0.032]	[0.039]	[0.036]	[0.046]	[0.038]	[0.032]
Probability of Being Resold	0.455***	0.505***	0.628***	0.356***	0.673***	0.653***	0.513***
	[0.143]	[0.143]	[0.185]	[0.133]	[0.201]	[0.184]	[0.144]
Ln Number of Institutional Shareholders	-0.129***						
	[0.028]						
Percentage Institutional Shareholding		-0.174***					
		[0.064]					
Pay Performance Sensitivity			-0.256				
			[0.212]				
Dual Class				-0.001			
				[0.042]			
GI Index					-0.007		
					[0.005]		
Joint CEO-Chairman						-0.009	
						[0.023]	

DGTW Adjusted Stock Return Year 0							0.025
							[0.025]
Inst Loan × Ln Num Inst Shareholders	0.066						
	[0.056]						
Inst Loan × Percentage Inst Holding		-0.057					
		[0.205]					
Inst Loan × Pay Performance Sensitivity			-1.761				
			[1.306]				
Inst Loan × Dual Class				0.152			
				[0.245]			
Inst Loan × GI Index					0.042		
					[0.039]		
Inst Loan × Joint CEO-Chairman						0.2	
						[0.232]	
Inst Loan × DGTW Adjusted Return							0.091
							[0.141]
Firm Size	-0.084**	-0.137***	0.027	-0.184***	0.012	0.023	-0.154***
	[0.040]	[0.038]	[0.045]	[0.040]	[0.056]	[0.044]	[0.041]
Market to Book	0.028*	0.011	0.040**	-0.003	0.038*	0.046***	0.009
	[0.016]	[0.015]	[0.017]	[0.017]	[0.021]	[0.017]	[0.016]
Tax to Asset Ratio	-0.621	-0.684	-0.161	-1.001	0.433	-0.343	-0.72
	[0.598]	[0.599]	[0.573]	[0.628]	[0.982]	[0.586]	[0.642]
Leverage	0.590***	0.718***	1.052***	0.605***	1.155***	1.061***	0.684***
	[0.127]	[0.123]	[0.153]	[0.119]	[0.158]	[0.151]	[0.129]
Loan Concentration	-0.155***	-0.154***	0.027	-0.190***	-0.026	0.02	-0.162***
	[0.059]	[0.059]	[0.065]	[0.062]	[0.079]	[0.063]	[0.062]
Facility Size	0.039	0.033	-0.066	0.069*	-0.053	-0.068	0.044
	[0.039]	[0.039]	[0.046]	[0.039]	[0.056]	[0.044]	[0.040]
Revolver	-0.187***	-0.186***	-0.152***	-0.176***	-0.137**	-0.144***	-0.161***
	[0.036]	[0.036]	[0.047]	[0.033]	[0.061]	[0.047]	[0.036]
Syndicate	-0.077	-0.069	0.014	-0.025	-0.053	0.023	-0.113
	[0.123]	[0.124]	[0.092]	[0.085]	[0.131]	[0.091]	[0.127]
LIBOR	-0.008	-0.006	-0.063**	-0.042	-0.067**	-0.060**	-0.024
	[0.028]	[0.028]	[0.027]	[0.031]	[0.030]	[0.026]	[0.027]
Term Premium	-0.039	-0.036	-0.121**	-0.06	-0.159**	-0.115**	-0.017
	[0.053]	[0.054]	[0.058]	[0.054]	[0.063]	[0.058]	[0.055]
Interest Volatility	1.592***	1.618***	1.344***	1.737***	1.427***	1.423***	1.389***
	[0.336]	[0.337]	[0.327]	[0.327]	[0.403]	[0.326]	[0.333]
Consent	-0.068	-0.078*	-0.078	-0.071*	-0.159**	-0.077	-0.087**
	[0.042]	[0.042]	[0.055]	[0.038]	[0.069]	[0.054]	[0.043]
Assignment	0.199	0.208	0.278	0.093	0.273	0.218	0.253
	[0.147]	[0.147]	[0.194]	[0.135]	[0.269]	[0.194]	[0.161]
Financial Covenant	0.058***	0.057***	0.095***	0.043***	0.074***	0.089***	0.061***
	[0.013]	[0.013]	[0.015]	[0.013]	[0.017]	[0.014]	[0.014]
Loan Purpose Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rating Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4396	4386	2485	3656	2280	2524	4073
Adjusted R-square	0.721	0.72	0.779	0.732	0.761	0.778	0.721

Table 4: Borrower and Institutional Lender Matching Models

This table presents the probit estimation results for the matching equation between borrowers and institutional or bank lenders. The dependent variable if a binary variable equaling 1 if the loan is an institutional loan, and 0 otherwise. The variable number of institutional shareholders is the total number of institutional shareholders who held the borrower's stock at of the year before the loan issuance. Percentage Institutional Shareholding is the percentage of shares held by institutional investors. DGTW Adjusted Stock Return 0 is the abnormal stock return in the fiscal year (calculated based on Daniel et al. (1997)) prior to the loan issuance. Institutional loan supply is calculated as the moving average over the last 2 years of the total dollar value of institutional loans scaled by the total dollar value of all loans. AAA Spread is the spread of AAA bonds over 5 year constant maturity treasury bonds in the month prior to the loan issuance. Corporate risk premium is the spread of BBB bonds over AAA bonds in the month prior to the loan issuance. Capital Gains Tax Rate is the maximum capital gains tax rate prevailing in the year of the loan issuance. Leveraged loan is a dummy variable that equals 1 if the loan is characterized by Dealscan as falling in the leveraged loan category and 0 otherwise. Firm size is loan borrower's log of total assets. Market to book is defined as borrower's total assets minus book value of equity plus market value of equity over total assets. Tax-to-asset ratio is tax paid over total assets. Leverage is total debt over total assets. Rated is a dummy variable which equals 1 if the borrower's S&P long-term senior debt rating is available and 0 otherwise. Rating dummies represent S&P long-term senior debt rating and omitted category is CCC or below. The AAA and AA ratings are missing in these regressions as none of the institutional loans have AAA or AA rating. Momentum is a measure of the borrower's stock price momentum in the year prior to loan issuance. Acquisition, LBO, working capital, repayment, recapitalization and other are dummy variables reflecting primary loan purpose. Number of lead banks is the total number of lead banks in the loan syndication. Heteroskadesticity corrected robust standard errors adjusted for clustering at the deal level is presented in parenthesis. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively.

	Reg 1	*Reg 2*	*Reg 3*	*Reg 4*	*Reg 5*	*Reg 6*	*Reg 7*	*Reg 8*
Ln Number of Institutional Shareholders	0.107*							
	[0.062]							
Percentage Institutional Shareholding		0.394***		0.378***	0.361***	0.390***	0.391***	0.485***
		[0.131]		[0.130]	[0.130]	[0.131]	[0.131]	[0.128]
DGTW Adjusted Stock Return Year 0			0.141	0.174	0.157	0.155	0.154	0.165
			[0.119]	[0.122]	[0.120]	[0.120]	[0.120]	[0.126]
Institutional Loan Supply	1.904**	1.905**	2.068**	2.015**	1.964**	1.975**	1.971**	2.072**
	[0.969]	[0.968]	[0.976]	[0.959]	[0.966]	[0.972]	[0.973]	[0.962]
AAA Spread	-0.264**	-0.261**	-0.251**		-0.400***	-0.259**	-0.258**	-0.261**
	[0.111]	[0.110]	[0.109]		[0.108]	[0.110]	[0.110]	[0.108]
Corporate Risk Premium	-1.333***	-1.369***	-1.350***			-1.381***	-1.368***	-1.359***
	[0.438]	[0.440]	[0.440]			[0.436]	[0.441]	[0.427]
Capital Gains Tax Rate	-0.972	-1.303	-0.529				-1.061	-0.247
	[4.181]	[4.168]	[3.996]				[4.194]	[4.233]
Leveraged Loan	1.705***	1.694***	1.686***	1.649***	1.679***	1.689***	1.689***	1.837***
	[0.123]	[0.122]	[0.121]	[0.121]	[0.121]	[0.122]	[0.122]	[0.110]
Firm Size	0.117***	0.148***	0.169***	0.154***	0.160***	0.150***	0.149***	0.190***
	[0.041]	[0.031]	[0.030]	[0.030]	[0.031]	[0.031]	[0.031]	[0.024]
Market to Book	0.074**	0.089***	0.080***	0.090***	0.090***	0.085***	0.085***	0.117***
	[0.030]	[0.029]	[0.028]	[0.030]	[0.030]	[0.030]	[0.030]	[0.029]
Tax to Asset Ratio	1.696	1.591	1.896*	1.638	1.605	1.598	1.602	0.959
	[1.082]	[1.085]	[1.065]	[1.088]	[1.102]	[1.083]	[1.083]	[1.041]
Leverage	0.756***	0.720***	0.585***	0.749***	0.705***	0.705***	0.705***	1.080***
	[0.240]	[0.226]	[0.219]	[0.226]	[0.228]	[0.226]	[0.226]	[0.203]
Rated	-0.084	-0.003	-0.08	-0.06	-0.068	-0.014	-0.013	
	[0.262]	[0.264]	[0.261]	[0.276]	[0.273]	[0.263]	[0.263]	
A	-0.016	-0.041	-0.049	-0.048	-0.021	-0.042	-0.043	
	[0.275]	[0.276]	[0.273]	[0.291]	[0.289]	[0.277]	[0.277]	
BBB	0.159	0.096	0.141	0.097	0.128	0.097	0.097	
	[0.247]	[0.248]	[0.247]	[0.263]	[0.260]	[0.248]	[0.248]	
BB	0.519**	0.432*	0.516**	0.452*	0.476*	0.436*	0.436*	
	[0.250]	[0.253]	[0.249]	[0.267]	[0.264]	[0.252]	[0.252]	
B	0.580**	0.498*	0.575**	0.552**	0.554**	0.505*	0.505*	
	[0.259]	[0.261]	[0.258]	[0.275]	[0.272]	[0.261]	[0.261]	

Momentum	-0.023	-0.016	-0.12	-0.145	-0.121	-0.121	-0.12	-0.129
	[0.038]	[0.037]	[0.100]	[0.102]	[0.099]	[0.099]	[0.099]	[0.104]
Acquisition	0.548***	0.542***	0.551***	0.541***	0.541***	0.540***	0.540***	0.546***
	[0.087]	[0.088]	[0.087]	[0.088]	[0.088]	[0.088]	[0.088]	[0.089]
LBO	1.583***	1.560***	1.551***	1.680***	1.634***	1.579***	1.579***	1.606***
	[0.269]	[0.270]	[0.260]	[0.272]	[0.275]	[0.276]	[0.276]	[0.269]
Working Capital	0.021	0.028	0.022	0.015	0.025	0.026	0.026	0.01
	[0.088]	[0.088]	[0.088]	[0.088]	[0.088]	[0.088]	[0.088]	[0.088]
Repayment	0.246**	0.244**	0.253***	0.258***	0.248**	0.242**	0.242**	0.278***
	[0.097]	[0.097]	[0.097]	[0.096]	[0.096]	[0.097]	[0.097]	[0.097]
Recapitalization	0.749***	0.764***	0.757***	0.705***	0.723***	0.756***	0.754***	0.697***
	[0.246]	[0.248]	[0.245]	[0.256]	[0.250]	[0.248]	[0.248]	[0.240]
Other	-0.2	-0.188	-0.21	-0.205	-0.193	-0.188	-0.187	-0.291*
	[0.162]	[0.162]	[0.160]	[0.164]	[0.164]	[0.162]	[0.162]	[0.156]
Number of Lead Banks	-0.056***	-0.057***	-0.052***	-0.056***	-0.060***	-0.057***	-0.057***	-0.054***
	[0.014]	[0.014]	[0.013]	[0.014]	[0.014]	[0.014]	[0.014]	[0.013]
Constant	-3.199**	-3.038**	-3.167***	-4.517***	-4.078***	-3.367***	-3.065**	-3.788***
	[1.263]	[1.264]	[1.215]	[0.408]	[0.435]	[0.508]	[1.271]	[1.278]
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6145	6129	6254	6129	6129	6129	6129	6129
Pseudo R-square	0.345	0.347	0.344	0.341	0.344	0.347	0.347	0.336

Table 5: Switching Regressions with Endogenous Switching

This table presents results from a switching-regression model with endogenous switching. The switching-regression model consists of the first stage probit equation (the borrower-institutional lender matching model as in *Reg 8* of Table 5) estimated in reduced form with *ex-ante* borrower and loan characteristics and the second stage loan pricing regressions for institutional loans and non-institutional loans respectively which are estimated here in a seemingly unrelated regressions framework. The dependent variable for the second stage loan pricing regressions is the natural logarithm of initial all-in-drawn spread defined as the percentage coupon spread over LIBOR plus the annual fee and the upfront fee paid by borrowers for each dollar drawn down. Inverse Mills-ratios calculated from the first stage are used to adjust for self-selection. Maturity is log of loan maturity in days. Has Secured Data is dummy variable taking the value of 1 for non-missing observations of secured status and 0 otherwise. Secured is a dummy variable taking the value of 1 for secured loans and 0 otherwise. Second lien is a dummy variable that equals 1 if the loan is a second lien and 0 otherwise. Firm size is loan borrower's log of total assets. Market to book is defined as borrower's total assets minus book value of equity plus market value of equity over total assets. Leverage is total debt over total assets. Rated is a dummy variable which equals 1 if the borrower's S&P long-term senior debt rating is available and 0 otherwise. Other rating dummies represent S&P long-term senior debt rating from AAA to B and omitted category is CCC or below. Maturity is log of loan maturity in days. Has Secured Data is dummy variable taking the value of 1 for non-missing observations of secured status and 0 otherwise. Secured is a dummy variable that equals 1 for secured loans and 0 otherwise. Facility size is log of facility amount. Facility ratio is facility amount over deal amount. Syndicate is a dummy variable taking a value of 1 if the loan is syndicated loan or 0 if it is a bilateral loan. LIBOR is the deal month end 3-month LIBOR rate. Interest volatility is a 12-month moving average of the standard deviation of the monthly yields on 10-year U.S. T-bonds at deal month. Term premium is the 12-month average for the deal year of the yield differential between 10 years and 1 year U.S. bonds. Financial covenant equals the total number of financial covenants that are present in the loan contract; it is 0 if none are specified. Revolver is a dummy variable taking the value of 1 for credit revolver and 0 for term loan. Acquisition, LBO, working capital, repayment, recapitalization and other are dummy variables reflecting primary loan purpose. The omitted category is general corporate purpose. The difference between the coefficients of the two categories is reported in the third column. Heteroskadesticity corrected robust standard errors adjusted for clustering at the deal level is presented in parenthesis. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively.

	Second Stage regression for Institutional Loans	Second Stage regression for Non-Institutional Loans	Difference (Institutional - Non-Institutional)
Inverse Mills Ratio	0.770***	-1.641***	2.410***
	[0.190]	[0.100]	
Ln Maturity	-0.439	0.030*	-0.469
	[0.374]	[0.017]	
Has Secured Data	-0.078	-0.107***	0.029
	[1.056]	[0.024]	
Secured	0.465	0.487***	-0.021
	[1.044]	[0.032]	
Second Lien	1.994***	3.189***	-1.195*
	[0.620]	[0.141]	
Firm Size	-0.206	-0.159***	-0.047
	[0.214]	[0.042]	
Market to Book	-0.029	0.001	-0.030
	[0.082]	[0.016]	
Leverage	0.555	0.771***	-0.216
	[0.578]	[0.135]	
Rated	0.486*	-0.327***	0.813***
	[0.273]	[0.054]	
A	-1.134	-0.031	-1.103
	[0.734]	[0.039]	
BBB	-0.472	0.242***	-0.714**
	[0.327]	[0.046]	
BB	-0.809***	0.303***	-1.111***
	[0.203]	[0.060]	
B	-0.601***	0.489***	-1.090***
	[0.176]	[0.085]	
Acquisition	0.450***	0.02	0.429***
	[0.162]	[0.043]	

LBO	1.183***	0.221	0.962*
	[0.348]	[0.330]	
Working Capital	-0.013	0.051	-0.064
	[0.186]	[0.036]	
Repayment	0.238	-0.057*	0.295
	[0.194]	[0.034]	
Recapitalization	0.494	-0.022	0.516*
	[0.302]	[0.104]	
Other	-0.568	-0.062*	-0.506
	[0.460]	[0.033]	
Loan Concentration	-0.784**	-0.081	-0.704**
	[0.328]	[0.056]	
Facility Size	0.297	0.01	0.288
	[0.197]	[0.040]	
Facility Ratio	-0.154	-0.366***	0.212
	[0.287]	[0.042]	
Syndicate	1.623***	-0.110**	1.733***
	[0.485]	[0.051]	
LIBOR	-0.057	-0.039	-0.017
	[0.115]	[0.025]	
Term Premium	0.176	-0.021	0.198
	[0.239]	[0.052]	
Interest Volatility	0.592	0.482	0.110
	[1.511]	[0.345]	
Financial Covenant	-0.019	0.026**	-0.046
	[0.036]	[0.013]	
Constant	-1.875	1.685***	
	[3.264]	[0.584]	
Year Fixed Effects	Yes	Yes	
Industry Fixed Effects	Yes	Yes	
Observations	359	4054	
Adjusted R-square	0.457	0.691	

Table 6: Actual versus Hypothetical Primary Market All-in-Drawn Spread

This table compares the means and medians of actual loan spreads with their hypothetical counterparts for institutional loans (Panel A) and non-institutional loans (Panel B). The hypothetical loan yield spreads are calculated using the switching regression with endogenous switching model as presented in Table 6. Institutional loans are loans that have institutional lenders; non-institutional loans are loans that have commercial banks as lenders. The hypothetical measures reflect what the spread would be if institutional loans had been made by commercial banks and similarly if bank loans had been made by institutions. The computation of these imputed values is discussed in the text. All variables are measured in percentages. The *t*-statistics for differences in means are reported.

Panel A: Institutional Loans: Actual - Hypothetical

	Observations	Mean	Standard Deviation	Median	Difference in means	*t*-statistics
Actual	359	2.974	1.030	2.750	0.412	7.17***
Hypothetical	359	2.562	0.576	2.568		

Panel B: Non-Institutional Loans: Actual - Hypothetical

	Observations	Mean	Standard Deviation	Median	Difference in means	T-statistics
Actual	4054	1.373	0.971	1.250	-2.436	-95.96***
Hypothetical	4054	3.808	1.015	3.794		

Table 7: Actual versus Hypothetical Primary Market All-in-Drawn Spread Conditional on Institutional Equity Ownership

This table compares the means and medians of actual loan spreads with their hypothetical counterparts for institutional loans after conditioning on the percentage of institutional equity ownership in firms. Panel A reports the results for the institutional loans, while Panel B reports the results for bank loans. The hypothetical loan yield spreads are calculated using the switching regression with endogenous switching model as presented in Table 6. Institutional loans are loans that have institutional lenders; non-institutional loans are loans that have commercial banks as lenders. The hypothetical measures reflect what the spread would be if institutional loans had been made by commercial banks and similarly if bank loans had been made by institutions. The computation of these imputed values is discussed in the text. All variables are measured in percentages. The *t*-statistics for differences in means are reported.

Panel A: Institutional Loans: Actual - Hypothetical by Percentage of Institutional Equity Ownership

Institutional Equity Ownership		Observations	Mean	Standard Deviation	Median	Difference in means	*t*-statistics
Bottom Quartile	Actual	55	3.270	1.045	3.250	0.708	4.55***
	Hypothetical	55	2.563	0.540	2.594		
Second Quartile	Actual	67	3.119	0.844	3.000	0.701	7.31***
	Hypothetical	67	2.417	0.657	2.292		
Third Quartile	Actual	100	3.122	1.216	3.000	0.536	4.25***
	Hypothetical	100	2.586	0.727	2.560		
Top Quartile	Actual	137	2.676	0.886	2.500	0.060	0.74
	Hypothetical	137	2.616	0.386	2.648		

Panel B: Non-Institutional Loans: Actual - Hypothetical by Percentage of Institutional Equity Ownership

Institutional Equity Ownership		Observations	Mean	Standard Deviation	Median	Difference in means	*t*-statistics
Bottom Quartile	Actual	737	1.826	0.945	1.750	-1.707	-28.65***
	Hypothetical	737	3.533	1.098	3.587		
Second Quartile	Actual	995	1.372	1.018	1.250	-2.506	-46.85***
	Hypothetical	995	3.878	1.050	3.848		
Third Quartile	Actual	1060	1.233	0.992	1.000	-2.730	-57.00***
	Hypothetical	1060	3.962	0.935	3.978		
Top Quartile	Actual	1262	1.225	0.842	1.000	-2.560	-61.55***
	Hypothetical	1262	3.785	0.968	3.763		

Table 8: Actual versus Hypothetical Primary Market All-in-Drawn Spread

This table compares the means and medians of actual loan spreads with their hypothetical counterparts for institutional loans by different classifications. Panel A sorts by Loan size, Panel B sorts by the percentage of the loan held by the Institutional Lenders, and Panel C sorts by the syndicate size. The hypothetical loan yield spreads are calculated using the switching regression with endogenous switching model as presented in Table 6. Institutional loans are loans that have institutional lenders; non-institutional loans are loans that have commercial banks as lenders. The hypothetical measures reflect what the spread would be if institutional loans had been made by commercial banks. The computation of these imputed values is discussed in the text. All variables are measured in percentages. The *t*-statistics for differences in means are reported.

Panel A: Institutional Loans by Loan Size: Actual - Hypothetical

Loan Size		Observations	Mean	Standard Deviation	Median	Difference in means	*t*-statistics
Bottom Quartile	Actual	33	3.315	1.740	3.000	0.724	2.72***
	Hypothetical	33	2.592	0.781	2.513		
Second Quartile	Actual	65	3.029	0.674	3.000	0.491	4.14***
	Hypothetical	65	2.537	0.585	2.555		
Third Quartile	Actual	146	2.925	0.899	2.750	0.385	4.70***
	Hypothetical	146	2.540	0.483	2.620		
Top Quartile	Actual	115	2.908	1.075	2.750	0.311	2.96***
	Hypothetical	115	2.597	0.615	2.542		

Panel B: Institutional Loans by Percentage of Loan held by Institution: Actual - Hypothetical

Percentage of Loan held by Institutions		Observations	Mean	Standard Deviation	Median	Difference in means	*t*-statistics
Less than 25%	Actual	70	2.964	1.201	2.875	0.460	3.36***
	Hypothetical	70	2.504	0.642	2.482		
25% <= X < 50%	Actual	111	3.024	0.872	3.000	0.488	5.16***
	Hypothetical	111	2.536	0.489	2.623		
50% <= X < 75%	Actual	97	2.979	0.773	3.000	0.318	3.24***
	Hypothetical	97	2.662	0.510	2.654		
75% <= X < 100%	Actual	18	3.042	0.739	2.875	0.423	2.06*
	Hypothetical	18	2.619	0.429	2.697		
Equal to 100%	Actual	63	2.869	1.441	2.500	0.364	2.07**
	Hypothetical	63	2.505	0.743	2.378		

Panel C: Institutional Loans by Syndicate Size: Actual - Hypothetical

Syndicate Size		Observations	Mean	Standard Deviation	Median	Difference in means	*t*-statistics
Bottom Quartile (Sole Lender)	Actual	30	3.090	0.798	3.000	0.449	2.76***
	Hypothetical	30	2.641	0.574	2.623		
Second Quartile (2 to 5)	Actual	134	3.128	1.258	3.000	0.587	5.06***
	Hypothetical	134	2.541	0.653	2.582		
Third Quartile (6 to 11)	Actual	101	2.980	0.895	2.750	0.414	4.41***
	Hypothetical	101	2.566	0.412	2.586		
Top Quartile (12 and above)	Actual	94	2.711	0.808	2.750	0.147	1.75*
	Hypothetical	94	2.564	0.615	2.471		

Table 9: Secondary Market (First Day) Loan Resale Returns

This table reports OLS initial loan resale return regression model results. The dependent variable for the raw return regressions is the raw initial loan resale return and for the market adjusted return models is the market adjusted return. The raw initial loan resale return is calculated as the first day trading price - 100. The market adjusted initial loan resale return is calculated as the initial loan resale return minus the S&P/LSTA leveraged loan market index return during the same period. Institutional loan dummy takes a value of 1 for institutional loans and 0 for bank loans. Leveraged loan is a dummy variable that equals 1 if the loan is characterized by Dealscan as falling in the leveraged loan category and 0 otherwise. Second lien is a dummy variable that equals 1 if the loan is a second lien and 0 otherwise. Holding period is defined as the time (in days) between the first loan trading day and the loan's origination day. Number of quotes is the log number of quotes received on the first day of trading. Loan price volatility is the standard deviation of daily loan prices over the entire data period. All-in-drawn spread is the percentage coupon spread over LIBOR plus the annual fee and the upfront fee paid by borrowers for each dollar drawn down. Maturity is the log of loan maturity in days. Has Secured Data is dummy variable taking the value of 1 for non-missing observations of secured status and 0 otherwise. Secured is a dummy variable that equals 1 for secured loans and 0 otherwise. Firm size is loan borrower's log of total assets. Market to book is defined as borrower's total assets minus book value of equity plus market value of equity over total assets. Leverage is total debt over total assets. Rated is a dummy variable which equals 1 if the borrower's S&P long-term senior debt rating is available and 0 otherwise. Borrower specific variables are measured at the end of the fiscal year prior to the first loan trading date. Facility size is log of facility amount. Number of lenders is log of number of lenders in the loan syndication. LIBOR is the deal month end 3-month LIBOR rate. Term premium is the 12-month average for the deal year of the yield differential between 10 years and 1 year U.S. bonds. Interest volatility is a 12-month moving average of the standard deviation of the monthly yields on 10-year U.S. T-bonds at deal month. Financial covenant equals the total number of financial covenants that are present in the loan contract; it is 0 if none are specified. Loan purpose dummies include acquisition, LBO (leverage buy out), repayment, recapitalization, general corporate, working capital and others. The omitted category is general corporate purpose. Heteroskadesticity corrected robust standard errors adjusted for clustering at firm level is presented in parenthesis. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively.

	Raw Returns				Market Adjusted Returns			
	Reg 1	*Reg 2*	*Reg 3*	*Reg 4*	*Reg 1*	*Reg 2*	*Reg 3*	*Reg 4*
Institutional Loan	0.831***	1.595***	1.275***	0.928***	0.914**	1.497***	1.239***	1.011***
	[0.299]	[0.251]	[0.247]	[0.330]	[0.372]	[0.294]	[0.295]	[0.385]
Leveraged Loan	-0.021	-0.485	-0.016	0.034	-0.192	-0.486	-0.046	-0.05
	[0.633]	[0.395]	[0.357]	[0.633]	[0.684]	[0.457]	[0.416]	[0.692]
Second Lien	1.269			0.936	5.626**			6.351***
	[1.288]			[1.081]	[2.230]			[2.256]
Holding Period	-0.348***	-0.384***	-0.421***	-0.503***	0.093	-0.011	0.079	0.008
	[0.090]	[0.082]	[0.083]	[0.094]	[0.094]	[0.089]	[0.093]	[0.095]
Number of Quotes	0.043	0.094	0.082		-0.075	-0.046	-0.082	
	[0.099]	[0.122]	[0.099]		[0.112]	[0.136]	[0.111]	
Loan Price Volatility	-0.570***		-0.647***	-0.562***	-0.564***		-0.637***	-0.539***
	[0.141]		[0.123]	[0.142]	[0.134]		[0.122]	[0.139]
All-in-Drawn Spread	0.068	0.141	0.306**	0.167	-0.264	-0.007	0.094	-0.286
	[0.237]	[0.123]	[0.130]	[0.227]	[0.267]	[0.161]	[0.186]	[0.260]
Ln Maturity	1.291**	0.186	0.542	0.94	1.883***	0.773*	1.136**	1.537**
	[0.576]	[0.479]	[0.451]	[0.590]	[0.571]	[0.460]	[0.449]	[0.606]
Has Secured Data	-0.679	-1.368	-1.061	-0.791	-1.365	-1.732*	-1.372*	-1.354
	[0.986]	[0.876]	[0.676]	[0.988]	[0.960]	[0.930]	[0.747]	[1.009]
Secured	-0.196	0.406	0.2	-0.252	0.783	0.95	0.816	0.691
	[0.759]	[0.730]	[0.542]	[0.802]	[0.797]	[0.768]	[0.614]	[0.826]
Firm Size	0.017	-0.193	-0.246	-0.225	-0.117	-0.191	-0.285	-0.345*
	[0.190]	[0.256]	[0.280]	[0.220]	[0.191]	[0.220]	[0.258]	[0.200]
Market to Book	0.501**	0.15	0.429**	0.341	0.444**	0.195	0.462**	0.282
	[0.218]	[0.141]	[0.185]	[0.216]	[0.219]	[0.168]	[0.216]	[0.227]
Leverage	1.151	-1.296	-0.298	0.899	1.8	-0.466	0.305	1.235
	[1.226]	[0.921]	[0.904]	[1.020]	[1.098]	[0.999]	[0.967]	[1.007]
Rated	-0.189	-0.052			-0.168	-0.06		
	[0.447]	[0.351]			[0.456]	[0.384]		
Facility Size	0.123		0.478**	-0.223	0.25		0.600***	-0.123
	[0.212]		[0.234]	[0.205]	[0.225]		[0.229]	[0.234]

Ln Number Lender		0.405	0.334	0.998**		0.364	0.209	0.972**
		[0.301]	[0.253]	[0.403]		[0.339]	[0.307]	[0.428]
LIBOR	0.003	-0.16			0.675***	0.612**		
	[0.199]	[0.218]			[0.226]	[0.239]		
Term Premium	0.928**	0.231			1.579***	0.895		
	[0.449]	[0.510]			[0.498]	[0.550]		
Interest Volatility	3.326	4.272			-2.317	-1.783		
	[4.061]	[3.375]			[4.348]	[3.795]		
Financial Covenant	0.354**	0.363***	0.308***	0.231*	0.219	0.224*	0.123	0.074
	[0.137]	[0.123]	[0.108]	[0.119]	[0.149]	[0.127]	[0.109]	[0.130]
Constant	-12.849*	-0.862	-11.591***	-1.087	-21.619***	-8.879**	-19.187***	-7.073
	[6.513]	[4.347]	[4.440]	[5.665]	[6.299]	[4.387]	[4.700]	[5.474]
Loan Purpose Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Observations	533	765	765	533	533	765	765	533
Adjusted R-square	0.355	0.224	0.357	0.344	0.316	0.159	0.283	0.292

Table 10: Holding Period

This table reports the OLS regression results for the holding period. The dependent variable, log of holding period is defined as the time (in days) between the first loan trading day and the loan's origination day. Institutional loan takes a value of 1 for institutional loans and 0 for bank loans. Leveraged loan is a dummy variable that equals 1 if the loan is characterized by Dealscan as falling in the leveraged loan category and 0 otherwise. Second lien is a dummy variable that equals 1 if the loan is a second lien and 0 otherwise. All-in-drawn spread defined as the percentage coupon spread over LIBOR plus the annual fee and the upfront fee paid by borrowers for each dollar drawn down. Maturity is the log of loan maturity in days. Has Secured Data is dummy variable taking the value of 1 for non-missing observations of secured status and 0 otherwise. Secured is a dummy variable taking the value of 1 for secured loans or 0 otherwise. Probability of being resold are predicted values obtained from regressing a binary variable (which takes a value of 1 if the loan is resold and 0 otherwise) on *ex-ante* firm and loan characteristics, calculated as discussed in Kamstra et al. (2007). Firm size is loan borrower's log of total assets. Market to book is defined as borrower's total assets minus book value of equity plus market value of equity over total assets. Leverage is total debt over total assets. Rated is a dummy variable which equals 1 if the borrower's S&P long-term senior debt rating is available and 0 otherwise. Other rating dummies are also controlled. They represent S&P long-term senior debt rating from AAA to B and omitted category is CCC or below. Borrower specific variables are measured at the end of the fiscal year prior to the first loan trading date. Facility size is log of facility amount. LIBOR is the deal month end 3-month LIBOR rate. Term premium is the 12-month average for the deal year of the yield differential between 10 years and 1 year U.S. bonds. Interest volatility is a 12-month moving average of the standard deviation of the monthly yields on 10-year U.S. T-bonds at deal month. Financial covenant is a dummy variable if there is at least one financial covenant specified in the loan contract. Percentage Institutional Shareholding is the percentage of shares held by institutional investors. Loan purpose dummies include acquisition, LBO (leverage buy out), repayment, recapitalization, general corporate, working capital and others. The omitted category is general corporate purpose. Heteroskadesticity corrected robust standard errors adjusted for clustering at firm level is presented in parenthesis. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively.

	Reg 1	*Reg 2*	*Reg 3*	*Reg 4*	*Reg 5*	*Reg 6*
Institutional Loan	-1.216***	-1.105***	-1.226***	-1.319***	-1.458***	-1.023***
	[0.173]	[0.187]	[0.184]	[0.179]	[0.174]	[0.169]
Leveraged Loan	0.121				-0.425	
	[0.296]				[0.305]	
Second Lien	-0.308				-1.320**	
	[0.920]				[0.621]	
All-in-Drawn Spread	-0.264**	-0.233**				
	[0.114]	[0.097]				
Ln Maturity	-0.167	-0.082				
	[0.223]	[0.208]				
Has Secured Data	-0.155	-0.327				
	[0.445]	[0.450]				
Secured	-0.899***	-1.055***				
	[0.294]	[0.312]				
Probability of Being Resold	-0.964*	-0.781**	-1.092***	-0.721**	-0.823**	-0.979***
	[0.490]	[0.379]	[0.355]	[0.338]	[0.330]	[0.277]
Firm Size	0.117	-0.023	0.204*	0.089	0.129	0.106
	[0.110]	[0.118]	[0.122]	[0.092]	[0.092]	[0.075]
Market to Book	0.046	-0.046	0.072	0.002	-0.061	-0.111
	[0.132]	[0.159]	[0.156]	[0.160]	[0.167]	[0.156]
Leverage	1.093	-0.195	-0.588	-1.163	-0.064	0.331
	[0.711]	[0.780]	[0.734]	[0.713]	[0.654]	[0.627]
Rated	-0.730***	-0.544***	-0.569***	-0.505**	-0.554**	-0.537***
	[0.224]	[0.204]	[0.203]	[0.218]	[0.246]	[0.187]
Facility Size	-0.098					
	[0.158]					
LIBOR	0.361***				0.445***	0.589***
	[0.109]				[0.111]	[0.107]
Term Premium	-0.677***				-0.593***	-0.668***
	[0.206]				[0.218]	[0.214]

Interest Volatility	-2.654				-4.047**	-3.673**
	[1.682]				[1.702]	[1.833]
Financial Covenant	-0.318	-0.588*	-0.638**			
	[0.362]	[0.301]	[0.267]			
Percentage Institutional Shareholding		-0.774*	-0.734*	-0.868**	-0.901**	-0.409
		[0.439]	[0.428]	[0.400]	[0.396]	[0.335]
Constant	8.713**	8.878***	4.864***	6.130***	5.089***	3.483**
	[4.236]	[2.036]	[1.157]	[0.850]	[1.356]	[1.339]
Loan Purpose Dummies	Yes	Yes	Yes	No	No	No
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	No
Observations	447	598	600	600	426	600
Adjusted R-square	0.534	0.304	0.238	0.213	0.493	0.427