Are Banks Still Special When There is a Secondary Market for Loans?

Amar Gande and Anthony Saunders *

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*Amar Gande is from the Edwin L. Cox School of Business, Southern Methodist University (SMU), and Anthony Saunders is from the Stern School of Business, New York University (NYU). We thank seminar participants at the annual meetings of the Western Finance Association (WFA), the American Economic Association (AEA), the Financial Management Association (FMA), and at the Federal Reserve Bank of Chicago's Bank Structure Conference, the SMU Lone Star Finance Symposium, the University of Miami, Rutgers University and Vanderbilt University for helpful comments. We also thank Campbell Harvey (the editor), an anonymous associate editor and an anonymous referee as well as Rob Battalio, Scott Bauguess, Sreedhar Bharath, Tim Burch, Mark Flannery, Rob Hansen, David Mauer, Bill Maxwell, George Pennacchi, Nagpurnanand Prabhala, Manju Puri, Anjolein Schmeits, David Smith, Sascha Steffen, Hans Stoll, Rex Thompson, Kumar Venkataraman and Harold Zhang for many useful suggestions. Please address all correspondence to Amar Gande, Finance Department, Edwin L. Cox School of Business, Southern Methodist University, 6212 Bishop Blvd, Dallas, TX 75205. Tel: (214) 768-1945. Fax: (214) 768-4099. Email:agande@cox.smu.edu.

ABSTRACT

When a borrowing firm's existing loans trade for the first time in the secondary loan market, it elicits a significant positive stock price response by the borrowing firm's equity investors. We show that underlying this response is the impact of loan sales in alleviating a borrowing firm's financial constraints. In particular, we show in a differences-in-differences framework that firms that are smaller, younger, without a bond rating or that are distressed are more likely to benefit from loan sales as compared to other borrowers. We also find that new loan announcements are associated with a positive stock price announcement effect even when prior loans made to the same borrower already trade on the secondary market. Overall, we conclude that the role of banks, in terms of their specialness to borrowers, has changed due to their ability to create an active secondary loan market while simultaneously maintaining their traditional specialness as monitors and information producers for outside agents.

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It is commonly argued that banks play a special role in the financial system because they resolve important information asymmetries. Theoretical models (e.g., Diamond (1984), Ramakrishnan and Thakor (1984), Fama (1985)) highlight the unique monitoring functions of banks, and show that banks have a comparative advantage, as well as enhanced incentives (relative to public debt holders), in monitoring debt contracts. However, the recent development of an active secondary market for loans could potentially diminish or significantly alter this special role.[1] This study analyzes how and whether the development of the secondary market for bank loans has changed the special role of banks in the financial system.

The past two decades have witnessed an increased commoditization of bank loans due to the development of structured finance products, such as Commercial Debt Obligations (CDOs), Commercial Loan Obligations (CLOs),[2] as well as a well developed secondary market for bank loans. Figure 1 shows that the rate of growth in the secondary market for bank loans from 1991 to 2008, as can be seen secondary market loan transactions have exceeded $100 billion a year since 2000. More importantly, and perhaps surprisingly, Figure 1 suggests that the secondary loan market was quite resilient during the recent financial crisis. For example, secondary market trading volume during 2008 was only 6.9% lower than in 2007 (see Section II for details). This is in sharp contrast to the dramatic decline in the market for structured finance products, such as CDOs and CLOs.

There are several interesting economic trade-offs that the secondary market for loans presents to banks and their borrowers. On the one hand, a loan sale in the secondary market can dilute the monitoring incentives of banks since they can more easily offload loans to third parties. This could be potentially value-destroying for the borrowing firms since they lose the benefits of monitored capital. On the other hand, the secondary market for loans allows banks to convert their illiquid assets into liquid assets which allows them to share the risk of their loans with a wider group of investors. These channels provide banks with better risk-management tools, which in turn might result in enhanced access to capital (and potentially a lower cost of debt) for their borrowers. These competing forces can be ultimately value-enhancing, value-neutral or value-destroying for an average borrower. This trade-off is the

central focus of our study.

In particular, we use a new dataset on secondary market loan prices to address the following questions: First, is the secondary market trading of loans valuable to equity investors of a borrowing firm, and specifically, is the borrowing firm's stock price reaction on the first day of trading of its existing loans positive or negative? This is important since prior studies on bank specialness (see Section I for details) have only analyzed borrower stock price reactions at loan origination or renewal.

Second, what are the channels through which shareholders benefit (or lose) from their loans being traded in the secondary loan market? We argue that an important benefit to equity holders of a borrowing firm is that a loan sale could alleviate a firm's financial constraints. In particular, a firm may be able to borrow a larger amount compared to what it could have borrowed in the absence of a secondary loan market (see, Drucker and Puri (2009)). Furthermore, alleviation of financial constraints could reduce the agency costs of underinvestment (i.e., of not investing in projects that have a positive net present value as described in Myers (1977)) resulting in an increase in a firm's value.[3] Additionally, a loan sale could also lower a borrower's cost of capital due to valuable risk-sharing benefits from the sale of loans to other investors in the secondary loan market (see, Parlour and Winton (2009)), and the increased liquidity from secondary market loan trading (see, Gupta, Singh and Zebedee (2008)) could further lower a firm's cost of capital. Thus, identifying the channels through which shareholders benefit (or lose) from loan sales helps to update our understanding of the special role played by banks.

Finally, is there any evidence that secondary market loan trading reduces or significantly alters key features of traditional bank specialness? This is an important question because secondary market trading of loans could undermine the incentives of a bank to monitor its borrowers. For example, Parlour and Plantin (2008) use a theoretical model to show how banks have lower incentives to monitor a borrower when they can use a liquid loan market to unbundle balance sheet management from borrower relationship management. Interestingly, such a loss in monitoring incentives could potentially lead to an increased risk-shifting by

the borrowing firm's shareholders at the expense of its bondholders, resulting in a transfer of wealth from the bondholders to the shareholders of the borrowing firm.

From a longer-term perspective, any loss in monitoring incentives due to the secondary market trading of loans could lead to a reduction in traditional aspects of bank specialness, and its beneficial effects on borrower's shareholders. Prior studies, such as James (1987), Lummer and McConnell (1989), Best and Zhang (1993), and Billett, Flannery, and Garfinkel (1995) find a robust, favorable, impact of new bank loan announcements on borrowers' stock returns. However, these prior studies use data from the 1970s and 1980s, a time period during which a well developed secondary market for loans did not exist.

Our main results are summarized as follows: First, we find that secondary market loan trading is valuable to equity holders of a borrowing firm. For example, when a borrower's existing loans trade for the first time in the secondary market, it elicits a positive announcement effect on the borrower's stock price. This evidence suggests that the trading of a firm's loans is interpreted as 'good news' rather than 'bad news' by a borrower's equity holders.

The above result reflects a 'sea change' in the way the loan sale market impacts a borrower's shareholders compared to prior periods. For example, in an earlier study, Dahiya, Puri and Saunders (2003) find, based on a sample of 29 borrowers during 1995 to 1998, that the reaction of equity investors to loan sales was negative, especially for distressed borrowers. In that study, it appears that many original lenders were terminating their lending relationship with a borrower after a loan sale, whereas in our study, this is not the case (see Section I for more details). Simply put, it appears that the negative connotations associated with the loan sale market, as a place where the only transactions that take place are the ones where informed lenders off-load their troubled borrower loans, is no longer valid.

Second, we show that a key channel through which a borrower's shareholders benefit from the sale of loans is through the alleviation of a firm's financial constraints. We present several pieces of evidence in a differences-in-differences framework that are consistent with a view that loan sales alleviate a firm's financial constraints.

We document that borrowers whose loans are sold ("Traded Borrowers") received a sub-

stantially larger amount of loans post loan sale year (i.e., the year in which a firm's loans trade for the first time) than that of borrowers whose loans are never sold ("Non-traded Borrowers"). We establish this evidence using a differences-in-differences framework. We verify that the larger amount of loans received by traded borrowers relative to that of non-traded borrowers represents new funds to a borrower, which could be used for investing in additional positive NPV projects that a financially constrained firm was previously unable to finance. Specifically, we show that the financial leverage of traded borrowers is larger than that of non-traded borrowers post loan sale.

In addition, we adapt the methodology of Fazarri, Hubbard and Petersen (1988) to a differences-in-differences framework, and present evidence that the cash flow sensitivity of investment is lower in the post-loan sale period as compared to pre-loan sale period.[4] These results hold well for subsamples of borrowers that are likely to be financially constrained, such as firms that are younger, smaller, without a bond rating, or that are distressed. That is, we find that the cash flow sensitivity of investment for these subsamples of borrowers is lower in the post-loan sale period as compared to the pre-loan sale period.

Third, we find that the borrower stock price reaction on the first day of trading of its loans in the secondary loan market is significantly larger for smaller borrowers and distressed borrowers who are *ex ante* more likely to be financially constrained than other borrowers. Moreover, financially distressed borrowers appear to gain the most from having their loans traded in the secondary loan market, indicated by the 9.65% abnormal stock price reaction around the first day of trading of their loans, after controlling for other loan-specific and firm-specific variables. This result is qualitatively unchanged even after we control for the potential endogeneity of a loan sale in our empirical analysis.

Finally, we find some evidence of a transfer of wealth from bondholders to stockholders on the first trading day of loans. A possible explanation for negative abnormal bond returns around the first day of trading of a borrower's loans is that secondary market trading of loans potentially undermines bank monitoring incentives, which in turn encourages riskshifting by stockholders at the expense of bond holders. Furthermore, the higher financial leverage of

the traded borrowers (and thus the increased bondholder risk) that is expected in the future, relative to that of non-traded borrowers, is also consistent with less monitoring of borrowers by banks. We also find that bank loan announcement effects (i.e., borrower stock price reaction to bank loan announcements) while still positive, actually decline for post-trade loans, i.e., loans announced subsequent to the first trading day loans of the same borrower. Moreover, this result is robust after controlling for other well-known determinants of bank loan announcement abnormal returns.

The above evidence, taken together suggests that the secondary loan market has significantly altered the nature of bank specialness. That is, in more recent times, banks may be viewed as being special along two distinct dimensions: (a) the traditional role of bank specialness characterized by information production and monitoring advantages at loan origination, and (b) creation of an active secondary market for bank loans (see, Taylor and Sansone (2007) for details) while simultaneously continuing their lending relationships with borrowing firms. This provides valuable new benefits to the borrower, such as alleviation of borrower financial constraints and additional financing. While our evidence shows that the traditional bank specialness dimension is somewhat reduced due to potential loss of monitoring incentives (see, Parlour and Plantin (2008)), the second, or new, dimension of bank specialness suggests important additional value to borrowing firms equity holders.

We conclude that overall shareholders of borrowing firms benefit from loan sales. This result holds especially true for smaller borrowers and distressed borrowers who are *ex ante* expected to be among the most adversely affected by a potential reduction in bank-lender incentives to monitor in the presence of a secondary market for loans.

The remainder of the paper is organized as follows. Section I presents a brief review of prior studies on bank specialness and loan sales. Section II describes the growth of the secondary market for bank loans. Section III describes our data and sample selection. Section IV presents our test hypotheses. Section V summarizes our results and Section VI concludes.

I. Bank Specialness and Loan Sales

Many theoretical models highlight the unique monitoring functions of banks (e.g., Diamond (1984), Ramakrishnan and Thakor (1984), Fama (1985)). These studies argue that banks have a comparative advantage, as well as enhanced incentives (relative to public debt holders), in monitoring debt contracts. The empirical research to date on bank specialness generally finds a robust favorable impact of bank loan announcements on borrowers' stock returns. This result is in contrast to the insignificant or negative response of investors to the announcement of other forms of financing, including private placements of debt, straight public debt, preferred stock, convertible debt, convertible preferred, and common stock.

Traditionally, theoretical models have viewed bank loans as being largely illiquid, i.e., a bank makes a loan and holds it until maturity. One possible explanation for this (see Pennacchi (1988)) is that loan sales generate a moral hazard problem because a bank could retain higher quality loans and sell its 'lemons' so that a loan sale would convey negative information about a borrower.[5] Thus, a loan sale could threaten bank-borrower relationship, and result in the termination of that relationship. Dahiya, Puri and Saunders (2003) (hereafter referred to as the DPS study) analyze the effect of a loan sale on the equity value of borrowing firms whose loans were sold. Based on a sample of 29 borrowers during the 1995 to 1998 period, they find that the stock returns of borrowers were significantly negatively impacted by the announcement of the loan sale.

Our study differs from the DPS study in that most original lenders in their study terminated their lending relationships with a borrower after the loan sales,[6] whereas in our study, this is simply not the case.[7] Interestingly, in our dataset that includes the post-2000 period (a period of rapid growth in the secondary loan market), the lead arranger terminated its lending relationship with a borrower after the first trading of the borrower's loans in less than 17% of the cases (in sharp contrast with the 87% termination rate of lending relationships with borrowers subsequent to a loan sale as in the earlier DPS study). That is, the termination of lending relationships after a loan sale event in the DPS study versus the continuation of the lending relationship subsequent to a loan sale event as in our study is a

fundamental market development related shift in how the secondary loan market has evolved over the years. Simply put, the negative connotations associated with the loan sale market as a place where the only transactions that take place are the ones where informed lenders off-load their troubled borrower loans appears to be no longer valid. Hence, our results do not contradict what DPS find in their study, but rather complement their findings.

II. The Growth of the Secondary Market for Loans

The secondary market for loans has grown rapidly during the past two decades. The market for loans typically includes two broad categories, the first is the primary or syndicated loan market, in which portions of a loan are placed with a number of banks, often in conjunction with, and as part of, the loan origination process (usually referred to as the sale of participations). The second category is the seasoned or secondary loan sales market in which a bank subsequently sells an existing loan (or part of a loan).

Banks and other financial institutions have sold loans among themselves for over 100 years. However, this market grew slowly until the early 1980s when it entered a period of growth, largely due to expansion in highly leveraged transaction (HLT) loans to finance leveraged buyouts (LBOs) and mergers and acquisitions (M&As). With the decline in LBOs and M&As in the late 1980s after the stock market crash of 1987, the volume of loan sales dwindled to approximately $10 billion in 1990. However, since then the volume of loan sales has expanded rapidly, especially as M&A activity picked up again. Figure 1 shows the rate of growth in the secondary market for loans from 1991 to 2008. Note that secondary market loan transactions have exceeded $100 billion a year since 2000. Some of this growth is attributable to institutional investment in the syndicated loan market (see Nandy and Shao (2008)).

Insert Figure 1 here.

The data underlying Figure 1 shows, perhaps surprisingly, that the secondary loan market is quite resilient to the recent financial crisis. For example, secondary market trading volume

during 2008 was $318.38 billion as compared to $342.02 billion in 2007, which was the peak year of loan trading. Based on the trends in Figure 1, it appears that the secondary loan market is now well established.

The secondary loan sales market is sometimes segmented by distinguishing between "par" loans (loans selling at 90% or more of face value) versus "distressed" loans (loans selling at below 90% of face value). In our empirical analysis, we distinguish between par and distressed loans. Figure 1 also shows a significant proportion of loan sales have often been distressed loans.

III. Data and Sample Selection

The sample period for our study for the most part is 1987 to 2009. For example, we use the full length of the sample period when we examine evidence regarding alleviation of financial constraints of borrowing firms (see Sections V.B.1 through V.B.3). However, for analyzing borrower stock price reactions on the first day of trading of its loans (see Sections V.A and V.B.4), we do not use the entire time period for reasons discussed in the paragraph below.

Our choice of sample period for our empirical analysis is driven by the following considerations. First, LPC Dealscan data on loan originations goes back to 1987. However, the secondary market loan price data, which is used in some of our tests (which we refer to simply as the 'loan pricing dataset'), is available only from 1999. For example, we obtain the first date of trading of a loan in the secondary market from the loan pricing dataset. Second, we use data for a five-year period subsequent to the first date of trading of a loan to conduct additional tests to provide a comparison of our results with those of the DPS study, and to examine whether there is any evidence of a potential reduction in bank monitoring incentives during the post loan sale period.[8] Finally, to ensure that our results are not affected by alternative markets for credit risk hedging (such as the Credit Default Swaps (CDS) market)[9] that rapidly accelerated after 2004, we end the sample period in 2003 when investigating a borrower's stock price reaction on the first day of trading of its loans.

The loan pricing dataset is a new dataset of daily secondary market loan prices from the Loan Syndication and Trading Association (LSTA) and Loan Pricing Corporation (LPC) mark-to-market pricing service, supplied to over 100 institutions managing over $200 billion in bank loan assets. This dataset consists of daily bid and ask price quotes aggregated across dealers. Each loan has a minimum of at least two dealer quotes and a maximum of over 30 dealers, including all top loan broker-dealers.

We obtained borrower stock returns, and stock index (i.e., NYSE/AMEX/NASDAQ Value-weighted index) returns for computing abnormal returns from the daily stock and indices files of the Center for Research in Securities Prices (CRSP).

For our empirical analysis, we also need daily secondary market bond prices. However, we need the 9-character bond CUSIP assigned by Standard & Poors' to each bond to obtain daily secondary market bond prices from the data sources mentioned below. We manually searched the Fixed Income Securities Database (FISD) using the name of the issuer in the loan pricing dataset to match with the name of the issuer in FISD to extract the relevant 9-character bond CUSIPs.

We use two data sources for bond prices over two non-overlapping subperiods that together span our entire sample period. The main reason for doing this is an alternative comprehensive database of bond prices, known as "Trade Reporting and Compliance Engine" (TRACE) became available during the later part of the sample period as a result of an improvement in bond market transparency. The first data source for daily bond prices is the *Salomon* (now Citigroup) Yield Book (YB). We extract daily bond prices from the YB database from November 1, 1999 through June 30, 2002 for all the companies in the loan pricing database using their 9-character bond CUSIPs from FISD. The second data source for daily bond prices is the TRACE database. We extract end of day bond prices from TRACE beyond July 1, 2002 for all the companies in the loan pricing database using their 9-character bond CUSIPs from FISD. We use the same data source in computing daily bond returns. For example, bond returns calculated from TRACE start on July 2, 2002 since the first available bond price in TRACE is on July 1, 2002. We use a bond index (the

Lehman Brothers U.S. Corporate Intermediate Bond Index) from Datastream for computing abnormal bond returns.

Borrower characteristics, such as leverage and Tobin's q were obtained from the Compustat database of Standard and Poor's (S&P). Security-specific characteristics, such as maturity, seniority and collateral were obtained from LPC Dealscan.[10] Finally, for some of our robustness tests, e.g., whether our results are robust to whether or not options are traded on a company's stock, we use data from OptionMetrics. We describe the variables used in our empirical analysis, and their construction from the underlying data from these sources in the Appendix.

IV. Secondary Market Loan trading and Bank Specialness

In this section, we elaborate on the main research issues, discuss the underlying economic issues and consider the associated trade-offs in outlining the main testable hypotheses.

A. Is Loan Trading Valuable to Equity Investors?

To understand whether equity holders interpret the availability of secondary market trading in bank loans of a borrower to be good or bad news, we start by identifying the possible positive and negative effects of loan trading on equity holders of the borrowing firm. We then hypothesize whether the positive effects are likely to outweigh the negative effects.

As described earlier, secondary market trading in loans offers several potential benefits to equity holders of a borrowing firm. First, a loan sale could alleviate a firm's financial constraints. For example, a firm may be able to borrow a larger amount as compared to what it could have borrowed in the absence of secondary loan markets (see, Drucker and Puri (2009)). As a result, we would expect that financially constrained borrowers are more likely to benefit from loan sales than financially unconstrained borrowers.

Second, if the secondary market trading of loans undermines the incentives of a bank to monitor the borrower, this could lead to opportunistic risk-shifting by the borrower firm's

shareholders at the expense of its bondholders, resulting in a transfer of wealth from the bondholders to the shareholders of the borrowing firm.

Finally, there could be a lowering of a borrower's cost of capital due to valuable risk-sharing benefits resulting from sale of loans to other investors in the secondary loan market (see, Parlour and Winton (2009)) or as a result of increased liquidity from secondary market loan trading (see, Gupta, Singh and Zebedee (2008)).

Secondary market trading in loans, however, could result in 'reduced monitoring incentives' for bank lenders with specialized monitoring skills. If so, any reduced incentives to monitor could adversely affect the equity holders of a borrowing firm as managers risk-shift and pursue other agency-related benefits that reduce a firm's cash flows. In contrast, a bank lender may continue to monitor regardless of loan market availability to preserve its reputation and long-term relationship with the borrowing firm as well as the credit risk exposure of any retained share of the original loan.

Overall, we hypothesize that the positive effects of loan trading should outweigh the negative effects in a well functioning loan sales market. This leads us to hypothesis 1 (loan trading hypothesis) which states that secondary market trading in loans is valuable to equity holders of a borrowing firm.

B. Channels of Value Benefit or Loss

Depending on the source of the value benefit or loss to the shareholders, we have additional testable hypotheses that we describe below. As described in Section IV.A, a loan sale could alleviate a firm's financial constraints due to the ability of a lender to sell a borrower's loans which frees up bank liquidity and allows for additional loans to be made to borrowers. This leads us to hypothesis 2 (alleviation of financial constraints hypothesis) which states that secondary market trading in loans is valuable to equity holders of a financially constrained borrowing firm.

Moreover, if secondary market loan trading undermines bank monitoring incentives as described in Section IV.A, this leads us to the following two hypotheses: hypothesis 3 (risk-

shifting hypothesis) that states that equity holders of a borrowing firm have greater incentives to risk-shift due to reduced bank monitoring incentives, with a resultant wealth transfer from bond holders to equity holders in a borrowing firm, and hypothesis 4 (traditional bank specialness hypothesis) which states that secondary market trading in loans reduces the traditional aspect of bank specialness.

V. Empirical Results

In this section, we test the four hypotheses identified in Section IV. The results relating to the loan trading hypothesis are presented in Section V.A, while the channels of shareholder value from loan trading are presented in subsequent sections. Specifically, we examine the alleviation of financial constraints in Section V.B, the riskshifting hypotheses in Section V.C and reduced (traditional) bank specialness hypothesis in Section V.D.

A. The Value of Loan Trading to Equity Holders

To test whether secondary market loan trading is valuable to a borrowing firm's shareholders, we conduct an event study (see the Internet Appendix for details of the event study methodology we use in this paper). That is, we test whether the borrower's stock price reaction on the first day of trading in its loans is positive. If a borrower has multiple loans that are traded on the secondary market, we take the earliest of the first trading day of all loans for the same borrower. Thus, our event study focuses on the date of trading of a borrower's loans for the very first time – see the Internet Appendix for details on other alternative dates that we considered for our event study analysis.

Table I summarizes the results. We find a positive average abnormal borrower stock return of 0.82% (z-statistic 2.94) on the first trading date of a borrower's loans for a sample of 415 borrowers. Multi-day event windows present similar results − positive and statistically significant at the 1% level. For example, we find a 1.24% (z-statistic 3.27) cumulative abnormal return on the borrower's stock around a two-day event window surrounding the first trading day of a borrower's loans.[11]

Insert Table I here.

To assess the economic significance of our results, we compare these estimates with those from other studies on bank specialness, such as Billett, Flannery and Garfinkel (1995) and Best and Zhang (1993). Our day 0 abnormal stock return of 0.82% in Table I is larger than the 0.68% day 0 loan announcement effect reported by Billett, Flannery and Garfinkel (1995) in their Table I. Our two-day cumulative abnormal stock return of 1.24% is almost four-times the 0.32% loan announcement effect documented by Best and Zhang (1993).

We next examine the channels through which shareholders benefit from the sale of loans in the secondary market, which by implication should be reflected in the abnormal stock returns surrounding the first day of trading of a borrower's loans. In Section V.B, we examine whether the secondary loan market alleviates a firm's financial constraints, and whether financially constrained borrowers benefit from loan sales more than other borrowers. In Section V.C, we investigate whether there is increased risk-shifting by the borrowing firm's shareholders at the expense of its bondholders as a result of the secondary loan market reducing banks' incentives to monitor. While we focus on these two channels here, in subsequent empirical analysis, we consider alternative channels such as improved risk sharing and increased liquidity.

B. Alleviation of Financial Constraints

A secondary loan market could reduce a firm's financial constraints. It facilitates an increased credit expansion (e.g., drawing in more capital providers), and a diversification of risk exposure. This would allow any given bank to offer a larger loan to a borrower (relative to the size of loan that bank would offer the same borrower in the absence of a secondary loan market). We turn our attention to this issue next.

B.1. Do Loan-sale Borrowers Receive Larger Loans?

To investigate whether a borrower would receive a larger loan if its loans were to trade in the secondary loan market relative to what it would receive if its loans were not to trade in the

secondary loan market, we use a differences-in-differences framework. That is, we examine differences in loans received by borrowers whose loans are sold ("Traded Borrowers") relative to that of borrowers whose loans are never sold ("Non-traded Borrowers") pre- versus post-loan sale year (i.e., the year in which the borrower's loans trade for the first time).

Specifically, we estimate the following equation:

$$\begin{aligned} \text{LN(LOANS RECEIVED)} &= \theta_0 + \theta_1 \text{TRADED} + \theta_2 \text{POST TRADE} + \\ &\quad \theta_3 \text{TRADEDxPOST TRADE} + \gamma X_t + \epsilon_t. \end{aligned} \tag{1}$$

The variables in the above equation are defined as follows. The dependent variable is the natural log of loans received by a borrower during a fiscal year, where the value of loans is measured in millions of U.S. dollars. The independent variables are *TRADED*, an indicator variable that takes a value of one for borrowers that have had a loan available for trading for the first time during the sample period (and zero otherwise), *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise), and an interactive variable based on *TRADED* and *POST TRADE*. X represents a vector of other control variables, such as firm size, as proxied by log of total assets, and a firm's investment opportunity set, as proxied by Q. See the Appendix for a complete description of these variables and their construction from underlying data.

The results are presented in Table II. The interaction term is positive and statistically significant at the 5% level, consistent with traded borrowers receiving a larger amount of loans after the first loan sale date than non-traded borrowers.

Insert Table II here.

We next test if firms that are ex ante more likely to be financially constrained, such as younger, smaller or unrated borrowers received a larger amount of loans after the loan sale date than comparable non-traded borrowers.[12] The differences-in-differences method is also well-suited when examining whether firms that are ex ante more likely to be financially

constrained received a larger amount of loans after their loan sale date than comparable non-traded borrowers. That is, similar to the differences-in-differences regression for the full sample in Table II, we run the same exact regression for younger firms, smaller firms and unrated firms first separately, and then together for these ex ante financially constrained borrower types. The results included in the Internet Appendix show that younger, smaller or unrated borrowers all received a larger amount of loans after the loan sale date than comparable non-traded borrowers. Based on this evidence, we conclude that traded borrowers received a larger amount of loans than non-traded borrowers after their loan sale date, and that these results also hold for firm-types that are ex ante likely to be financially constrained, such as younger firms, smaller firms or unrated firms.

We also conduct a triple-differences regression to examine the impact of having traded loans for firms that are ex ante likely to be financially constrained, such as younger firms, smaller firms or unrated firms, relative to the impact of having traded loans for borrowers that are not likely to be financially constrained. The results are shown in Table III. We find the triple interaction term to be positive and statistically significant at the 5% level suggesting that the impact of having traded loans is stronger for firms likely to be financially constrained than for firms that are unlikely to be constrained.

Insert Table III here.

B.2. Do Loan-sale Borrowers have Higher Financial Leverage?

It would be problematic to conclude that loan sales could help alleviate a borrower's financial constraints if the larger amount of loans received post loan-sale were used to refinance its existing debt. We test this by examining the financial leverage of borrowing firms. If the larger amount of future (i.e., post loan-sale) loans received by traded borrowers were used to refinance their existing debt, we would not expect to see an increase in the financial leverage of traded borrowers. To examine this, we reproduce the analysis of Table II for the borrowing firm's leverage (instead of loans received), and present the results in Table IV. As

can be seen, the interaction term which picks up the differences-in-differences in leverage is positive and statistically significant at the 1% level, implying that traded borrowers received a larger amount of loans after the loan sale date than non-traded borrowers, and that this resulted in a higher future leverage for traded borrowers post loan-sale. In other words, the increased amount of loans received by traded borrowers post-loan sale year relative to non-traded borrowers is not used to refinance its existing debt, and consequently, the additional debt capital could help alleviate a traded borrower's financial constraints.

Insert Table IV here.

We also verify that our results that younger, smaller or unrated borrowers received a larger amount of loans than comparable non-traded borrowers is not driven by those traded borrowers using the greater amount of loan proceeds to repay existing debt. That is, we rerun our analysis in Table IV for younger firms, smaller firms and unrated firms first separately, and then together for these ex ante financially constrained borrower types. The results, included in the Internet Appendix, show that younger, smaller and unrated borrowers all had a higher future (i.e., post loan sale) leverage than that of comparable non-traded borrowers.

B.3. Is Cash Flow Sensitivity of Investment Lower for Loan-sale Borrowers?

An alternative way to investigate whether a sale in the secondary loan market alleviates a firm's financial constraints is by examining the cash flow sensitivity of investment before and after a loan sale. We adapt the empirical methodology of Fazzari, Hubbard and Petersen (1988) to a differences-in-differences framework, and examine whether the cash flow sensitivity of investment, after controlling for the investment opportunity set of a firm, is lower in the post loan-sale period as compared to that during the pre-loan sale period.

We define the pre-loan sale period for a firm to be the time period prior to the first day of trading of its loans, and the post-loan sale period to be the time period after the first trading day of its loans.[13] Towards this objective, we create an indicator variable *POST*

TRADE that takes a value of one for firm-year observations that are subsequent to the first day of trading of the same borrower's loans, and zero otherwise.

We use a differences-in-differences framework. That is, we control for the unconditional effect of cashflows, and the unconditional effect of post-trade on investments in examining whether the cash flow sensitivity of investment is lower in the post-loan sale period as compared to the pre-loan sale period. Specifically, we estimate equation (2):

$$\frac{I_t}{K_{t-1}} = \theta_0 + \theta_1 \frac{CF_t}{K_{t-1}} + \theta_2 Q_t + \theta_3 \frac{CF_t}{K_{t-1}} \text{xPOST TRADE} + \theta_4 \text{POST TRADE} + \gamma X_t + \epsilon_t. \quad (2)$$

The variables in the above equation are defined as follows. The dependent variable is the level of investment (I), scaled by the beginning of the period level of capital (K). The independent variables are the investment opportunity set (Q), cash flow (CF) scaled by the beginning of the period level of capital, an interactive variable based on cash flow (CF) scaled by the beginning of the period level of capital, the *POST TRADE* variable as described above, and X represents a vector of other control variables, such as firm fixed effects and year fixed effects as in Fazzari, Hubbard and Petersen (1988) (see the Appendix for a complete description of these variables and their construction from the underlying data).

Consider the model represented by equation (2). The effect of internal cash flow on a firm's investment after its loan sale is given by $\theta_1 + \theta_3$. The effect of internal cash flow on a firm's investment policy before its loan sale is given by θ_1. Consequently, θ_3 identifies the incremental effect of cash flows on investments before and after the loan sale. As a result, to examine whether cash flow sensitivity of investment is lower in the post-loan sale period as compared to the pre-loan sale period, we test whether:

$$\theta_3 < 0. \quad (3)$$

The results are shown in column (1) of Table V. We find strong evidence in support of a loan sale in the secondary loan market alleviating a firm's financial constraints. Specifically, we find the $\hat{\theta}_3$ equals -0.056 and is statistically significant at the 1% level. This suggests

that after controlling for the unconditional effect of cash flows and the unconditional effect of post-trade on investments, the cash flow sensitivity of investment is lower in the post-loan sale period relative to pre-loan sale period.

Insert Table V here.

Column (1) of Table V also shows that the alleviation of a firm's financial constraints by the secondary loan market is economically significant. For example, after controlling for the unconditional effect of cash flows and the unconditional effect of post-trade on investments, the cash flow sensitivity of investment drops by more than a half relative to that of the level during the pre-loan sale period (i.e., -0.056/0.103 = -54.37%).

In contrast, when we conduct a similar analysis as in column (1) of Table V for non-traded firms, we find no such evidence of an alleviation of financial constraints (see the Internet Appendix for details). Specifically, the interaction term (i.e., CF_t/K_{t-1} x *POST TRADE*) is not statistically significant for non-traded borrowers. Consequently, the differences-in-differences method appears well-suited for examining whether a loan sale in the secondary loan market alleviates a firm's financial constraints since there is no evidence of such an effect for non-traded firms.

We next analyze whether we find a similar lowering of cash flow sensitivity of investment for subsamples of firms that *ex ante* are most likely to be financially constrained, such as borrowers that are younger, smaller, without a bond rating or that are distressed. We present the results for the subsamples of firms that are (i) younger, (ii) smaller, (iii) without a bond rating or (iv) that are distressed in columns (2) through (5) of Table V. We find that the coefficient of cash flow sensitivity of investment (i.e., θ_3) is negative for each subsample, and is statistically significant at the 5% level or better for all of the subsamples. Furthermore, the cash flow sensitivity of investment drops by more than a half relative to that of the level during the pre-loan sale period for each of the four subsamples suggesting that the alleviation of financial constraints is economically significant.

Based on the above results, we conclude that the data supports hypothesis 2, i.e., that

financially constrained borrowers benefit from loan sales.

B.4. Alleviation of Financial Constraints and Abnormal Returns

We next examine whether shareholder positive abnormal returns in Table I can be explained by the alleviation of financial constraints. Specifically, we examine whether the borrower stock price reaction surrounding the first day of trading of its loans is significantly larger for traded borrowers that are younger, smaller, without a bond rating or that are distressed as compared to other traded borrowers. In conducting such an analysis, we not only control for well-known determinants of borrower stock price reactions found in prior studies, but also include proxies for alternative channels such as improved risk sharing and increased liquidity.

The dependent variable is the two-day [-1,0] borrower stock cumulative abnormal return (*CAR*) where day 0 refers to the first day of trading of a borrower's loans. With respect to independent variables, we use *LN(TOTAL ASSETS)* to proxy for firm size. There is indirect evidence which suggests that large firms tend to receive larger loans at lower interest rates, all else equal.[14] Hence, we expect a positive relationship between *LN(TOTAL ASSETS)* and the abnormal stock return on the first day of trading. A loan sale event, such as the first day of trading of loans for a profitable company could signal to the market that it is likely to continue to be profitable in the future. Consequently, we expect a positive relationship between *OIBD* (operating income before depreciation, divided by total assets) and the abnormal stock return on the first day of trading.

Firms with higher *TOBQ* (the ratio of borrower's book value of debt plus market value of equity to its total assets) tend to have more growth options (relative to assets in place), and we expect alleviation of financial constraints to be especially important to such firms.

The shareholders in a riskier firm (as proxied by *SDPE*, the standard deviation of the prediction errors during the estimation period) might value a bank lender's assessment and monitoring of firm's idiosyncratic risk more highly than for a less risky firm (see Best and

Zhang (1993)). In addition, as suggested by Billett, Flannery and Garfinkel (1995), investors might also value a bank's monitoring of firms with relatively higher systematic (beta) risk. Another variable that also proxies for the risk faced by the shareholders is *LEVERAGE*.

We also include a stock price runup variable based on Korajczyk, Lucas, and McDonald (1991). Their study shows that firms tend to sell new equity claims following a run-up. If bank loans and their subsequent sale in the secondary loan market are similarly announced in the wake of other good news, *RUNUP* should be inversely related to the extent to which a loan sale event has a positive surprise.

To control for the alternative channel of increased liquidity of a secondary loan market, we include *AVG QUOTES* (average of the bid quotes and ask quotes of secondary market loan prices for the traded loan on the first day of trading), as a proxy for loan market liquidity. We view a loan to be more liquid if it is associated with more quotes.[15]

Additionally, to control for the alternative channel of improved risk-sharing, we include *NUMBER OF LENDERS* (in the syndicate at loan origination) as a proxy for risk-sharing (see the Internet Appendix for evidence on improved risk-sharing from loan sales).

To test whether other loan-specific characteristics influence abnormal returns on the first day of trading, we include *MATURITY* and *SECURED*. We expect *MATURITY* to be negatively related to abnormal returns on the first day of trading since longer-maturity issues are potentially subject to greater interest-rate exposure than shorter-maturity issues, and can have a higher default risk (see, Flannery (1986)). In addition, to the extent *SECURED* enhances the credit quality of the debt issue, we expect a positive coefficient on this variable.

It can be argued that changing macro-economic factors, such as those reflected in credit spreads could influence loan trading abnormal returns.[16] To test this, we include *CREDIT SPREAD* (the difference in bond yields of Aaa and Baa corporate bonds) on the first day of trading as an additional explanatory variable. The descriptive statistics of the variables described above are shown in Table VI.

Insert Table VI here.

We presented evidence on the beneficial effects of loan trading in Section V.A. Furthermore, our analysis in Sections V.B.1 through V.B.3 shows evidence of an important channel of this beneficial effect, the alleviation of financial constraints, for subsamples of financially constrained borrowers, i.e., firms that are younger, smaller, without a bond rating or that are distressed. We next examine whether the existence of a secondary market for loans impacts the equity values of each of these borrower-types more than other traded borrowers, after controlling for other possible determinants of borrower stock price reaction described above.

We run four separate regressions to examine whether a borrower's stock price reaction surrounding the first day of trading of its loans is significantly larger for traded borrowers that are (i) younger, (ii) smaller, (iii) without a bond rating or (iv) that are distressed as compared to other traded borrowers. Specifically, we regress the two-day [-1,0] borrower stock CAR surrounding the first trading day of loans of a borrower on an indicator variable (which takes a value of one for a borrower-type: *YOUNGER*, *SMALLER*, *NO BOND RATING*, or *DISTRESSED* and zero otherwise) and the control variables described above.

Table VII summarizes the regression results. The borrower-type indicator variables have the expected positive sign, and are statistically significant for smaller borrowers (Model 2) and distressed borrowers (Model 4). In other words, we find that the borrower stock price reaction surrounding the first day of trading of its loans in the secondary loan market is significantly larger for smaller borrowers (2.57%) and distressed borrowers (9.65%) − these two borrower-types could reasonably be expected to be *ex ante* more financially constrained than other larger and more mature firms.

Insert Table VII here.

We next examine whether our results in Table VII, namely a statistically significant positive borrower stock price reaction for smaller firms (Model 2 of Table VII) and for distressed firms (Model 4 of Table VII) are robust to selection bias arising from the characteristics of loans that are sold in the secondary loan market.[17]

B.5. Selection Bias and Endogeneity

If sold loans have different characteristics than loans that are not sold (see, for example Drucker and Puri (2009)), then the issue of selection bias could influence our results. Specifically, if banks target some specific types of loans to sell in the market, then the markets could simply be responding to the news about those characteristics. For example, consider a scenario in which a firm first finds a valuable investment opportunity. To fund this investment opportunity, the firm approaches a bank. The only way a bank can fund this project is if it can reduce its current exposure to the borrower. So it decides to sell the loan to other participants. When banks sell the loan, the market views it as positive news because it signals positive NPV projects for the borrowing firm.

To test the extent of selection bias on our results in Table VII, we use Heckman's selection model and the two-step methodology advocated by Heckman (see, Heckman (1979)). The first step is to estimate a probit regression of the likelihood of a loan sale based on firm-specific, loan-specific and market-specific characteristics, and from this step we obtain estimates of λ, the *inverse mills ratio* (see, Greene (2008) for details). The second step involves augmenting the regression equation (such as, for example, Model 4 of Table VII) with the estimate of λ from the first step.

We consider the set of variables from Table VII as potential explanatory variables of the likelihood of a loan being sold. Furthermore, we draw upon the evidence in Drucker and Puri (2009) to include additional explanatory variables reflecting the likelihood of a loan being sold. We construct variables that measure the *number of covenants*, the natural *log of the loan size*, and whether a *loan is syndicated* as in Drucker and Puri (2009), and augment the set of variables from Table VII with these variables.

Since the strongest evidence of a positive market response to loan sales is for distressed firms, we present results corresponding to Model 4 of Table VII in Table VIII. Consistent with our earlier discussion, we find that firms with valuable investment opportunities, as proxied by the firm's Q have a higher likelihood of their loans being sold. Furthermore, Table VIII suggests that our prior results are robust to selection bias. In particular, we

continue to find the *DISTRESSED* variable to be positive and statistically significant at the 1% level, after we control for the *inverse-mills ratio*, λ which is estimated from the first-step probit regression.

Insert Table VIII here.

We conduct several tests for the appropriateness of our three instruments, namely *number of covenants*, *ln(loan size)* and *syndicated loan*. First, to examine whether our instruments directly affect announcement returns, we augment the set of explanatory variables of announcement returns (from Model 4 of Table VII) with our three instruments, and conduct an F-test for the coefficients of these three instruments. The F-statistic is 0.95, and the associated p-value is 0.4179 (see the Internet Appendix for details). This suggests that our three instruments do not directly affect announcement returns. As a robustness test, we augment the set of explanatory variables of announcement returns (from Model 4 of Table VII) with one instrument at a time instead of all three instruments together. The associated p-values for the instruments in these three separate announcement return regressions are: (a) *number of covenants*: 0.6330, (b) *ln(loan size)*: 0.6790, and (c) *syndicated loan*: 0.1420 (see the Internet Appendix for details). Accordingly, we conclude that our three instruments are not directly related to the announcement returns.

Second, we conduct additional tests for whether our three instruments are strong. As a rule of thumb, instruments are considered weak if the F-statistic for the excluded instruments (i.e., *number of covenants*, *ln(loan size)* and *syndicated loan*) in the first-stage regression is below 10 (e.g., in the spirit of Staiger and Stock (1997)). We find that the F-statistic of the three instruments in the first-stage regression (i.e., column 1 of Table VIII) is 120.20, significantly larger than 10, suggesting that our instruments are not weak. Based on the associated p-value of 0.0000, we strongly reject the null hypothesis that these three coefficients are jointly zero. We also examine the partial R^2 associated with these instruments, i.e., the improvement in *pseudo* R^2 from using these three instruments in the first-stage regression in Table VIII. To do this, we run the first-stage regression (i.e., column 1 of Table

VIII) without the three instruments, i.e., using the remaining explanatory variables as in column 1 of Table VIII. The pseudo R^2 of this first-stage regression without these three instruments is 0.1284 as compared to the *pseudo* R^2 of 0.3234 when we include these three instruments (see column 1 of Table VIII). Consequently, the partial R^2 attributable to these three instruments is 0.3234-0.1284 = 0.1950. This increase in *pseudo* R^2 represents a 152% (=0.1950/0.1284) increase from the *pseudo* R^2 of the first stage regression without the three instruments. These results are presented in the Internet Appendix. This large increase in the *pseudo* R^2, together with other evidence described above should provide some comfort that these three instruments are strong, and have significant explanatory power for the loan sale decision.[18]

Overall, the above empirical analysis suggests that the three instruments we use in the Heckman two-step analysis are strong, have significant explanatory power in identifying the relationship in the first-stage regression, and more importantly, have no direct effect on announcement returns in the second-stage analysis.

Finding instruments that are not only empirically strong but also are based on economic reasoning can be challenging. The empirical analysis described above shows some evidence that our three instruments are empirically strong instruments. As for the economic reasoning, we rely on prior literature for selection of these instruments. For example, as evidenced in Drucker and Puri (2009), lenders use covenants as a mechanism to reduce agency and information problems. Hence we would expect it to be an important determinant of whether a loan is traded or not. Moreover, Drucker and Puri (2009) show that sold loans are likely to be part of larger syndicated loans. Larger loans in general, and syndicated loans in particular are natural candidates for requiring many participants, such as banks. These participants in turn are likely to require an avenue to generate liquidity such as a secondary loan market. In short, we would expect that larger loans and syndicated loans increase the likelihood of whether a loan is traded.

For completeness, we also examine whether the positive market response to loan sales for smaller firms (i.e., Model 2 of Table VII) is robust to the issue of selection bias. We

conduct a similar analysis as described above corresponding to Model 2 of Table VII. The results, presented in the Internet Appendix show that the SMALLER variable continues to be positive and statistically significant at the 10% level, even after we control for self-selection through the *inverse-mills ratio*, λ. Once again, the size of the coefficient of the *SMALLER* variable is similar to that in Model 2 of Table VII. Overall, we conclude that our results relating to the positive market response to loan sales for distressed firms and smaller firms are robust to selection bias.

A related issue is whether our finding that traded borrowers receive a larger amount of loans after the first loan sale date than non-traded borrowers (i.e., Table II) is robust to the issue of selection bias. Specifically, we examine whether that the interaction term (i.e., *TRADED* x *POST TRADE*) continues to be positive and statistically significant, even after we control for self-selection along the lines described above. The results, presented in the Internet Appendix show that the interaction term (i.e., *TRADED* x *POST TRADE*) continues to be positive and statistically significant at the 5% level, even after we control for self-selection through the *inverse-mills ratio*, λ.

We next investigate hypothesis 3, that is, whether there is increased risk-shifting by the borrowing firm's shareholders at the expense of its bondholders as a result of a secondary loan market reducing banks' incentives to monitor.

C. Risk-shifting by Shareholders of Borrowing Firms

Some of the shareholder gains that we document in Table I may reflect wealth transfers from bondholders, which could be the case if secondary market trading of loans undermines bank monitoring incentives and increases the scope for risk-shifting behavior that benefits shareholders at the expense of the bondholders.To investigate such risk-shifting by shareholders, we analyze whether a borrower's bonds experience a negative cumulative abnormal return around the first day of trading of its loans.

Specifically, for each borrower in our secondary loan market dataset, we obtain daily returns on its bonds from the data sources described in Section III. Then we conduct an

event study of bond returns around the first trading day of the same borrower's loans in the secondary market. We used the same methodology as that for determining abnormal borrower stock returns (see the Internet Appendix for details of the event study methodology we use in this paper).

The results for the full sample, presented in Panel A of Table IX, show a negative cumulative abnormal bond return on the first trading day of loans for the borrowing firms. One possible explanation for the negative abnormal bond returns around the first trading day of a borrower's loans is the higher financial leverage of traded borrowers and the increased bondholder risk that is expected in future as compared to that of non-traded borrowers (see Table IV for details). Given the positive abnormal stock return on the first trading day of loans in Table I, our evidence in Table IX is thus consistent with a transfer of wealth from bond holders to equity holders of the same borrower.[19]

Insert Table IX here.

The results for distressed borrowers are presented in Panel B of Table IX. We find even stronger evidence of a transfer of wealth from bond holders to equity holders for distressed borrowers as compared to that for the full sample.

Overall, we find evidence consistent with the secondary market trading of loans undermining a bank's monitoring incentives, thereby resulting in riskshifting by shareholders at the expense of existing bondholders. In addition, this effect is stronger for distressed borrowers where the incentives to risk shift are likely to be highest. Moreover, from a longer-term perspective, any loss in monitoring incentives due to secondary market trading of loans could also lead to a reduction in traditional bank specialness and its beneficial effect on borrower's shareholders. We next turn our attention to this issue by examining hypothesis 4, whether loan announcement effects, after the first loan sale date, are smaller. Such lower values would be consistent with outside agents placing a lower value on bank monitoring.

D. Traditional Bank Specialness and Loan Trading

If loan trading undermines bank monitoring incentives, this could lead to a reduction in traditional bank specialness in the longer-term. In this section, we examine whether there is any evidence consistent with such a reduction in bank specialness as a result of loan trading. Prior studies, such as James (1987), Lummer and McConnell (1989), Best and Zhang (1993) and Billett, Flannery and Garfinkel (1995) find a robust, positive impact of bank loan announcements on borrowers' stock returns at the time of loan origination which is in contrast to insignificant or negative response by investors to announcements of most other forms of new financing.[20] However, these prior studies use data from the 1970s and 1980s, a time period during which a well developed secondary market for loans did not exist.

A natural question to ask is whether a traded borrower's loans are also associated with a positive loan announcement effect (i.e., at loan origination) similar to the studies mentioned above. If investors anticipate a reduction in traditional bank specialness as posited in hypothesis 4, the loan announcement effect could be zero or even negative. To test this, we conduct an event study on the borrower's stock prices on loan announcement dates for first-trade loans (i.e., loans that are the first ones to trade) for those borrowers. That is, we conduct an event study on the *loan announcement date* (proxied by the deal active date of a loan in Dealscan) in this subsection as opposed to an event study on the *first day of trading* in Section V.A for these loans.

The results are presented in Panel A of Table X. The average loan announcement effect for first-trade loans is positive and statistically significant at the 5% level or better. For example, the average two-day abnormal return is 0.99% (z-statistic 2.77), which is of a similar order of magnitude as documented in the empirical studies of bank specialness, such as Billett, Flannery and Garfinkel (1995). We view this evidence as being consistent with little reduction in traditional bank specialness, at least in the shorter-term.

Insert Table X here.

However, a related issue is whether loan trading could lead to a reduction in traditional bank specialness in the longer-term.[21] If a borrower's shareholders capitalize the benefits or

costs from loan trading when those loans trade for the first time, we could expect that average loan announcement effects of subsequent post-initial traded loans (i.e., loan announcements after the first loan sale date) of the same borrowers could be lower, reflecting a reduction in the traditional bank specialness in the longer-term. We conduct a similar event study on loan announcement dates for these post-trade loans.

The results are presented in Panel B of Table X. We find that the average loan announcement effects for subsequent or follow-on post-trade loans, while positive are much smaller than those shown in Panel A of Table X for first-trade loans. For example, the average two-day abnormal return for post-trade loans is 0.21% (z-statistic 2.58), significantly lower than the corresponding 0.99% (z-statistic 2.77) for the first-trade loan of the same borrower. This difference of 0.78% (=0.99-0.21) is statistically significant at the 5% level. This evidence is consistent with some reduction in traditional bank specialness in the longer-term. Below we show that these results also hold when we control for well-known determinants of loan borrower abnormal returns in a regression framework.

D.1. Evidence on Traditional Bank Specialness

In Section V.D, we presented evidence, based on a univariate comparison of loan announcements, that there is evidence of a longer-term decline in traditional bank specialness as a result of secondary market loan trading. In this section, we conduct additional empirical tests to examine whether this conclusion changes when we control for well-known determinants of borrower abnormal returns in a regression framework.

Specifically, we augment our sample of first-trade loans with post-trade loans (i.e., loans announced subsequent to the first trading day for the same borrower), and regress $[-1, 0]$ loan announcement *CAR* on the explanatory variables discussed in Section V.B.4. and the *POST TRADE* variable that takes a value of one if a loan announcement date is subsequent to the first trading day of the same borrower, and zero otherwise. If secondary market loan trading undermines longer-term bank monitoring incentives, one would expect the coefficient of the POST TRADE variable to be negative and statistically significant.

The results are reported in Table XI. We find that the coefficient of *POST TRADE* is negative and statistically significant at the 5% level in two of the five regression specifications, and at the 10% level in the remaining three regression specifications. The explanatory power of these regressions is also similar to that found in other studies on bank specialness.

Insert Table XI here.

This evidence offers some support for the view that secondary market trading in loans reduces bank specialness over the longer-term when viewed in the traditional sense of banks being monitors and information producers for external agents. However, this evidence needs to be weighed against the backdrop of the beneficial effects of secondary loan markets that we documented earlier. In other words, banks now may be viewed as being special along two distinct dimensions: (a) the traditional view as a bank monitor, where we find some evidence of a long-term lowering of such specialness, and (b) a newly developing dimension of specialness in the ability of banks to create a secondary loan market for their borrower's loans while simultaneously continuing to maintain a lending relationship with that borrower.

VI. Conclusions

We present evidence that suggests that secondary market trading in loans is valuable to the equity holders of a borrowing firm. Specifically, when a borrower's existing loans trade for the first time in the secondary loan market, it elicits a positive announcement effect on the borrower's stock return. We show that an important explanation as to why secondary market loan trading is valuable to equity investors is that loan sales are associated with an alleviation of a borrower's financial constraints. Specifically, we find that subsamples of financially constrained borrowers, such as firms that are younger, smaller, without a bond rating, or that are distressed have a cash flow sensitivity of investment that is lower in the post-loan sale period as compared to that of the pre-loan sale period.

Interestingly, we also find evidence of a transfer of wealth from bondholders to shareholders on the first trading day of loans. One possible explanation for the negative abnormal

bond returns around the first trading day of a borrower's loans is the higher financial leverage of traded borrowers (and the increased bondholder risk) that might be expected in future as compared to that of non-traded borrowers.

The above evidence, taken together, suggests that the developing strength and depth of the secondary loan market is significantly changing the nature of bank specialness. That is, banks may now be viewed as being special along two distinct dimensions: (a) the traditional view of bank specialness, characterized by information production and monitoring, and (b) the creation of an active secondary market for bank loans with lenders who maintain lending relationships with the borrower. The second benefit reflects an alleviation of a borrower's financial constraints and additional liquidity for a borrower's loans. Consequently, our results have implications for the broader debate on the comparative advantages of banks versus markets as information producers, and for the substitutability and complementarity of markets for banks as monitors and information producers.

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Table I
Distribution of Cumulative Abnormal Stock Returns
surrounding the First Trading Day of Loans

This table presents some measures of distribution of cumulative abnormal returns (CARs) of our sample of 415 borrowers that are in the loan pricing dataset surrounding the first trading day of their loans. For borrowers with multiple loans, we use the earliest of the first trading day of all loans of the same borrower. The Z statistics of average CARs in the event windows are computed using the methodology of Mikkelson and Partch (1989) that considers both the time-series and cross-sectional dependence, and unequal variances in returns. The superscript a for the Z statistics stands for significance at the 1% level using a two-tailed test. The 25th percentile and the 75th percentile of the distribution of CARs are also shown in this table.

Event window	Average (%)	Z-statistic	25th Percentile (%)	75th Percentile (%)
[0]	0.82	2.94^a	-1.56	2.14
[-1,0]	1.24	3.27^a	-2.35	3.21
[-1,1]	1.31	2.89^a	-2.55	3.77

Table II
Loans Received by Borrowers

This table presents information relating to the amount of loans received in millions of dollars. Borrowers are classified into two distinct borrower types: "Traded Borrowers" that have had a loan available for trading for the first time during the sample period, and "Non-Traded Borrowers" that never had any loans traded during the sample period. Our sample of 415 firms that are in the loan pricing dataset for which we have the relevant data in Dealscan comprise "Traded Borrowers". We sum the values of loans received during a fiscal year from the Dealscan database for each of the traded and non-traded borrowers. The unit of observation is borrower-fiscal year. For all traded borrowers that had their first day of trading during a fiscal year, we include all non-traded borrowers that received a loan during the same fiscal year. We include all loans (i.e., pre and post-trade, measured relative to the same fiscal year) of both these borrower types. The dependent variable is the log of loans received by a borrower during a fiscal year, where the value of loans is measured in millions of U.S. dollars. The independent variables are: *TRADED*, an indicator variable that takes a value of one for borrowers that have had a loan available for trading for the first time during the sample period, and zero otherwise. *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on *TRADED* and *POST TRADE*. *LN(TOTAL ASSETS)* which proxies for firm size. A firm's investment opportunity, as proxied by Q, which is measured as the market value of assets divided by the book value of assets. See the Appendix for additional details on how these variables are constructed from underlying data. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: LN (LOANS RECEIVED)

Variable	Coefficient	T-statistic
INTERCEPT	0.96	15.89^a
TRADED	0.45	7.36^a
POST TRADE	0.03	1.08
POST TRADE x TRADED	0.14	2.26^b
LN(TOTAL ASSETS)	0.60	62.47^a
Q	0.03	2.63^a
Adjusted R^2	0.6381	
Observations	38,498	

Table III
Loans Received by Financially Constrained Borrowers
(Triple-Differences Method)

This table presents information relating to the amount of loans received in millions of dollars by borrowers. Borrowers are classified into two distinct borrower types: "Traded Borrowers" that have had a loan available for trading for the first time during the sample period, and "Non-Traded Borrowers" that never had any loans traded during the sample period. The unit of observation in this table is borrower-fiscal year. We sum the values of loans received during a fiscal year from the Dealscan database for each of the traded and non-traded borrowers. For all traded borrowers that had their first day of trading during a fiscal year, we include all non-traded borrowers that received a loan during the same fiscal year. We include firm-year observations corresponding to all loans (i.e., pre and post-trade, measured relative to the same fiscal year) of both these borrower types. The dependent variable is the log of loans received by a borrower during a fiscal year, where the value of loans is measured in millions of U.S. dollars. The independent variables are: *TRADED*, an indicator variable that takes a value of one for borrowers that have had a loan available for trading for the first time during the sample period, and zero otherwise. *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on *TRADED* and *POST TRADE*. *FINANCIALLY CONSTRAINED* refers to a borrower that is smaller, younger or without a bond rating. *LN(TOTAL ASSETS)* proxies for firm size. *Q*, measured as the market value of assets divided by the book value of assets, proxies for a firm's investment opportunity set. We include double interactions and the triple interaction term in the regression. See the Appendix for additional details on how these variables are constructed from underlying data. The *t* ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: LN (LOANS RECEIVED)

Variable	Coefficient	T-statistic
INTERCEPT	1.13	9.98[a]
TRADED	0.34	3.25[a]
POST TRADE	0.14	3.37[a]
POST TRADE x TRADED	-0.03	-0.31
FINANCIALLY CONSTRAINED	-0.06	-0.91
FINANCIALLY CONSTRAINED x TRADED	0.19	1.48
FINANCIALLY CONSTRAINED x POST TRADE	-0.15	-3.18[a]
FINANCIALLY CONSTRAINED x POST TRADE x TRADED	0.24	2.36[b]
LN(TOTAL ASSETS)	0.58	42.31[a]
Q	0.03	2.45[b]
Adjusted R^2	0.6401	
Observations	38,498	

Table IV
Financial Leverage of Borrowers

This table presents information relating a borrower's financial leverage, measured as interest-bearing debt, divided by the borrowing firm's market capitalization. Borrowers are classified into two distinct borrower types: "Traded Borrowers" that have had a loan available for trading for the first time during the sample period, and "Non-Traded Borrowers" that never had any loans traded during the sample period. Our sample of 415 firms that are in the loan pricing dataset for which we have the relevant data in Dealscan comprise "Traded Borrowers". The unit of observation is borrower-fiscal year. For all traded borrowers that had their first day of trading during a fiscal year, we include all non-traded borrowers that received a loan during the same fiscal year. We include firm-year observations corresponding to all loans (i.e., pre and post-trade, measured relative to the same fiscal year) of both these borrower types. The dependent variable is *LEVERAGE*, as defined above. The independent variables are: *TRADED*, an indicator variable that takes a value of one for borrowers that have had a loan available for trading for the first time during the sample period, and zero otherwise. *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on *TRADED* and *POST TRADE*. *LN(TOTAL ASSETS)* which proxies for firm size. A firm's investment opportunity, as proxied by Q, which is measured as the market value of assets divided by the book value of assets. See the Appendix for additional details on how these variables are constructed from underlying data. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: LEVERAGE

Variable	Coefficient	T-statistic
INTERCEPT	0.31	19.53^a
TRADED	0.05	3.57^a
POST TRADE	0.02	4.45^a
POST TRADE x TRADED	0.08	5.89^a
LN(TOTAL ASSETS)	0.01	5.75^a
Q	-0.07	-23.56^a
Adjusted R^2	0.1765	
Observations	37,859	

Table V
Alleviation of Financial Constraints through Loan Sales

This table presents estimates from a linear regression analysis of whether a firm's cash flow sensitivity of investment is reduced during its post-loan sale period after we control for a firm's investment opportunity as in Fazzari, Hubbard and Petersen (1988). The results for the full sample, subsamples of firms that are younger, smaller, without a bond rating, or that are distressed are shown in the table. Our regression specifications use the variables described below. The dependent variable is Investment (I), scaled by the beginning of year Capital (K). Independent variables are: Cash Flow (CF), scaled by the beginning of year capital (K). A firm's investment opportunity, as proxied by Q, which is measured as the market value of assets divided by the book value of assets. it POST TRADE, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on Cash Flow (CF), scaled by beginning of year capital (K) and *POST TRADE*. Refer to Appendix for a complete description of these subsamples, and for how the above-mentioned variables are constructed from the underlying data in Compustat. These regressions include firm and year fixed effects, although their coefficients are not displayed in the table. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Table V (Continued)
Alleviation of Financial Constraints through Loan Sales

Dependent Variable: I_t/K_{t-1}

Variable	Full Sample (1)	Younger Firms (2)	Smaller Firms (3)	Firms Without Bond Rating (4)	Distressed Firms (5)
INTERCEPT	0.139	0.221	0.209	0.189	0.624
	(5.96)^a	(5.81)^a	(6.06)^a	(3.80)^a	(2.44)^b
CF_t/K_{t-1}	0.103	0.084	0.108	0.099	0.055
	(6.79)^a	(3.28)^a	(4.60)^a	(3.12)^a	(1.95)^c
Q_t	0.045	0.034	0.055	0.099	0.083
	(5.28)^a	(2.79)^a	(3.81)^a	(3.12)^a	(2.09)^b
POST TRADE	-0.004	-0.006	-0.009	-0.004	-0.061
	(-0.26)	(-0.23)	(-0.31)	(-0.05)	(-1.17)
CF_t/K_{t-1} x POST TRADE	-0.056	-0.052	-0.061	-0.062	-0.084
	(-3.67)^a	(-2.14)^b	(-2.57)^a	(-2.23)^b	(-2.35)^b
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Within R^2	0.1621	0.1838	0.1762	0.2441	0.2603
Adjusted R^2	0.4401	0.4574	0.4660	0.3715	0.7142
Observations	5,743	2,585	2,133	533	286

Table VI
Descriptive Statistics

This table presents the descriptive statistics of the control variables used in the empirical analysis in Table VI of the 415 borrowers in our sample that are in the loan pricing dataset. See the Appendix for a description of how these variables are constructed. † stands for an indicator variable.

Variable	Mean	Median	Min.	Max.
Panel A: Loan Characteristics				
AVG QUOTES	2.49	2.00	1.50	13.00
MATURITY (months)	68.77	72.00	7.00	167.00
NUMBER OF LENDERS	14.12	10.00	1.00	96.00
SENIOR†	1.00	1.00	1.00	1.00
SECURED†	0.92	1.00	0.00	1.00
Panel B: Borrower Characteristics				
OIBD (%)	9.87	9.94	-89.92	80.20
LN(TOTAL ASSETS)	7.55	7.34	2.29	12.40
SDPE (%)	3.86	3.35	0.89	17.88
RUNUP (%)	0.64	0.44	-95.32	73.15
TOBQ	1.57	1.29	0.55	11.16
BETA	0.87	0.76	-0.76	3.63
LEVERAGE	0.48	0.49	0.00	0.99
Panel C: Macro/Market Characteristics				
CREDIT SPREAD (basis points)	96.31	97.00	52.00	146.00

Table VII
Regression Analysis of Determinants of Cumulative Abnormal Returns surrounding the First Trading Day of Loans

This table presents estimates from a linear regression analysis of the determinants of cumulative abnormal returns (CARs) surrounding the first trading day of loans. The dependent variable is the two-day [-1,0] CAR, measured as a percentage. See the Appendix for a description of other independent variables used in this table. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: CAR[-1,0], %

Variable	Model 1	Model 2	Model 3	Model 4
INTERCEPT	-7.68	-11.58	-8.87	-7.53
	(-1.44)	(-1.83)^c	(-1.48)	(-1.51)
YOUNGER	0.32			
	(0.39)			
SMALLER		2.57		
		(1.99)^b		
NO BOND RATING			1.37	
			(0.63)	
DISTRESSED				9.65
				(2.64)^a
LN(TOTAL ASSETS)	0.63	1.06	0.72	0.90
	(1.92)^c	(2.46)^b	(1.76)^c	(2.60)^a
OIBD	0.09	0.10	0.09	0.09
	(3.21)^a	(3.41)^a	(3.19)^a	(3.24)^a
TOBQ	-0.62	-0.42	-0.55	-0.57
	(-1.78)^c	(-1.14)	(-1.43)	(-1.54)
LEVERAGE	2.43	1.10	2.81	0.29
	(1.14)	(0.58)	(1.16)	(0.15)
BETA	-0.73	-0.52	-0.77	-0.82
	(-0.90)	(-0.65)	(-0.95)	(-0.97)
RUNUP	0.02	0.02	0.02	0.03
	(0.33)	(0.46)	(0.35)	(0.61)
SDPE	0.52	0.44	0.50	0.17
	(1.75)^c	(1.58)	(1.78)^c	(0.63)
AVG QUOTES	-0.14	-0.12	-0.13	-0.26
	(-0.58)	(-0.47)	(-0.53)	(-1.14)
CREDIT SPREAD	0.02	0.02	0.02	0.02
	(0.65)	(0.61)	(0.65)	(0.67)
NUMBER OF LENDERS	-0.02	-0.02	-0.02	-0.05
	(-0.53)	(-0.49)	(-0.51)	(-1.32)
MATURITY	0.02	0.02	0.02	0.01
	(0.98)	(1.02)	(1.02)	(0.72)
SECURED	-3.11	-2.94	-2.85	-2.02
	(-1.62)	(-1.60)	(-1.66)^c	(-1.30)
Year dummies	yes	yes	yes	yes
Adjusted R^2	0.0494	0.0652	0.0520	0.1300
Observations	323	323	323	323

Table VIII
Regression Analysis of Determinants of Cumulative Abnormal Returns surrounding the First Trading Day of Loans (Controlling for Self-selection)

This table presents estimates from a linear regression analysis of the determinants of cumulative abnormal returns (CARs) surrounding the first trading day of loans. The left panel shows the estimates of the first step probit regression and the right panel shows the estimates of the second step linear regression of the Heckman's two-step estimation procedure. The dependent variable for the first step probit regression is *TRADED*, which takes a value of one if a loan is sold, and zero otherwise. We include first-trade loans (i.e., sold loans) of traded borrowers, and pre-trade loans of traded borrowers (i.e., loans prior to the first trading day of the same borrower which by definition are not sold) along with loans of non-traded borrowers (i.e., those that never trade during the sample period). The dependent variable for the second step linear regression is the two-day [-1,0] *CAR*, measured as a percentage. The inference variable in the second step linear regression is *DISTRESSED* that takes a value of one if a borrower's loan price, measured as percentage of par on the first day of trading is less than 90%, and zero otherwise. See the Appendix for a description of other independent variables used in both panels of this table. In addition, the right panel includes an estimate of the inverse-mills ratio *LAMBDA* from the first-step probit regression. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variables: TRADED (first step) and CAR[-1,0], % (second step)		
Variable	First Step	Second Step
INTERCEPT	-6.28	-11.70
	(-24.16)[a]	(-1.57)
DISTRESSED		9.82
		(5.02)[a]
LN (TOTAL ASSETS)	0.11	0.99
	(3.89)[a]	(2.26)[b]
OIBD	-0.16	0.08
	(-0.60)	(2.06)[b]
TOBQ	0.04	-0.19
	(2.60)[a]	(-0.31)
LEVERAGE	0.13	1.27
	(0.89)	(0.53)
BETA	-0.08	-0.69
	(-1.40)	(-0.72)
RUNUP	-0.03	0.03
	(-0.11)	(1.21)
SDPE	7.46	0.51
	(4.22)[a]	(1.80)[c]
MATURITY	0.01	0.04
	(5.54)[a]	(1.69)[c]
SECURED	0.29	-2.80
	(3.41)[a]	(-1.89)[c]
NUMBER OF LENDERS		-0.06
		(-1.56)
AVERAGE QUOTES		-0.39
		(-0.94)
CREDIT SPREAD		0.00
		(0.08)
NUMBER OF COVENANTS*	0.17	
	(13.37)[a]	
LN(LOAN SIZE)*	0.34	
	(9.76)[a]	
SYNDICATED LOAN*	0.36	
	(2.50)[b]	
LAMBDA		0.91
		(0.88)
Year dummies		yes
F-statistic*	120.20	
p-value (F-statistic*)	0.0000	
Pseudo R^2	0.3234	
Adjusted R^2		0.1690
Observations	14,313	302

Table IX
Average Cumulative Abnormal Bond Returns surrounding the First Trading Day of Loans for Traded Borrowers

This table presents the average cumulative abnormal bond return ($ACAR$) of our sample firms (i.e., borrowers in the loan pricing dataset) surrounding the first trading day of a borrower's loans in Panel A. For borrowers with multiple loans, we use the earliest of the first trading day of all loans of the same borrower. The evidence in this table is based on market model-adjusted abnormal bond returns. We use the Lehman Brothers U.S. Corporate Intermediate Bond Index (obtained from Datastream) as the benchmark bond market index in computing these abnormal returns. In Panel B of this table, we classify a borrower as financially distressed if its loan price, measured as percentage of par on the first day of trading is less than 90%. See the Appendix for details. The Z statistics of $ACARs$ in the event window (shown in parentheses) are computed using the methodology of Mikkelson and Partch (1989) that considers both the time-series and cross-sectional dependence, and unequal variances in returns. The superscripts for Z statistics a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test.

Panel A: Abnormal bond returns (N=132)

Event window	ACAR (%)	Z-statistic
[0]	-0.48	-2.16^b
[-1,0]	-0.12	-1.96^b
[-1,1]	-0.01	-0.81

Panel B: Abnormal bond returns (N=31)
(Distressed borrowers)

Event window	ACAR (%)	Z-statistic
[0]	-1.77	-3.36^a
[-1,0]	-1.23	-4.56^a
[-1,1]	-1.34	-3.46^b

Table X
Average Loan Announcement Effects

This table presents the average cumulative abnormal return ($ACAR$) of our sample of borrowers that are in the loan pricing dataset surrounding their loan announcement dates. Panel A presents the loan announcement effects for the 415 first-trade loans of surrounding the loan announcement date of these loans. That is, we match the loans of our sample borrowers that trade for the first time during the sample period with the LPC Dealscan database, and use the deal active date of that loan as a proxy for the announcement date of the firm receiving that first-traded loan. Panel B presents similar evidence for the post-trade loans of the same borrowers, i.e., for loans that are announced subsequent to the first trading day of that borrower. The Z statistics of $ACARs$ in the event window (shown in parentheses) are computed using the methodology of Mikkelson and Partch (1989) that considers both the time-series and cross-sectional dependence, and unequal variances in returns. The superscript a for the Z statistics stands for significance at the 1% level using a two-tailed test.

Panel A: First-trade loans (N= 314)

Event window	ACAR (%)	Z-statistic
[0]	0.46	2.05^b
[-1,0]	0.99	2.77^a
[-1,1]	1.41	3.44^a

Panel B: Post-trade loans (N= 1,040)

Event window	ACAR (%)	Z-statistic
[0]	0.18	2.91^a
[-1,0]	0.21	2.58^a
[-1,1]	0.41	3.78^a

Table XI
Regression Analysis of Determinants of Cumulative Abnormal Returns surrounding the Loan Announcement Date

This table presents estimates from a linear regression analysis of the determinants of cumulative abnormal returns (CARs) surrounding the loan announcement date for the augmented sample comprising first-trade and post-trade loans, as described in Table IX. We use the deal active date of a loan in the LPC Dealscan database as a proxy for the announcement date of a firm receiving a loan. The dependent variable is the two-day [-1,0] *CAR*, measured as a percentage. The inference variable is *POST TRADE* that takes a value of one for observations that are subsequent to the first day of trading of the same firm's loans, and zero otherwise. See the Appendix for a description of other independent variables used in this table. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: CAR[-1,0], %

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
INTERCEPT	2.57	-1.12	2.60	3.25	-0.08
	(1.20)	(-0.39)	(1.21)	(1.40)	(-0.03)
POST TRADE	-1.05	-1.05	-1.04	-1.38	-1.39
	(-1.78)^c	(-1.65)^c	(-1.77)^c	(-2.21)^b	(-2.22)^b
LN(TOTAL ASSETS)	-0.18	-0.18	-0.20	-0.18	-0.24
	(-1.46)	(-1.51)	(-1.60)	(-1.38)	(-1.68)^c
OIBD	0.02	0.01	0.02	0.02	0.02
	(0.75)	(0.62)	(0.77)	(1.03)	(0.99)
TOBQ	-0.11	-0.11	-0.12	-0.23	-0.24
	(-0.48)	(-0.48)	(-0.49)	(-0.97)	(-1.00)
LEVERAGE	1.34	1.32	1.43	0.82	0.96
	(1.72)^c	(1.71)^c	(1.80)^c	(1.05)	(1.18)
BETA	0.60	0.59	0.61	0.54	0.55
	(1.15)	(1.11)	(1.16)	(1.03)	(1.03)
RUNUP	0.15	0.15	0.15	0.18	0.18
	(3.22)^a	(3.18)^a	(3.22)^a	(3.76)^a	(3.77)^a
SDPE	-0.08	-0.09	-0.08	-0.07	-0.07
	(-0.34)	(-0.38)	(-0.33)	(-0.29)	(-0.30)
CREDIT SPREAD		0.02			0.02
		(1.01)			(0.97)
NUMBER OF LENDERS			0.01		0.02
			(0.93)		(1.40)
MATURITY				0.01	0.01
				(1.06)	(1.09)
SECURED				-0.52	-0.57
				(-1.27)	(-1.39)
Year dummies	yes	yes	yes	yes	yes
Adjusted R^2	0.0689	0.0706	0.0686	0.0949	0.0970
Observations	1,311	1,308	1,311	1,241	1,238

Appendix
Variable Definitions

Alleviation of Financial Constraints

I_t Stands for investment in plant and equipment during the period t. It is the same as capital expenditures (Compustat variable CAPX).

K_t Represents the capital stock as of the end of the period t. It is the same as net property, plant, and equipment (Compustat variable PPENT).

Q_t Refers to the market value of assets divided by the book value of the assets as of the end of period t. The book value of the assets is the same as "assets - total" (Compustat variable AT). The market value of assets is calculated as the book value of assets (Compustat variable AT) plus the market value of common stock (described next) less the sum of the book value of common stock (Compustat variable CEQ) and balance sheet deferred taxes (Compustat variable TXDB). We calculate the market value of common stock as the product of the number of common shares outstanding (Compustat variable CSHO) and the closing price (Compustat variable PRCC_F) as of the end of the period t.

CF_t Equals the sum of earnings before extraordinary items (Compustat variable IB) and depreciation (Compustat variable DP).

X_t Stands for a vector of other control variables: firm fixed effects (based on Compustat firm identifier GVKEY) and year fixed effects (based on Compustat variable FYEAR).

Appendix
Variable Definitions (Continued)

Firm Specific Variables

YOUNGER	An indicator variable that takes a value of one if a borrower's listing age is less than 10 years, where age is measured relative to a firm's initial public offering date, and zero otherwise. See Petersen and Rajan (1995) and Fink et al. (2010).
SMALLER	An indicator variable that takes a value of one if a borrower's equity market capitalization is less than $500 million, and zero otherwise. Source: Standard & Poors.
NO BOND MARKET	An indicator variable that takes a value of one if a borrower's credit rating (Compustat variable SPLTICRM) is missing, and zero otherwise. See Faulkender and Petersen (2006).
DISTRESSED	An indicator variable that takes a value of one if a borrower's loan trades below 90% of its par value in the secondary loan market, and zero otherwise.
BETA	Borrower's market model beta calculated over the estimation period.
RUNUP	Cumulative return of the borrower's stock during the estimation period.
SDPE	Standard deviation of the prediction errors (i.e., borrower's stock return residual) during the estimation period.
LN(TOTAL ASSETS)	Stands for the natural log of total assets (Compustat variable AT).
OIBD	Stands for the operating income before depreciation (Compustat variable OBIDP), measured as a fraction of total assets (Compustat variable AT).
TOBQ	Stands for Tobin's q (see, Q_t).
LEVERAGE	Stands for the book value of debt divided by the sum of book value of debt and market value of equity. See Q_t for how the market value of equity is computed.

Appendix
Variable Definitions (Continued)

Loan Specific Variables

AVG QUOTES	Stands for the average of bid quotes and ask quotes for a trade loan.
LN(LOAN SIZE)	Stands for the natural log of loan size when the loan is originated, where loan size is measured in millions of U.S. dollars.
MATURITY	Stands for the maturity of a loan at issuance, measured in months.
NUMBER OF LENDERS	Stands for the number of lenders at loan syndication.
NUMBER OF COVENANTS	We follow Drucker and Puri (2009) and defined this variable as the total number of financial covenants plus number of sweep covenants (asset, equity, and debt) plus one if the loan has a dividend restriction.
SENIOR	An indicator variable that takes a value of one if a loan is senior, and zero otherwise.
SECURED	An indicator variable that takes a value of one if a loan is secured, and zero otherwise.
SYNDICATED LOAN	We follow Drucker and Puri (2009) and defined this variable as an indicator variable that takes a value of one if the loan has more than one lender at the time of loan. That is, when the NUMBER OF LENDERS variable described earlier is greater than or equal to one.

Other Variables

BOND MARKET	An indicator variable that takes a value of one if a firm is rated by the Standard & Poors (S&P) (e.g., as of the loan announcement date), and zero otherwise.
CREDIT SPREAD	The difference in bond yields of Aaa and Baa corporate bonds, measured in basis points. The bond yield data is from the Federal Reserve Statistical Release (FRB:H.15) and is provided by Moody's.
POST TRADE	An indicator variable that takes a value of one for observations that are subsequent to the first day of trading of the same firm's loans.
OPTION MARKET	An indicator variable that takes a value of one if a firm has options traded on its stock (e.g., as of the loan announcement date), and zero otherwise.

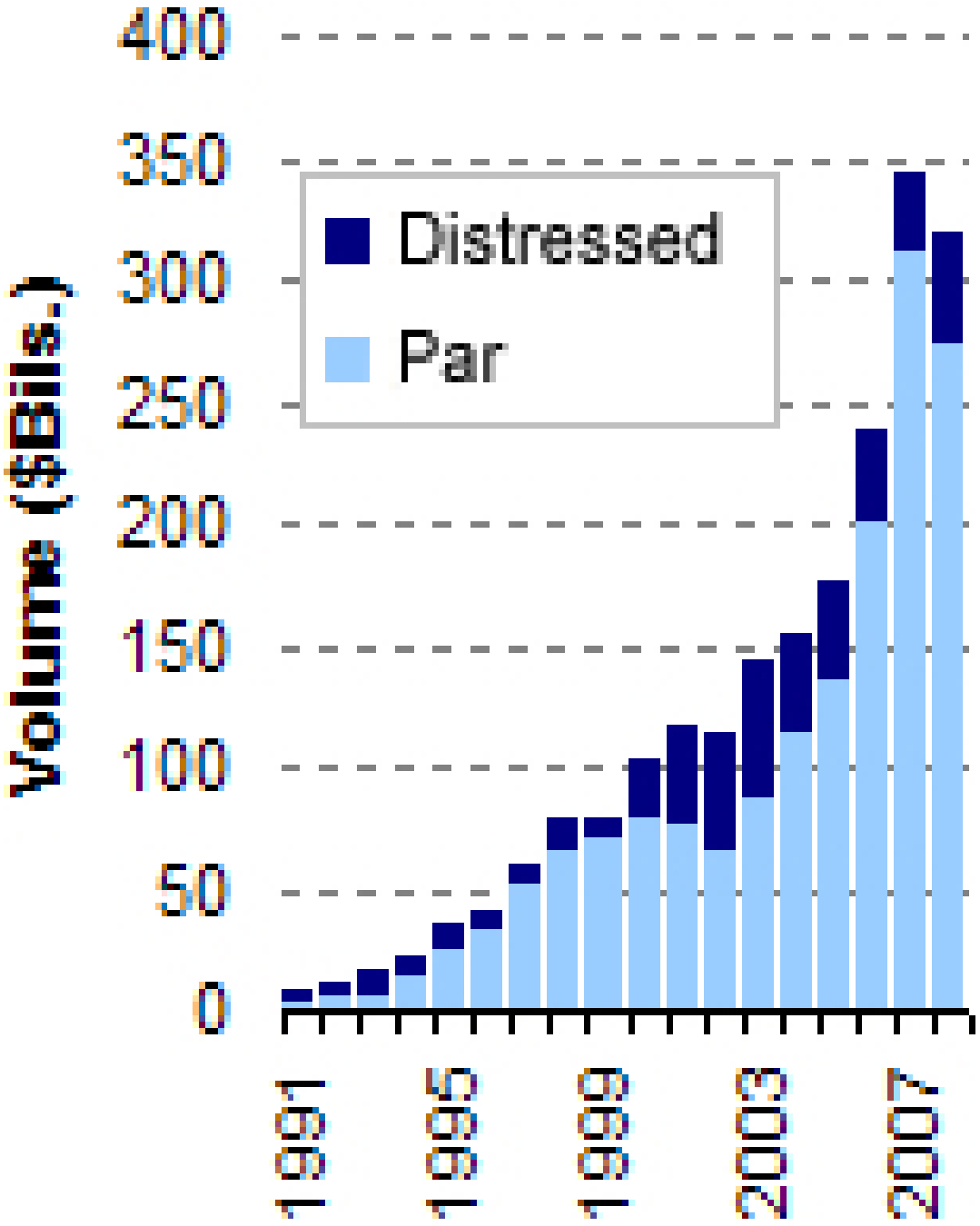

Figure 1
Secondary Loan Market Volume
Source: Reuters LPC Traders Survey

NOTES

[1]Banks are considered "special" for several reasons, including reducing the agency costs of monitoring borrowers. See, Gorton and Winton (2003), and Saunders (2008) for comprehensive reviews of why banks are considered special.

[2]A CDO owns financial assets that are debt obligations by nature, such as mortgage backed securities and may sometimes include corporate loans. A CLO owns only financial assets that are loan obligations, such as corporate loans and sometimes high yield loans. See Lucas, Goodman and Fabozzi (2006) for an excellent discussion of these structured finance products.

[3]See Campello, Graham and Harvey (2010) for recent evidence on the effects of financing constraints on investment behavior based on a survey of 1,050 CFOs in U.S., Europe and Asia. In particular, they show that the inability to borrow externally causes many firms to bypass attractive investment projects, with 86% of the constrained U.S. CFOs saying their investment in attractive projects has been restricted during the credit crisis of 2008 and more than half outright canceling or postponing their investment plans.

[4]We thank an anonymous referee for helping us develop the alleviation of financial constraints channel through which shareholders benefit from the sale of loans in the secondary loan market, and for helping us conceptualize the testing of cash flow sensitivity of investment in a differences-in-differences framework.

[5]See, Gorton and Pennacchi (1995) who show that this moral hazard can be mitigated if a lending bank retains a portion of the loan.

[6]We focused on the DPS subsample of 15 subpar loan sale announcements (listed in their Appendix) because it drives their main result regarding borrower stock price reaction to loan sales (see Panel B of Table I of the DPS study). We manually searched and found all the 15 borrower names in the Dealscan database. Our analysis shows that 87% (i.e., 13 of 15) of the borrowers in the DPS sample had no loans from the selling bank during the five year period following the DPS sample period (i.e., from 1999 to 2003) in the Dealscan database. Accordingly, we conclude that loan sales in the DPS sample terminated the lending relationship between the selling bank and the borrowing firm in almost all cases. Our results are qualitatively unchanged when we examine the DPS full sample, i.e., containing both subpar and par loans. That is, the termination of the lending relationship between the selling bank and the borrowing firm appears to be the norm rather than the exception in the DPS full sample of subpar and par loans.

[7]We examine whether the lead arranger continues to offer more loans to the same borrower during the next five years. We conduct this analysis using data from Dealscan. Specifically, if a lead arranger on the first-traded loan to a borrower does not participate in any capacity on a syndicated loan to the same borrower that is subsequent to the first trading day during the next five years, we infer that the lead arranger has terminated its lending relationship with the borrower subsequent to the first day of trading. We find that in a majority of the cases, a lead arranger is also a lead arranger on a subsequent loan to the same borrower, and in most cases they participate in some capacity in the syndicate. Our analysis takes into account lender name changes as a result of mergers and acquisitions during the sample period.

[8]We conducted these additional empirical tests to address an anonymous referee's comment on comparing and contrasting our findings with that of the prior literature (see Section II for details), and an anonymous associate editor's comment on the risk-shifting channel and its implications for the traditional role of banks as monitors and information producers (see Sections V.D and V.D.1 for details).

[9]Also, see Parlour and Winton (2009) for how bank monitoring incentives differ between the secondary loan market and the CDS market.

[10]See, Winton (1995) for the role of seniority, and Rajan and Winton (1995) for the role of collateral as contractual devices that influence a lender's incentive to monitor.

[11]We focus only on the first trading day of a borrower's loans as the relevant event date for our empirical analysis since the market capitalizes the benefits of loan trading the very first time a loan of that borrower is traded. See the Internet Appendix for details.

[12]We classify a borrower as distressed in our paper if its loan price, measured as percentage of par on the first day of trading is less than 90%. Since such a loan price is unavailable for non-traded borrowers, we can't run this subsample analysis for distressed borrowers using our current definition of distressed.

[13]Since we employ annual data for this analysis, we do not have any borrowers whose financial year-end observations exactly coincide with the first day of trading of their loans.

[14]See, Bharath et al. (2011) who show that firms that borrow repeatedly from a relationship lending bank receive, on average, larger loans and at lower interest rates.

[15]LSTA does not provide volume traded data.

[16]See, Santos and Winton (2008) who find evidence of an increase in loan spreads for borrowers during recessions.

[17]We also examined whether borrower abnormal stock returns on the first day of trading are related to whether or not an options market existed for the borrower on the first day of trading. That is, we augmented the regressions in Table VII with an indicator variable (using data from OptionMetrics) for whether a borrowing firm had options traded on its

stock on the first day of trading of its loans. The results, tabulated in the Internet Appendix show that our results in Table VII are qualitatively unchanged.

[18]As an additional robustness test, we conduct the two-step Heckman analysis in Table VIII where we include a single instrument (instead of including all three instruments) in the first stage regression. Our evidence presented in the Internet Appendix shows that even if we choose any one of the three instruments for identification purposes rather than use all three instruments in the first-stage regression, our results are qualitatively unchanged.

[19]We find that the size (in dollars) of the stock announcement return is significantly larger than the size (in dollars) of the bond abnormal returns, and the combined effect is positive. When we examine this evidence for the subset of firms in our sample that also have publicly traded bonds surrounding the first day of trading of their loans, we find that the average size (in dollars) of the stock announcement effect around a two-day window (i.e., [-1,0]) surrounding the first trading day of a borrower's loans is $10.18 million. In contrast, the average size (in dollars) of the bond announcement effect for the same borrowers is -$0.70 million (i.e., a loss of $0.70 million). The combined average size (in dollars) is $9.48 million. Overall, we find evidence that both the good side (relaxation of financial constraints) and the bad side (exploitation of debt holders) are going on simultaneously, albeit on an overall basis the good side seems to be much larger than the bad side.

[20]See James and Smith (2000) for a comprehensive review of the research on the special nature of bank loan financing.

[21]Also, see Billett, Flannery and Garfinkel (2006) for evidence on the long-run stock return performance and operating performance of bank borrowers during a three year period following a new loan announcement.

Internet Appendix for "Are banks still special when there is a secondary market for loans?"

Amar Gande and Anthony Saunders *

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This Internet Appendix contains additional descriptions, explanations and results that are referenced in this paper.

I. Event Study Methodology

Table IA.I describes the event study methodology used in computing stock and bond abnormal returns used in this paper.

II. Robustness Tests

A. Event Date: First Day of Trading

In our empirical analysis, for example in Table I, we examine the borrower stock price reaction on the first day of trading of its loans. We have used the first trading day in our empirical analysis simply because that is the only data item that we have access to. Nevertheless, we searched on Lexis-Nexis, Factiva, and a trade publication (Credit Investment News, a weekly publication of the Institutional Investor magazine that covers news events in credit markets, including the secondary loan market) to see if there were any announcements of a borrower's loan becoming available for trading a few days prior to the first day of trading. We did not find any such announcements.

B. Borrower Stock Price Reactions to Subsequent Loans

We find that 'subsequent loans' (i.e., loans whose first trading day is greater than the earliest of the first trading day of all loans of the same borrower) yield, not surprisingly, statistically insignificant borrower stock price reaction on the first trading day of the subsequent loan. The results of this event study analysis are shown in Table IA.II. Based on this evidence, we conclude that the market capitalizes the benefits of loan trading the very first time a loan of that borrower is traded. Hence we focus only on the first trading day of a borrower's loans as the relevant event date for our empirical analysis.

C. Loans Received by Financially Constrained Firms

Table IA.III provides evidence using a differences-in-differences regression method that borrowers that are younger, smaller or without a bond rating receive a larger increase in the amount of loans post loan-sale relative to comparable non-traded borrowers. These results are discussed in Section V.B.1.

D. Leverage of Financially Constrained Firms

Table IA.IV provides evidence that borrowers that are younger, smaller or without a bond rating have higher financial leverage post loan-sale relative to comparable non-traded borrowers. These results are discussed in Section V.B.2.

E. Alleviation of Financial Constraints for Non-traded Borrowers

Table IA.V conducts analysis similar to Model 1 (Full Sample) of Table V for non-traded borrowers. We find no evidence of alleviation of financial constraints for non-traded borrowers. Specifically, the interaction term (i.e., CF_t/K_{t-1} x *POST TRADE*) is not statistically significant. These results are discussed in Section V.B.3.

F. First Day of Trading and the Options Market

We examined whether borrower abnormal stock returns on the first day of trading are related to whether or not an options market existed for the borrower on the first day of trading. An options market presents an additional opportunity for a market maker to hedge a loan position (i.e., rather than hedging only through a borrower's stock), and would reduce the likelihood of any mechanical effects in the stock returns on the first day of trading. We augmented the regressions in Table VII with an indicator variable (using data from OptionMetrics) for whether a borrowing firm had options traded on its stock on the first day of trading of its loans. The results, tabulated in Table IA.VI show the options market indictor variable to be statistically insignificant from zero at any meaningful level of significance. That is, the positive market response to loan sales for smaller firms (Model 2 of Table VII)

and for distressed firms (Model 4 of Table VII) (after controlling for other determinants) is robust to controlling for whether or not an options market exists for the company's stock on the first day of trading of its loans. These results are discussed in Section V.B.4.

III. Selection bias and Endogeneity

We conducted several additional tests related to selection bias and endogeneity. These results are summarized below and are discussed in Section V.B.5.

A. Abnormal Returns and Instruments

Table IA.VII augments the set of explanatory variables of announcement returns (from Model 4 of Table VII) with our three instruments, namely *number of covenants*, *ln(loan size)* and *syndicated loan*. Based on the evidence from this table, we conclude that our three instruments are not directly related to announcement returns.

B. Instruments and Improvement in R^2

Table IA.VIII examines the partial R^2 associated with the three instruments, namely *number of covenants*, *ln(loan size)* and *syndicated loan*. That is, it examines the improvement in *pseudo* R^2 from using these three instruments in the first-stage regression in Table 8. The evidence from this table shows that the *pseudo* R^2 of the first-stage regression without the three instruments is 0.1284 as compared to the *pseudo* R^2 of 0.3234 when we include these three instruments (which is also shown in column 1 of Table 8). Consequently, the partial R^2 attributable to these three instruments is 0.3234-0.1284 = 0.1950.

C. Single Instrument versus Three Instruments

Table IA.IX conducts the two-step Heckman analysis (similar to the one in Table VIII) with one key difference: we include a single instrument (instead of including all three instruments) in the first stage regression. Our evidence shows that even if we choose any one of

the three instruments for identification purposes rather than use all three instruments in the first-stage regression, our results are qualitatively unchanged.

D. Smaller Firms

Table IA.X presents evidence that the positive market response to loan sales for smaller firms (i.e., Model 2 of Table VII) is robust to the issue of selection bias. Specifically, it shows that the *SMALLER* variable continues to be positive and statistically significant at the 10% level, even after we control for self-selection through the *inverse-mills ratio*, λ.

E. Loans Received by Borrowers

Table IA.XI presents evidence that our finding that traded borrowers receive a larger amount of loans after the first loan sale date than non-traded borrowers (i.e., Table II) is robust to the issue of selection bias. Specifically, it shows that the interaction term (i.e., *TRADED* x *POST TRADE*) continues to be positive and statistically significant at the 5% level, even after we control for self-selection through the *inverse-mills ratio*, λ.

IV. Loan Sales and Improved Risk-sharing

While information on the number of lenders on the first day of trading of a borrower's loans is not publicly available, information on syndicate size at loan origination is available on Dealscan. Using this data, we find that the syndicate size, i.e., the number of lenders at loan-syndication, is significantly larger for loans that are traded on the secondary market as compared to that for loans that are not traded in the secondary market. Specifically, we find that the average syndicate size is 13.52 lenders for loans that are traded for the first-time on the secondary market. In comparison, the average syndicate size for loans of the same borrowers that do not trade on the secondary market is 8.68 lenders. The difference of 4.84 (=13.52-8.68) lenders between the two types of loans for the same borrowers is statistically significant at the 1% level. Assuming that the syndicate size at loan origination proxies for

the extent of risk-sharing benefits, this evidence suggests that there are larger risk-sharing benefits that come from sale of loans relative to when loans are not sold in the secondary loan market.

Table IA.I
Event Study Methodology

To be consistent with the prior literature on bank loan specialness, we employ the event study methodology as outlined in Mikkelson and Partch (1986) to estimate the impact of an event, such as the first day of trading of a borrower's loans, or a bank loan announcement on the stock return of the borrowing firm. The abnormal returns are computed around such an event date. The abnormal stock return or prediction error for borrower j over day t is defined as

$$PE_{jt} = R_{jt} - (\hat{\alpha_j} + \hat{\beta}_j R_{mt}), \tag{1}$$

where R_{jt} is the rate of return for the common stock of firm j on day t, and R_{mt} is the rate of return on CRSP's dividend-inclusive value-weighted market index (of NYSE, AMEX, and NASDAQ stocks) on day t. The coefficients $\hat{\alpha_j}$ and $\hat{\beta_j}$ are estimated by regressing R_{jt} on R_{mt} for the period [-200,-51], i.e., from 200 trading days before the event date (day 0) to 51 trading days before the event date. The prediction errors are computed for each day in the event period [-50,+30], i.e., that begins 50 trading days before the event date and ends 30 days after the event date.

The daily prediction errors are averaged of all firms to produce a daily portfolio average prediction error:

$$APE_t = \frac{1}{N}\sum_{j=1}^{N} PE_{jt}, \tag{2}$$

where N is the number of firms in the sample. Tests of statistical significance are based on standardized prediction errors. The standardized prediction error for firm j on day t (SPE_{jt}) is defined as:

$$SPE_t = \frac{PE_{jt}}{S_{jt}}, \tag{3}$$

where

$$S_{jt} = \left\{ V_j^2 \left[1 + \frac{1}{ED} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{k=1}^{ED}(R_{mk} - \bar{R}_m)^2} \right] \right\}^{1/2}, \tag{4}$$

and V_j^2 is the residual variance of the market model regression for firm j in equation (1), ED is the estimation period (150 days) used in the market model regression, $\bar{R}_m$ is the mean market return over the estimation period, i.e., [-200,-51].

The average standardized prediction error for day t is given by:

$$ASPE_t = \frac{1}{N}\sum_{j=1}^{N} SPE_{jt}. \tag{5}$$

Under the assumption that individual daily prediction errors are distributed normally, SPE_{jt} follows a Student$-t$ distribution with ED-2 degrees of freedom. Cumulative abnormal returns (CAR_{T_1,T_2}) are the sum of the prediction errors for the event window beginning with trading day T_1 and ending with T_2, and are given by:

$$CAR_{T_1,T_2} = \frac{1}{N}\sum_{j=1}^{N}\sum_{t=T_1}^{T_2} PE_{jt}. \tag{6}$$

The test statistic is distributed asymptotically normal under the null hypothesis that $CAR_{T_1,T_2} = 0$ and is calculated as follows:

$$Z_{T_1,T_2} = \sqrt{N}(ASCAR_{T_1,T_2}), \tag{7}$$

where the average standardized cumulative abnormal return ($ASCAR_{T_1,T_2}$) is given by:

$$ASCAR_{T_1,T_2} = \frac{1}{N}\sum_{j=1}^{N}\sum_{t=T_1}^{T_2} SPE_{jt}/(\sqrt{T_2 - T_1 + 1}). \tag{8}$$

Table IA.II
Average Cumulative Abnormal Stock Returns
surrounding the First Trading day of a Firm's Subsequent Loans

This table presents the average cumulative abnormal return ($ACAR$) surrounding the first trading day of their 953 subsequent loans of our 415 sample borrowers. That is, if a firm has multiple loans, we exclude the earliest loan (i.e., whose first trading day equals the earliest of the first trading day of all loans of the same borrower), and consider only the subsequent loans, i.e., the first trading of each such loan is subsequent to the first day of the earliest loan. The Z statistics of $ACARs$ in the event window (shown in parentheses) are computed using the methodology of Mikkelson and Partch (1989) that considers both the time-series and cross-sectional dependence, and unequal variances in returns. The superscripts for the Z statistics a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test.

Event window	ACAR (%)	Z-stat
[0]	-0.09	-0.25
[-1,0]	-0.05	-0.14
[-1,1]	-0.17	-0.22

Table IA.III
Loans Received by Financially Constrained Borrowers

This table presents information relating to the amount of loans received in millions of dollars for firms that are ex ante likely to be financially constrained, such as firms that are younger, smaller, or without a bond rating. Borrowers are classified into two distinct borrower types: "Traded Borrowers" that have had a loan available for trading for the first time during the sample period, and "Non-Traded Borrowers" that never had any loans traded during the sample period. Our sample of 415 firms that are in the loan pricing dataset for which we have the relevant data in Dealscan comprise "Traded Borrowers" in the full sample (see Table II). We sum the values of loans received during a fiscal year from the Dealscan database for each of the traded and non-traded borrowers. The unit of observation is borrower-fiscal year. For all traded borrowers that had their first day of trading during a fiscal year, we include all non-traded borrowers that received a loan during the same fiscal year. We include all loans (i.e., pre and post-trade, measured relative to the same fiscal year) of both these borrower types. The dependent variable is the log of loans received by a borrower during a fiscal year, where the value of loans is measured in millions of U.S. dollars. The independent variables are: *TRADED*, an indicator variable that takes a value of one for borrowers that have had a loan available for trading for the first time during the sample period, and zero otherwise. *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on *TRADED* and *POST TRADE*. *LN(TOTAL ASSETS)* which proxies for firm size. A firm's investment opportunity, as proxied by Q, which is measured as the market value of assets divided by the book value of assets. See the Appendix for additional details on how these variables are constructed from underlying data. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: LN (LOANS RECEIVED)

Variable	Younger Firms (1)	Smaller Firms (2)	Firms Without Bond Rating (3)	Financially Constrained Firms (4)
INTERCEPT	1.179	0.632	0.674	0.990
	(10.37)^a	(7.98)^a	(9.25)^a	(11.06)^a
TRADED	0.540	0.454	0.257	0.513
	(6.29)^a	(4.59)^a	(1.67)^c	(7.01)^a
POST TRADE	-0.111	0.046	-0.025	-0.023
	(-2.15)^b	(1.53)	(-0.86)	(-0.72)
POST TRADE x TRADED	0.215	0.167	0.352	0.210
	(2.58)^a	(1.68)^c	(2.04)^b	(2.80)^a
LN(TOTAL ASSETS)	0.591	0.658	0.658	0.603
	(25.53)^a	(50.42)^b	(48.62)^a	(34.34)^a
Q	0.002	-0.028	-0.024	0.009
	(0.10)	(-1.37)	(-2.12)^b	(0.72)
Adjusted R^2	0.5983	0.5935	0.5878	0.5938
Observations	14,548	14,266	15,012	23,491

Table IA.IV
Financial Leverage of Borrowers

This table presents information relating a borrower's financial leverage (measured as interest-bearing debt, divided by the borrowing firm's market capitalization) for firms that are ex ante likely to be financially constrained, such as firms that are younger, smaller, or without a bond rating. Borrowers are classified into two distinct borrower types: "Traded Borrowers" that have had a loan available for trading for the first time during the sample period, and "Non-Traded Borrowers" that never had any loans traded during the sample period. Our sample of 415 firms that are in the loan pricing dataset for which we have the relevant data in Dealscan comprise "Traded Borrowers" in the full sample (see Table IV). The unit of observation is borrower-fiscal year. For all traded borrowers that had their first day of trading during a fiscal year, we include all non-traded borrowers that received a loan during the same fiscal year. We include firm-year observations corresponding to all loans (i.e., pre and post-trade, measured relative to the same fiscal year) of both these borrower types. The dependent variable is LEVERAGE, as defined above. The independent variables are: *TRADED*, an indicator variable that takes a value of one for borrowers that have had a loan available for trading for the first time during the sample period, and zero otherwise. *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on *TRADED* and *POST TRADE*. *LN(TOTAL ASSETS)* which proxies for firm size. A firm's investment opportunity, as proxied by Q, which is measured as the market value of assets divided by the book value of assets. See the Appendix for additional details on how these variables are constructed from underlying data. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: LEVERAGE

Variable	Younger Firms (1)	Smaller Firms (2)	Firms Without Bond Rating (3)	Financially Constrained Firms (4)
INTERCEPT	0.242 (12.37)^a	0.205 (10.57)^a	0.245 (15.81)^a	0.265 (16.47)^a
TRADED	0.092 (4.34)^a	0.086 (3.49)^a	-0.016 (-0.25)	0.081 (4.08)^a
POST TRADE	0.047 (4.58)^a	0.019 (2.25)^b	0.031 (4.20)^a	0.028 (4.08)^a
POST TRADE x TRADED	0.058 (2.86)^a	0.083 (3.58)^a	0.106 (1.59)	0.067 (3.90)^a
LN(TOTAL ASSETS)	0.021 (5.61)^a	0.036 (10.67)^a	0.019 (6.58)^a	0.020 (6.98)^a
Q	-0.062 (-20.05)^a	-0.061 (-14.95)^a	-0.057 (-19.65)^a	-0.064 (-22.62)^a
Adjusted R^2	0.1832	0.1584	0.1230	0.1607
Observations	14,104	13,975	14,721	22,979

Table IA.V
Alleviation of Financial Constraints for Non-traded Borrowers

This table presents estimates from a linear regression analysis of whether a firm's cash flow sensitivity of investment is reduced during the post-loan sale period after we control for a firm's investment opportunity as in Fazzari, Hubbard and Petersen (1988). In this table, our focus is on non-traded firms only. Borrowers are classified into two distinct borrower types: "Traded Borrowers" that have had a loan available for trading for the first time during the sample period, and "Non-Traded Borrowers" that never had any loans traded during the sample period. Our sample of 415 firms that are in the loan pricing dataset for which we have the relevant data in Dealscan comprise "Traded Borrowers". The unit of observation is borrower-fiscal year. For all traded borrowers that had their first day of trading during a fiscal year, we include all non-traded borrowers that received a loan during the same fiscal year. We include firm-year observations corresponding to all loans (i.e., pre and post-trade, measured relative to the same fiscal year) only for non-traded borrowers in this regression. Our regression specification uses the variables described below. The dependent variable is *Investment (I)*, scaled by the beginning of year *Capital (K)*. Independent variables are: *Cash Flow (CF)*, scaled by the beginning of year *capital (K)*. A firm's investment opportunity, as proxied by Q, which is measured as the market value of assets divided by the book value of assets. *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on *Cash Flow (CF)*, scaled by beginning of year *capital (K)* and *POST TRADE*. Refer to Appendix for how the above-mentioned variables are constructed from the underlying data in Compustat. These regressions include firm and year fixed effects, although their coefficients are not displayed in the table. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: I_t/K_{t-1}

Variable	Non-traded Firms
INTERCEPT	0.228
	(9.30)[a]
CF_t/K_{t-1}	0.052
	(5.50)[a]
Q_t	0.048
	(7.03)[a]
POST TRADE	
	(-2.14)[b]
CF_t/K_{t-1} x POST TRADE	-0.010
	(-1.35)
Firm Fixed Effects	Yes
Year Fixed Effects	Yes
Within R^2	0.1268
Adjusted R^2	0.5257
Observations	30,891

Table IA.VI
Regression Analysis of Determinants of Cumulative Abnormal Returns surrounding the First Trading Day of Loans
(Controls for Whether or not an Options Market Exists for the Borrower's Stock)

This table presents estimates from a linear regression analysis of the determinants of cumulative abnormal returns (CARs) surrounding the first trading day of loans. The dependent variable is the two-day [-1,0] CAR, measured as a percentage. See the Appendix for a description of other independent variables used in this table. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: CAR[-1,0], %

Variable	Model 1	Model 2	Model 3	Model 4
INTERCEPT	-6.60	-10.55	-7.92	-6.45
	(-1.25)	(-1.68)^c	(-1.34)	(-1.29)
YOUNGER	0.52			
	(0.62)			
SMALLER		2.57		
		(1.99)^b		
NO BOND RATING			1.55	
			(0.70)	
DISTRESSED				9.67
				(2.65)^a
LN(TOTAL ASSETS)	0.56	0.98	0.66	0.82
	(1.73)^c	(2.32)^b	(1.64)	(2.40)^b
OIBD	0.08	0.09	0.08	0.08
	(3.02)^a	(3.25)^a	(3.02)^a	(3.04)^a
TOBQ	-0.62	-0.41	-0.53	-0.56
	(-1.75)^c	(-1.09)	(-1.37)	(-1.49)
LEVERAGE	2.06	0.80	2.52	-0.03
	(1.00)	(0.43)	(1.07)	(-0.02)
BETA	-0.51	-0.31	-0.55	-0.60
	(-0.58)	(-0.35)	(-0.62)	(-0.65)
RUNUP	0.02	0.02	0.02	0.03
	(0.35)	(0.48)	(0.37)	(0.63)
SDPE	0.53	0.46	0.51	0.19
	(1.76)^c	(1.61)	(1.79)^c	(0.69)
AVG QUOTES	-0.17	-0.14	-0.16	-0.29
	(-0.70)	(-0.58)	(-0.65)	(-1.25)
CREDIT SPREAD	0.02	0.02	0.02	0.02
	(0.55)	(0.52)	(0.55)	(0.56)
NUMBER OF LENDERS	-0.02	-0.02	-0.02	-0.05
	(-0.50)	(-0.47)	(-0.49)	(-1.29)
MATURITY	0.02	0.02	0.03	0.02
	(1.09)	(1.14)	(1.14)	(0.87)
SECURED	-3.21	-3.02	-2.90	-2.10
	(-1.65)^c	(-1.62)	(-1.67)^c	(-1.34)
OPTION MARKET	-1.32	-1.22	-1.34	-1.27
	(-1.48)	(-1.43)	(-1.46)	(-1.48)
Year dummies	yes	yes	yes	yes
Adjusted R^2	0.0512	0.0664	0.0540	0.1319
Observations	323	323	323	323

Table IA.VII
Abnormal Returns and Instruments

This table presents estimates from a linear regression analysis of the determinants of cumulative abnormal returns (*CARs*) surrounding the first trading day of loans. The dependent variable is the two-day [-1,0] *CAR*, measured as a percentage. Model 1 includes all three instruments, namely *number of covenants*, *ln(loan size)* and *syndicated loan* as additional explanatory variables to the independent variables in Model 4 of Table VII. Model 2 includes *number of covenants*, Model 3 includes *ln(loan size)* and Model 4 includes *syndicated loan* respectively as an additional explanatory variable to the independent variables in Model 4 of Table VII. See the Appendix for a description of other independent variables used in this table. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variable: CAR[-1,0], %

Variable	Model 1	Model 2	Model 3	Model 4
INTERCEPT	-11.73	-6.88	-8.48	-12.15
	(-1.55)	(-1.00)	(-1.21)	(-1.65)^c
DISTRESSED	9.40	9.78	9.79	9.41
	(4.66)^a	(4.88)^a	(4.88)^a	(4.67)^a
LN(TOTAL ASSETS)	0.80	0.82	0.79	0.94
	(1.58)	(1.80)^c	(1.65)^c	(2.12)^b
OIBD	0.08	0.09	0.09	0.08
	(2.21)^b	(2.28)^b	(2.28)^b	(2.21)^b
TOBQ	-0.39	-0.37	-0.36	-0.36
	(-0.66)	(-0.62)	(-0.60)	(-0.61)
LEVERAGE	1.10	1.13	1.30	1.20
	(0.45)	(0.46)	(0.53)	(0.49)
BETA	-0.88	-0.74	-0.77	-0.94
	(-0.90)	(-0.76)	(-0.80)	(-0.97)
RUNUP	0.04	0.04	0.04	0.04
	(1.32)	(1.29)	(1.32)	(1.35)
SDPE	0.55	0.50	0.50	0.56
	(1.90)^c	(1.73)^c	(1.74)^c	(1.95)^c
AVG QUOTES	-0.42	-0.40	-0.45	-0.44
	(-0.98)	(-0.92)	(-1.05)	(-1.06)
CREDIT SPREAD	0.00	0.00	0.00	0.00
	(0.01)	(0.00)	(0.01)	(0.03)
NUMBER OF LENDERS	-0.07	-0.06	-0.07	-0.07
	(-1.66)^c	(-1.55)	(-1.67)^c	(-1.76)^c
MATURITY	0.04	0.03	0.03	0.04
	(1.53)	(1.47)	(1.39)	(1.57)
SECURED	-3.19	-3.23	-3.41	-3.71
	(-2.10)^b	(-2.17)^b	(-2.45)^b	(-2.69)^a
NUMBER OF COVENANTS*	-0.17	-0.09		
	(-0.82)	(-0.48)		
LN(LOAN SIZE)*	0.17		0.27	
	(0.25)		(0.41)	
SYNDICATED LOAN*	4.53			4.18
	(1.54)			(1.47)
Year dummies	yes	yes	yes	yes
F-statistic*	0.95	0.23	0.17	2.16
p-value (F-statistic*)	0.4179	0.6330	0.6790	0.1420
Adjusted R^2	0.1745	0.1728	0.1726	0.1783
Observations	310	310	310	310

Table IA.VIII
Instruments and Improvement in Pseudo R-square

This table presents estimates the improvement in pseudo r-square from including the three instruments, namely *number of covenants*, *ln(loan size)* and *syndicated loan* in the first-stage probit regression of the Heckman's two-step estimation procedure. The left panel shows the estimates of the first step probit regression including all three instruments and the right panel shows the estimates of the first step probit regression excluding the three instruments in the Heckman's two-step estimation procedure. The dependent variable for the first step probit regression is *TRADED*, which takes a value of one if a loan is sold, and zero otherwise. We include first-trade loans (i.e., sold loans) of traded borrowers, and pre-trade loans of traded borrowers (i.e., loans prior to the first trading day of the same borrower which by definition are not sold) along with loans of non-traded borrowers (i.e., those that never trade during the sample period). See the Appendix for a description of other independent variables used in both panels of this table. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variables: TRADED (first step)		
Variable	First Step	First Step (No Instruments)
INTERCEPT	-6.28	-4.83
	(-24.16)[a]	(-27.05)[a]
LN (TOTAL ASSETS)	0.11	0.25
	(3.89)[a]	(14.86)[a]
OIBD	-0.16	0.99
	(-0.60)	(3.94)[a]
TOBQ	0.04	0.04
	(2.60)[a]	(2.97)[a]
LEVERAGE	0.13	-0.10
	(0.89)	(-0.86)
BETA	-0.08	-0.04
	(-1.40)	(-1.00)
RUNUP	-0.03	0.01
	(-0.11)	(0.06)
SDPE	7.46	5.59
	(4.22)[a]	(4.11)[a]
MATURITY	0.01	0.01
	(5.54)[a]	(8.40)[a]
SECURED	0.29	0.83
	(3.41)[a]	(11.10)[a]
NUMBER OF COVENANTS*	0.17	
	(13.37)[a]	
LN(LOAN SIZE)*	0.34	
	(9.76)[a]	
SYNDICATED LOAN*	0.36	
	(2.50)[b]	
F-statistic*	120.20	
p-value (F-statistic*)	0.0000	
Pseudo R^2	0.3234	0.1284
Observations	14,313	14,313

Table IA.IX
Regression Analysis of Determinants of Cumulative Abnormal Returns surrounding the First Trading Day of Loans Controlling for Self-selection (Single Instrument instead of Three Instruments)

This table presents estimates from a linear regression analysis of the determinants of cumulative abnormal returns (CARs) surrounding the first trading day of loans. We introduce one instrument at a time (unlike Table 8 that includes all three instruments). The top panel includes number of covenants, the middle panel includes ln(loan size), and the bottom panel includes syndicated loan as the instrument. The left column in each panel shows the estimates of the first step probit regression and the right panel shows the estimates of the second step linear regression of the Heckman's two-step estimation procedure. The dependent variable for the first step probit regression is *TRADED*, which takes a value of one if a loan is sold, and zero otherwise. We include first-trade loans (i.e., sold loans) of traded borrowers, and pre-trade loans of traded borrowers (i.e., loans prior to the first trading day of the same borrower which by definition are not sold) along with loans of non-traded borrowers (i.e., those that never trade during the sample period). The dependent variable for the second step linear regression in the right column of each panel is the two-day [-1,0] CAR, measured as a percentage. The inference variable in the second step linear regression is *DISTRESSED* that takes a value of one if a borrower's loan price, measured as percentage of par on the first day of trading is less than 90%, and zero otherwise. See the Appendix for a description of other independent variables used in both panels of this table. In addition, the right panel includes an estimate of the inverse-mills ratio *LAMBDA* from the first-step probit regression. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variables: TRADED (first step) and CAR[-1,0], % (second step)		
Variable	First Step	Second Step
INTERCEPT	-5.43	-11.57
	(-25.34)[a]	(-1.53)
DISTRESSED		9.82
		(5.02)[a]
LN (TOTAL ASSETS)	0.28	1.01
	(13.80)[a]	(2.27)[b]
OIBD	0.59	0.08
	(1.88)[c]	(2.15)[b]
TOBQ	0.04	-0.20
	(2.75)[a]	(-0.33)
LEVERAGE	-0.01	1.26
	(-0.09)	(0.52)
BETA	-0.02	-0.66
	(-0.42)	(-0.69)
RUNUP	0.03	0.03
	(0.12)	(1.19)
SDPE	5.28	0.49
	(3.08)[a]	(1.75)[c]
MATURITY	0.01	0.04
	(7.35)[a]	(1.63)
SECURED	0.30	-2.67
	(3.53)[a]	(-1.68)[c]
NUMBER OF LENDERS		-0.07
		(-1.71)[c]
AVERAGE QUOTES		-0.41
		(-0.99)
CREDIT SPREAD		0.00
		(0.08)
NUMBER OF COVENANTS	0.22	
	(17.96)[a]	
LAMBDA		0.84
		(0.81)
Year dummies		yes
Pseudo R^2	0.2680	
Adjusted R^2		0.1686
Observations	14,313	302

Dependent Variables: TRADED (first step) and CAR[-1,0], % (second step)		
Variable	First Step	Second Step
INTERCEPT	-5.70	-13.22
	(-26.85)[a]	(-1.55)
DISTRESSED		9.78
		(5.00)[a]
LN (TOTAL ASSETS)	0.03	1.05
	(1.10)	(2.30)[b]
OIBD	0.06	0.08
	(0.21)	(1.99)[b]
TOBQ	0.04	-0.14
	(2.64)[a]	(-0.23)
LEVERAGE	0.09	1.34
	(0.67)	(0.56)
BETA	-0.08	-0.76
	(-1.75)[c]	(-0.79)
RUNUP	-0.08	0.04
	(-0.35)	(1.24)
SDPE	8.08	0.54
	(5.41)[a]	(1.87)[c]
MATURITY	0.01	0.04
	(5.82)[a]	(1.73)[c]
SECURED	0.71	-2.81
	(9.32)[a]	(-1.89)[c]
NUMBER OF LENDERS		-0.06
		(-1.54)
AVERAGE QUOTES		-0.40
		(-0.95)
CREDIT SPREAD		0.00
		(0.08)
LN(LOAN SIZE)	0.46	
	(15.03)[a]	
LAMBDA		1.21
		(0.85)
Year dummies		yes
Pseudo R^2	0.2413	
Adjusted R^2		0.1688
Observations	14,313	302

Dependent Variables: TRADED (first step) and CAR[-1,0], % (second step)		
Variable	First Step	Second Step
INTERCEPT	-5.55	-6.07
	(-24.51)^a	(-0.59)
DISTRESSED		9.77
		(4.97)^a
LN (TOTAL ASSETS)	0.22	0.84
	(11.97)^a	(1.66)^c
OIBD	0.46	0.08
	(1.57)	(2.10)^b
TOBQ	0.05	-0.20
	(3.51)^a	(-0.33)
LEVERAGE	-0.09	1.55
	(-0.69)	(0.64)
BETA	-0.09	-0.74
	(-1.96)^c	(-0.77)
RUNUP	0.03	0.04
	(0.13)	(1.28)
SDPE	7.46	0.47
	(5.09)^a	(1.67)^c
MATURITY	0.01	0.03
	(7.59)^a	(1.51)
SECURED	0.75	-3.84
	(10.21)^a	(-1.93)^c
NUMBER OF LENDERS		-0.07
		(-1.84)^c
AVERAGE QUOTES		-0.45
		(-1.09)
CREDIT SPREAD		0.00
		(0.07)
SYNDICATED LOAN	1.14	
	(9.13)^a	
LAMBDA		-0.70
		(-0.33)
Year dummies		yes
Pseudo R^2	0.1851	
Adjusted R^2		0.1673
Observations	14,313	302

Table IA.X
Regression Analysis of Determinants of Cumulative Abnormal Returns surrounding the First Trading Day of Loans (Controlling for Self-selection)

This table presents estimates from a linear regression analysis of the determinants of cumulative abnormal returns (*CARs*) surrounding the first trading day of loans. The left panel shows the estimates of the first step probit regression and the right panel shows the estimates of the second step linear regression of the Heckman's two-step estimation procedure. The dependent variable for the first step probit regression is *TRADED*, which takes a value of one if a loan is sold, and zero otherwise. We include first-trade loans (i.e., sold loans) of traded borrowers, and pre-trade loans of traded borrowers (i.e., loans prior to the first trading day of the same borrower which by definition are not sold) along with loans of non-traded borrowers (i.e., those that never trade during the sample period). The dependent variable for the second step linear regression is the two-day [-1,0] CAR, measured as a percentage. The inference variable in the second step linear regression is *SMALLER* that takes a value of one if a borrower's equity market capitalization is less than $500 million, and zero otherwise. See the Appendix for a description of other independent variables used in both panels of this table. In addition, the right panel includes an estimate of the inverse-mills ratio *LAMBDA* from the first-step probit regression. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variables: TRADED (first step) and CAR[-1,0], % (second step)		
Variable	First Step	Second Step
INTERCEPT	-6.28	-14.36
	(-24.16)^a	(-1.82)^c
SMALLER		2.33
		(1.86)^c
LN (TOTAL ASSETS)	0.11	1.12
	(3.89)^a	(2.24)^b
OIBD	-0.16	0.09
	(-0.60)	(2.28)^b
TOBQ	0.04	-0.08
	(2.60)^a	(-0.13)
LEVERAGE	0.13	2.33
	(0.89)	(0.92)
BETA	-0.08	-0.60
	(-1.40)	(-0.61)
RUNUP	-0.03	0.04
	(-0.11)	(1.21)
SDPE	7.46	0.78
	(4.22)^a	(2.71)^a
MATURITY	0.01	0.05
	(5.54)^a	(2.14)^b
SECURED	0.29	-4.52
	(3.41)^a	(-3.02)^a
NUMBER OF LENDERS		-0.04
		(-0.85)
AVERAGE QUOTES		-0.14
		(-0.32)
CREDIT SPREAD		0.00
		(0.05)
NUMBER OF COVENANTS	0.17	
	(13.37)^a	
LN(LOAN SIZE)	0.34	
	(9.76)^a	
SYNDICATED LOAN	0.36	
	(2.50)^b	
LAMBDA		0.78
		(0.72)
Year dummies		yes
Pseudo R^2	0.3234	
Adjusted R^2		0.1098
Observations	14,313	302

Table IA.XI
Loans Received by Borrowers (Controlling for Self-selection)

This table presents estimates from a linear regression analysis of the amount of loans received in millions of dollars by borrowers. Borrowers are classified into two distinct borrower types: "Traded Borrowers" that have had a loan available for trading for the first time during the sample period, and "Non-Traded Borrowers" that never had any loans traded during the sample period. We sum the values of loans received during a fiscal year from the Dealscan database for each of the traded and non-traded borrowers. Our sample of 415 firms that are in the loan pricing dataset for which we have the relevant data in Dealscan comprise "Traded Borrowers". The unit of observation is borrower-fiscal year. For all traded borrowers that had their first day of trading during a fiscal year, we include all non-traded borrowers that received a loan during the same fiscal year. We include all loans (i.e., pre and post-trade, measured relative to the same fiscal year) of both these borrower types. The left panel shows the estimates of the first step probit regression and the right panel shows the estimates of the second step linear regression of the Heckman's two-step estimation procedure. The dependent variable in the right panel is the log of loans received by a borrower during a fiscal year, where the value of loans is measured in millions of U.S. dollars. The independent variables in the second step are: *TRADED*, an indicator variable that takes a value of one for borrowers that have had a loan available for trading for the first time during the sample period, and zero otherwise. *POST TRADE*, an indicator variable which takes a value of one for firm-year observations that are subsequent to the first day of trading of the same firm's loans (and zero otherwise). An interactive variable based on *TRADED* and *POST TRADE*. *LN(TOTAL ASSETS)* which proxies for firm size. A firm's investment opportunity, as proxied by Q, which is measured as the market value of assets divided by the book value of assets. The dependent variable for the first step probit regression is *TRADED*. All measures unless otherwise specified are measured as of the fiscal year end. See the Appendix for a description of other independent variables used in both panels of this table. In addition, the right panel includes an estimate of the inverse-mills ratio *LAMBDA* from the first-step probit regression. The t ratios shown in parentheses are adjusted for heteroskedasticity using White's (1980) variance-covariance matrix and are corrected for clustering of firm effects (a, b, and c stand for significance at the 1%, 5%, and 10% levels using a two-tailed test).

Dependent Variables: TRADED (first step) and LN (LOANS RECEIVED) (second step)		
Variable	First Step	Second Step
INTERCEPT	-2.20	2.04
	(-39.92)[a]	(17.59)[a]
TRADED		0.42
		(6.92)[a]
POST TRADE		0.05
		(1.98)[b]
POST TRADE x TRADED		0.10
		(2.09)[b]
LN (TOTAL ASSETS)	0.01	0.60
	(0.41)	(62.13)[a]
Q		0.05
		4.63[a]
OIBD	0.57	
	(5.17)[a]	
TOBQ	-0.03	
	(-2.38)[b]	
LEVERAGE	0.94	
	(20.76)[a]	
BETA	0.23	
	(12.32)[a]	
RUNUP	0.49	
	(4.20)[a]	
SDPE	-5.56	
	(-7.46)[a]	
MATURITY	0.01	
	(13.60)[a]	
SECURED	0.09	
	(3.04)[a]	
NUMBER OF COVENANTS	0.06	
	(9.91)[a]	
LN(LOAN SIZE)	-0.00	
	(-0.42)	
SYNDICATED LOAN	-0.05	
	(-1.39)	
LAMBDA		-0.53
		(-10.41)[a]
Pseudo R^2	0.0600	
Adjusted R^2		0.6419
Observations	38,498	38,498