EQUITY-HOLDING INSTITUTIONAL LENDERS:
DO THEY RECEIVE BETTER TERMS?

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ABSTRACT

The past decade has seen significant changes in the structure of the corporate lending market, with non-commercial bank institutional investors playing larger roles than they historically have played. In addition, non-commercial bank institutional lenders are often equity holders in their borrowing firms. In our sample of 11,137 tranches of institutional "leveraged" loans, 2,008 (18%) have a non-commercial bank institution that also owns at least 0.1% of the firm's equity. Such "dual holder" loan tranches have higher spreads than otherwise similar loan tranches without equity holder participation. The dual holder premium is present for both revolver and term loans, and exists within all non-investment grade credit rating classes. Contrary to risk-based explanations of this finding, dual holder tranches are priced with premiums relative to other tranches of the same loan package. Dual holding premiums are higher when the equity-holder's stake is larger, when the dual-holder's share in the loan is larger, and when the equity holder is a hedge fund or a private equity fund. These premiums likely represent additional compensation to dual holders for providing capital to firms when the firms are having difficulty raising capital otherwise.

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1. Introduction

The past decade has seen significant changes in the structure of the corporate lending market, with non-traditional lenders such as non-commercial bank institutional investors playing larger roles than they historically have played.[1] Because institutional investors often have greater flexibility than commercial banks in the type of assets they can hold, profitable opportunities arise from investing in multiple securities issued by the same firm. For example, Ivashina and Sun (2011b) document that when institutional investors lend to firms and trade in those firms' equities, such trading tends to have abnormally good performance. Another way in which an institutional investor can take advantage of multiple investments in a firm's securities is by lending to firms in which it is already an equity holder. In this paper, we document the extent to which non-commercial bank institutional equity holders have become increasingly important lenders to their firms, as well the way in which they are able to obtain more superior terms than outside investors when they lend to their firms.

To evaluate the way in which institutional equity holders are involved in the lending process, we consider a sample of 11,137 tranches of institutional "leveraged" loans from the *DealScan* database, originated between 1997 and 2007.[2] We focus on the leveraged loan segment of the market because institutional investors' participation in the corporate lending market has been concentrated in this lower quality, non-investment grade segment of the market.[3] Of the 11,137 institutional leveraged loan tranches, 2,008 had the participation of an institutional lender that also held at least 0.1% of the firm's equity during the one-year period prior to the current loan origination. These "dual holders" can have meaningful

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[1] We use the term "institutional" investor to refer to non-commercial banking institutions.

[2] The technical definition of leveraged loans varies by organization. For example, *DealScan* defines as leveraged any loan with a credit rating of BB+ or lower and any unrated loan. Bloomberg defines leveraged loans as those with spreads over LIBOR of 250 basis points (bp) or more. Standard & Poor's deems loans with spreads over LIBOR of 125 bp or more as leveraged loans. Thompson Financial denotes as leveraged loans, all those with an initial spread of 150 bp or more before June 30, 2002, or 175 bp or more after July 2, 2002. We follow *DealScan's* classification of leveraged loans in this paper. By "institutional" loan facilities we mean loan facilities in which at least one institutional investor is involved.

[3] The proportion of leveraged loans among loans classified as institutional loans by *DealScan* is about 90% during the sample period. Similarly, Nandy and Shao (2010) find that 86.1% of institutional loans are leveraged loans with the proportion increasing over the years during the period from 1995 to 2006. In our sample, the proportion of leveraged loan facilities with institutional participation almost doubled during our sample period, from 38% in 1997 to 74% in 2007.

equity positions; of the 2,008 dual holder loan tranches in our sample, 493 had the participation of institutional investor(s) with equity holdings of at least 3%, and 279 had the participation of institutional investor(s) holding at least 5%. In addition, 106 loan tranches had the participation of equity-holding hedge funds or private equity funds which held on average 4.3% of the borrowing firm's equity.

Theoretically, lending to a firm in which an investor already has an equity position is sub-optimal from a diversification perspective. Therefore, to induce such an investor to lend to the firm, he must earn more than the rate on comparable loans, or receive some other benefits to offset the loss of diversification. Jiang, Li and Shao (2010) argue that one such benefit could arise if lending leads to common ownership of equity and debt that could reduce future investment distortions arising from conflicts between claimholders. A second possible benefit, arising from information asymmetries among potential lenders, is that an equity holder's lending to the firm could certify the firm's quality and facilitate participation of other institutions in the loan. Finally, firms or lead arrangers sometimes approach firm insiders, such as institutional equity, investors to participate in loan facilities that are particularly important to the firm or for which demand is relatively weak.[4] In this case, by participating in the loan syndicate, the equity holder would provide value by alleviating a financial constraint, and receive a premium return that represents his compensation for providing capital when it is most valuable.

To evaluate these explanations for institutional investors' dual holdings of equity and debt, we estimate the difference in all-in-drawn spreads between loan tranches in which dual holders invest, and otherwise similar loan tranches. We first estimate the incremental effect of a tranche's being held by an institutional dual holder on the spread of that tranche. In doing so, we control for other factors that affect the loan tranche's spread, such as the firm's risk measured by either firm-level accounting variables, or the rating of the issuer, as well as the loan's type (Term Loan A, Term Loan B, or Revolver) and other tranche-specific characteristics.

Our results indicate that loan facilities in which at least one institutional equity holder participates have, on average, 13 basis-point higher spreads than otherwise identical loan facilities which is

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[4] Throughout the paper, we use the terms "facilities' and "tranches" interchangeably.

approximately 5% of the average total spread of 258 basis points. This premium exists for different types of loan tranches: There is a 12 basis-point premium when dual holders invest in revolvers and a 16 basis-point premium for term loans, both of which are economically significant and statistically significantly different from zero. In addition, there are premiums associated with dual holders for loan tranches made to issuers of each non-investment grade rating class, and the premiums are generally larger for lower-rated issuers. For example, for loan tranches to issuers rated below CCC, the dual holder premium is about 21 basis points compared to a 12 basis-point premium for BB-rated issuers.

In computing these estimates of the dual holder premiums, we control for publicly observable variables that could affect spreads. However, it is possible that dual holder premiums could reflect unobservable heterogeneity across firms that is correlated with both the likelihood of a dual holder and the all-in-drawn spreads on the loan tranches in which they invest. For example, suppose that an equity-holder helps to arrange or to certify a loan at a time when the firm is having financial problems that prevent it from receiving a loan from other lenders. In this case, it is likely that the borrowers' true risk would not be reflected in observable variables, so that the positive estimated premiums could reflect compensation for risk that is unobservable to an outsider.

To evaluate the possibility that the premiums to dual holders could reflect incremental risk differences between dual holder loans tranches and other loan tranches, we estimate the effect of the dual holder on the pricing of different tranches within the same loan. Different tranches of the same loan package share the same underlying firm fundamentals and typically have the same seniority and hence have the same default risk. Yet, they have different maturities, sizes and members of syndicate, so we control econometrically for those differences in tranche-specific attributes when estimating our equations. If the existence of a dual holder affects the relative spreads on different tranches of the same loan, it cannot reflect a correlation between dual holders' existence and a factor related to firm-level risk.

The within-loan estimates indicate that when a dual holder participates in a Term Loan B tranche, the tranche trades at a positive premium relative to Term Loan A tranches or revolvers of the same loan. This positive premium is higher than that for non-dual holder Term Loan B tranches relative to other

tranches in their loans. In addition, when a dual holder purchases part of the revolver, the spread gap between the Term Loan B tranche and revolver *decreases*, suggesting that *ceteris paribus*, dual holders are able to invest in revolvers with higher spreads. Finally, we consider the cases in which a dual holder invests in a Term Loan B facility and there is also another institutional Term Loan facility in the same loan. In these cases as well, the one with the dual holder trades at a higher spread. These findings confirm that particular tranches for which equity holders invest have higher spreads than otherwise similar tranches, even holding borrower characteristics constant.

The fact that the dual holder premium appears to be a function of the particular tranche in which the equity holder participates suggests that the explanation for the premium is tranche-specific rather than firm-specific. This finding is not consistent with arguments that dual holding reduces conflicts that potentially increase the value of future investments, or that the dual holder's presence signals something about the firm's quality. Rather, the tranche-specific nature of the dual holder premium favors the argument that an equity holder participates in a particular loan tranche that is relatively difficult to obtain, or for which the capital raised from the loan tranche is particularly important. This logic suggests that equity holders are opportunistic lenders who provide capital to firms when it is most needed and receive higher spreads in return for doing so.

The idea that dual holder premiums can be explained by opportunistic lending implies that the premiums should be larger when equity holders are most flexible in the type of investments they can make, and when they have larger incentives to maximize the returns of their investments. Consequently, we consider the way pricing of loan facilities varies with lender characteristics. First, we consider whether the type of institutional investor affects the loan tranche pricing. In particular, private equity and hedge funds tend to have substantial direct and indirect incentives to increase the returns of their investments, as well as the freedom to make different kinds of investments relatively quickly without being subject to restrictions faced by other institutional investors. Consequently, we expect private equity and hedge funds

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to be the most likely investors to lend at relatively higher spreads.[5] The empirical results are consistent with this hypothesis; our estimates indicate that hedge funds and private equity funds loan facilities have spreads that are 54 basis points higher than otherwise similar facilities that do not have a dual holding institution. Facilities held by other funds who are equity holders have 28 basis point higher spreads, and loans from other institutional equity holders have 6 basis-point spreads than comparable loans without dual holding institutions. These findings suggest that the institutions managed by individuals with the strongest incentives and most information about their firms receive the highest spreads when they lend to firms.

Second, we estimate whether the size of the dual holder's equity position affects the loan pricing. The results suggest that institutions with larger equity stakes receive higher interest rates when they lend to their own companies. In particular, holding other things constant, institutions with higher than average (2.6%) equity holdings receive a 20 basis-point premium over comparable non-dual holder loan facilities, while institutions with less than average equity holdings receive a 11 basis-point premium. When we consider both the type of the institution and size of the institution's equity position together, both characteristics affect the dual holding premium, although hedge funds and private equity funds' loans tend to have particularly high spreads regardless of their equity ownership.

Third, we estimate whether the size of the dual holder's share of the loan affects the loan's pricing. Controlling for the size of the dual holder's equity position, as well as firm and tranche characteristics, our estimates indicate that the dual holder's loan share is positively and statistically significantly related to the loan tranche's spread. They imply that a one-standard deviation increase (12.5%) in dual loan share is associated with an 18 basis-point increase in the loan spreads.

Finally, we consider the idea that if equity-holding lenders are paid premiums to invest in the particular tranches in which dual holders participate, then these tranches should be for loans in which

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[5] Hedge funds and private equity funds started to actively participate in corporate lending market starting in the mid-1990s. According to HedgeFund.Net, there were more than 100 funds specializing in lending as of 2007. Large funds are accelerating this trend by raising giant funds dedicated to loan investing; for example, the private equity firm Blackstone Group started a $3 billion fund to invest in leveraged loans in 2011.

capital is particularly important for the borrowing firms. Therefore, we expect that these firms should spend the capital they raise more quickly than when a dual holder does not participate. To evaluate this hypothesis, we estimate equations similar to those in Kim and Weisbach (2008) that predict the fraction of an incremental dollar raised that goes to alternative uses. Our estimates indicate that virtually none of the capital raised from dual holder lenders is saved as cash, while between 19 and 28 cents from every dollar raised by non-dual holder lenders is saved as cash. This difference is consistent with the notion that dual holders receive a premium as compensation for participating in situation when raising capital quickly is particularly important to the firm.

Our findings are parallel those of Brophy, Ouimet, and Sialm (2009), who find that hedge funds' equity investments are typically to firms that otherwise would have trouble raising capital. When making equity investments, hedge funds typically negotiate discounts relative to the public stock price paid by other investors, and earn abnormal returns because their purchases are at a discount. Thus, hedge funds abnormal returns on private placements of equity can be thought of as the return to providing liquidity. Our findings can be viewed similarly; we find that equity holders contribute to loan tranches in firms with spreads that are relatively high. Since spreads are determined through an auction process, high spreads that cannot be explained by risk and other firm and loan attributes mean that the tranche would have relatively few investors or would have difficulties in fully subscribing absent the equity holder. Therefore, we view dual holders' incremental return as compensation that they receive in exchange for providing liquidity to their firms in the tranche that is in less demand from other investors.

Our paper is related to Jiang, Li, and Shao (2010), who also analyze the pricing of loans held by equity-holding institutional investors. In contrast to our findings, these authors find that loans from institutional equity holders have lower spreads than otherwise similar loans. The likely source of the difference in findings between the two papers is the sample. In contrast to our sample that is made up entirely of relatively risky leveraged loans, 51% of Jiang, Li and Shao's sample are investment grade. If we re-estimate the equations in our paper using only the institutional leveraged loan tranches in the Jiang, Li and Shao sample and our definition of non-commercial institutional dual holders, we find a positive

spread premium similar to what we report in our paper.[6] Consistent with this argument, we do not find the dual holder premium for the subsample of issuers that have investment grade ratings (BBB or above). In addition, Jiang, Li and Shao's sample is somewhat earlier than ours in calendar time, and therefore likely has fewer hedge fund and private equity funds as dual holders. Given that our findings suggest that these institutions receive by far the highest spreads on their loan tranches, a sample like Jiang, Li and Shao's that does not contain as many hedge funds and private equity funds is likely to have smaller dual holder spread premium than ours.

The paper is also related to the literature on potential conflicts of interest that arise when institutional investors engage in syndicated lending. Ivashina and Sun (2011b) and Massoud, Nandy, Saunders, and Song (2011) focus on the trading of institutions that participate in syndicated lending, and the associated potential conflicts of interest. Both papers find evidence that institutional investors in the syndicated loan market exploit their access to private information when trading and earn abnormal returns when they trade in the firm's equities.

The paper proceeds as follows: Section 2 describes the data sources and sample. Section 3 discusses hypotheses about why equity holders might lend to their firms. Section 4 estimates the differences in spreads between dual-holder loan tranches and comparable non dual-holder loan tranches. Section 5 examines the impact of dual holder characteristics of the dual-holders on premiums. Section 6 considers the way in which the uses of funds differs between dual holder and non-dual holder borrowers, and Section 7 concludes.

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[6] We are extremely grateful to Wei Jiang, Kai Li and Peng Shao for sharing their sample and allowing us to understand the differences in the results between the two papers. The estimated equations using the Jiang, Li and Shao sample are available from the authors by request. The definition of dual investor used in our paper is somewhat different from the one used in Jiang et al. (2010) in terms of both timing and size of equity holdings. To define a dual holder, Jiang et al. (2010) measures the lender's equity holding at the end of the quarter in which the loan is originated, whereas we start from the list of shareholders during one year *prior* to the loan origination and then examine whether any of these shareholders participated in the loan syndicate. Moreover, they consider only equity holdings above 1.0% as dual holding, whereas we consider all holdings above 0.1%.

2. Data and Sample

2.1. Sample of Institutional Leveraged Loans

We obtain a sample of leveraged loans with institutional participation from the Reuters Loan Pricing Corporation's (LPC) *DealScan* database for the 1997-2007 period. Leveraged loans are loans with credit ratings of BB+ or lower or any unrated loan (see footnote 2). In a leveraged loan, term loans tranches are often packaged together with revolver facilities. A term loan tranche is a loan tranche for a specified amount, fixed repayment schedule and maturity, and usually fully funded at origination. In contrast, revolvers typically have shorter maturities than term loan tranches and are not fully funded at the origination of the loan syndicate. The Term Loan A tranche is a term loan that is usually amortizing, and is typically held by the lead arranger. Institutional term loan tranches (Term Loan B, C, D, E, …) also can amortize like Term Loan A tranches but are more often "bullet", meaning that they have one payoff at maturity.[7]

We focus on leveraged loans because participation of institutional investors in this segment of the loan market has been particularly pronounced, with institutions making up more than 70% of the capital funding of these loans. Additionally, the overwhelming majority of institutional loans are leveraged loans with the proportion increasing over time. We begin our sample in 1997 because major developments in the market that fueled institutional involvement in the corporate loan market occurred in 1995 and 1996.[8]

To construct the sample, we begin with all leveraged loans listed in *DealScan* made to non-financial U.S. public firms and completed between 1997 and 2007, a total of 37,552 loan facilities. We require that the data on deal value and dates not be missing. We additionally restrict the sample to the

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[7] Appendix B contains statistics on the payoff structure of each type of tranche.
[8] The Loan Syndications and Trading Association (LSTA) was founded in 1995 and S&P first started rating bank loans in 1995. In 1996, LSTA first started providing mark-to-market pricing (for dealers only). In addition, the secondary market for syndicated loans became well established by mid-1990s: by the early 1990s specialized loan trading desks were operating in a number of institutions led by Bankers Trust, Alex Brown, Bear Stearns, Citibank, Continental Bank and Goldman Sachs. By 1997, about 25 institutions had active trading desks and there were two inter-dealer brokers. These innovations spurred the fast growth of the syndicated loan market, which in turn fueled institutional participation in the primary lending market. Moreover, there are very few leveraged loans before 1997, as is documented in Figure 1.

most common type of tranches, where the type of instrument is either a line of credit (Revolver/Line, 364-Day Facility, Demand Loan, Limited Line) or a term loan (Term Loan, Delay Draw Term Loan, Term Loan A, B, …, H).[9] We further restrict the sample to the borrowing companies for which we could match to the *Compustat* database.[10] Finally we exclude loans whose primary purpose is LBO financing, because our goal is to study the way equity holders influence the lending environment in the corporate environment. The above screening process results in a sample of 20,031 facilities associated with 13,122 loans made to 5,627 borrowing firms.

We consider a loan facility to have institutional participation if at least one non-commercial bank institutional investor is involved in the lending syndicate. Non-commercial bank institutions include hedge funds, private equity funds, mutual funds, pension funds and endowments, insurance companies, financing companies, and investment banks. A narrower definition of institutional participation is if at least one institutional investor plays a major role in the lending syndicate.[11] We consider a lender to be a commercial bank if it and/or its ultimate parent have major commercial banking operations. To distinguish the identity of a lender between commercial banks and non-commercial bank institutional investors, we rely primarily on *DealScan's* information on lender type. We confirm this identification by the lender's primary SIC code and Investor Type code in *Thompson Reuters Institutional Holding Database*.[12] We also take into consideration the changes in the institutional type. So for example, JP Morgan is classified as institutional lender before its merger with the Chase Manhattan Corp in 2000, and JP Morgan Chase is coded as a commercial bank afterward. According to this classification, 1,137 of the

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[9] This restriction excludes bankers' acceptance, leases, standby letters of credit, step payment leases, guidance lines, traded letters of credit, multi-option facilities, and undisclosed loans.

[10] We are grateful to Michael Roberts for providing the *Dealscan-Compustat* link file. In addition to using this link file, we also manually confirmed the matching between *DealScan* and *Compustat*.

[11] The lenders with the following roles are considered as the major participants: admin agent, agent , arranger, book runner, co-agent, co-arranger, co-lead manager, co-manager, co-syndications agent, co-underwriter, collateral agent, coordinating arranger, documentation agent, facility agent, issuing agent, joint arranger, L/C issuer, lead arranger, lead manager, lead participant, manager, managing agent, mandated arranger, PRC agent, packager, paying agent, reference agent, senior co-arranger, senior lead manager, senior manager, senior managing agent, sole lender, syndication agent. We have estimated the equations reported in the paper using this narrower definition of participation and get similar results to those reported below.

[12] A lender is classified as a commercial bank if its primary SIC code falls in 6011-6082 or 6712, or its Thompson Financial institution type code equals one.

20,031 leveraged loan facilities in our sample had institutional participation, and 8,408 had major participation by institutional lenders.

Information about other loan- or facility-specific variables is also taken from *DealScan*. Because loan tranches are almost always floating-rate, we use the all-in-drawn spread as a measure of loan pricing. The all-in-drawn spread is the sum of the spread of the facility over LIBOR and any annual fees paid to the lender group. *DealScan* also provides data on the facility's size and maturity, the number of investors participating in the lending syndicate, as well as information on whether the facility is senior, secured, second-lien, syndicated, and the type of facility (revolver or term loan). We also consider the firm's lending relationship with the dual holding lenders and other lenders, by examining whether the firm borrowed from the same lender previously.

To identify whether the lender held equity stake in the borrower prior to the loan origination, we create the list of shareholders of the borrowing company from *Thompson Reuters Institutional Holding Database* (13F) for the one-year period leading up to the current loan, as well as the list of lenders who are participating in the current loan. For example, for a loan originated in April 2000, we create a list of equity holders using four 13F filings: filings for the quarters that end in June 1999, September 1999, December 1999, and March 2000, respectively. An institutional investor's equity stake is measured as the average of the holdings that appear in these four filings. We focus on the equity stake held by lenders prior to loan origination because we wish to evaluate the effect of holding an equity position on the loan decision. We then match lender information from *DealScan* to the institutional investors in the 13F by the lender's name, and the lender's ultimate parent's name. We consider a loan facility to be a dual-holder facility if at least one non-commercial bank institutional investor or its ultimate parent participating in the loan syndicate also held an equity stake larger than 0.1% on average in the same borrower during the one-year period prior to loan origination.

We match the borrower's and/or borrower's parent name to the *Compustat* firm by a combination of algorithmic matching and manual checking following Chava and Roberts (2008). Using this matching procedure, we are able to obtain other firm-level variables from *Compustat*, CRSP, I/B/E/S,

13F, and SDC Platinum. The total number of loan facilities with institutional participation that have a full set of data for the most recent prior fiscal year-end is 6,350.

2.2. Overview of Sample

Table 1 provides statistics on the annual distribution of institutional loan facilities. This table emphasizes increasing trend of institutional participation in the leveraged loan market. As Table 1 and Figure 2 document, the portion of leveraged loans having institutional participation grew from 38% of loan facilities in 1997 to 74% in 2007.

The emergence of institutional investors in the leverage loan market has been accompanied by an increase in institutional equity holders' participation in loans. In our sample of leverage loan facilities, 2,008 loan facilities (18%) had institutional investors who were also equity holders of the firms. As the last column of Table 1 and Figure 3 show, this phenomenon of dual holding also has increased over the sample period from about 16% of the sample in 1997 to almost 24% of the sample in 2007.

Table 2 presents summary statistics for both loan facilities and borrowing firms. The dual holders have substantial equity stakes in the firms to which they lend, averaging 2.6% of the firm's equity. The sample average facility amount is $250 million, the average number of investors involved in a lending syndicate is about nine, and the average maturity is about 52 months. Approximately 74% of facilities are secured, 2% are second-lien, and roughly half are revolvers. Almost all loan facilities are senior debt distributed in loan syndication.

Not surprisingly, because the sample consists of leveraged loans, borrowers tend to be risky. The average leverage, measured by book value of total debt to total assets ratio, of our sample firms is 67.1% and the median is 63.3%. In addition, the sample firms also exhibit relatively low Z-scores and credit ratings (BB-rated on average). [13],[14] Finally, these firms underperformed relative to their industry, as indicated by a negative industry-adjusted ROA prior to the loan origination.

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[13] "Z-score" is intended to be a negative function of bankruptcy probabilities. It is taken form Altman (1968) and defined by: $Z = 1.2$ Working Capital / Total Assets + 1.4 Retained Earnings / Total Assets + 3.3 EBIT / Total Assets + 0.6 Market Value of Equity / Book Value of Total Liabilities T_4 + 0.999 Sales/ Total Assets.

3. Why Would Equity Holders Lend to their Firms?

All else equal, investors prefer to concentrate their lending in firms other than the ones for which they have a substantial equity stake. Lending to a firm for which an investor has a substantial equity stake increases the investor's exposure to firm-specific shocks, which could be mitigated to some extent if the investor were to lend to a comparable firm for which it does not have an equity stake. Therefore, to induce an investor to lend to a firm for which it is an equity holder, its lending must lead to an additional source of gains that offsets her loss of diversification.

One potential source of such gains to a dual holder comes from aligning the interests of equity holders and debt holders. Classic papers by Jensen and Meckling (1976) and Myers (1977) point out how differences the incentives of equity holders and debt holders can lead to both underinvestment of value-increasing projects and overinvestment of value-decreasing ones. Common ownership of debt and equity potentially decreases conflicts of interest, improving the quality of the firm's investments. Thus, the dual holding of equity and debt by an institutional investor provides a channel which could lead to efficiency gains.[15] If the improvement in investment efficiency arising from dual holding is larger than the associated costs from sub-optimal diversification to the investor, as Jiang, Li and Shao (2010) argue, the required return from dual holder loans is likely to be lower than that for similar non-dual holder loans. Empirically, if dual holding occurs to increase investment efficiency, the incremental effect of dual holding on spreads should be negative.

Another way in which equity holders can create value by lending is if imperfections in capital markets lead firms to face financial "constraints", meaning that firms cannot borrow at the interest rate reflecting the firms' fundamental risks. When firms are constrained at a time when access to capital is particularly important, equity holders, who internalize some of the value created by the positive NPV

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[14] We use issuer ratings, not ratings for individual loans, because information on ratings for individual loans is often missing. Therefore the sample includes 796 loans made to investment grade borrowers, despite the fact that all of our loan facilities are classified as "leveraged".

[15] However, Parrino and Weisbach (1999)'s simulations suggest that the magnitude of this effect is trivial unless the firm is substantially more levered than the average public U.S. firm.

project, are potential sources of capital. If the equity holders receive a return commensurate to the firm's risk minus the fraction of the value created through the project belonging to the equity holders, then the loans could be priced at a discount relative to comparable ones. However, if the equity holder receives compensation for providing capital through lending when others are unwilling to, or is able to negotiate rents because of their influence inside the firms, then it is possible that the loan tranches could be priced at a premium. Since firms will only be willing to pay a premium to avoid financial constraints at times when raising capital is particularly important, a prediction of this argument is that firms will spend the capital from these loan tranches more quickly than the capital raised from other ones.[16]

Finally, asymmetric information among potential lenders could potentially lead equity holders to lend to the firm. By participating in the loan tranches themselves, insiders "certify" the quality of the firm, and signal to other investors that the firm's prospects are relatively good. We expect that the certification argument leads to dual holdings at relatively risky-looking firms, and that the loan tranches should trade at a premium to otherwise comparable loan tranches, since they were the ones that required certification in the first place. In addition, to induce the equity holder to certify the quality of a loan that is undesirable from a diversification perspective, the loan tranche is likely to require a premium over comparable loan tranches that are more desirable to the equity holder.

Overall, there are several reasons why equity holders would choose to lend to their firms despite the diversification costs they face from doing so. Equity holders receive a portion of value created through better real investments, which could potentially be improved by reducing conflicts between equity and debt holders, and also by providing capital to firms when they face financial constraints. Theoretically, such capital could be priced at either a discount or a premium: A discount would occur if equity holders internalize some of the value created and a premium if the equity holder receives

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[16] An interesting issue is why an equity holder would lend through a syndicated loan rather than through a private placement. In practice, equity holders, especially hedge funds and private equity funds, do lend to firms in which they hold equity positions, sometimes through affiliated mezzanine funds. These loans are generally at relatively high interest rates and contain substantial control rights; however the positions are private so it is impossible to quantify their magnitude. Involving an equity holder in a syndicated loan can be thought of as an intermediate way of involving the equity holder without paying the larger premium associated with a private placement of debt.

compensation and/or rents from providing capital when it is most needed. In addition, if equity holder participation is necessary to certify the quality of a deal, the equity holder should receive some sort of compensation for being under-diversified, so in this case, we expect the loans to trade at a premium.

4. Differences between Dual Holder Loans and Non-Dual Holder Loans

4.1. Differences in Characteristics

Table 3 summarizes the univariate differences between the 2,008 dual holder and 9,129 non-dual holder loan tranches in our sample. Dual holder tranches are somewhat less likely to be revolvers than non-dual holder loans, but revolvers still make up more than half the dual holder sample (52.3%). The other loan tranches in both samples are term loans. Both samples have roughly the same proportion of Term Loan A facilities (between 6 and 7 percent), while dual holder facilities are more likely to have a larger fraction (41.3%) of Term Loan B facilities than non-dual holder facilities (37.4%).[17]

Within a sample of institutional leveraged loan facilities, the dual holder facilities tend to be less risky than non-dual holder facilities. A much higher proportion of borrowers of dual holder loan facilities have ratings than borrowers of non-dual holder loan facilities (82.5% vs. 51.6%). Of the borrowers that do have ratings, dual holder borrowers' ratings tend to be higher. For example, of the dual-holder loan facilities with issuer ratings, 34% have a B rating or lower, compared to 48% of the non-dual holder loan facilities. Also indicative of dual holder facilities having lower risk is the fact that dual holder facilities are substantially larger than non-dual holder loans ($461 million versus $212 million). Finally, dual holder loan facilities tend to have more participating lenders (14 versus 8), to have somewhat longer maturity, and are less likely to be secured or second-lien than non-dual holder loans.

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[17] We treat tranches with B or higher designations (e.g. C, D, etc.) as Term Loan B since all of them are marketed to institutional investors. Moreover, about one-third of the term loans in our sample has no letter designation but is just called 'Term Loan'. In all reported tables, we treat these undesignated term loans as Term Loan B. We do so because the facility attributes, such as the spread and payment schedule, of the unlabeled Term Loans in our sample appear to be more like the Term Loan B's than the Term Loan A's. Detailed comparisons of attributes across different tranche types are provided in Appendix B. In addition, when a tranche is first launched and appears in the 'Calendar', which is the weekly record of outstanding loans published by Reuters Loan Pricing Corporation (LPC), often its type is originally described as "Term Loan", but ultimately is classified in DealScan "Term Loan B", or vice versa. We have re-estimated all equations reported in the paper treating unclassified term loans separately and all results are similar to those reported below.

Table 4 reports selected statistics on the types of institutional investors who are dual holders. Column (1) reports the number of loan facilities with each type of institutional dual holder.[18] Over 60% of the dual holder loan facility sample has an investment banker as a dual holder, while only 5.3% of the sample has as a hedge fund or private equity fund as a dual holder. As Column (4) shows, most of the participation by hedge funds or private equity funds (over 75%) is in Term B Loan tranches. Loan participating mutual funds also participate more often in Term B loan tranches, while other institutional dual holders such as investment bank and finance company participate more frequently in revolvers (about 60%). The equity stakes by institutional dual holder also varies by institutional type; Column (7) reports the average equity stake by type and shows that hedge funds and private equity funds tend to have the largest holdings, with an average of 4.3%.

4.2. Differences in Spreads

The goal of this paper is to understand the motives underlying equity holders' investments in loan tranches to the companies in which they have equity investments. One possibility is that they are able to earn additional compensation by lending to these firms because of an information advantage, enabling them to lend in situations where spreads are higher than usual. Alternatively, as suggested by Jiang, Li and Shao (2010), having an equity position creates an extra motive for equity holders to lend, since doing so potentially reduces conflicts of interest, and also could increase the value of their equity stake by facilitating valuable investments. This argument implies that lending to a firm could be sufficiently desirable to an equity holder that we could observe them lending at lower rates than other investors.

To evaluate these alternative hypotheses, we estimate equations predicting the interest rate on a particular loan facility. Because the loans in our sample are floating rate with LIBOR as their index, we estimate equations predicting the "All-in-Drawn Spread", which is the spread of the loan facility over LIBOR plus any annual fees that the borrower must pay the lenders. Our goal is to estimate the

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[18] The column sums to 2,399, not 2,008, because a loan can have more than one type of institutional investor as a dual holder.

incremental effect of a dual holder on the spread, holding other factors that could affect the spread constant. Therefore we estimate the following equation:

$$All\text{-}in\text{-}drawn = \alpha + \beta \cdot Dual\ Holder\ Indicator + \gamma \cdot X + \varepsilon \qquad (1)$$

where X is a vector of covariates that include facility- and firm-specific control variables. The control include the facility amount, the number of participating lenders and the lenders' past relationships with the firm, the maturity of the facility, whether the facility is secured or second-lien, whether the loan has covenants, as well as the borrowing firm's size and its ratio of fixed to total assets. Definitions of all variables are provided in the Appendix A.

The loan facilities are generally either revolvers or term loans. The term loans are of two types, Term Loan A facilities, which are usually syndicated to banks, or Term Loan B facilities (sometimes labeled just "Term Loan"), which are typically structured for institutional investors. Since each type of tranche usually has a different spread, it is important to control for differences in type of tranche when estimating these types of equations.

A key factor in determining the spread on a loan facility is its default risk. The majority (82.5%) of the firms in our sample have issuer credit ratings at the end of fiscal year prior to the loan origination. The credit ratings presumably reflect the risk of the issuer as assessed by professionals around the time the loan is issued. However, relying solely on credit ratings to measure risk necessitates dropping loans to firms that do not have ratings. Therefore, we present specifications using issuer credit ratings as a measure of risk for the loan facilities for which credit ratings are available, as well as equations using the Z-Score and leverage to control for default risk for the larger sample that includes loan facilities without credit ratings.

We present the OLS coefficient estimates of Equation (1) and the corresponding *p-values* on the full sample in Table 5, and on the sub-sample with credit ratings in Table 6. Each equation includes tranche-type fixed effects, tranche-purpose fixed effects, and year fixed effects, and reported standard errors are clustered by borrower.

Column (1) of Table 5 presents estimates of Equation (1) using all observations for which all required data are not missing (6,350 loan facilities). In this column, the coefficient on the institutional dual holder indicator variable is 13.4, and is statistically significantly different from zero. This coefficient indicates that holding other things constant, loan facilities with institutional dual holder participation have spreads that are 13.4 basis points higher than other loan facilities. This spread difference is relatively large, given the average spread of 257.5 basis points, so the estimated dual holder premium equals 5.2% of the total spread.

The coefficients on the remaining variables, which control for other factors that potentially affect spreads, are consistent with the notion that spreads are a function of borrower and loan risk. Larger loan facilities with more participants, especially when the participants have past relationships with the borrowers, tend to be less risky and have lower spreads. Secured and second-lien facilities tend to be more risky, and hence have positive coefficients.[19] Z-Score has a negative coefficient and leverage a positive one, suggesting that riskier firms have higher spreads, and profitability in the form of industry-adjusted ROA, not surprisingly, lowers spreads. We also control for market-wide risk premia by including the high-yield credit spread, measured as the gap between the spread on AAA loan index and the spread on BB loan index in the month of loan origination. Not surprisingly, since our sample is relatively riskly leveraged loans, the high yield spread is positively related to the all-in-drawn spread.

In Column (2) of Table 5, we present estimates of Equation (1) for the subsample of revolvers, in Column (3) for all term loans, and in Column (4) for only the Term Loan B facilities. In each column, the coefficient on the institutional dual holder indicator variable is positive and statistically significantly different from zero. For revolvers, the coefficient on the dual holder indicator variable implies that loans from dual holders have 12.0 basis point higher spreads than other loans. For all term loans pooled (Column (3)), the premium is 16.5 basis points, and for just Term Loan B facilities, it is 17.7 basis points. These results imply that there is a positive premium for different types of loan facilities.

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[19] Security by itself lowers the risk of a loan. However, secured loans tend to be issued by younger, riskier firms with lower cash flows, so the positive relation with spreads likely reflects this additional risk. See Berger and Udell (1990) and Erel, Julio, Kim, and Weisbach (2012).

In these equations, we control for default risk based on accounting measures such as leverage and the firm's Z-Score. An alternative way of controlling for risk is to use the issuer's credit rating. Since credit ratings are constructed to measure firms' comprehensive default risk, it is likely a preferable approach. However, credit ratings are not available for all firms, so the use of credit ratings is limited to those firms that have them.

Table 6 presents coefficient estimates of Equation (1) for different credit ratings (Columns (1) through (5)) and for issuers of no credit ratings (Column (6)). Column (1) contains estimates for all facilities from issuers with credit ratings, including indicator variables for different rating categories. Columns (2), (3), (4), and (5) present estimates for BBB and above rated firms, BB-rated firms, B-rated firms, and CCC and below rated firms, respectively. As in Table 5, we include control variables for tranche and firm characteristics, tranche-type, tranche-purpose and year fixed effects. The reported standard error estimates are clustered by borrower.

In each column in Table 6, except Column (2), the coefficient on the dual holder indicator variable is positive and statistically significantly different from zero. For all firms with ratings (Column (1)), the estimates indicate that there is about an 11.0 basis point premium for dual holder facilities. This premium rises with the risk of the firms: It is an insignificant 5.8 basis points for firms rated BBB and higher, 12.0 basis points for BB-rated firms, 17.4 basis points for B-rated firms and 21.0 basis points for firms with ratings lower than CCC. In addition, for firms without ratings, there is a positive but not significant premium of 9.1 basis points to dual holders. These estimates suggest that this positive premium to equity holders who lend to their firms increases with the firm's default risk.

4.3. Do the Dual Holder Spread Premiums Reflect Unobservable Heterogeneity?

One possible interpretation of the results in Tables 5 and 6 is that there is some sort of heterogeneity that is unobservable to an outsider, but affects both the likelihood that an equity holder lends to the firm and also the spreads on the loans in which the dual holder participates. A potential source of such heterogeneity is the unobservable risk of the firms. If dual holders are more likely to lend in situations in which ratings understate true risks, then the premiums would reflect risk rather than

liquidity provision. A second potential source would be if dual holders are less likely to have covenants or other restrictions in their loan facilities, and the spread premium represents compensation to the lenders for having fewer rights than other lenders.[20] If equity holdings strengthen the relationship between lender and borrower, they could act in a similar manner to lending relationships and affect the optimal number of covenants to use in a loan.[21]

A method of measuring dual holder premiums that is unlikely to be affected by such unobserved firm heterogeneity comes from the relative pricing of different tranches within the same loan.[22] Since each tranche of a multiple tranche loan has the same seniority and covenants, the default risk of tranches and the creditor rights attached to the tranches in the same loan is essentially the same. Different tranches in the same loan will generally have different maturities and implicit options from one another that will affect their pricing. However, once these other differences are controlled for econometrically, the incremental effect of a dual holder on the relative pricing of tranches within a given loan should reflect the dual holder's impact. This approach will not be affected by unobservable firm-level heterogeneity causing a spurious relation between the dual holder's existence and the firm's risk.

Within-loan estimates can also help to distinguish between alternative explanations for the dual-holder premiums. Factors that affect firm-level value such as a change in ownership that is likely to reduce future conflicts between equity and debt holders, and/or a signal to the market that the quality of the firms' assets is high, should affect the spreads on all tranches of the loan similarly. In contrast, a systematic difference in the *relative* spread between different tranches that is a function of whether an equity holder participates in that tranche has to be a function of tranche-level rather than firm-level factors. One such possibility would be if different types of tranches have different liquidity and demand. For

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[20] Bradley and Roberts (2004) and Reisel (2010) estimate that, holding other factors constant, additional covenants lower the equilibrium interest rate paid by borrowers.

[21] The relation between lending relationships or equity holdings and covenant use is not clear theoretically. In principle, they could lower the marginal cost of monitoring and lead to more covenants, or increase the ability of lenders to extract rents through covenants, leading to fewer covenants. Prilmeier (2011) develops these hypotheses in the context of lending relationships and finds empirical support suggesting both effects are important.

[22] This approach was developed by Ivashina and Sun (2011a) and was recently adopted by Nadauld and Weisbach (2011).

example, commercial banks, typically the lead arrangers, hold the Term Loan A portion of the loan and sell the Term Loan B portion to non-commercial bank institutional investors. If the lead arranger is worried about being able to sell a particular Term Loan B tranche it can increase the spread, probably above the reservation price of equity holders, leading an institutional equity-holder to purchase part of that tranche. In this case, the dual holders are likely to receive an unusually high spread, measured relative to the Term Loan A tranche of the same loan.

To estimate the incremental effect of a dual holder on the differences in spreads between tranches of a given loan, we estimate the following equation:

$$SpreadGap = \alpha + \beta \cdot Dummy\,indicating\,which\,tranche\,the\,dual\,holder\,bought + \gamma \cdot X + \varepsilon \qquad (2)$$

where X includes differences in tranche-specific characteristics such as facility size, the number of participating lenders, maturity, and whether the tranche is secured by collateral, as well as firm-level characteristics and market-wide high-yield spread. The dependent variable in this equation is the difference between the spreads of different tranches within the same loan. The indicator variable denoting which tranche the dual holder bought measures the incremental effect on the spread gap of the dual holder's existence, and the control variables are intended to capture other differences between the tranches. We estimate these equations on the sample of loans that have multiple tranches of the type considered in that specification.[23]

Column (1) of Panel A of Table 7 presents estimates of Equation (2) for the subsample of 227 loans that have both Term Loan A and Term Loan B tranches. In this subsample, it was more common for the dual holder to participate in the Term Loan B portion of the loan than the Term Loan A portion: Of the 227 loans, there were 37 in which the dual holder participated in the Term Loan B tranche and only one in which he participated in the Term Loan A tranche. For this reason, we estimate the incremental effect of an equity holder participating in the Term Loan B portion of the loan.

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[23] We exclude cases in which dual holders exist in both types of tranches.

Term Loan B tranches tend to have a longer effective maturity than Term Loan A tranches because the majority of Term Loan B tranches are bullet while the majority of Term Loan A tranches are amortizing (see Appendix B). With a longer duration, Term Loan B tranches will have higher spreads regardless of whether there is a dual holder participating in the tranche. The hypothesis that dual holders are able to invest in the most attractive tranche implies that there should be an additional premium over the corresponding Term Loan A tranche for the Term Loan B tranches in which they invest. The coefficient estimates indicate the presence of a dual holder in the Term Loan B portion increases the difference in spreads between Term Loan B and Term Loan A tranches by 11.9 basis points. However, because of the relatively small number of cases with both tranche types present, the difference is not statistically significant at conventional levels.

There are 1,055 loans in our sample that have both a Term Loan B tranche and a revolver. Of these 1,055 cases, equity holding institutions participated in 71 of the Term Loan B tranches and five of the revolvers. We estimate Equation (2) on this subsample of loans, considering the effect of the dual holder purchasing the Term Loan B tranche in Column (2) and the effect of the dual holder purchasing the revolver in Column (3). The dependent variable in these equations is the difference in spreads between the Term Loan B tranche and the revolver. Therefore, the coefficient estimate of 28.3 on the dual holder variable in Column (2) implies that the spread between Term Loan B tranches and revolvers is by 28.3 basis points higher when a dual holder is present in Term Loan B. Similarly the coefficient estimate of -26.2 in on the dual holder variable in Column (3) implies that the spread difference is 26.2 basis points *lower* in the small number of cases in which the dual holder participates in the revolver. These estimates suggest that dual holders are more likely to participate in whichever tranche has the highest spread holding other factors constant.

A potentially cleaner test of the hypothesis that dual holders are able to invest in the most attractive tranches comes from cases in which the dual holder invests in one of multiple tranches of the same type in a particular deal. Our sample contains 100 such tranches, coming from 50 loans. In Panel B of Table 7 we estimate equations similar to Equation (1) on this subsample of loans. In Column (1) we

present estimates of Equation (1) without controlling for firm-level characteristics, since each pair of loans share the same firm-level fundamentals. In Column (2), we report estimates when controlling for firm-level characteristics to further deal with the possibilities that cross-sectional variation in firm characteristics across different pairs matters. Again, the coefficient estimate on the dual holder indicator variable is positive and statistically significantly different from zero, implying between a 30.7 and a 36.1 basis point premium to dual holders.

Finally, there are 322 cases in which a borrower issues two of the same tranche type in the same year, but not necessarily in the same deal. We re-estimate the equation for this subsample in Column (3) and (4) of Panel B of Table 7. For this subsample, the coefficient estimate is statistically significant and implies a positive dual holder premium of between 13.7 and 14.9 basis points.

Overall the results from Table 7, in which we compare tranches within a given loan, or across similar tranches from the same borrower within a short period of time, are consistent with the results in Table 6 that are based on comparisons across different loans. When an equity holding institution lends to the firm, it receives a premium on the particular tranche in which it chooses to participate. These premiums do not appear to be a result of unobserved heterogeneity across tranches in terms of their risk, or in terms of the rights of lenders through protective covenants.

5. Dual Holder Characteristics and Spreads

The within-loan results suggest that the dual holder premiums occur because of tranche-specific and not firm-specific factors. The most plausible explanation is that tranches in which equity holders participate appear to be relatively more difficult to market than the ones in which they do not participate. When institutional equity holders are relatively flexible in making their investment decisions, they can lend to a firm fairly quickly and are able to earn compensation for providing capital in these circumstances. This explanation implies that the types of institutions that are most flexible and can lend to a firm under these circumstances are most likely to earn premiums. In addition, when an institutional investor's personal incentives are strongest, he is most likely to seek out investment opportunities with

relatively high returns. Finally, when an investor owns a larger share of the firm's equity ownership, he is likely to be more influential or have more information inside the firm, and thus more able to earn premium by lending to it. We evaluate these predictions empirically in this section.

5.1. The Type of Institutional Dual Holder.

As documented in Table 4**,** there are a number of different types of institutional investors that invest in loan tranches. If institutional investors' incentives and their flexibility to make different kinds of investments relatively quickly are factors that lead to larger dual holder premiums, then we would expect hedge funds and private equity funds to be associated with relatively high premiums. Hedge funds and private funds provide very large direct and indirect incentives to their managers and are relatively unrestricted in the types of investments they can make.[24] Other asset managing funds also have strong pecuniary incentives, albeit not as strong as hedge fund and private equity fund managers. However, their investments are more often subject to various kinds of restrictions (e.g. diversification requirement). Finally, other institutions such as financing companies, investment banks and insurance companies tend to have lower monetary incentives than the other groups that are directly related to loan pricing. For example, insurance companies tend to focus on ensuring that their loan portfolio has the right term structure and risk profile, rather than seeking out unusual opportunities to achieve abnormal returns. Investment banks in our sample are often take the role of security broker whose major sources of profit consist of not only loan spreads, but also fees they receive in exchange for providing services to the borrower and other members of syndication.[25]

In Column (1) of Table 8, we re-estimate Equation (1) with the dual holders broken down by the type of institution. To do so, we include separate indicator variables for hedge funds and private equity

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[24] General partners of private equity and hedge funds receive direct incentives through carried interest that usually equals 20% of profits. In addition, they receive indirect incentives because their performance affects their future incomes. These indirect incentives are likely to be of similar magnitude as the direct incentives. [See Chung, Sensoy, Stern and Weisbach (2012) for estimates for private equity funds and Lim, Sensoy and Weisbach (2012) for estimates for hedge funds.]

[25] One concern about the dual holding investment banks is that it is possible that the equity and debt positions are controlled by different parts of the bank, and consequently have virtually nothing to do with one another. It is impossible to tell from our data exactly which part of the bank is controlling each investment. This issue is another reason why we estimate the premiums separately by type of dual holder in this section.

funds, other funds, and other institutional investors. The coefficient estimates indicate that the premium is substantially larger for hedge and private funds than for other types of funds. The coefficient on the indicator variable for hedge and private equity funds is 53.7, indicating that when these funds lend to their firms, they receive a 53.7 basis point premium over other non-dual holder facilities. The regression coefficients also indicate that other fund dual holders have a 27.7 basis point premium over other investors, while other institutional dual holders have just a 6.4 basis point premium. This pattern indicates that the type of institution clearly matters in the premium the dual holders receive when they lend. Hedge and private equity fund managers have substantially larger pecuniary incentives than other investors; they also receive better interest rates when they lend to their firms.

Column (2) of Table 8 includes indicator variables for each un-grouped type of institutional dual holder. Again, similar to the results in Columns (1), the coefficient estimates indicate that the type of institutional investors matters. The coefficient estimate on the hedge fund and private equity fund indicator variable is 36.9, while the coefficient estimates on the mutual funds and finance company dual holder indicator variables are 22.5 and 12.1, respectively. The coefficient estimates on other types of dual holders are not statistically significant or large in magnitude.

Columns (3) and (4) of Table 8 re-estimate this equation using just the loan facilities in which the dual holders have participated, omitting the "Other institutional dual holder" variable from the equation in Column (3), and the "Pension fund/CDO dual holder" variable in Column (4). Again, the hedge funds and private equity funds have a largest premium relative to other institutional dual holders (33.5 to 44.8 basis points). The other funds also do have a premium relative to the other institutions (16.4 basis points); however, it is substantially smaller than the premium for hedge and private equity funds. These results are consistent with hedge fund and private equity funds receiving the largest premiums relative to other loan participants when they lend to firms in which they hold equity positions.

5.2. *The Size of Dual Holder Equity Ownership.*

The extent to which institutional equity holders invest in loan facilities that have relatively high spreads also depends on the extent to which their equity position affords them informational or strategic

advantage inside the borrowing firm. Larger equity ownership implies that the investor will share a larger fraction of the gains created through a value-increasing loan, but also potentially increases the institution's ability to facilitate participation in the most attractive tranches. To evaluate the extent to which equity ownership influences their lending to their firms, we estimate the effect of the size of the equity ownership on the dual holder premium.

To do so, we re-estimate Equation (1) using two dual holder indicator variables, one of which measures that there is a dual holder with less than average (2.6%) equity holdings and the other which indicates that there is a dual holder with above average holdings. Columns (1) - (4) of Table 9 contain coefficient estimates for different types of tranches. The coefficients on these indicator variables represent the premiums for dual holders with small and large stakes for all tranche types, revolvers, all term loans, and only Term B facilities, respectively.

The premiums for large shareholdings range from 20.4 to 21.9 basis points, and the premiums for small shareholdings range from 8.5 to 15.8 basis points. For each type of tranche, the premium is higher for above average shareholdings than for below average shareholdings. This pattern indicates that dual holding premiums, in addition to being affected by the type of institution, are increasing in the equity ownership of the institution.

It is possible that these size effects are related to the type of institutional investor, since private equity funds and hedge funds have the largest premiums and also tend to have the largest holdings (4.3% compared to 2.5% for other dual holders). Therefore, we re-estimate this equation using separate controls for whether the dual holder is a hedge fund or private equity fund, and how this is affected by the fund's equity ownership. The results, presented in Column (5) of Table 9, indicate that the largest effect is the type of the fund, rather than the ownership of the fund. Hedge and private equity funds with small equity ownership stakes have a 38.2 basis point premium and those with large ownership stakes have a 46.0 basis point premium. These premiums are substantially larger than the 8.6 basis point and 17.1 basis point premiums for small and large shareholdings of non-hedge or private equity fund institutions.

5.3. The Proportion of the Loan Held by Dual Holders

If the dual-holder premiums represent compensation to equity holders for lending to the borrowing firms, then, within the sample of dual holder loans, this compensation should be higher when the firm would have had difficulties funding this particular facility absent the presence of dual holders. An additional prediction of this argument is that the spread should be higher when the dual holder provides a larger portion of the loan tranche. To evaluate this hypothesis, we estimate equations predicting the spread on a particular loan tranche as a function of the dual holder's loan share, as well as the control variables we have used throughout the paper. Data on the share of the loan contributed by each lender is available for only 301 dual holder loan tranches.[26] We present estimates of the way the spread is affected by the dual holder's contribution on this sample in Table 10.

The estimates indicate that larger positions in the loan are associated with larger spreads. The coefficient on the dual holder's share in the base-case specification (Column (1)) is 147.5, which is statistically significantly different from zero. This coefficient implies that for each additional percentage point of dual holder loan ownership, the spread increases by 1.47 basis points, or that for one standard deviation increase in loan share (12.5%, see Table 2), the spread increases by 18.4 basis points. Since it is possible that loan share is correlated with a lender's equity ownership, we include a variable indicating whether the equity ownership is above the mean ownership of 2.6% in Column (2) of Table 10. The results indicate that consistent with the results reported in Table 9, having above average equity ownership leads to a 17.7 basis-point increase in spreads; however the coefficient on the dual holder's loan share is essentially unchanged. Finally, in Columns (3) and (4) of Table 10, we replace the dual holder's loan share with a variable indicating whether the dual holder is the largest lender. The results reported in these columns indicate that a dual holder being the largest lender increases the spread by about 20 basis points. Overall, it appears that the size of the lender's share has a statistically significant and economically important effect on the tranche's spread.

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[26] Our test here is restricted on a sample of dual holder loans, since non-dual holder loans, by definition, do not have any dual holder loan share.

6. The Uses of Funds

The analysis so far suggests that the dual-holding premiums are most consistent with a story in which equity holders provide capital for tranches that are particularly hard to fund, and receive compensation for doing so in the form of a higher spread. Such premium will be even higher, if this hard-to-fund facility is also particularly important to the firm. The idea is that, if it is difficult to raise a specific tranche, firms will pay additional compensation for an equity holder to participate, provided that the capital has a valuable use that cannot be delayed to a point in time in the future when capital markets are potentially more liquid and it is unnecessary to pay an additional premium to acquire capital. This argument predicts that firms borrowing from dual holders will spend a higher proportion of the raised cash relatively quickly, rather than saving it as additional cash.

We test this prediction by estimating models similar to those in Kim and Weisbach (2008) that predict the uses of the funds raised in a particular time period following the capital raising. In particular, we estimate the following equation:

$$Y = \beta_0 + \beta_1 \ln\left[\left(\frac{\text{loan proceed}}{\text{total assets}_0}\right) + 1\right] + \beta_2 \ln\left[\left(\frac{\text{loan proceed}}{\text{total assets}_0}\right) + 1\right] \times \text{Dual Holding Indicator}$$

$$+ \beta_3 \text{Dual Holding Indicator} + \beta_4 \ln\left[\text{total assets}_0\right] + \sum_{i=1997IQ}^{2007IVQ} \theta_i \text{Year - Qtr} + \varepsilon, \tag{3}$$

where $Y = ln[(V_t - V_0)/\text{total assets}_0]+1]$ for V = cash holdings and total assets, and $Y = ln[(\sum_{i=1}^{t} V_i)/\text{total assets}_0]+1]$ for V = capital expenditure, acquisition, R&D, and long-term debt reduction, and t=1, 2, 3, 4 quarters subsequent to the loan issuance quarter.

We present estimates of Equation (3) in Table 11. We present the coefficient estimates for β_1 and β_2 for the sake of brevity. Each row of this table represents a regression predicting a different possible use of the capital that is raised in a specified time period. For example, the top row predicts the change in cash

during the first quarter following the capital raising, the second, the change in cash during the four quarters following the capital raise, and the third row the change in cash during the eight quarters following the capital raising. In the first row, the positive coefficient on β_1 means that a portion of capital raised is used to increase cash holdings in the first quarter following a loan. However, the negative coefficient on β_2 implies that the fraction of loan used to increase cash holdings is smaller for firms that raised capital through at least one dual holder tranches. The final two columns transform the coefficients into the predicted quantity of cash saved from an additional dollar raised by a median-sized firm.[27] These estimates suggest that, depending on the window used to measure the change in cash holdings, cash increases at non-dual holder firms by between 20 and 29 cents for every dollar raised, while at dual holder firms, the increase is only between 1 and 3 cents for every dollar raised.

The implication of these results is that firms with dual holder lenders appear to spend virtually all of the capital they raise, while firms with non-dual holder lenders save between 20 and 29 cents of each dollar raised as cash. The remaining rows of Table 11 attempt to gauge the types of use for which dual holder firms tend to use the cash. These estimates are somewhat inconclusive, with total assets increasing and long-term debt is reducing at all sample firms, with a somewhat larger effect for firms using dual holder lenders. Nonetheless, these results suggest that firms with dual holder lenders spend the capital they raise more quickly than non-dual holder firms, consistent with the view that capital raising was particularly important at the firms that had equity-holder participation in their loans.

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[27] The calculations are based on a median-sized firm in the sample using Year and Quarter fixed effects for 3Q2003. For example, the dollar changes in cash for t=1 is calculated as follows: Median loan proceeds are 150 and median total assets prior to the loan issuance are 790. The estimates for β_2 and β_3 are 0.063 and 0.001, respectively, and the constant term reflecting 3Q2003 is 0.007. Using these numbers together with coefficients from Table 11 yields a predicted change of 40.37 in cash for non-dual holder lenders and a predicted change of 62.54 in cash for dual holder lenders. Then we add one to median loan proceed and repeat the above procedure, which results in a predicted change of 40.57 for non-dual holder lenders and 62.55 for dual holder lenders. The difference in the two predicted changes represents the dollar change in cash for one unit increase in loan proceed, which equals 0.20 for non-dual holder lenders and 0.01 for dual holder lenders.

7. Conclusion

Participation by equity-holding institutions has become a major part of the syndicated loan market. In our sample of 11,137 institutional "leveraged" loan tranches between 1997 and 2007 from the *DealScan* database, 2,008 (18%) have participation by a "dual holder" institution that owns at least 0.1% of the borrowing firm's equity. Lending to firms in which one has an equity position goes against the principle of diversification, since it exposes the investor to firm-specific shocks through both its equity and debt ownership. To justify dual holding, the investor must receive compensation of some sort, either through the improvements in the value of its equity holdings, or by above market rates of return on the loan.

We estimate the abnormal return a dual holder receives by comparing spreads on dual holder tranches to those on observationally equivalent tranches that do not have a dual holder. Our estimates indicate, holding all else equal, that loan tranches with dual holder participation receive a 13 basis-point higher spread than otherwise similar tranches without an equity holder's participation in the lending syndicate. The positive spread is statistically and economically significant for revolvers as well as term loans, and for loans to borrowers of different ratings and to unrated borrowers as well.

It is possible that the equity holding by an institutional investor is correlated with other, potentially unobservable factors related to the loan tranche spread, which could drive the spread premiums. For example, suppose that the risk of the particular tranches for which equity holders tend to invest tends to be higher than is reflected in their ratings. We address the possibility that these spread differences in spreads could reflect unobservable sources of risk by considering differences in spreads across tranches of the same loan. Since different tranches of the same loan share the same underlying risk and have the same seniority, unobservable differences in risk cannot explain differences in spreads of tranches of the same loan. Because factors such as maturity and implicit options affect the spreads of different types of tranches, we test whether the existence of a dual holder affects the *relative* difference in spreads, holding other factors constant. Our results suggest that in a loan with both a Term Loan B and a revolver, if a dual holder invests in a Term Loan B tranche, the spread between the two is higher than

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would be expected absent dual holder participation, while if the dual holder invests in the revolver, the spread is lower than expected. In the subsample of dual holder loans that have multiple tranches of the same type, the tranches with dual holder participation have higher spreads than the tranches without dual holder participation.

These results are not consistent with the view that dual holder premiums reflect unobservable risk. Instead, they suggest that equity holders receive additional compensation in terms of additional returns when they lend to firms for which they hold equity positions. There are several channels that would lead to these additional returns. It is possible that common ownership of equity and debt could reduce conflicts of interest between claimholders, leading to improved firm-level investment, or that participation by an equity holder could certify a firm's quality to outside investors. However, these arguments predict that returns to all tranches of a loan will be higher, and do not explain differences in returns between tranches of the same loan. The within-loan results are better explained by a story in which equity holders receive compensation for participating in tranches that are relatively difficult to fill at times when it particularly important for the firm.

An implication of this argument is that the equity holders with the largest monetary incentives and the flexibility to make loans quickly will receive higher premium. Our results suggest that there are large differences in premiums going to different types of dual holders. When private equity and hedge funds are dual holders, they have a 54 basis-point premium over other loans when other kinds of money managing funds are dual holders, the premium is 28 basis-points, and when all other types of institutional investors are dual holders, the premium is only 6 basis points. Since incentives to maximize returns from holding multiple securities of the same firm are substantially higher in private equity and hedge funds than in other institutions, these large differences reinforce our interpretation of the premium as reflecting equity holding institutions utilize their position inside the borrowing firms when they lend to their firms. In addition, spreads are higher when the investor has a larger equity position in the firm, and when it purchases a larger portion of the loan.

Institutional investors, especially private equity and hedge funds, have become substantial equity holders in corporations. In addition, they are important lenders to corporations through their role in the syndicated loan market. In principle, institutions could use one type of investment to improve returns in their other investments. The evidence in this paper suggests that their substantial equity stakes can lead these investors to obtain higher interest rates than other investors when they lend to the companies in which they hold equity. By comparing spreads across loan tranches of the same loan, we can rule out explanations for this finding coming from unobserved heterogeneity coming from risk or other loan features being associated with dual holders.

The basic point, however, is that there can be interactions among different investments by one financial institution in a particular firm. These interactions can potentially create efficiencies and rents that can be captured by one party or other. Understanding the way in which institutional investors utilize different types of investments to benefit their overall returns would be an excellent topic for future research.

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Figure 1. Par Amount of Outstanding US Leveraged Loans

This figure presents the overall size of the U.S. leveraged loan market over the period 1996 to September of 2010. Par amount of outstanding U.S. leveraged loans in billion dollars is plotted. Numbers are from S&P / LCD.
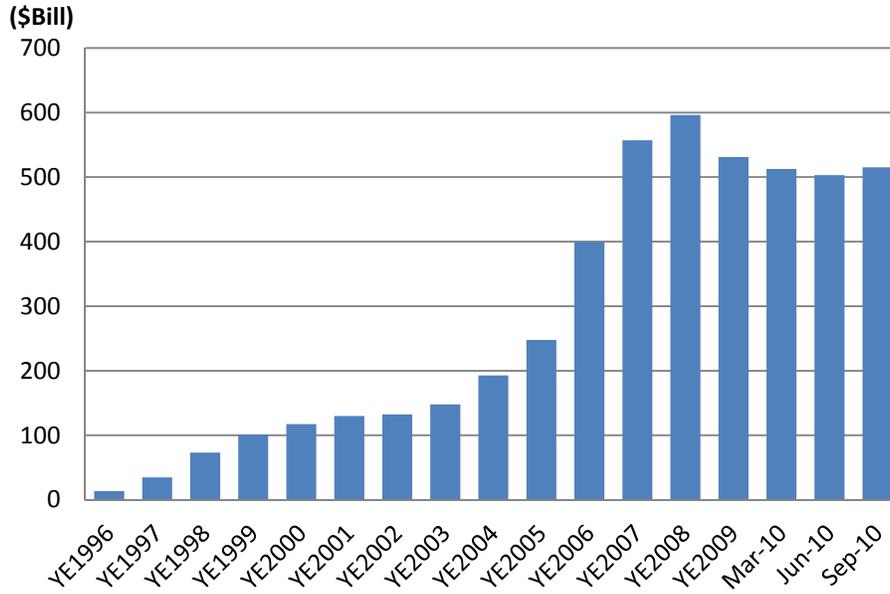
Figure 2. Institutional Participation in Leveraged Loan Facilities

This figure presents the proportion of leveraged loan facilities with institutional participation over the period 1997 to 2007. The solid line and the dotted line represent the proportion of loan facilities that have non-commercial bank participation and non-commercial bank major participation, respectively, among 20,031 leveraged loan facilities in our sample. The dashed line represents the proportion of loan facilities that involve only commercial banks.
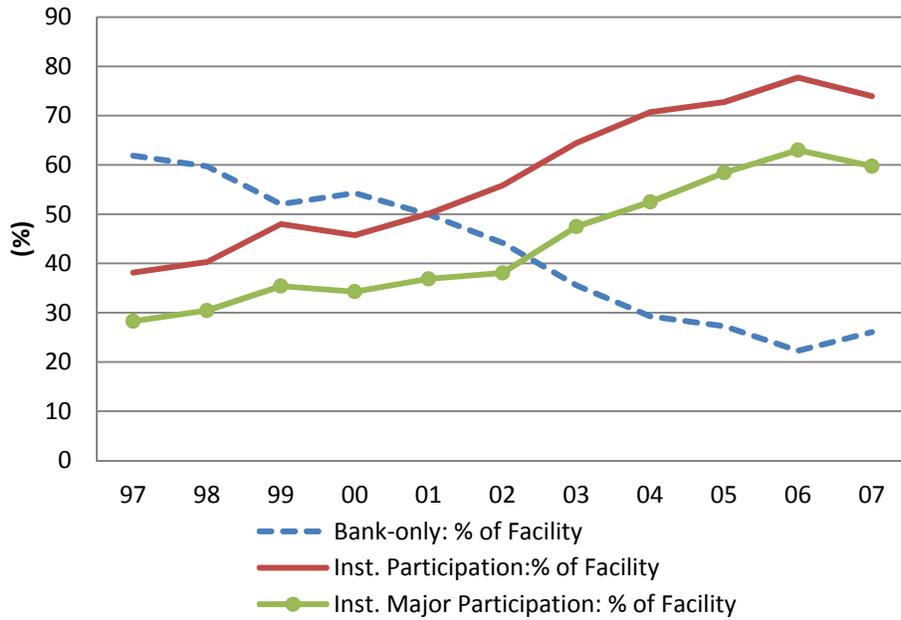
Figure 3. Dual Holdings by Institutional Investors

This figure presents proportion of dual holder loan facilities over the period 1997 to 2007. The solid line and the dotted line represent the proportion of dual holder loan facilities among all leveraged loan facilities (20,031 loan facilities) and among institutional leveraged loan facilities (11,137 loan facilities) in our sample, respectively.
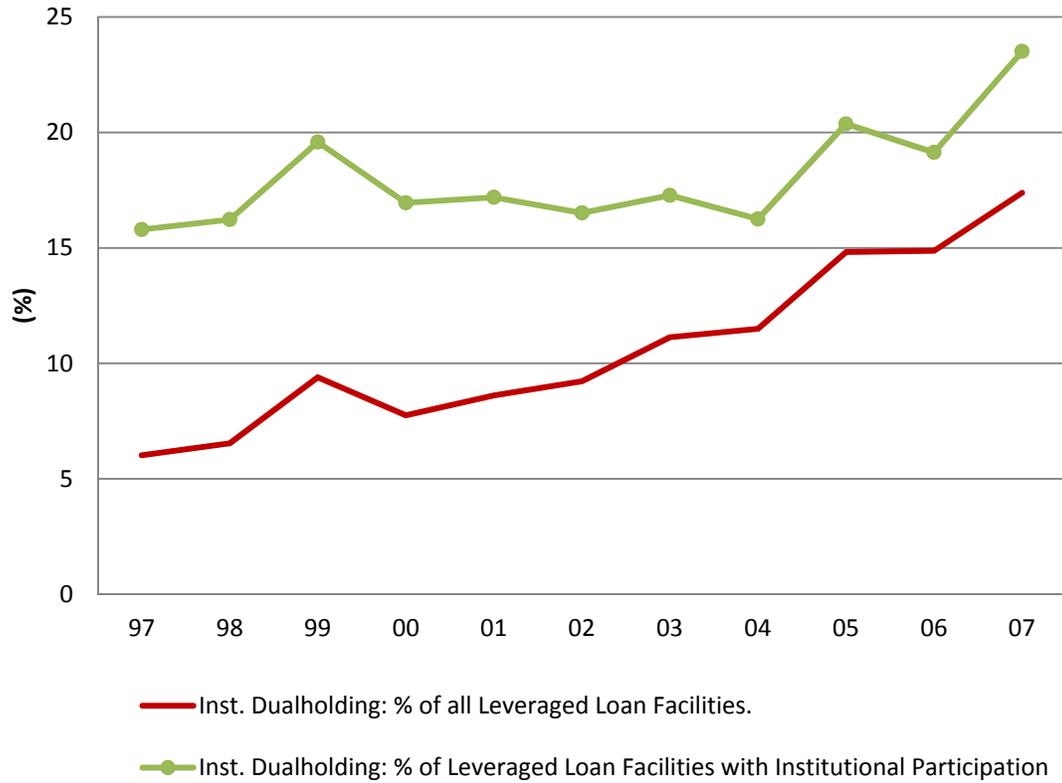
Table 1. Trends in Institutional Participation in Leveraged Loans and Dual Holdings

Panel A and Panel B present the distribution of loan origination during 1997-2007 by number and dollar value, respectively. Column (1) reports the total number (value) of all leveraged loan facilities from *DealScan* database. Column (2) reports the total number (value) of loan facilities in which only commercial banks participated. Columns (3) and (4) report the total number (value) of loan facilities in which at least one institutional investor is a participant and a major participant of a loan syndicate, respectively. Column (5) reports the total number (value) of loan facilities in which an institution is involved as a dual holder.

Panel A: Number of Loan Facilities

Year of Origination	Number of All Leveraged Loan Facilities	Number of Bank-only Facilities (% of all facilities)	Number of Institution-participated Facilities (% of all facilities)	Number of Facilities with Major Participation by Institutions (% of all facilities)	Number of Facilities with at least one Insitutional Dual Holder (% of institutional loans)	
	(1)	(2)	(3)	(4)	(5)	
1997	2,706	1,674 (61.9)	1,032 (38.1)	765 (28.3)	163 (6.0)	(15.8)
1998	2,264	1,352 (59.7)	912 (40.3)	689 (30.4)	148 (6.5)	(16.2)
1999	1,915	996 (52.0)	919 (48.0)	678 (35.4)	180 (9.4)	(19.6)
2000	1,780	966 (54.3)	814 (45.7)	610 (34.3)	138 (7.8)	(17.0)
2001	1,777	887 (49.9)	890 (50.1)	655 (36.9)	153 (8.6)	(17.2)
2002	1,800	795 (44.2)	1,005 (55.8)	685 (38.1)	166 (9.2)	(16.5)
2003	1,778	632 (35.5)	1,146 (64.5)	844 (47.5)	198 (11.1)	(17.3)
2004	1,818	532 (29.3)	1,286 (70.7)	954 (52.5)	209 (11.5)	(16.3)
2005	1,626	443 (27.2)	1,183 (72.8)	950 (58.4)	241 (14.8)	(20.4)
2006	1,365	304 (22.3)	1,061 (77.7)	860 (63.0)	203 (14.9)	(19.1)
2007	1,202	313 (26.0)	889 (74.0)	718 (59.7)	209 (17.4)	(23.5)
Total	20,031	8,894 (44.4)	11,137 (55.6)	8,408 (42.0)	2,008 (10.0)	(18.0)

Panel B: Value of Loan Facilities (in $ billions)

| Year of Origination	Value of All Leveraged Loan Facilities	Value of Bank-only Facilities (% of all facilities)	Value of Institution-participated Facilities (% of all facilities)	Value of Facilities with Major Participation by Institutions (% of all facilities)	Value of Facilities with at least one Insitutional Dual Holder (% of institutional loans)	
1997	322	80.3 (24.9)	242 (75.2)	192 (59.6)	79.2 (24.6)	(32.7)
1998	269	69.5 (25.8)	200 (74.3)	166 (61.7)	58.1 (21.6)	(29.1)
1999	268	57.2 (21.3)	211 (78.7)	170 (63.4)	82.1 (30.6)	(38.9)
2000	241	70.4 (29.2)	171 (71.0)	129 (53.5)	45.4 (18.8)	(26.5)
2001	271	52.7 (19.4)	218 (80.4)	174 (64.2)	73.2 (27.0)	(33.6)
2002	243	37.9 (15.6)	205 (84.4)	156 (64.2)	60.9 (25.1)	(29.7)
2003	268	35.7 (13.3)	233 (86.9)	185 (69.0)	83 (31.0)	(35.6)
2004	341	35.5 (10.4)	305 (89.4)	246 (72.1)	82.4 (24.2)	(27.0)
2005	368	44.4 (12.1)	324 (88.0)	275 (74.7)	96.3 (26.2)	(29.7)
2006	380	39.8 (10.5)	340 (89.5)	300 (78.9)	103 (27.1)	(30.3)
2007	393	39.8 (10.1)	354 (90.1)	315 (80.2)	121 (30.8)	(34.2)
Total	3,370	563.0 (16.7)	2,800 (83.1)	2,310 (68.5)	885 (26.3)	(31.6)

Table 2. Summary Statistics

This table presents sample summary statistics for leveraged loan facilities with institutional participation from the *DealScan* database, occurring between 1997 and 2007. The total number of such loan facilities with a full set of matched information from various data sources is 6,350. Definitions of the variables are provided in the Appendix A. All variables are winsorized at the 1% and 99% level.

	N	Mean	25th Pct.	Median	75th Pct.	Std. Dev.
Dual Holdings						
Dual holdings indicator	6,350	0.240	0.000	0.000	0.000	0.427
Dual holder's equity holding (conditonal on dual holding)	1,523	0.026	0.003	0.012	0.029	0.041
Dual holder's loan share (conditonal on dual holding)	301	0.129	0.057	0.096	0.150	0.125
Dual holder is the largest lender (conditonal on dual holding)	301	0.326	0.000	0.000	1.000	0.469
Loan Characteristics						
Facility amount ($MM)	6,350	250.0	50.0	150.0	300.0	309.0
Number of participating lenders	6,350	9.453	3.000	7.000	13.000	8.611
% of participating lender with past relationship	6,350	0.340	0.000	0.250	0.600	0.344
Maturity (months)	6,350	52.32	36.00	60.00	66.00	22.61
Secured indicator	6,350	0.736	0.000	1.000	1.000	0.441
Secondlien indicator	6,350	0.017	0.000	0.000	0.000	0.129
Number of finanacial covenants	6,350	2.125	0.000	2.000	3.000	1.585
Number of non-financial covenants	6,350	2.839	1.000	4.000	5.000	2.115
Revolver indicator	6,350	0.585	0.000	1.000	1.000	0.493
Allindrawn	6,350	257.5	162.5	225.0	325.0	138.5
Firm Characteristics						
Total Assets ($MM)	6,350	2,649	301	790	2,129	5,067
Fixed assets/total assets	6,350	0.337	0.135	0.283	0.501	0.240
Zscore	6,350	2.534	1.063	2.091	3.296	2.890
Leverage	6,350	0.671	0.477	0.633	0.800	0.331
Ind.adj. ROA	6,350	-0.075	-0.106	-0.034	0.009	0.182
Number of analyst following	6,350	5.526	1.000	4.000	8.250	5.420
Institutional holdings	6,350	0.492	0.186	0.522	0.769	0.330
Have S&P issuer rating	6,350	0.648	0.000	1.000	1.000	0.478
S&P issuer rating (conditional on having rating)	4,116	9.938	9.000	10.000	11.000	2.703

Table 3. Differences in Attributes of Dual Holder Loan Facilities and Non-Dual Holder Loan Facilities

This table shows the differences in various attributes between dual holder loan facilities and non-dual holder loan facilities in our sample. Definitions of the variables are provided in the Appendix A. The total number of loan facilities in our sample is 11,137, including 2,008 dual holder loans and 9,129 non-dual holder loans. Panel A, B, and C present the differences in the type of tranche purchased, issuer credit rating, and other loan characteristics, respectively.

Panel A.

Facility Type	Dual Holder Loans (1)		Non-Dual Holder Loans (2)		Diff (1) - (2)
	N	Mean	N	Mean	Diff. (t-value)
% of Revolver	2,008	52.3%	9,129	55.7%	-3.4% (2.74***)
% of Term Loan A	2,008	6.3%	9,129	6.9%	-0.6% (0.93)
% of Term Loan B	2,008	41.3%	9,129	37.4%	3.9% (3.29)***

Panel B.

S&P Issuer Credit Rating	Dual Holder Loans (1)		Non-Dual Holder Loans (2)		Diff (1) - (2)
	N	Mean	N	Mean	Diff. (t-value)
% of having issuer ratings	2,008	82.5%	9,129	51.6%	30.9% (-26.13)***
% of BBB (conditional on having ratings)	1,657	15.3%	4,709	9.1%	6.2% (7.03)***
% of BB (conditional on having ratings)	1,657	47.9%	4,709	41.3%	6.6% (4.67)***
% of B (conditional on having ratings)	1,657	29.0%	4,709	39.8%	-10.8% (-7.90)***
% of CCC and below (conditional on having ratings)	1,657	4.6%	4,709	8.5%	-3.8% (-5.08)***

Panel C.

Facility Attributes	Dual Holder Loans (1)		Non-Dual Holder Loans (2)		Diff (1) - (2)
	N	Mean	N	Mean	Diff. (t-value)
Facility Amount ($MM)	2,008	461.0	9,129	212.0	249.0 (23.00)***
Number of participating lenders	2,008	14.089	9,129	8.285	5.805 (21.73)***
Maturity (Months)	2,008	58.41	9,129	52.54	5.87 (9.47)***
Secured Indicator	2,008	0.662	9,129	0.715	-0.053 (-4.49)***
Second-lien Indicator	2,008	0.014	9,129	0.024	-0.010 (-2.55)*

Table 4. Type of Dual Holders

This table reports selected statistics on the types of institutional investors who are dual holders. Columns (1) and (2) report the number and amount of loan facilities with each type of institutional dual holders. The number of loan facilities in Column (2) sums to 2,399, which is greater than the total number of dual holder loan facilities in our sample, because a loan facility can have more than one type of institutional investor as a dual holder. Columns (3) and (4) present the frequency of participating in revolvers and Term B tranches by type of dual holders, respectively. Columns (5) and (6) report the average dollar amount and syndicate size of loan facilities in which each type of dual holder is involved, respectively. The last Column (7) presents the average equity holdings of each type of dual holders.

Type of Dual Holder	Total number of dual holding loans involved (1)	Total amount of dual holding loans involved ($MM) (2)	Fraction Revolver (3)	Fraction TermB (4)	Average facility amt. ($MM) (5)	Average number of participants (6)	Average equity hldg. (%) (7)
Investment bank	1,215 (60.5%)	507,070 (64.3%)	0.576	0.361	417.0	11.6	2.45
Finance company	497 (24.8%)	240,205 (30.4%)	0.616	0.324	483.0	17.2	2.92
Mutual funds	436 (21.7%)	133,571 (16.9%)	0.271	0.677	306.0	18.4	4.25
Hedge funds/ Private Equity funds	106 (5.3%)	34,163 (4.3%)	0.217	0.755	322.0	19.3	4.31
Insurance company	90 (4.5%)	36,392 (4.6%)	0.167	0.800	404.0	22.7	4.08
Others (Pension funds/ CDOs)	50 (2.5%)	14,090 (1.8%)	0.080	0.920	282.0	28.7	3.01

Table 5. Do Dual Holder Loan Facilities Have Higher Spreads?

This table presents the OLS regression coefficient estimates of Equation (1) and corresponding *p-values*. Definitions of all variables are provided in the Appendix A. The dependent variable is the all-in-drawn loan spread over LIBOR in basis points, and the analysis is conducted at the loan facility level. Column (1) employs the full sample. The number of loan facilities for which all required data are not missing is 6,350. Columns (2)-(4) employ the subsamples of revolvers, all term loans, and just the Term Loan B facilities, respectively. All specifications include tranche-purpose fixed effects and year fixed effects. The specification in Column (1) additionally includes tranche type fixed effects, because it considers the full sample of all tranche types. Standard errors are clustered at the borrowing firm level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Var.: All-in-drawn spread	All Tranche Types Sample		Revolver Sample		All Term Loan Sample		Term B Sample	
	(1)		(2)		(3)		(4)	
	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)
Institutional Dual Holding Indicator	13.380***	(0.000)	11.996***	(0.002)	16.549***	(0.002)	17.695***	(0.003)
Log(Facility amount)	-23.756***	(0.000)	-30.700***	(0.000)	-15.903***	(0.000)	-17.370***	(0.000)
Log(Number of participating lenders)	-20.621***	(0.000)	-13.468***	(0.000)	-27.378***	(0.000)	-28.261***	(0.000)
% of participating lenders with past relationship	-14.301***	(0.002)	-5.581	(0.212)	-26.864***	(0.000)	-29.747***	(0.000)
Log(Maturity)	-13.151***	(0.000)	-13.431***	(0.000)	-15.095**	(0.016)	-12.789**	(0.049)
Secured Indicator	46.118***	(0.000)	54.327***	(0.000)	33.237***	(0.000)	33.225***	(0.000)
Second-lien Indicator	288.859***	(0.000)	265.706***	(0.000)	288.519***	(0.000)	283.738***	(0.000)
Covenants Indicator	-4.902	(0.412)	-11.723**	(0.047)	2.220	(0.809)	6.647	(0.471)
Log(Total assets)	0.767	(0.690)	2.245	(0.278)	-1.657	(0.580)	-0.595	(0.852)
Fixed assets/total assets	6.414	(0.387)	-0.617	(0.934)	13.011	(0.286)	10.649	(0.414)
Z-score	-2.555***	(0.001)	-2.461***	(0.004)	-2.768**	(0.027)	-3.210**	(0.019)
Leverage	16.403**	(0.020)	21.134***	(0.003)	6.789	(0.515)	6.425	(0.567)
Ind-adj. ROA	-96.577***	(0.000)	-89.911***	(0.000)	-102.053***	(0.000)	-104.075***	(0.000)
Log(Number of analyst following)	-9.789***	(0.001)	-7.138**	(0.011)	-13.507***	(0.003)	-14.269***	(0.003)
Institutional holdings	-17.985***	(0.005)	-18.015***	(0.003)	-19.758**	(0.042)	-14.496	(0.162)
High-yield spread	0.147***	(0.000)	0.115***	(0.000)	0.191***	(0.000)	0.211***	(0.000)
Term A Indicator					-23.677***	(0.000)		
Number of obs.	6,350		3,713		2,637		2,232	
Adjusted R2	0.516		0.493		0.484		0.473	

Table 6. Is the Dual Holder Increase in Spreads Driven by Issuer Credit Rating?

This table presents the OLS regression coefficient estimates of Equation (1) and corresponding *p-values* for different credit ratings and for issuers of no credit ratings. Definitions of all variables are provided in the Appendix A. The dependent variable is the all-in-drawn loan spread over LIBOR in basis points, and the analysis is conducted at the loan facility level. Column (1) contains estimates for all facilities from issuers with credit ratings, including indicator variables for different rating categories. Columns (2)-(5) present estimates for BBB and above rated firms, BB-rated firms, B-rated firms, and CCC and below rated firms, respectively. Column (6) presents estimates for issuers with no credit ratings. All specifications include tranche-type fixed effects, tranche-purpose fixed effects and year fixed effects. Standard errors are clustered at the borrowing firm level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Var.: All-in-drawn spread	All Rating Sample		BBB and Above Sample		BB-rated Sample		B-rated Sample		CCC and Below Sample		No Issuer Rating Sample	
	(1)		(2)		(3)		(4)		(5)		(6)	
	coef.	(p-val)	coef	p-value	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)
Institutional Dual Holding Indicator	10.998***	(0.001)	5.806	(0.492)	12.037***	(0.004)	17.424***	(0.005)	21.022	(0.411)	9.085	(0.291)
Log(Facility amount)	-18.812***	(0.000)	-7.960	(0.154)	-14.965***	(0.000)	-17.753***	(0.000)	-40.183***	(0.000)	-25.469***	(0.000)
Log(Number of participating lenders)	-15.867***	(0.000)	-18.499***	(0.008)	-17.294***	(0.000)	-15.777***	(0.000)	3.328	(0.762)	-19.503***	(0.000)
% of participating lenders with past	-15.552***	(0.001)	-11.924	(0.349)	-14.355***	(0.006)	-22.272***	(0.006)	-28.762	(0.233)	-23.748***	(0.002)
Log(Maturity)	-10.676***	(0.002)	2.029	(0.720)	1.052	(0.822)	-36.054***	(0.000)	-31.764**	(0.017)	-13.416***	(0.007)
Secured Indicator	36.970***	(0.000)	46.507***	(0.000)	41.924***	(0.000)	6.377	(0.543)	53.289**	(0.012)	30.397***	(0.000)
Second-lien Indicator	253.937***	(0.000)	300.883***	(0.000)	218.898***	(0.000)	253.756***	(0.000)	204.079***	(0.000)	295.445***	(0.000)
Covenants Indicator	-1.631	(0.765)	-16.450	(0.120)	-10.865	(0.103)	29.186**	(0.016)	14.450	(0.455)	-6.426	(0.435)
Log(Total assets)	6.843***	(0.000)	9.746*	(0.076)	3.731	(0.151)	7.177**	(0.022)	7.787	(0.364)	-4.652	(0.115)
Fixed assets/total assets	4.869	(0.457)	19.962	(0.274)	-6.476	(0.420)	9.665	(0.389)	-22.904	(0.481)	9.892	(0.374)
Leverage	11.540**	(0.042)	-2.459	(0.911)	19.350**	(0.019)	10.773	(0.216)	13.709	(0.498)	19.265**	(0.025)
Ind-adj. ROA	-61.594***	(0.000)	-67.986	(0.368)	-114.809***	(0.000)	-77.748***	(0.001)	69.304**	(0.032)	-91.837***	(0.000)
Log(Number of analyst following)	-4.608*	(0.056)	-9.074	(0.109)	-4.618	(0.142)	-4.434	(0.266)	9.839	(0.458)	-8.219**	(0.049)
Institutional holdings	-13.953**	(0.010)	0.003	(1.000)	-17.236**	(0.022)	-13.798	(0.109)	-33.133	(0.377)	-7.215	(0.490)
High-yield spread	0.163***	(0.000)	0.161*	(0.086)	0.174***	(0.000)	0.165***	(0.006)	-0.004	(0.976)	0.112**	(0.043)
BB-rated Indicator	33.838***	(0.000)										
B-rated Indicator	81.941***	(0.000)										
CCC and below-rated Indicator	138.127***	(0.000)										
Number of observations	5,426		671		2,397		2,010		348		2,989	
Adjusted R2	0.566		0.393		0.495		0.439		0.429		0.480	

Table 7. Is the Dual Holder Increase in Spreads Driven by Unobservable Heterogeneity across Firms?

Panel A of this table presents the OLS regression coefficient estimates of Equation (2) and corresponding *p-values* on the sample of loans that have multiple tranches. Definitions of all variables are provided in the Appendix A. The dependent variable is the spread gap between different tranches *within* the same loan in basis points. The dummy variable indicating which tranche the dual holder bought measures the incremental effect on spreads of the dual holder's existence, and the control variables are intended to capture other differences between the tranches. Column (1) of Panel A presents estimates for the subsample of 227 tranche pairs that have both Term Loan A and Term Loan B tranches, and Columns (2) and (3) present estimates for the subsample of 1,055 tranche pairs that have both a Term Loan B tranche and a revolver. Panel B of this table presents the OLS regression coefficient estimates of Equation (1) and corresponding *p-values* on the sample of dual holder loans and the matched non-dual holder loans of the same tranche type. Column (1) employs 50 loans (100 facilities) that have both a dual holder loan and a non-dual holder loan of the same tranche type. Column (3) considers 161 pairs (322 facilities) of a dual holder loan and a non-dual holder loan of the same tranche type issued by the same borrower in the same year, but not necessarily in the same deal. Number of observations drops in Column (3) and (4), as we require firm-level information. All specifications include tranche-purpose fixed effects and year fixed effects. All regressions in Panel B additionally include tranche type fixed effects. Standard errors are clustered at the borrowing firm level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Within Deal Spreads Gap between Tranches

Dependent Var.: Within Deal Spread Gap between Tranches	(TermB - TermA) Spread in the Same Deal		(TermB - Revolver) Spread in the Same Deal		(TermB - Revolver) Spread in the Same Deal	
	(1)		**(2)**		**(3)**	
	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)
Dual Holder Bought TermB	11.860	(0.368)	28.270***	(0.007)		
Dual Holder Bought Revolver					-26.188*	(0.089)
Log(Facility amount)_Gap	-1.845	(0.845)	-16.215***	(0.000)	-16.115***	(0.000)
Log(Number of participating lenders)_Gap	-23.144*	(0.062)	-23.990**	(0.013)	-21.421**	(0.029)
% of participating lenders with past relationship_Gap	-16.210	(0.583)	-0.989	(0.964)	-9.485	(0.645)
Log(Maturity)_Gap	-12.887	(0.793)	-9.255	(0.301)	-8.100	(0.362)
Secured_Gap	68.940*	(0.064)	-14.457	(0.392)	-14.634	(0.381)
Second-lien_Gap	166.872***	(0.009)	320.408***	(0.000)	319.388***	(0.000)
High-yield spread	0.100	(0.254)	-0.052	(0.409)	-0.059	(0.348)
Firm-level characteristic control	Yes		Yes		Yes	
Number of observations	227		1,055		1,055	
Adjusted R2	0.365		0.293		0.290	

Panel B: Differences in Spreads between Dual Holder Loans and Matching Non-Dual Holder Loans

Matching Dependent Var.: All-in-drawn spread	Same Tranche Type Within the Same Deal				Same Tranche Type to the Same Borrower in the Same Year			
	(1)		**(2)**		**(3)**		**(4)**	
	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)
Institutional Dual Holding Indicator	36.073**	(0.038)	30.715*	(0.062)	14.876**	(0.025)	13.745*	(0.088)
Log(Facility amount)	2.703	(0.867)	-15.096	(0.493)	-26.224***	(0.001)	-18.981*	(0.071)
Log(Number of participating lenders)	-36.432*	(0.062)	-34.289	(0.172)	-30.891***	(0.006)	-20.097	(0.156)
% of participating lenders with past relationship	-29.591	(0.549)	-4.477	(0.917)	-23.733	(0.330)	35.384	(0.278)
Log(Maturity)	-1.849	(0.941)	9.192	(0.594)	-19.427	(0.112)	-13.204	(0.450)
Secured Indicator	57.307**	(0.021)	9.648	(0.670)	30.398	(0.132)	49.581***	(0.009)
Second-lien Indicator	-75.137	(0.174)	562.962***	(0.000)	259.985***	(0.000)	297.765***	(0.000)
High-yield spread	-0.096	(0.730)	0.423	(0.308)	-0.377	(0.576)	0.441	(0.504)
Firm-level characteristic control	No		Yes		No		Yes	
Number of observations	100		76		322		226	
Adjusted R2	0.545		0.760		0.438		0.535	

Table 8. Does the Type of Dual Holder Affect the Loan Facility Pricing?

This table presents the OLS regression coefficient estimates of Equation (1) and corresponding *p-values*, with the dual holders broken down by the type of institution. Definitions of all variables are provided in the Appendix A. The dependent variable is the all-in-drawn loan spread over LIBOR in basis points, and the analysis is conducted at the loan facility level. In Columns (1) and (3) dual holders are classified into three different groups: *HF/PE Dual holder, Other Fund Dual holder,* and *Other Institutional Dual holder. HF/PE Dual holder* indicates that the institutional type of a dual holder is a hedge fund, a private equity fund, or other vulture fund. *Other Fund Dual holder* indicates the cases in which a mutual fund, a pension fund, or a CDO participated as a dual holder. *Other Institutional Dual holder* indicates the cases in which a financing company, insurance company, or an investment bank participated as a dual holder. In Column (2) and Column (4) each type of dual holders is considered separately. Columns (1) and (3) employ all loan facilities in our sample for which all required data are not missing (6,350 loan facilities), whereas Column (2) and (4) present estimates for the subsample of loans in which the dual holders have participated. All specifications include tranche-type fixed effects, tranche-purpose fixed effects, and year fixed effects. Standard errors are clustered at the borrowing firm level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Var.: All-in-drawn spread	All Institutional Loans Sample				Dual holder Loans Sample			
	(1)		(2)		(3)		(4)	
	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)
HF/PE Dual holder	53.743***	(0.000)	36.918***	(0.004)	44.759***	(0.000)	33.458***	(0.007)
Other Fund Dual holder	27.667***	(0.000)			16.373**	(0.031)		
Other Institutional Dual holder	6.425	(0.113)						
Mutual fund Dual holder			22.537***	(0.000)			8.180	(0.326)
Pension fund/CDO Dual holder			1.643	(0.942)				
Finance company Dual holder			12.050**	(0.044)			0.392	(0.959)
Insurance company Dual holder			6.540	(0.601)			8.266	(0.477)
IB Dual holder			1.699	(0.703)			-9.038	(0.223)
Log(Facility amount)	-23.311***	(0.000)	-23.318***	(0.000)	-19.018***	(0.000)	-19.250***	(0.000)
Log(Number of participating lenders)	-21.683***	(0.000)	-21.944***	(0.000)	-23.966***	(0.000)	-24.117***	(0.000)
% of participating lenders with past	-16.107***	(0.001)	-16.174***	(0.001)	-16.368*	(0.097)	-16.379*	(0.097)
Log(Maturity)	-14.065***	(0.000)	-14.064***	(0.000)	-3.969	(0.521)	-3.466	(0.573)
Secured Indicator	44.759***	(0.000)	44.936***	(0.000)	52.858***	(0.000)	52.998***	(0.000)
Second-lien Indicator	288.110***	(0.000)	288.598***	(0.000)	278.607***	(0.000)	280.804***	(0.000)
Covenants Indicator	-5.096	(0.393)	-5.671	(0.344)	-9.463	(0.433)	-10.926	(0.370)
Log(Total assets)	0.940	(0.624)	1.024	(0.595)	4.585	(0.214)	4.761	(0.203)
Fixed assets/total assets	7.093	(0.338)	6.818	(0.358)	-12.613	(0.313)	-13.367	(0.293)
Z-score	-2.523***	(0.001)	-2.529***	(0.001)	-3.758**	(0.012)	-3.826**	(0.012)
Leverage	16.386**	(0.019)	16.335**	(0.020)	14.977	(0.128)	14.722	(0.136)
Ind-adj. ROA	-95.467***	(0.000)	-95.177***	(0.000)	-171.986***	(0.000)	-171.136***	(0.000)
Log(Number of analyst following)	-9.700***	(0.001)	-9.478***	(0.001)	-10.989**	(0.027)	-10.776**	(0.033)
Institutional holdings	-17.705***	(0.005)	-17.542***	(0.006)	-10.624	(0.337)	-12.376	(0.266)
High-yield spread	0.149***	(0.000)	0.150***	(0.000)	0.262***	(0.000)	0.262***	(0.000)
Number of observations	6,350		6,350		1,523		1,523	
Adjusted R2	0.518		0.517		0.545		0.544	
Wald-test	9.830***	(0.000)	2.820**	(0.015)	4.660**	(0.031)	2.970**	(0.019)

Table 9. Does the Size of the Dual Holder's Equity Position Affect the Loan Facility Pricing?

This table presents the OLS regression coefficient estimates of Equation (1) and corresponding *p-values,* using two dual holder indicator variables: *Below-Mean equity holding* and *Above-Mean equity holding*. *Below-Mean equity holding* indicates that there is a dual holder holding less than average (2.6%) equity stake and *Above-Mean equity holding* indicates that the dual holder has above average holdings. Definitions of all other variables are provided in the Appendix A. The dependent variable is the all-in-drawn loan spread over LIBOR in basis points, and the analysis is conducted at the loan facility level. Columns (1) and (5) employ the full sample of loan facilities for which all required data are not missing (6,350 loan facilities). Columns (2)-(4) employ the subsamples of revolvers, all term loans, and just the Term Loan B facilities, respectively. In Column (5) both *Below-Mean equity holding* and *Above-Mean equity holding* are interacted with *HF/PE Dual Holder* indicator to measure the combined effect of the size of equity ownership and the type of institution. All specifications include tranche-purpose fixed effects and year fixed effects. The specifications in Columns (1) and (5) additionally include tranche type fixed effects, because they consider the full sample of all tranche types. Standard errors are clustered at the borrowing firm level. Wald-test statistics and the corresponding p-value are reported at the bottom of the table. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Var.: All-in-drawn spread	All Tranche Types Sample		Revolver Sample		Term A and Term B Sample		Term B Sample		All Tranche Types Sample	
	(1)		(2)		(3)		(4)		(5)	
	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)
Below-Mean equity holding	10.566***	(0.01)	8.468**	(0.03)	14.696**	(0.01)	15.782**	(0.01)	8.642**	(0.02)
Below-Mean equity holding*HF/PE Dual Holder									38.183**	(0.01)
Above-Mean equity holding	20.437***	(0.01)	20.991***	(0.00)	20.425*	(0.05)	21.920**	(0.05)	17.062**	(0.03)
Above-Mean equity holding*HF/PE Dual Holder									45.963***	(0.01)
Log(Facility amount)	-23.699***	(0.00)	-30.692***	(0.00)	-15.839***	(0.00)	-17.303***	(0.00)	-23.551***	(0.00)
Log(Number of participating lenders)	-20.815***	(0.00)	-13.690***	(0.00)	-27.449***	(0.00)	-28.358***	(0.00)	-21.347***	(0.00)
% of participating lenders with past relationship	-17.270***	(0.00)	-7.440	(0.12)	-32.090***	(0.00)	-35.735***	(0.00)	-16.525***	(0.00)
Log(Maturity)	-13.179***	(0.00)	-13.297***	(0.00)	-15.353**	(0.01)	-13.104**	(0.04)	-13.435***	(0.00)
Secured Indicator	46.289***	(0.00)	54.637***	(0.00)	33.388***	(0.00)	33.367***	(0.00)	45.792***	(0.00)
Second-lien Indicator	288.472***	(0.00)	265.363***	(0.00)	287.948***	(0.00)	283.043***	(0.00)	287.958***	(0.00)
Covenants Indicator	-4.890	(0.41)	-11.958**	(0.04)	2.152	(0.81)	6.492	(0.48)	-4.765	(0.42)
Log(Total assets)	0.884	(0.65)	2.302	(0.26)	-1.447	(0.63)	-0.361	(0.91)	0.914	(0.63)
Fixed assets/total assets	6.742	(0.36)	-0.261	(0.97)	13.164	(0.28)	10.912	(0.40)	7.022	(0.34)
Z-score	-2.537***	(0.00)	-2.436***	(0.00)	-2.764**	(0.03)	-3.209**	(0.02)	-2.557***	(0.00)
Leverage	16.664**	(0.02)	21.297***	(0.00)	7.199	(0.49)	6.894	(0.54)	16.168**	(0.02)
Ind-adj. ROA	-96.173***	(0.00)	-89.686***	(0.00)	-101.072***	(0.00)	-102.904***	(0.00)	-95.799***	(0.00)
Log(Number of analyst following)	-9.771***	(0.00)	-7.090**	(0.01)	-13.390***	(0.00)	-14.115***	(0.00)	-9.778***	(0.00)
Institutional holdings	-18.226***	(0.00)	-18.386***	(0.00)	-19.902**	(0.04)	-14.636	(0.16)	-18.008***	(0.00)
High-yield spread	0.147***	(0.00)	0.115***	(0.00)	0.190***	(0.00)	0.210***	(0.00)	0.150***	(0.00)
Term A Indicator					-23.589***	(0.00)				
Number of observations	6,350		3,713		2,637		2,232		6,350	
Adjusted R2	0.516		0.494		0.484		0.474		0.517	
Wald-test										
(Above-Mean = Below-Mean)	3.560*	(0.06)	2.800*	(0.09)	0.460	(0.50)	0.430	(0.51)	3.550*	(0.06)
(Above-Mean*HFPE = Below-Mean*HFPE)									0.150	(0.70)
(Above-Mean =Above-Mean* HFPE)									4.370**	(0.04)
(Below-Mean = Below-Mean* HFPE)									13.970***	(0.00)

Table 10. Is the Spread Higher When the Dual Holder Has Funded a Larger Portion of the Loan Facility?

This table presents the OLS estimates and corresponding *p-values* of the spread regressions on measures of the dual holder's loan share, in a subsample of dual holder loans that have the lender share information available. *Dual Holder's loan share* measures the portion of the total facility amount funded by dual holder(s). *Dual Holder is the largest lender* indicates that the dual holder is the largest lender in the loan syndicate. Definitions of all variables are provided in the Appendix A. The dependent variable is the all-in-drawn loan spread over LIBOR in basis points, and the analysis is conducted at the loan facility level. All specifications include tranche type fixed effects, tranche-purpose fixed effects and year fixed effects. Standard errors are clustered at the borrowing firm level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)		(2)		(3)		(4)	
Dependent Var.: All-in-drawn spread	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)	coef.	(p-val)
Dual Holder's loan share	147.507***	(0.003)	141.610***	(0.003)				
Dual Holder is the largest lender					22.158**	(0.011)	18.142**	(0.032)
Above-Mean equity holding			17.665*	(0.058)			17.541*	(0.063)
Log(Facility amount)	-7.897	(0.280)	-3.796	(0.602)	-7.686	(0.307)	-3.311	(0.661)
Log(Number of participating lenders)	2.860	(0.797)	-3.601	(0.737)	-11.517	(0.213)	-17.886**	(0.043)
% of participating lenders with past relationship	-43.624***	(0.000)	-46.024***	(0.000)	-44.158***	(0.000)	-46.231***	(0.000)
Log(Maturity)	-9.596	(0.307)	-10.266	(0.263)	-7.676	(0.404)	-8.426	(0.350)
Secured Indicator	76.112***	(0.000)	85.148***	(0.000)	78.188***	(0.000)	86.836***	(0.000)
Second-lien Indicator	249.907***	(0.000)	250.115***	(0.000)	281.690***	(0.000)	282.903***	(0.000)
Covenants Indicator	-4.640	(0.802)	12.389	(0.530)	0.794	(0.966)	17.112	(0.387)
Log(Total assets)	1.599	(0.766)	-5.227	(0.342)	3.466	(0.524)	-3.479	(0.530)
Fixed assets/total assets	-32.660**	(0.043)	-34.912**	(0.028)	-30.411*	(0.072)	-32.726*	(0.052)
Z-score	-2.572	(0.113)	-2.303	(0.134)	-2.492	(0.130)	-2.219	(0.162)
Leverage	26.183	(0.247)	22.744	(0.356)	25.256	(0.267)	22.580	(0.369)
Ind-adj. ROA	-192.279***	(0.000)	-238.909***	(0.000)	-181.184***	(0.001)	-227.553***	(0.000)
Log(Number of analyst following)	-21.105**	(0.017)	-4.529	(0.610)	-21.220**	(0.018)	-5.012	(0.582)
Institutional holdings	-8.721	(0.628)	1.936	(0.916)	-12.100	(0.506)	-1.739	(0.926)
High-yield spread	0.179**	(0.013)	0.171**	(0.016)	0.170**	(0.017)	0.160**	(0.025)
Number of observations	301		301		301		301	
Adjusted R2	0.641		0.657		0.634		0.648	

Table 11. Uses of Loan Proceeds

This table presents the estimation results from the following regression specification:

$$Y = \beta_0 + \beta_1 \ln\left[\left(\frac{\text{loan proceed}}{\text{total assets}_0}\right)+1\right] + \beta_2 \ln\left[\left(\frac{\text{loan proceed}}{\text{total assets}_0}\right)+1\right] \times \text{Dual Holding Indicator}$$

$$+ \beta_3 \text{Dual Holding Indicator} + \beta_4 \ln\left[\text{total assets}_0\right] + \sum_{i=1997 1Q}^{2007 4Q} \theta_i \text{Year - Qtr} + \varepsilon$$

$$, \text{where } Y = \ln\left[\left(\frac{V_t - V_0}{\text{total asets}_0}\right)+1\right] \text{ for } V = \text{cash, and total assets}$$

$$= \ln\left[\left(\frac{\sum_{i=1}^{t} V_i}{\text{total asets}_0}\right)+1\right] \text{ for } V = \text{capex, acquisition, R \& D, and reduction in long term debt}$$

t=1, 4, 8 corresponds to the fiscal quarter following the issuing quarter. All regressions include year-quarter fixed effects. Loan proceeds are aggregated within a calendar-quarter. The coefficient for *Dual Holding Indicator* and *ln[total assets$_0$]* as well as fixed effects are omitted for the sake of brevity. *Dollar changes* are the implied change in the dependent variable when the loan proceeds are increased by \$1 for non-dual holder borrowers and for dual holder borrowers, respectively (calculations are based on a median-sized firm/facility in the sample. Year-quarter fixed-effects are for 2003Q3). ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

V	t	N	β1 Coeff. (p-val)	β2 Coeff. (p-val)	$Change Non-DH	DH	adj-R^2
Δ Cash	1Q	5,517	0.227** (0.017)	-0.213** (0.014)	0.201	0.013	0.121
	4Q	5,209	0.319*** (0.006)	-0.290*** (0.006)	0.292	0.028	0.146
	8Q	4,760	0.261** (0.015)	-0.239** (0.016)	0.217	0.018	0.109
Δ Total Assets	1Q	5,523	0.711*** (0.000)	0.120 (0.227)	0.709	0.852	0.340
	4Q	5,214	0.852*** (0.000)	0.062 (0.605)	0.756	0.841	0.271
	8Q	4,766	0.914*** (0.000)	0.055 (0.709)	0.746	0.800	0.222
∑ CAPEX	1Q	5,392	0.059** (0.022)	-0.040* (0.091)	0.050	0.016	0.116
	4Q	5,003	0.197*** (0.006)	-0.100 (0.187)	0.164	0.082	0.137
	8Q	4,508	0.226*** (0.001)	-0.115 (0.129)	0.176	0.088	0.092
∑ Acquisition	1Q	5,227	0.096*** (0.004)	0.048 (0.464)	0.081	0.122	0.074
	4Q	4,731	0.174*** (0.001)	0.024 (0.761)	0.148	0.169	0.100
	8Q	4,154	0.261*** (0.000)	0.088 (0.413)	0.207	0.275	0.111
∑ R&D	1Q	1,734	0.033 (0.287)	-0.048 (0.128)	0.027	-0.012	0.100
	4Q	1,346	0.126 (0.139)	-0.185** (0.033)	0.090	-0.044	0.189
	8Q	1,171	0.197 (0.134)	-0.312** (0.023)	0.123	-0.076	0.206
∑ LT Debt Reduction	1Q	5,167	0.100*** (0.000)	0.042 (0.220)	0.091	0.128	0.052
	4Q	4,644	0.210*** (0.001)	0.114* (0.094)	0.193	0.299	0.065
	8Q	4,080	0.391*** (0.000)	0.174* (0.079)	0.352	0.506	0.088

Appendix A: Variable Descriptions

Variables	Definition
Leveraged Loan	An indicator variable that takes a value of one if the loan is classifed as a leveraged loan segment by *LPC DealSCan* . LPC defines leveraged loans as loans that meet one of the following two criteria: (1) the loan has a BB or lower rating; (2) the initial loan yield spread of the loan is at least 150 basis points above LIBOR. *Source: DealScan*
Institutional Loan	An indicator variable that takes a value of one if at least one non-commercial bank institutional investor is involved in the loan syndicate, and zero otherwise. *Source:* DealScan, Thompson Reuters Institutional Holding
Institutional Dual Holding Indicator	An indicator variable that takes a value of one if the loan facility has the participation of at least one non-commercial bank institutional investor who held at least 0.1% of equity stake in the same borrowing company during the 1-year period leading up to the current loan., and zero otherwise. *Source* : DealScan, Thompson Reuters Institutional Holding
Dual holder-Major Role Indicator	An indicator variable that takes a value of one if an institutional dual holder also takes a major role in the loan syndicate, such as arranger, manager, or agent. *Source: DealScan, Thompson Reuters Institutional Holdings*
Dual holder's equity holding	Average equity stake held by dual holder(s) during the one-year period prior to the current loan. *Source: Thompson Leuters Institutional Holdings*
Below-Mean equity holding	An indicator variable that akes a value of one if the loan facility has the presence of an institutional dula holder who held a lower-than-average (2.6%) equity stake in the borrowing company, and zero otherwise. *Source* : DealScan, Thompson Reuters Institutional Holding
Above-Mean equity holding	An indicator variable that akes a value of one if the loan facility has the presence of an institutional dula holder who held a greater-than-average (2.6%) equity stake in the borrowing company, and zero otherwise. *Source* : DealScan, Thompson Reuters Institutional Holding
Dual holder's loan share	Loan allocation to dual holder(s). *Source: DealScan*
Dual holder is the largest lender	An indicator variable that takes a value of one if dual holder is the largest lender in the loan syndicate. *Source: DealScan*
All-in-drawn spread	Spread over LIBOR plus the annual fee and the upfront fee spread, if there is any, in basis point*s*. *Source: DealScan*
Log(FacilityAmt)	Natural log of the loan size. *Source* : DealScan
Log(Number of participating lenders)	Natural log of the number of participating lenders. *Source: DealScan*
% of participating lenders with past relationship	The portion of lenders in the loan syndicate that have made loans to the borrower within the 36-month period prior to the current loan. *Source: DealScan*
Log(Maturity)	Natural log of the maturity of the loan in months. *Source: DealScan*
Secured Indicator	An indicator variable that takes a value of one if the loan is secured, and zero otherwise. *Source: DealScan*
Senior Indicator	An indicator variable that takes a value of one if the loan is senior in priority, and zero otherwise. *Source: DealScan*
Second-lien Indicator	An indicator variable that takes a value of one if the loan is second-lien, and zero otherwise. *Source: DealScan*
Syndicated Indicator	An indicator variable that takes a value of one if the loan is distributed in syndication, and zero otherwise. *Source: DealScan*
Covenant Indicator	An indicator variable that takes a value of one if the loan has covenants, and zero otherwise. *Source: DealScan*

Variables	Definition
Revolver Indicator	An indicator variable that takes a value of one if the loan is revolving line of credit (Revolver/Line, Revolver, 364-Day Facility, Demand Loan, Limited Line in DealScan), and zero otherwise. *Source: DealScan*
Term Loan A Indicator	An indicator variable that takes a value of one if the loan is Term Loan A tranche, and zero otherwise. *Source: DealScan*
Term Loan B Indicator	An indicator variable that takes a value of one if the loan is Term Loan B tranche or higher (C, D, …., H), and zero otherwise. *Source: DealScan*
Log(total assets)	Natural log of the total assets of the borrower at the end of fiscal year prior to the current loan. *Source : Compustat*
Fixed assets/Total assets	The borrower's asset tangibility at the end of fiscal year prior to the current loan, calculated as Net Property, Plant, and Equipment (PP&E)/total assets *Source : Computstat*
Z-score	Altman's Z-score for the borrower at the end of fiscal year prior to the current loan.. Z-score is calculated as $Z=1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.99X_5$, where X_1 is working capital/total assets, X_2 is retained earnings/total assets, X_3 is EBIT/total assets, X_4 is market value of equity/book value of total liabilities, and X_5 is sales/total assets (Altman (1968)). *Source : Compustat*
Leverage	The borrower's book leverage at the end of fiscal year prior to the current loan., calculated as book value of total debt/book value of total assets. *Source : Compustat*
Ind-adj ROA	The borrower's ROA in excess of the median of the corresponding 2-digit SIC industry ROA at the end of fiscal year prior to the current loan. *Source : Compustat*
Log(Number of analyst following)	Natural log of the number of analysts following the borrower's stock. Missing is treated as zero. *Source: I/B/E/S*
Institutional holdings	The sum of the borrower's stock held by all institutional investors at the end of fiscal year prior to the current loan. Missing is treated as zero. *Source: Thompson Reuters Institutional Holdings*
S&P Issuer Rating	The borrower's S&P long-term domestic issuer credit rating. Lower score corresponds to lower rating, with the highest rating (AAA) receives 22 and the lowest rating (D) receives 1. Missing ratings are assigned to zero. *Source: Compustat*
High-yield Spread	Market credit spread in the month of loan issuance. Credit spread is measured as (BofA Merrill Lynch US Corporate High Yield BB Option-Adjusted Spread - BofA Merrill Lynch US Corporate AAA Option-Adjusted Spread) in basis points. *Source: Federal Reserve Bank*

Appendix B: Spread and Payment Schedule by Loan Type (in sample)

	Revolver		Term A		Term B+		Term Loans	
Total numer of facilities in sample	6,136		757		2,438		1,806	
Avg. all-in-drawn spread								
Mean	234		272		318		331	
Median	225		250		275		275	
Payment Schedule	N	(%)	N	(%)	N	(%)	N	(%)
Payment Schedule information avilable	14	(0.2)	451	(59.6)	1,420	(58.2)	781	(43.2)
Payment Period								
Bullet / Final Payment	4	(28.6)	142	(31.5)	776	(54.6)	405	(51.9)
Annually	1	(7.1)	12	(2.7)	72	(5.1)	40	(5.1)
Semi-annually	0	(0.0)	13	(2.9)	33	(2.3)	18	(2.3)
Quarterly	8	(57.1)	275	(61.0)	525	(37.0)	269	(34.4)
Monthly	1	(7.1)	7	(1.6)	9	(0.6)	45	(5.8)
Other	0	(0.0)	2	(0.4)	5	(0.4)	4	(0.5)

Figure A1. Distribution of Payment Period by Loan Type

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