The Bank-Firm Relationship: A Trade-off Between Better Governance and Greater Information Asymmetry

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Abstract

We study the governance role of banks and provide evidence of the following trade-off: while monitoring by the bank enhances the firm's corporate governance, this also increases the informational asymmetry in the market. We analyze this trade-off and quantify the "dark side" of the bank's lending relationship with the firm (Rajan, 1992). We define the power of the bank vis-à-vis the borrowing firm in terms of the exclusivity of the relationship as well as of the proximity to the borrowing firm. We show that a "stronger" lending relationship, measured by greater proximity and exclusivity, improves monitoring and increases managerial turnover. This in turn abates rent-appropriation by managers, reduces their insider trading as well as their incentives to initiate acquisitions, and lowers their risk-taking behavior. This translates into lower volatility of cash-flows, and also, a lower stock volatility. At the same time, however, a stronger lending relationship increases adverse selection in the market and reduces the investors' incentives to hold the stock of the borrowing firm. This brings down the stock's liquidity as well as trading volume in the market and widens the information asymmetry. Institutional investors reduce their trading in the stock of firms that have a stronger relationship with their bank(s). The net effect of a strong lending relationship on the firm's value is positive. The effect of a more exclusive bank-lending relationship increases the stock price after the inception of the loan by roughly 6%. Our results have important normative implications for the role of banks in the development of financial markets. Moreover, the impact of banks on stock-market liquidity is particularly relevant now as Glass-Steagall Act has been abolished – the abolition opens the possibility of banks trading directly on the basis of information they acquire during the course of their lending activity.

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1. Introduction

Banks provide an indirect source of corporate governance by mitigating the risk-taking tendency of managers and thus improving the quality of the projects undertaken by the firm (Diamond, 1984, James, 1987, Lummer and McConnel, 1989, Bolton and Scharfstein, 1996, Boot and Thakor, 2000). However, this better governance comes at the cost of an informational advantage that the banks have over other providers of capital (Mayer, 1988, Sharpe, 1990, Rajan, 1992, Boot, 2000). This informationally privileged position – akin to that of an insider – allows the bank to extract rents from the borrowing firm. The extent of rent-extraction is directly related to the power that the bank wields vis-à-vis the firm. The bank's informational advantage arising from a "strong" lending relationship with the borrowing firm exacerbates the information asymmetry in the equity market. This induces a trade-off between improved governance and greater information asymmetry.

What are the implications of this trade-off on the borrowing firm? We argue that the bank's privileged information, obtained from monitoring the firm, mitigates managers' rent-appropriation as well as risk-taking tendencies. This translates into lower managerial compensation, reduced volatility of cash flows, and as a result, a lower stock volatility as well. On the other hand, however, the bank's informational advantage also increases adverse selection in the equity market. Indeed, the standard asymmetry of information between the manager and the market (e.g., Myers, 1984, Myers and Majluf, 1984) is compounded by the information monopoly of the bank. This, by increasing the bargaining power of the bank over the firm, may induce an appropriation of rents by the bank (Rajan, 1992) or a distortion of the firm's investment, which may have a direct impact on the shareholders' wealth. If it's not only the managers, but also the bank that knows more than the rest of the market about the firm's investment opportunities and can directly affect them, then the uncertainty and the information asymmetry that the market faces will be higher. This will reduce the incentives of the investors to trade the stock of the borrowing firm, resulting in a smaller liquidity and trading volume, and a greater information asymmetry in the stock market.

So far, the literature has not focused on this trade-off between greater information asymmetry and better corporate governance induced by bank lending. However, this trade-off is of great significance, particularly because its implications for the development of the financial markets are substantial. It is akin to the trade-off between liquidity and monitoring for the main institutional investors and block-holders (Berle and Means, 1932, Coffee, 1991, Bhide, 1993). The more these shareholders collect information that is useful to monitor the managers, the more tempted they may be to exploit it themselves by trading (Kahn and Winton, 1998, Maug, 1998). This trading by insiders reduces the liquidity of the firm's stock, resulting in a trade-off between governance and liquidity. In the case of banks lending to a

firm, the channel of impact on the market is related to the worsening of the information asymmetry between the firm (banks/managers) and the market. The market will discount the higher asymmetry of information and the potential appropriation by the bank by requiring a higher illiquidity premium for the stock. As in the traditional case of liquidity/monitoring trade-off for institutional investors, the net effect on firm value of these two competing forces is uncertain.

In this paper, we study the banks-induced corporate-governance/information-asymmetry trade-off empirically. This provides a way of directly quantifying the "dark side" of lending relationships with banks (see, Rajan, 1992), theorized in the literature but never fully tested.

We construct a dataset containing characteristics of bank loans for a broad panel of U.S. firms over the 1985–2004 period and we test for the impact of bank lending on the borrowing firms. We rely upon the existing literature on relationship lending and multiple-bank lending to construct measures of the "strength" of banks' lending-relationship with the firm. We define "strength" of the lending relationship as a two-fold construct – one facet of it mostly measures the degree of inside information that the bank obtains while the other facet mostly reflects the power that the bank wields upon the firm. The former is proxied by what we define as "proximity" and the latter by what we define as "exclusivity".

We assume that geographical proximity to the borrowing firm gives the bank greater access to "soft information" (Berger *et al.*, 2005) and makes it more able to influence the firm's decisions. We also posit that a more exclusive lender-borrower relationship increases the bargaining power of the bank (Diamond, 1984, James, 1987, Lummer and McConnel, 1989, Boot and Thakor, 2000). For example, concentration of information in the hands of one (or just a few) bank(s) makes informational leakage less likely (Petersen and Rajan, 1994), thus increasing the informational monopoly of the bank and accentuating the market implications of adverse selection. In other words, a more exclusive relationship between a borrower and a lender increases the information available to the bank about the firm, which in turn amplifies the informational asymmetry between the firm/bank and the market. Thus, in some way, both proximity and exclusivity underline the role of the bank as a monitor and also increase the power that it can exert.

We measure "proximity" either as the fraction of total loan taken from the banks headquartered within 200 miles of the firm's headquarters or simply as the average distance

between the borrower and all lenders in the syndicate (i.e., the latter measure is inversely related to the former).[1]

"Exclusivity" of the lending relationship is measured by either the concentration index of the lending syndicate or simply the number of banks in the lending syndicate (where again, the latter measure is inversely related to the former one). We then relate these measures to the market characteristics of the firm (such as liquidity of the firm's stock and the informational asymmetry between the firm and the market) as well as corporate-finance characteristics (such as managerial appropriation and risk taking). We use an appropriate instrumental variables technique to account for the fact that both, the borrowing decision as well as proximity and exclusivity of the loan, are endogenous, and constrained by firm and market characteristics. We also directly control for the potential reverse causality due to the fact that more opaque firms may choose a closer bank and/or more exclusive relationship with the bank.

We find that borrowing locally and/or having a more exclusive relationship with the lending banks increases the stock's illiquidity and the information asymmetry in the equity market, and lowers the stock's trading volume. The effect is economically and statistically significant. An increase of one standard deviation in proximity increases the observed price impact of a trade by about 0.19 standard deviation, increases information asymmetry in the stock market by 0.29 standard deviation, and reduces trading volume by 0.36 standard deviation. A 10% increase in exclusivity increases the observed price impact of a trade by 4%, increases information asymmetry in the stock market by 1%, and reduces trading volume by 5%. Also, institutional investors reduce their trading in the stock of firms that contract into a more exclusive relationship with the bank. An increase of one standard deviation in proximity (exclusivity) reduces institutional trading by 0.17 (0.24) standard deviation.

We also find evidence of the beneficial effects of better monitoring by the banks. In particular, we study whether proximity and exclusivity have any impact on managers' ability and/or tendency of rent-appropriation and risk-taking. We proxy for managers' rent-appropriation by using both the excess compensation of the managers with respect to their peers and their insider trading. Managers' risk-taking behavior is proxied by the variation in the firm's cash-flows. We find that a more exclusive relationship with the bank directly affects the management of the firm as it reduces the risk-taking of the managers as well as their appropriation. More specifically, a one standard deviation increase in proximity (exclusivity) reduces the excess compensation of the managers with respect to their peers in the industry by about 0.29 (0.52) standard deviation, lowers managerial insider trading by 25% (24%) and

[1] Our results are robust to defining "proximity" as the fraction of total loan taken from the banks headquartered in the same state as the firm's headquarters. However, since sizes of states vary widely, we only show results using the earlier definition because a 200-miles limit gives us a more uniform scale of proximity.

reduces the volatility of the firm's cash-flows by 38% (0.2 standard deviation). This directly translates into lower stock volatility – an increase of one standard deviation in proximity (a 10% increase in the exclusivity of the deal) reduces stock return volatility by nearly 3% (3%). So, the disciplining effect of bank-lending on the managers is stronger in the case of geographically closer and more exclusive bank relationships.

At the same time, a more exclusive relationship with the bank directly reduces the amount of money spent in M&As and accelerates managerial turnover. A standard deviation increase in exclusivity reduces M&A expenditure by 5% and increases the probability of managerial turnover by 15%.

What is the net effect on the firm's value? On the one hand, more constraints on the managers' wasteful ways imply higher stock prices. On the other hand, lower liquidity increases the required rate of return on the stock, thereby reducing its price. We find that entering a more exclusive bank-lending relationship increases value. This is reflected in higher Tobin's Q and higher stock return following the inception of the loan. In particular, one standard deviation increase in the exclusivity of the deal increases Tobin's Q by 9%. After the inception of the loan, the returns of firms entering a more exclusive relationship with the bank are positive. The increase in value is equal to 46 b.p./month over 12 months, and a trading strategy yields 6% over 12 months.

Our paper makes several different contributions. First of all, we provide a direct test of the so-called "dark side" of bank lending, quantifying its impact on the borrowing firm's stock price. The test is based on a trade-off between corporate-governance/risk-mitigation and information-asymmetry/stock-illiquidity that is similar to the one between monitoring and illiquidity already defined by the corporate governance literature (Berle and Means, 1932, Coffee, 1991, Bhide, 1993, Maug, 1998, Kahn and Winton, 1998, Bolton and Von Thadden, 1998a, 1998b and Noe, 2002, Faure-Grimaud and Gromb, 2003). We test it directly, and separately identify the risk mitigation channel and the illiquidity channel, and show how the benefits of the traditional role of monitoring by banks should be weighed against the negative effects of their role as a potential insider.

Secondly, our paper adds to the conventional banking literature. To our knowledge, our paper is one of the first attempts at studying the *corporate-finance implications* of lending, illustrated by using the proximity to the bank and the exclusivity of the deal. That is, while there is a consolidated body of literature that has studied the determinants and implications of relationship lending, few, if any, have hitherto considered its implications in terms of informational externalities on the financial markets and the subsequent impact on the borrower's stock liquidity.

Next, we also contribute to arguably the most crucial debate in financial intermediation. The literature on financial-intermediation has studied the differences between bank-based systems and market-based systems, and the implications of one prevailing as opposed to the other (e.g., Allen and Gale, 2000). The implications of conflicts of interest originating due to underwriting or consulting activities of investments banks around M&A deals, IPOs as well as equity- and bond-issues have been explored. However, the informational and liquidity implications of the lending activity of banks have not been considered. Not only does our paper provide that link but we also show that its impact on firm value can be sizable. If the very power that allows the banks to monitor better has an unfavorable impact on the stock market, then it may actually prevent systems based on a close relationship between banks and firms from developing a well-functioning stock-market. In the limit, the adverse-selection effects generated by the banks may dry up liquidity and diminish stock-market participation.

Fourth, we add another facet to the literature on liquidity. We are not aware of any study that relates stock market liquidity to the lending relationships between firms and banks, and the informational externalities that emerge. Previous studies have provided evidence of price support after an IPO by the trading arm of the financial conglomerate that underwrites the IPO (Ellis, Michaely, and O'Hara, 2000) or of the price effects that the flow of information within financial conglomerates has around IPOs (Schenone, 2004). We directly focus on the steady state equilibrium liquidity resulting from the lending relation.

Finally, we contribute to the nascent literature on the effects of geography in finance. Gaspar and Massa (2005) build on Coval and Moskowitz (2001) to show that local investment is a proxy for the presence of informed traders and that this has important implications for the firms. Here, we focus on another dimension along which geography is relevant: the distance between the lender and the borrower. Our paper confirms the underlying intuition of the studies proving the differing ability of banks to transmit "hard" vs. "soft" information over distance (Berger *et al.*, 2005), and in addition identifies the liquidity consequences of the fact that soft information is involved in the case of borrowing from closer banks.

More importantly, our findings also provide some normative insights. Indeed, after the abolition of the Glass-Steagall Act, the possibility for the banks to directly trade on the basis of information acquired through lending activity have increased tremendously. Policy makers and academics have in general considered the Glass-Steagall Act as a way of protecting the investors by preventing banks from getting directly involved in the companies they lend to (see Rajan and Kroszner, 2004, for a discussion). However, the separate, and maybe more relevant, issue of their role as insiders has gone largely unnoticed. While regulatory measures (such as Regulation Fair Disclosure introduced in late 2000) have been passed to level the playing field

between investors and insiders, little attention has been paid to the information that accrues to banks by virtue of their lending activity. The legal remedy is not clear as the same type of disclosure rules that are applied to analysts and insider cannot be directly applied to banks. Our results suggest that the effects of this on market liquidity may be relevant indeed.

The remainder of the paper is structured as follows. Section 2 lays out our main testable hypotheses. Section 3 describes the sample and the variables we use. Section 4 describes the econometric methodology. Sections 5, 6, 7 and 8 report the main findings of the impact of proximity and exclusivity on stock liquidity, information asymmetry, managerial risk-taking and appropriation, and Tobin's Q, respectively. A brief conclusion follows.

2. Main hypothesis and testable propositions

We now lay out our main hypotheses. We start by outlining the interaction between monitoring and the equity-market's reaction. The literature (e.g., Diamond, 1984, Ramakrishnan and Thakor, 1984, Fama, 1985, Boyd and Prescott, 1986 and Williamson, 1986) posits that banks have a beneficial monitoring role. By granting loans and monitoring borrowers, banks "acquire private information about loans and enhance the value of investment projects" (Diamond, 1984, James, 1987, Lummer and McConnel, 1989, Boot and Thakor, 2000). For example, the banks help to improve the quality of the projects undertaken by the firm and reduce the risk-taking tendency within the firm. Also, bank lending reduces the management's incentive to default strategically (Bolton and Scharfstein, 1996). So overall, bank lending is expected to lower risk and increase the value of the investments. That is, the presence of banks as monitors improves corporate governance, preventing the managers from investing the cash flows sub-optimally (Jensen, 1986).

The equity markets are well aware of this effect. Indeed, the willingness of the bank to finance the firm provides a positive signal to the market (Wansley *et al.*, 1993, Bhattacharya and Thakor, 1993). The announcement of a new loan leads to a significantly positive abnormal return for the stock of the borrowing firm (James, 1987, Slovin *et al.*, 1992). The very existence of a borrowing-relationship with banks affects the way the market reacts to corporate financial policies. For example, there are significantly positive returns around corporate sell-off announcements by companies with greater proportion of bank debt but a much smaller market reaction to sell-off announcements by companies with little bank debt (Hirschey *et al.*, 1990).[2]

At the same time, however, the information collected by the bank in its lending relationship grants it a privileged position vis-à-vis the firm and allows it to extract rents from

[2] Also, firms with a lot of bank financing face virtually no stock price response to the announcements of seasoned equity offerings, while those with little bank debt face significant and negative stock price responses to seasoned equity offering announcements (Slovin *et al.*, 1990).

the borrowing firm (Sharpe, 1990, Rajan, 1992, von Thadden, 1992, Padilla and Pagano, 1997). Indeed, competing banks will face increasing adverse selection problems when approaching borrowers to whom they did not lend before. A rejection by the bank of a firm's request for credit would send a very negative signal about the firm's condition, inducing other banks also to restrain the supply of capital to the firm. Therefore, the privileged information acquired through lending locks-in the firm as a captive customer of the bank and enables it to extract rents (Sharpe, 1990). These rents have negative effects on the entrepreneur's incentives to invest (Rajan, 1992, Kracaw and Zenner, 1998) and on his decision to undertake long-term rather than short-term projects (von Thadden, 1995),[3] effectively distorting investment.

The advantageous position due to its privileged information effectively turns the bank into an insider, increasing the asymmetry of information between the firm and the market (e.g., Myers, 1984, Myers and Majluf, 1984). If not only the managers, but the bank also knows more than the rest of the market about the firm's investment opportunities and may distort investment for its own purposes, then the uncertainty that the market faces will be higher. This will widen the asymmetry of information between the firm and the market, raising adverse selection, drying up stock liquidity, increasing the liquidity premium, and as a result, increasing the cost of capital. Moreover, higher uncertainty about the bank's behavior provides more opportunities of insider trading to investors close to the firm.

These considerations, suggest that better monitoring and governance may actually translate into worse liquidity.[4] We directly focus on this trade-off by studying its impact on the stock market. Empirical evidence of this trade-off can be interpreted as a direct test of the long-advocated "dark side" of bank lending (Rajan, 1992). We define the bargaining power of a bank vis-à-vis the borrowing firm in terms of the "intensity" or "strength" of the lending relationship. We argue that the market perceives the strength of the borrower-lender relationship as a potential threat of appropriation. This increases adverse-selection, making the stock less liquid. Therefore, our first prediction deals with the impact that inside information has on stock liquidity. We posit that:

H1: A stronger lending relationship increases information asymmetry and reduces the firm stock liquidity.

It is worth mentioning that the negative impact on liquidity and asymmetry can be compounded by the banks "indirectly" trading in the market. For example, banks that are part of financial conglomerates appear to use their investment arm (e.g., mutual funds) to trade on the basis of the information contained in the loan (Massa and Rehman, 2005), while

[3] Also, the existence of an exclusive bank-firm relationship increases the likelihood that borrower financing is terminated due to liquidity shocks to the lenders (Detragiache, Garella, and Guiso, 2000).
[4] It has been argued that banks may strategically prefer less information dissemination deliberately inducing their borrowing firms to be less transparent (Perrotti and Von Thadden, 2000).

investment banks acting as lead underwriter allocate "hot" IPOs to their affiliate funds in order to boost their funds' performance and thus attract more money (Ritter and Zhang, 2005). Overall, the evidence of "synergies accruing from being part of a financial conglomerate" is growing (e.g., Houston and Ryngaert 1994, Puri 1996, Cummins, Tennyson, and Weiss 1999, Berger et al. 2000, Houston, James, and Ryngaert 2001). This provides a way for banks to directly operate as insiders in the financial markets as opposed to indirectly affecting the cash-flows of the firm.

Our second prediction is that a stronger lending relationship reduces managerial appropriation and risk taking. That is, better information and greater bargaining power allow the bank to monitor and screen better. We therefore posit:

H2: A stronger lending relationship reduces managerial risk-taking and managerial rent-appropriation.

The net effect of these two factors on firm-value is uncertain *a priori*. If the better-governance effect prevails, then a stronger lending relationship would increase the stock price, while if the informational asymmetry aspect prevails, a stronger lending relationship reduces the stock price.

How do we measure the strength of the borrower-lender relationship? We concentrate on two main facets: the bank's geographical proximity to the firm and the exclusivity of its lending relationship with the firm. These are the very characteristics that make banks monitor better and mitigate risk – closer and more exclusive relationship – but are also more likely to increase information asymmetry and reduce liquidity. We rely on the existing literature for objectifying these features.

We start with geographical proximity. We argue that better information helps the bank to establish its informational monopoly. The conjecture of geographical proximity as a proxy for inside information is supported by plenty of recent evidence (Coval and Moskowitz, 1999, Garmaise and Moskowitz, 1999, Grinblatt and Keloharju, 2001). For example, Coval and Moskowitz (1999) show the existence of a positive relation between proximity and information, and provide evidence of the fact that U.S. mutual funds extract abnormal returns from their investment in stocks of geographically closer firms. They argue that local mutual fund ownership may "offer a unique method of identifying ... perhaps the first set of seemingly informed investors" (Coval and Moskowitz, 2001). The idea is that geographical proximity reduces the cost of understanding both, the firm's business as well as the ability of its management. They argue that better acquaintance with the firm's managers and frequent interaction amongst them within social settings outside work foster understanding and create inside knowledge.

In the banking industry, proximity is considered a way of overcoming the severity of the asymmetric information problem between the bank and the firm. The precision of the signal (about a borrower's quality) received by the bank decreases in distance (Hauswald and Marquez, 2000). Closer banks tend to serve informationally opaque credits (Diamond, 1984, Petersen and Rajan, 1994, Berger and Udell, 1995, Sufi, 2005).[5] Therefore, the closer the bank to the lender, the higher the informational advantage of the lending banks vis-à-vis the competing banks and the investors in the financial markets.

We then consider the degree of exclusivity of the relationship. Support for the conjecture that the bargaining power of the bank is negatively related to the number of lenders involved with the firm is also widely prevalent in the literature. In fact, banks, by virtue of their lending activity, are privy to inside information about the companies they lend to and have access to financial data unavailable in the public domain. An extreme case in which the bank enjoys an "exclusive" relationship is relationship lending (Mayer 1988, Sharpe, 1990, Rajan, 1992, Boot, 2000, Boot and Thakor, 2000). The more exclusive the bank-firm relationship is, the more the bank acquires information that is not available to other providers of capital and increases its information monopoly, and therefore its "hold" on the firm. Before moving on to the empirical testing, we describe the data as well as our methodological approach.

3. Data and Main Variables Definition

3.1 Data description

We draw data from several different sources and merge them to construct our final sample. Primarily, our data is built upon two groups of companies – one consists of all the firms that have a loan contract between 1985–2004 and the other consists of all Compustat firms between 1991–2004. Following is a detailed description of how we construct our final sample.

We start with data on firms' lending relationships, which form a crucial part of our analyses. The data on the firms' loan contracts are collected from Loan Pricing Corporation's (LPC) *DealScan* database. We pick all loan contracts over the period 1985–2004 between borrowers and lenders located in the United States. This data provides us with information such as the size of the loan, the date when the contract is effective, and the tenor of the loan, etc. For our study, an important item in this LPC data is the location of the borrowing firm at the time of the loan contract.

[5] Also, distant lending involves more impersonal interaction with the borrowers and more reliance on "hard" information. Hard information about a firm's investment projects can be easily objectified and passed along within a hierarchy. This is in contrast to the "soft" information that "cannot be verifiably documented in a report that the loan officer can pass on to his superiors" (Berger et al., 2005).

The other, larger component of our basic sample consists of Compustat firms between 1991–2004, for which we have historical location (as opposed to their current location) and some identifying variables available.[6] These firms act as a complementary group to the borrowers found in LPC, and the two together constitute our basic sample.

For all the banks listed as members of the lending syndicate in our LPC data, we obtain location of the parent company (or "bank holding company") either from Federal Reserve's *Report of Condition and Income* (a.k.a. "Call Reports"), or Federal Deposit Insurance Corporation's (FDIC) *Institution Directory*, or else Bureau van Dijk's *BankScope* database. In order to obtain these locations, banks are matched by name as well as the year in which the loan becomes active (the time dimension is added in order to account for possible changes in the banks' location). The name-matching is first done using an algorithm designed for this purpose and then further enhanced by eye-matching, i.e., by searching for the remaining (unmatched) LPC-banks in the above three databases and identifying their parent company's location.

Once the location of borrowing firms as well as lending banks is known, we calculate the distance between the two entities. To do that, we first identify the geographical coordinates (i.e., latitude and longitude) for each borrower and lender. These county-level coordinates are obtained from the *Gazetteer Files* of Census 2000 of the U.S. and plugged into the formula for calculating the spherical distance. The formula for calculating spherical distance $d_{i,j}$ between bank i and firm j, as identified by their respective latitudes and longitudes, is:

$$d_{i,j} = \arccos\left(\deg_{latlon}\right) \cdot r$$

where $\deg_{\text{latlon}}$ is given by:

$$cos(lat_i) \cdot cos(lon_i) \cdot cos(lat_j) \cdot cos(lon_j) + cos(lat_i) \cdot sin(lon_i) \cdot cos(lat_j) \cdot sin(lon_j) + sin(lat_i) \cdot sin(lat_j)$$

and *lat* and *lon* refer to the latitude and longitude in radians; r is the radius of Earth. (We convert latitudes and longitudes from degrees to radians by multiplying them with $\pi / 180$.)

Accounting variables through the tenor (or life) of each loan for the borrowing firm are obtained from the CRSP-Compustat Merged (CCM) database. In order to be able to associate the borrowing firms in LPC with their respective annual accounting data in CCM, we have to aggregate all the loans-specific information for each borrower across the multiple loan contracts within a given fiscal year. However, before this merge is accomplished, we extract PERMNO's and NCUSIP's for the borrowing firms from the CRSP database; we do this by matching the

[6] This Compustat location data is available at county-level and therefore, we are confined to county-level location details for the loan-taking firms and lending banks as well.

firm's Ticker and/or name in a given year. After having obtained the corresponding Permno's, we utilize these in matching the CCM accounting data.

Information regarding the local banking market (i.e., the county where the borrower is located) is obtained using branch-level deposits data from FDIC's *Summary of Deposits*. The earliest available Summary of Deposits is dated June 1994 and is reported for the preceding one year; hence, using this data puts a constraint on the extent of our sample through time. 13F Reports are used to obtain the fraction of borrowing company's outstanding shares held by financial institutions (as long as the holding is greater than 5% of the total shares outstanding). Next, we obtain the average number of analysts following the borrowing company's stock; this information is provided in the I/B/E/S *Summary* data. The Governance Index a la Gompers, Ishii and Metrick (2003) is obtained from the Investor Responsibility Research Center's (IRRC) database. For calculating aggregate volatility of returns and our measure of illiquidity, we use CRSP Daily data. Average trading volume is calculated using CRSP Monthly data.

We report summary statistics for our variables in Table 1. We can see that in our sample, the median market capitalization of is about $800m. Nearly half of the loan-taking firms are listed on the NYSE. Our sample is therefore not made of small firms. The firms in our sample have an average (median) borrowing relationship with ten (seven) banks. They borrow on average (median) 28% (27%) of their assets. They are on average (median) located 1,250 kilometers or 780 miles (940 km or 590 miles) away from their lenders. Approximately 25% of firms in our sample are located in large metropolitan areas; for this purpose, we take the following six major cities or metropolitan areas in the U.S. because of their large capital markets – Boston, Chicago, Los Angeles, New York, Philadelphia, and San Francisco.

The median firm sums 9 points out of the 24 that compose the Governance Index, a number very similar to the figures reported in Gompers, Ishii and Metrick (2003). Our mean statistic for Illiquidity is 0.18, which is lower than the mean statistic of 0.32 reported in Amihud (2002); this value rises to 0.49 for the overall sample. This is a first evidence that bank-lending by itself is related to the level of stock liquidity.

3.2 Loan characteristics

Our objective is to study the effect of the strength of the banks' lending relationship with the firm and its impact on the firm. We measure this strength of the lending relationship with two different facets of the loan – one is proximity of the lender to the borrowing firm and the other is the degree of exclusivity of the bank's relationship with the firm. The former is captured either by *Proximity* or by *Average Distance*, where *Proximity* is defined as the fraction of loans obtained from banks headquartered within 200 miles of the borrower (our results are robust if we define *close* banks as those located within the same state as the borrower) and

Average Distance is defined as the average distance of the borrowing firm from all the lending banks in the syndicate. The latter is captured either by *Exclusivity* or by *Dispersedness*, where *Exclusivity* is defined as the logarithm of the Herfindhal Index of the lending syndicate and *Dispersedness* is the logarithm of the number of lenders in the syndicate.

3.3 Measures of Liquidity and Information Asymmetry

The market microstructure literature has found alternative ways of measuring adverse selection in the market. A first set of measures is based on the intuition of Kyle's (1985) λ and measures the percentage price response for a given level of trading volume. This reflects the compensation that liquidity providers demand for transacting with better-informed traders and it increases with the degree of information asymmetry. It is, however, affected by other factors as well (such as inventory). To measure stock liquidity, we use the "illiquidity ratio," as developed by Amihud (2002). This is the average daily ratio between a stock's absolute return and its dollar volume:

$$ILLIQ_{j,t} = \frac{1}{Days_{j,t}} \sum_{d=1}^{Days_{j,t}} \frac{\left|R_{j,t,d}\right|}{DVol_{j,t,d}}$$

where $Days_{j,t}$ is the number of valid observation days for stock j in month t, and $R_{j,t,d}$ and $DVol_{j,t,d}$ are the daily return and daily dollar volume, respectively, of stock j on day d of month t. It is the price response associated with one dollar of trading volume. Amihud (2002) and Hasbrouck (2003) show that this measure is positively related to high-frequency measures of price impact and fixed trading costs over the time period for which microstructure data are available. According to Hasbrouck (2003), "the illiquidity ratio appears to have the most reliable relationship" among the available proxies of liquidity. We use yearly averages of the monthly values of the ratio and rescale them by a factor of 10^7 before taking the logarithm.

A second measure of liquidity is the "Liquidity Ratio" (Cooper, Groth, and Avera, 1985, Amihud, Mendelson, and Lauterbach, 1997, and Berkman and Eleswarapu, 1998). Conceptually, it can be considered as the inverse of the previous variable. Operationally, however, it has been constructed by using high-frequency data. It is the logarithm of the "Amivest" liquidity ratio, defined as "the average ratio of volume to absolute return, where the average is taken over all days in the sample for which the ratio is defined, i.e., all days with nonzero returns." [7] The intuition of this variable is that "in a liquid security, a large trading volume may be realized with small change in price." (Hasbrouck, 2005).

A second set of measures directly focuses on information asymmetry. This is the ex-ante degree of information asymmetry about the value of the firm using market data (quotes,

[7] Available on http://pages.stern.nyu.edu/~jhasbrou/Research/GibbsEstimates/Liquidity%20estimates.htm.

bid-ask spreads, trading volume). We follow Bharath, Pasquariello and Wu (2005) and do not use absolute bid-ask spreads for two reasons. First, the availability of bid-ask spreads from transactions data would limit the scope of our analysis. Second, the size of the bid-ask spread is also related to many other factors that are not related to adverse selection. We instead use the measure of information asymmetry developed by Llorente, Michaely, Saar, and Wang (2002). This relies on the interaction between trading volume and asset returns. The degree of asymmetric information is measured by the coefficient C_2 from the following regression:

$$R_{i,t+1} = C_0 + C_1.R_{i,t} + C_2.(V_{i,t} \times R_{i,t}) + \varepsilon_{i,t+1}$$

where: $V_t = log\,Turnover_t - \frac{1}{200}\sum_{s=-200}^{-1} log\,Turnover_{t+s}$, $log\,Turnover = log(Turnover_t + 0.00000255)$

and *Turnover* is defined as the total number of shares traded each day as a fraction of total shares outstanding (see Llorente *et al.*, 2002, for details.) As suggested by Bharath, *et al.* (2005), this measure is related to the activity of a firm's insiders (Clarke and Shastri, 2001), that is, it is constructed *"to measure the wedge between what the managers of a firm know and what all other market participants know about its investment opportunity set. Moreover, it captures the market's perceived intensity of information asymmetry surrounding a firm's value". C_2* captures the adverse selection between the market and "a larger category of agents informed traders of which firm managers constitute a subset". Unlike the standard corporate finance measures of asymmetry based on firm characteristics (e.g., relative size, growth opportunities, tangibility of their assets), this measure is dynamic and captures the "the financial markets changing perception of the information advantage held by firm insiders." (Bharath *et al.,* 2005).

A measure related to both information asymmetry and liquidity is the stock's trading volume. Information asymmetry reduces trading volume (Milgrom and Stokey, 1982, Foster and Viswanathan, 1990, Easley et al., 1996). Also, trading volume is positively related to stock liquidity (Amihud and Mendelson, 1986, Brennan *et al.*, 1998). We define volume as the number of shares traded as a fraction of total shares outstanding. *Trading Volume* is defined as the logarithm of average monthly volume over the year.

We also consider a measure of trading by institutional investors. The intuition is that since the institutions in general are assumed to be better informed as well as responsible for price informativeness and transparency, a reduction in their trading would be a signal of severe adverse selection problems. Trading by institutions (*Average Institutional Trading*) is defined as the trading by institutions of all types (as per CDA/Spectrum 13f data) over the four quarters in a given fiscal year.

3.4 Firm characteristics

Following is a brief description of several firm-characteristics that we employ as controls in our regressions. *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Size* is measured as the logarithm of book value of assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and *Cashflows* is income before extraordinary items (item 18) plus depreciation and amortization (item 14) as a fraction of lagged assets. Return on assets *(ROA)* is income before extraordinary items (item 18) as a percentage of lagged assets. *Capital Expenditure* is the ratio of capital expenditures (item 128) to lagged assets. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the borrowing firm's stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes the value 1 if the firm is listed on the New York Stock Exchange; otherwise the variable is equal to zero. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

4. Econometric methodology

We face three different econometric issues: the potential endogeneity of the main explanatory variables, the selection bias of the sample, and the stickiness of our variables along the intertemporal dimension of our panel dataset. We will now address these issues in turn.

4.1 Endogeneity

We start with the issue of endogeneity. All the explanatory variables of interest – the decision to borrow from a closer bank, the decision to have an exclusive relationship with few banks as well as the very decision to borrow from a bank (as opposed to issuing equity or bonds in financial markets) – are, at least to some extent, endogenously determined for the firm. They are affected by the characteristics of the firm as well as by many external constraints that the firm faces. Moreover, these decisions are also indirectly related to some of our dependent variables of interest, e.g., the informational asymmetry in the equity market. Indeed, more opaque firms and firms with greater asymmetry of information in the credit market are more likely to borrow from few banks (Sufi, 2005).

While we can control for many firm-specific characteristics, yet there might be some factors that we cannot control for and these may very well determine the choice of the type of relationship with the bank. This would induce an unwarranted correlation between the omitted variables and the errors, thus biasing our estimates. To address this issue, we follow the instrumental-variables approach, similar to the one adopted by Berger *et al.* (2005).

We need instruments that are correlated with the above-mentioned endogenous explanatory variables – measures of proximity and exclusivity of lending and the fraction of loans over total debt – but orthogonal to any other omitted characteristics. That is, the instruments should be uncorrelated with the dependent variable of interest through any channel other than their effect via the endogenous explanatory variables. In other words, the correlation between the residuals of the "second stage" regressions (i.e., main regressions with, say, illiquidity as the dependent variable) and the instruments should be null. In order to find such instruments, we focus on the "exogenous" determinants of the loan decisions, such as the location of the firm and the availability and/or the relative cost of other sources of capital. For example, firms located in remote areas populated by few banks are more likely to have a more exclusive relationship with few banks simply because bank competition may not be severe in such a remote area. Also, small firms, with scant access to equity or bond markets, are more likely to resort to bank lending.

We therefore employ the characteristics of the local bank-lending market as our main instruments. In order to capture the distinctive features of the local bank-lending market, we employ the following variables: size of the local bank-lending market, geographical composition of the local bank-lending market, and an index of concentration of the local bank-lending market. All these variables are measured in the year before the inception of the loan. As in Berger *et al.* (2005), size of the lending-market is proxied by the median size of *all* banks (weighted by the number of their respective branches) in the borrower's county of location. The geographical composition of the lending market in the firm's county of location, which would determine our proximity variable, is proxied by the median (and standard deviation of) distance between the borrower and headquarters of *all* local bank-branches (*inversely* weighted by the number of their respective branches). Finally, we measure concentration of the lending market by calculating a Herfindahl Index (ranging between 0–1) of the deposit size across all bank branches in the county of firm's location.[8] As an alternative robustness check, we use a Herfindahl Index based simply on the number of branches; the (unreported) results using this alternative are consistent with those reported here.

These variables capture the distinctive features of the banking industry in the firm's local area. The banking literature has shown that an increase in the number of banks leads to more competition and alters the lending conditions (e.g., it lowers the loan rates – see Berger and Hannan, 1989, Jayaratne and Strahan, 1998, and Calem and Nakamura, 1998, for instance). At the same time, more competition between banks aggravates the adverse selection problem by enabling lower quality borrowers to obtain financing, resulting in moral hazard and credit rationing (Petersen and Rajan, 1995) or a higher interest rates (Broecker, 1990).

[8] We define "local" at county level because the *historical* Compustat data on firm location is available to us only at county-level.

Also, we use the average lagged value of the corresponding loan characteristics in the industry: i.e., lagged values of the industry's average *Proximity, Exclusivity, Average Distance, Dispersedness,* and *Loan-to-Debt Ratio.* These are the averages of the same variables for all the loan-taking firms in the corresponding industry except the specific borrowing firm itself. *Proximity, Exclusivity, Average Distance,* and *Dispersedness* are as described above.

In addition to these, we use a dummy variable that equals 1 if the firm is located in one of the six largest metropolises in the U.S. (Boston, Chicago, Los Angeles, New York, Philadelphia, and San Francisco); this is done to account for firms located near large financial markets. The idea is that increased inter-bank competition may increase relationship lending and that higher competition due to easier access to other sources of capital reduces total bank lending as well as relationship lending (Boot and Thakor, 2000).

We also include the following instruments for the loan-characteristics: a) the borrowing firm's characteristics (such as *Size*, *Leverage*, *Cash*, *Cashflow*, *Capital Expenditure*, and *Market-to-Book*) from the year before the loan begins; b) features of the banking-market measured at the beginning of the fiscal year; and finally, c) industry averages of size, leverage, cash, cashflows, capital expenditure, and market-to-book, which are also measured at the beginning of the fiscal year.

We report the results of the first-stage of instrumental variables regressions (i.e., regressions using exogenous variables to instrument for our endogenous explanatory variables) in Table 2b. Columns 1 and 3 report the determinants of the choice of borrowing from close banks, while columns 2 and 4 report the determinants of the choice of borrowing from few banks. In particular, in column 1, the dependent variable *(Proximity)* is the fraction of the firm's loan borrowed from banks located within 200 miles (or 320 kilometers) of the firm's headquarter (our results are robust if we instead use the fraction of firm's loan borrowed from banks located in the same state as the firm as our measure of *Proximity*). In column 2, the dependent variable *(Exclusivity)* is the logarithm of the Herfindahl index of the lending syndicate. In column 3, the dependent variable *(Average Distance)* is the average distance in kilometers between the firm and all the banks in the lending syndicate; the distance is measured between firm's and banks' headquarters. In column 4, the dependent variable *(Dispersedness)* is the logarithm of number of banks in the lending syndicate.

The results show that lending proximity (average distance) is always negatively (positively) related to the median size of and distance from the banks, i.e., the presence of larger and distant banks in the local area increases *Average Distance*. Also, the fact of being located in a metropolitan area is strongly significant. Conversely, *Dispersedness* is mostly related to the distance from all available banks and the *Metropolis* dummy. In all cases,

however, the pre-loan levels of firm-characteristics play an important role; firm's size is especially significant.

Also, as a further assessment of the quality of our instruments, in each table of the main specifications (second-stage regressions), we report the Hansen's *J test* of over-identification of the second stage estimations. In terms of the correlation with the instrumented regressors, we find that a least-squares regression of the *Dispersedness* on the instruments and the exogenous variables reports an *F-test* statistic of 140.74 (p-value <0.0001) and an adjusted R^2 as high as 55%. The least-squares regression of *Average Distance* on the instruments and the exogenous variables reports an *F-test* statistic of 14.86 (p-value <0.0001) and an adjusted R^2 of 16%.

Regarding the issue of orthogonality, the Hansen's *J test* of over-identification provides evidence of the lack of residual correlation of the instruments with the second-stage residuals. In sum, for all the specifications, the instruments are strongly statistically correlated with the endogenous variables of interest and do not affect the dependent variable of interest through a channel other than their effect via the endogenous explanatory variables.

The use of these instruments allows us to project the lending characteristics on a set of exogenous variables that are not related to the degree of asymmetric information between the borrower and the lender (i.e., characteristics of the local bank-lending market) as well as firm-characteristics from before the loan-deal. These affect the borrowing decision and it may be argued to be indirectly related to the degree of asymmetric information between the borrower and the lender. Therefore, in the second-stage regressions, we explicitly control for these firm-level characteristics.

This set of variables allows us to directly control for the fact that the effect of our lending-relationship variables may indirectly be imputed to the underlying informational asymmetry between the borrower and the lender as opposed to the direct effect of the borrowing relationship itself. Some of these firm-specific variables are also directly related to the alternative ways of capturing information asymmetry about the firm's investment opportunities. These are: size, leverage and profitability (used by Frank and Goyal, 2003), level of institutional ownership (Best, Hodges, and Lin, 2004), analysts (Krishnaswami and Subramaniam, 1998 and Lowry, 2003).

Moreover, it is worth noting that we also include other variables such as the credit rating of the firm. We will see that in all the specifications, the ratings dummy – maybe the most related to the information asymmetry between borrowers and lenders in the credit market (Sufi, 2005) – is mostly not significant. This further confirms the lack of a direct channel from greater information asymmetry in the credit market to information asymmetry in the equity markets.

4.2 Selection Bias

So far, we have discussed our solution to the potential endogeneity in our data. We now consider the selection bias inherent in our sample. Note that all the estimates of the impact of the bank-firm relationship on the firm's characteristics (such as liquidity) are *conditional* on the firm having decided to borrow. This immediately induces a selection bias if the variables that determine such an impact are the very same variables that explain the decision to borrow – i.e., the selection mechanism. It could be the case, for instance, that the impact of an exclusive relationship on stock volatility is simply due to the fact that more volatile firms are the ones that are more likely to borrow from fewer banks in the first place. In particular, the problem can be represented as:

$$s_i^* = x'_{1i}\beta_1 + \varepsilon_{1i} \tag{1}$$

$$b_i^* = x'_{2i}\beta_2 + \varepsilon_{2i} \tag{2}$$

$$\text{if } b_i^* > 0, \quad s = s_i^*, b_i = 1 \text{ otherwise, if } b_i^* \leq 0, \ s_i \text{ not observed and } b_i = 0 \tag{3}$$

where equation (1) is the equation relating stock-specific characteristics (e.g., s_i is either stock volatility or liquidity) and (2) is the selection equation that represents the firm's decision to borrow from a bank. $\boldsymbol{x_{1i}}$ and $\boldsymbol{x_{2i}}$ are the explanatory variables. Conditions in (3) say that we do not observe the relationship between bank loans and stock characteristics for the firms which have chosen not to borrow. Thus, the decision to borrow is endogenous with respect to the explanatory variables: b_i depends on the latent variable b_i^*, itself a function of firm characteristics and other determinants. We assume the following correlation structure:

$$\begin{pmatrix} \varepsilon_{1i} \\ \varepsilon_{2i} \end{pmatrix} \approx NID\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{matrix} \sigma_1^2 & \sigma_{12} \\ \sigma_{12} & \sigma_2^2 \end{matrix} \right).$$

If self-selection is a problem, then the OLS estimates of equation (1) would be biased. To address this problem, we perform a Heckman two-stage procedure. We first estimate (2) using a Probit model. Then, we estimate:

$$s_i = x'_{1i}\beta_1 + \sigma_{12}\lambda_i + \eta_i \tag{4}$$

where $\lambda_i = \dfrac{\phi(x'_{2i}\beta_2)}{\Phi(x'_{2i}\beta_2)}$ is the Heckman's (1979) Lambda calculated using estimates from the first-stage Probit. We estimate equation (2), where b_i^* is a dummy variable taking the value of one in the case of an active loan and zero otherwise. The matrix x'_{2i} contains both the main determinants (instruments) of the decision to borrow as well as set of control variables. The

former consist of the lagged values of the lending-market characteristics: Median Size of Banks, Median Distance from Banks, Lending Market Concentration. The control variables in our Probit estimate of the loan-taking decision are the lagged values of several firm-characteristics: a dummy variable for whether the firm is located in a Metropolitan area *(Metropolis)*, *Leverage*, *Size*, *Cash*, *Cashflows*, *Capital Expenditure*, *Market-to-Book*, *Institutional Holdings*, *Analysts*, a dummy for whether the firm is listed on the NYSE or not *(NYSE)*, and a dummy variable for whether the firm has a credit-rating or not *(Ratings Dummy)*.

The estimated coefficients are reported in Table 2a. It is evident that even after controlling for firm-characteristics, the nature of the bank-lending market has a critical influence on the firm's loan-taking decision. Given that they are not the main focus of the paper, we will not dwell on them. In general, larger, more profitable, capital intensive, and highly-levered firms show a greater propensity to take loans from banks. As we might expect, firms with substantial cash stock have a smaller probability of borrowing from banks. However, and more interestingly, the more distant the banks are from the borrower, the less likely are the firms to undertake a loan. These results are consistent with the literature, showing that the decision of taking a loan is positively affected by characteristics of the lending market as well as by the firm specific ones.

4.3 Panel Dimension

We now consider the issue related to the panel dimension of our data. Our dataset has a panel dimension (cross-section of firms traced over time) and the loan-characteristic variables (e.g., the fraction of bank loans over total debt) are sticky. This induces a potential correlation of the errors across firms and across time.

Various approaches have been adopted to address similar econometric issues in general. Pure cross-sectional estimates (McConnell and Servaes, 1995), panel estimates with firm fixed effect (Himmelberg, Hubbard and Palia, 1999), panel estimates with industry fixed effects (Morck, Shleifer and Vishny, 1988 and McConnel, Servaes and Lins, 2003), Fama-MacBeth methodology (Gompers, Ishii and Metrick, 2003). The main issue is that, if the explanatory variable adjusts slowly over time, then using a firm fixed effect specification is not enough to capture the relationship. Moreover, firm fixed effect would deliver unbiased standard errors *only if* the firm effect is permanent and not gradually changing over time. This is hardly the case in our set-up. This problem is compounded in the case of time fixed-effects. In the case of both firm and time effects, the best resort is to "address one parametrically (e.g., including time dummies) and then estimate standard errors clustered on the other dimension" (Petersen, 2005). Therefore, we will adopt this approach in our panel specification, i.e. we use time and industry fixed effects and cluster the standard errors at the firm level.

Finally, as an additional robustness check, we also considered two alternative ways of addressing the issue of potential autocorrelation in the error structure. First, we estimate a specification that includes the lagged dependent variables (i.e., the value of the dependent variable – e.g., liquidity – before the loan's inception) among the explanatory variables. Second, we estimate a between-effect estimator that includes the pre-loan dependent variable among the explanatory variables. This effectively eliminates the time-dimension of the sample, focusing on its cross-sectional component. As we will see, the results of the alternative specifications are consistent.

5. Inside Banks and Stock Liquidity

We start with the main hypothesis relating stock liquidity to inside banks. We estimate:

$$LM_{i,t} = \beta_0 + \beta_1 IB_{i,t-1} + \beta_2 X_{i,t-1} + \eta_{i,t}, \qquad (5)$$

where $LM_{i,t}$ is the measure of liquidity we consider. It is either Amihud' measure of illiquidity *(ILLIQUIDITY)*, or alternatively, Hasbrouck' measure of liquidity *(LIQUIDITY)*, or else trading volume *(TRADING VOLUME)*. $IB_{i,t-1}$ is the vector containing our proxies for the intensity of the lending relationship: proximity of the firm to the lending banks and the degree of exclusivity of the bank-firm relationship. The former is captured by our proxies of *Proximity* or *Average Distance*, and the latter by our proxies of *Exclusivity* or *Dispersedness*. These variables are defined in Section 3 and have been instrumented as described in Section 4.

The vector of control variables ($X_{,i,t}$) in our simplest specification consists of *Size*, *Leverage*, *Cash, ROA*, *Market-to-Book*, *Institutional Holdings*, *Analysts*, *NYSE*, and *Ratings Dummy*. We further expand our analysis by including Heckman's (1979) Lambda *(Lambda)* in order to correct for the selection bias inherent in our sample of loan-taking firms. We then test for the robustness of our results by including the pre-loan level of the respective dependent variable as well as the *Governance Index* in addition to all the variables mentioned above. This *Governance Index* is a dummy variable based on the measure of the quality of corporate governance as defined in Gompers, Ishii and Metrick (2003); the dummy takes value 1 for firms with an index of 10 or above, and 0 otherwise (i.e., 1 for "dictatorship" firms and 0 for "democratic" firms – as per the terminology of Gompers et al., 2003). Finally, we estimate the between-effects estimator for the last specification that includes the pre-loan dependent variable among the explanatory variables.

We recall that our working hypothesis (H1) requires $\beta_1 > 0$. The results are reported in Table 3 for the Amihud's illiquidity ratio, in Table 4 for the Hasbrouck' measure of liquidity, and in Table 5 for trading volume. We will start by considering Amihud's illiquidity ratio. We first employ an OLS specification, followed by an instrumental variable specification and

then a two-stage Heckman specification with instrumental variables followed by a more comprehensive specification including the lagged dependent variable as well as a measure of the quality of corporate governance. We next consider alternative specifications based on the complementary pair of variables capturing the intensity of the lending relationship. In particular, columns (1)-(5) report the results for the case in which we use *Proximity* and *Exclusivity*, while columns (6)-(10) report the results for the case in which we use the complementary pair – *Average Distance* and *Dispersedness*.

The findings support our main hypothesis and display a strong and statistically significant positive relationship between stock illiquidity and the intensity of the lending relationship. This holds across all the specifications and for the different proxies of the intensity of lending relationship. Not only are our results statistically significant, but they are also economically substantial. A one standard-deviation increase in proximity of the lenders (say, by reducing *Average Distance* by approximately 1,000 km or 625 miles) increases stock illiquidity by 45%, while a 10% reduction in the number of lenders (or increase in exclusivity) increases stock illiquidity by 5.5%. The results also hold both before and after adjusting for selection bias.

The coefficients of the control variables are in line with intuition. Firms held by institutional investors, firms belonging to the NYSE and firms with higher market-to-book ratio have lower illiquidity levels. It is important to note that the fact that our results hold even after controlling for the standard measures of governance suggests that we are indeed identifying a separate dimension of governance: a purely bank-based one.

All these results, reported in Table 3, are consistent if we use the Hasbrouck's measure of liquidity. Here, a reduction of 1,000 km (or 625 miles) in *Average Distance* (i.e., an increase in proximity) decreases liquidity by 32% and a 10% reduction in the number of lenders (i.e., an increase in exclusivity) decreases liquidity by roughly 14%. We leave these findings as a robustness check and we move on to consider trading volume as dependent variable. This represents the other main alternative measure of stock liquidity (Amihud and Mendelson, 1986). We recall that our working hypothesis (H1) requires $\beta_1 < 0$. All the other variables as well as the estimation methodology are the same as in the previous case. The results are reported in Table 5. In this case also, columns (1)-(5) report the results for the case in which we use *Proximity* and *Exclusivity*, while columns (6)-(10) report the results for the case in which we use the complementary pair – *Average Distance* and *Dispersedness*.

The findings confirm those in Table 3, and display a strong and statistically significant negative relationship between trading volume and the intensity of the lending relationship. This holds across all the specifications and for the different measures of intensity of the lending relationship. The results are also economically relevant. A one standard deviation increase in

exclusivity (measured by a 1,000 km or 625 miles decrease in *Average Distance* from the lenders) reduces the firm's trading volume by 27%, while a 10% reduction in the number of lenders reduces trading volume by 12%. The results hold both before and after adjusting for selection bias. Also in this case, the results hold even after controlling for the pre-loan level of trading volume as well as the standard measures of corporate governance.

The main message is that the intensity of the lending relationship – i.e., a closer and more exclusive bank-lending relationship reduces the liquidity of a firm's stock. We now proceed on to test how the intensity of the lending relationship affects information asymmetry in the equity market.

6. Inside Banks and Information Asymmetry

We now consider the effect of the strength of banking relationship on the degree of information asymmetry. We proceed in two parts. First, we relate our proxy of information asymmetry to the intensity of the lending relationship, and then we test how the latter affects the behavior of the institutional investors – presumably the informed players in the market.

We start by re-estimating equation (5) except replacing the dependent variable with our proxy of information asymmetry. That is, we estimate:

$$A_{i,t} = \beta_0 + \beta_1 IB_{i,t-1} + \beta_2 X_{i,t-1} + \eta_{i,t}, \qquad (6)$$

where $A_{i,t}$ is the proxy of information asymmetry we defined above. The other variables are defined as in the previous section. In this case, our working hypothesis (H1) requires $\beta_1 > 0$. The results are reported in Table 6. As in the previous specifications, columns (1)-(5) report the results for the case in which we use *Proximity* and *Exclusivity*, while columns (6)-(10) report the results for the case in which we use the complementary pair – *Average Distance* and *Dispersedness*.

The findings show a strong positive and significant correlation between information asymmetry and the intensity of the lending relationship. The results are also economically relevant. An increase in proximity of the lenders by one standard deviation (measured by a reduction of 1,000 km or 625 miles in *Average Distance*) increases information asymmetry by 2%, while a reduction in the number of lenders by 10% (i.e., increasing exclusivity) increases asymmetry by 1%. It is also interesting to note that among the control variables included, there's a strong negative relationship between the amount of cash holdings of the firm and information asymmetry and a positive relationship between the information asymmetry and leverage. An increase of one standard deviation in cash holdings (leverage) reduces (increases) information asymmetry by 0.11 (0.19) standard deviation. This is consistent with the previous findings on liquidity that suggest that cash – the less "opaque" asset – helps to make the firm

more transparent and therefore reduces information asymmetry. At the same time, higher leverage, by increasing the potential riskiness of the firm, increases information asymmetry.

As expected, holdings by institutional investors and listing on the NYSE reduce asymmetry. It is important to note that the ratings dummy is mostly not significant. This further confirms the lack of a direct channel from higher asymmetry between borrower and lenders to asymmetry in the equity market. Again, these results hold, even after controlling for standard measures of governance.

It is worth emphasizing that the measure (a la Llorente *et al.*, 2002) that we employ for information asymmetry is meant to capture the adverse selection perceived by the market when it deals with better-informed agents – i.e., the bank and the firms' managers in our case. Thus a positive relationship in Table 6 between the strength of lending relationship and information asymmetry is evidence of the fact that the market perceives a stronger lending relationship as an increase in adverse-selection (see Bharath *et al.*, 2005). If this is the case, then, according to the pecking-order proposed by Myers and Majluf (1984), the lending relationship should also influence the financing decision of the firm. Indeed, we do find some preliminary evidence to that effect as the probability of seasoned equity offerings appears to be significantly reduced by an increase in exclusivity of the firm's loan. While this is not the focus of our paper, these (unreported) results are consistent with our above conjecture relating firm's lending relationships and information asymmetry.

We now move on to consider the impact of the lending relationship on the behavior of the institutions. We focus on the *Trading by Institutional Investors* – i.e., the average trading by institutional investors over the four quarters in a given fiscal year – and we regress it on our measures of lending intensity and the same set of control variables as before. The results are reported in Table 7.

The findings show a strong negative relationship between trading by the institutional investors and the intensity of lending. A one standard deviation increase in proximity (which is roughly equal to a 1,000 km or 625 miles reduction in *Average Distance* from the lenders) lowers institutional trading by 8%, while a one standard deviation change in the number of lenders changes institutional trading by 0.6 standard deviations. The results hold both before and after adjusting for selection bias as well as after controlling for pre-loan trading by institutions and the standard measures of corporate governance. This supports our intuition. Indeed, given that institutions tend to be among the more informed investors in the market, the fact that even they tend to trade less suggests that asymmetry is more related to behavior of the banks than to the insider behavior of some informed market participant. At the same time, this helps to explain the higher information asymmetry. As institutional trading drops,

less information is impounded in prices, prices become less transparent and asymmetry rises. We now discuss the benefits of the bank's monitoring role.

7. Inside Banks and Monitoring

As we argued above, banks should play a role in mitigating risk at the borrowing firm as well as in directly monitoring the managers. If this is the case, we should see a clear impact of the intensity of lending relationship on both managerial risk taking and firm's governance.

7.1 Managerial Risk Taking

We start by considering the impact of closer/fewer banks on the managers' risk-taking behavior. We consider two proxies for managerial risk-taking: stock volatility and cash flow volatility. As we mentioned above, banks can affect stock volatility in two ways: they may convey the impression that the firm is safe and better supervised, or alternatively, they may actually control the risk-taking behavior of the managers. The latter effect will show up in a smaller incentive-based compensation for the managers as well as in lower volatility of the firm's cash-flows and returns. We estimate:

$$RT_{i,t} = \beta_0 + \beta_1 IB_{i,t-1} + \beta_2 X_{i,t-1} + \eta_{i,t}, \qquad (7)$$

where $RT_{i,t}$ represents the proxy for risk taking.

We recall that our working hypothesis (H2) requires $\beta_1 < 0$. The results for stock volatility and cashflow variation are reported in Tables 8 and 9, respectively. We employ an OLS specification, an instrumental variable specification and a two-stage Heckman specification with instrumental variables followed by the addition of pre-loan volatility and *Governance Index* in the last specification, after which we also estimate the between-effects model using the penultimate specification. As in the previous cases, columns (1)-(5) report the results for the case in which we use *Proximity* and *Exclusivity*, while columns (6)-(10) report the results for the case in which we use the complementary pair – *Average Distance* and *Dispersedness*. The other variables and the methodology are defined as in the previous Sections.

We start with a discussion of results using stock volatility. The findings show a strong and statistically significant negative relationship between stock volatility and the intensity of the lending relationship. This is robust across all the specifications and for the different proxies for the intensity of the lending relationship. It is also economically significant – a one standard deviation increase in proximity (measured by a 1,000 km or 625 miles reduction in *Average Distance*) reduces stock volatility by 8%, while a 10% reduction in the number of lenders (i.e., an increase in exclusivity) reduces stock volatility by 7%. The results also hold

both before and after adjusting for selection bias. These results always hold even after controlling for pre-loan volatility and quality of corporate governance.

We next consider the effect of the intensity of lending relationship on cash flow variation, for which we use a measure derived from Guay and Harford (2000). This is constructed as the absolute change in cash-flows with respect to the average cash-flows over the previous three years. We re-estimate equation (7) replacing the dependent variable with cash flow variation.

The results are reported in Table 9, and show a strong and statistically significant negative relationship between cash-flow variation and the intensity of the lending relationship. As in the previous cases, this is robust across all the specifications and for the different proxies for the intensity of the lending relationship. It is also economically significant – a one standard deviation increase in exclusivity (measured by a 1,000 km or 625 miles reduction in *Average Distance*) reduces cash flow variation by 15%, while a 10% reduction in the number of lenders (i.e., increasing exclusivity) reduces cash flow variation by 7%. Also, the results hold both before and after adjusting for selection bias and after controlling for pre-loan volatility and quality of corporate governance.

As an additional robustness check, we also consider two alternative measures of volatility of cash flows. The first is constructed as the sum of the absolute deviations of the cash flows each year from the previous one, throughout the interval over which the loan is active. So, effectively it is the average value of the Guay and Hartford's measures over the tenor of the loan. The second is just the standard deviation of the cash flows over the same interval. The (unreported) results of these specifications are consistent with the ones reported here, displaying a strong and statistically significant negative relationship between cash flow volatility and the strength of the lending relationship.

These findings suggest that the intensity of the lending relationship affects stock volatility. The impact is not limited to a lower stock price volatility related to lower investor uncertainty, but it directly translates into lower cash-flow uncertainty.

7.2 Firm governance

We now consider alternative proxies of firm's governance. There are many different proxies that the literature has variously employed. We will focus on a few of them. We start by analyzing measures of rent appropriation by the managers, as proxied by the compensation of the managers. We study whether inside banks are able to moderate the compensation contracts of the managers. We measure *Managerial Appropriation* as the borrowing firm's CEO's total compensation as a fraction of the average CEO compensation for all firms (except the firm under consideration) in the corresponding industry. We regress it on our measures of intensity of lending as well as the standard control variables we have used before; additionally,

a one-year lagged value of the CEO's total compensation is also included as a control in these regressions. Our hypothesis is that there is a negative correlation between our proxies of inside lending and managerial appropriation.

The results are reported in Table 10 and show a significantly negative correlation between the exclusivity of lending relationship and managerial appropriation. More powerful banks are able to curb managerial compensation. In particular, a one standard deviation increase in proximity (measured by a 1,000km or 625 miles reduction in *Average Distance*) reduces managerial appropriation by 17%, while a 10% reduction in the number of lenders (i.e., an increase in exclusivity) reduces appropriation by 18%. It is important to note that these results hold both before and after adjusting for selection bias and after controlling for one-year lagged appropriation and quality of governance. Indeed, it may be the case that the firms with stronger control over the managers or better governance are the one that resort to bank lending and/or borrow more from closer and few banks.

The second measure focuses on another way for the managers to exploit their position: trading in the shares of the firm. We therefore study whether inside banks do reduce the insider trading of the managers. Following Jenter (2005), we measure insider trading as the ratio of the dollar value of trades made by the CEO through the fiscal year to the firm's market capital. We then regress it on our measures of intensity of lending and the standard control variables as before as well as the lagged value of CEO's trading. We posit a negative relation between managerial trading and our proxies of inside lending.

The results are reported in Table 11 and partially confirm our working hypothesis. There is a significant negative correlation between the exclusivity of lending relationship and managerial trading. This holds true for both measures of exclusivity, while in the case of proximity, it is only marginally true. In particular, a one standard deviation increase in exclusivity reduces managerial trading by 24%. As in the previous case, it is worth stressing that the results hold both before and after adjusting for selection bias and after controlling for one-year lagged CEO-trading and quality of governance.

We next consider the M&A activity of the borrowing firm. The number of M&As initiated by the firm has in general been considered an indication of poor governance (e.g. Gompers *et al.*, 2003). We therefore relate our measures of strength of lending to the expenditure on acquisitions initiated by the firm. In particular, we define the *Expenditure on M&As* as the ratio of Compustat item 129 to lagged assets. We regress it on our measures of the strength of lending relationship as well as the standard control variables as before. Pre-loan level of M&A expenditure is also included as a control in the final specifications. We posit a negative relation between M&A activity and our proxies of inside lending. The results are reported in Table 12. They show a strong negative correlation between the exclusivity

(dispersedness) of the lending relationship and M&A activity. One standard deviation increase in exclusivity reduces M&A expenditure by 5%. Proximity does seem to not play any role.

Finally, we focus on CEO turnover. This is directly related to quality of governance (e.g., Jenter, 2006). Indeed, better governance means less entrenched managers and higher turnover. We consider a measure of CEO turnover following Jenter (2006). This is constructed simply as a dummy that is equal to 1 in the fiscal year during which a new CEO is appointed. We then use a logit model to analyze the relationship between our measures of strength of lending and the probability of CEO turnover. Again, we expect a negative relation between CEO turnover and our proxies of inside lending.

These results are reported in Table 13. They show a strong negative correlation between the exclusivity (dispersedness) of the lending relationship and the probability of CEO turnover. A standard deviation increase in exclusivity increases the probability of CEO turnover by 15% while proximity seems to play no significant role.

All these findings together provide substantial evidence that inside lending reduces risk taking and curbs managerial appropriation, reduces managers' propensity to initiate M&As and accelerates managerial turnover. All this would suggest a positive impact on firm value. In particular, the impact should be more pronounced for exclusivity as this is the characteristic that seems to be more strongly related to governance.

8. Inside Banks and Tobin's Q

Estimating the effect of the intensity of lending on the firm value is equivalent to answering the question of what is the net effect of the corporate-governance and information-asymmetry tradeoff inherent in the bank-firm relationship that we have shown so far. Being an important on its own, we test whether the intensity of the lending relationship increases or decreases firm value. To address this issue, we estimate:

$$Q_{i,t} = \beta_0 + \beta_1 IB_{i,t-1} + \beta_2 X_{i,t-1} + \eta_{i,t}\,, \qquad (8)$$

where $Q_{i,t}$ is the Tobin's Q of the firm (calculated as (item6 + item25 x item199 – item60 – item74)/(item6)), while all the other variables are the same as in the previous Sections; we also include the firm's lagged Q and the average Tobin's Q of other firms in the corresponding industry as additional controls in these tests. The econometric methodology is the same as the one defined in Section 3. The results are reported in Table 14; columns (1)-(5) report the results for the case in which we use *Proximity* and *Exclusivity*, while columns (6)-(10) report the results for the case in which we use the complementary pair – *Average Distance* and *Dispersedness*.

The results show a strong and statistically significant positive (negative) relationship between firm value (as measured by Tobin's Q) and *Exclusivity* (*Dispersedness*) of the lending relationship. The impact is economically relevant – a 10% reduction in the number of lenders (thus increasing the exclusivity) increases Tobin's Q by 9%. No statistically significant effect is present in the case of proximity. This shows that firms with a more exclusive bank-lending relationship display a higher stock price. The results also hold both before and after adjusting for selection bias. The coefficients of the control variables are in line with previous studies (Gompers, Isjhi and Metrick, 2003). Although few control variables are statistically significant, we find that firms with greater analysts-coverage and firms belonging to high-Q industries display a higher Tobin's Q; of course, lagged Tobin's Q of the firm itself is most significant in these regressions.

As an additional test, we calculate the abnormal returns from trading strategies based on the different loan characteristics. We use alternative methodologies: returns across time and securities (RATS), and the calendar-time portfolio regressions (CTPR). The RATS methodology (Ibbotson, 1975) is based on the monthly average abnormal returns in event time. One cross-sectional regression is run for each event month *j* (*j=0* is the month in which the firm enters the loan), with *j* varying from 1 to 36. The following regression is run each event month *j*:

$$\left(R_{i,t} - R_{f,t}\right) = a_j + b_j\left(R_{m,t} - R_{f,t}\right) + c_j SMB_t + d_j HML_t + \varepsilon_{i,t}, \qquad (9)$$

where $R_{i,t}$ is the monthly return on security i in calendar month t. $R_{f,t}$ and $R_{m,t}$ are the risk-free rate and the return on the equally-weighted CRSP index, respectively. SMB_t and HML_t – from K. French's website – are the monthly returns on the size and book-to-market factor-mimicking portfolios in month t, respectively. The numbers reported are sums of the intercepts of cross-sectional regressions a_j over the relevant event-time periods.

The alternative methodology is based on portfolios. We construct portfolios consisting of firms whose loan-characteristic (proximity, or exclusivity, or average distance, or dispersedness) is *above* median in a given month (*Hi*), and then portfolios consisting of firms whose loan-characteristic is either *equal to* or *below* median in that month (*Lo*). *Hi – Lo* represents a trading strategy where we go long in the *Hi* portfolio and short the *Lo* portfolio. That is, each month we look backward and, depending on the loan characteristics, we add stocks (that have entered into a loan contract) to one of the two portfolios, and we keep them in the portfolios for a certain number of months. We consider horizons of 1, 3, 6 and 12 months. Then, we calculate the abnormal returns of each of these portfolios as well as of their differences with respect to four factors: the Fama-French 3-factors as well as momentum factor.

We report the results in Table 15. Panel A presents returns using the Ibbotson's (1975) RATS estimation. Therefore, the returns in this panel are returns over the indicated holding period. The numbers in brackets at the head of each column represent months after the loan, over which these stocks are held. E.g., [1, 6] would represent the 6-month period immediately *after* the month in which the loan started. Panels B and C present returns using a calendar-time portfolio strategy; Panel B shows returns of an equally-weighted portfolio and Panel C those of a value-weighted portfolio. The returns in this panel are returns per month over the indicated period (i.e., the returns under [1, 6] are monthly returns for a period of 6 months immediately after the month in which the loan started.)

The results are consistent with the ones based on Tobin's Q and show a significantly positive relationship between stock returns and measures of exclusivity (either *Exclusivity* or *Dispersedness*). After the inception of the loan, the returns of firms entering a more exclusive relationship with the bank are positive. The appreciation in value is not only statistically significant, but also economically relevant. It is equal to 46 b.p. over 12 months using the calendar-time portfolio strategy and more than 6% over 12 months using RATS. This confirms that entering a more exclusive bank-lending relationship has a positive effect for the stock price.

This signifies that the power or influence that the bank can exert on the lender (in terms of mitigating the lender's risk-taking behavior) is perceived by the market as a benefit of effective monitoring. The positive effect of better monitoring and improved governance prevails over the negative effect of reduced liquidity and higher informational asymmetry.

9. Conclusion

We document the trade-off facing a borrowing firm due to the positive governance effect of the lending bank and the negative effect of an increase in the firm's information asymmetry. We directly quantify the "dark side" of the bank-lending relationship, theorized in the literature but never fully tested (e.g., Rajan, 1992). We argue that the bank's privileged information, by improving bank's monitoring, reduces the possibility for the managers to appropriate rent and lowers their risk taking. This translates into lower managerial compensation, reduced volatility of cash flows and lower stock volatility. At the same time, however, the bank's privileged information, by increasing the adverse selection in the market, reduces the incentive of the investors to hold the stock of the borrowing firm. This lowers stock market liquidity and trading volume, and increases information asymmetry.

We define the power of the bank vis-à-vis the firm in terms of proximity of the borrower to the lending banks and exclusivity of the lending relationship. We show that borrowing locally and/or having a more exclusive relationship with the lending banks increases

stock illiquidity and asymmetric information in the stock market and lowers trading volume. Institutions reduce their trading in the stock of firms that enjoy a more exclusive relationship with the bank. At the same time, a more intensive lending relationship with a bank directly affects the management of the firm, by reducing the risk-taking tendency of the managers, managerial compensation and insider trading. Lower risk directly feeds back into stock volatility, thus lowering it. A more intensive lending relationship with a bank also increases managerial turnover and reduces the incentives of the managers to initiate M&As. That is, the disciplining/constraining effect on the managers of borrowing is stronger in the case of more exclusive and geographically closer bank relationships.

The net effect on the firm value is positive. Entering a more exclusive bank-lending relationship has a positive effect for the stock price. Both the firm's Tobin's Q and the stock returns following the inception of the loan are directly affected. After the inception of the loan, the returns of firms entering a more exclusive relationship with the bank are higher.

Our findings provide a new perspective on how banks affect the firm. The channel is similar to a "corporate governance" channel. The trade-off between risk-reduction and illiquidity is similar to the one between illiquidity and governance already defined in the corporate governance literature. This has important normative implications. Indeed, after the abolition of the Glass-Steagall Act, the possibilities for the banks to directly trade on the basis of the information they acquire in the course of their lending activity have increased tremendously. This should have further compounded the liquidity effects of bank lending.

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Table 1

Variable Definitions and Summary Statistics

The table below presents summary statistics of the variables used in our analyses. We present separate figures for the overall sample (in Table 1a) as well as the loan-taking sub-sample (in Table 1b). We start with the definitions of all the dependent variables.

First of all, *LoanDummy* is a dummy variable that equals 1 for all the firm-years during which there is an active loan; this variable is zero otherwise. This dummy represents the "loan-taking decision". Hence, it is 1 for firm-years derived from the LPC data (described above in Section 4) and 0 for the remaining firm-years (which are obtained from Compustat). *Illiquidity* is $ln(1 + \text{AvgILLIQx}10^7)$ where *AvgILLIQ* is the yearly average of the monthly *ILLIQ* values calculated as per equation in Section 3.3 above. *Liquidity* is the logarithm of "Amivest" liquidity ratio, which is obtained from Prof. Joel Hasbrouck's webpage; it is simply the reciprocal of the illiquidity ratio defined above. *Trading Volume*, is the logarithm of average monthly volume over the year. *Information Asymmetry* measures the degree of asymmetric information and is constructed following the model of Llorente, Michaely, Saar, and Wang (2002). It is the coefficient C_2 obtained from the regression: $R_{i,t+1} = C_0 + C_1.R_t + C_2.(V_{i,t}xR_{i,t}) + e_{i,t+1}$. (See Section 3.3 in the paper or Table 6 for further details on C_2.) *Trading by Institutional Investors* is the average trading by institutional investors over the four quarters in a given fiscal year. *Volatility* is the logarithm of one plus the standard deviation (rescaled by 10^4) of daily returns over the year; this variable is also rescaled for the convenience of obtaining normally-scaled coefficient estimates. *Cashflow Variation* is the absolute change in cashflows with respect to the average cashflows over the previous three years. *Managerial Appropriation* is the ratio of the CEO's total compensation ("TDC1" from *ExecuComp*) to the average total compensation of other CEO's in the industry (as defined by 1-digit SIC code). *Trading by Managers* is the ratio of trades made by the CEO to the average trading by other CEO's in the industry (as defined by 1-digit SIC code); the trades are calculated according to Jenter (2005). *Expenditure on M&As* is defined as the ratio of Compustat item 129 to lagged value of assets (item 6). *CEO Turnover* is a dummy variable that takes value 1 if the CEO changed a given fiscal year, and 0 otherwise. *Tobin's Q* is calculated as (item6 + item25 x item199 – item60 – item74)/(item6).

Size is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and *Cashflows* are defined as income before extraordinary items (item 18) plus depreciation and amortization (item 14), standardized by lagged assets. *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. *Capital Expenditure* is the ratio of capital expenditures (item 128) to lagged assets. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Industry Tobin's Q* is the average Q in the industry to which the borrower belongs.

Institutional Holdings is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy equal to 1 if the firm has a credit rating available, and 0 otherwise. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance.

Proximity is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. Finally, the *Loan-to-Debt Ratio* is the ratio of total loan amount (raised in the loan deal) to the lagged value of outstanding long-term debt (item 9); this ratio takes surprisingly large values because certain firms might start out with negligible leverage and then at some point decide to borrow enormously from banks.

Table 1a: Summary statistics for overall sample

Variables	Units	N	Mean	Median	Std. Dev.
Illiquidity	logarithm	42,805	1.625	0.719	1.908
Liquidity	logarithm	38,881	-3.446	-3.417	2.995
Trading Volume	logarithm	42,805	-2.681	-2.643	1.048
Information Asymmetry	fraction	42,765	0.019	0.021	0.105
Trading by Institutions	fraction	35,675	0.034	0.024	0.051
Stock Volatility	logarithm	42,805	5.861	5.866	0.587
Cashflow Variation	fraction	39,325	2.977	0.420	63.668
Managerial Appropriation	fraction	13,922	0.934	0.505	2.073
Trading by Managers	fraction	10,906	2.083	0.125	91.572
Expenditure on M&A	fraction	41,184	0.035	0.000	0.156
CEO Turnover	0/1	42,805	0.034		
Tobin's Q	fraction	42,805	1.808	1.320	1.606
Size	logarithm	42,805	5.301	5.160	2.025
Leverage	fraction	42,805	0.208	0.182	0.183
Cash	fraction	42,805	0.175	0.077	0.232
Cashflow	fraction	42,805	0.046	0.076	0.170
Return on Assets	%	42,805	-0.57%	3.28%	16.865
Capital Expenditure	fraction	42,805	0.067	0.043	0.088
Market-to-Book	logarithm	38,919	1.151	1.051	0.558
Industry Tobin's Q	fraction	42,805	2.026	1.850	0.640
Institutional Holdings	fraction	27,066	0.434	0.420	0.233
Analysts	thousands	30,303	0.069	0.043	0.073
NYSE	0/1	42,805	0.322		
Ratings Dummy	0/1	42,805	0.299		
Governance Index	0/1	42,805	0.147		

Table 1b: Summary statistics for sub-samples

		Sub-sample without loans				Loan-taking sub-sample				Test statistic comparing sub-samples	
Variables	**Units**	N	Mean	Median	Std. Dev.	N	Mean	Median	Std. Dev.	t-test	Wilcoxon rank-test
Illiquidity	logarithm	25,552	2.035	1.351	2.040	17,253	1.017	0.224	1.502	56.08***	60.35***
Liquidity	logarithm	23,351	-4.148	-4.208	2.914	15,530	-2.392	-2.207	2.799	-59.11***	-56.45***
Trading Volume	logarithm	25,552	-2.762	-2.737	1.114	17,253	-2.562	-2.534	0.929	-19.38***	-18.99***
Information Asymmetry	fraction	25,521	0.021	0.023	0.098	17,244	0.016	0.018	0.116	4.88***	4.87***
Trading by Institutions	fraction	20,586	0.031	0.021	0.050	15,089	0.037	0.027	0.052	-10.16***	-23.74***
Stock Volatility	logarithm	25,552	5.964	5.992	0.609	17,253	5.709	5.699	0.518	45.09***	46.06***
Cashflow Variation	fraction	22,963	3.737	0.483	81.579	16,362	1.912	0.358	20.019	2.80***	18.85***
Managerial Appropriation	fraction	5,754	0.820	0.426	2.166	8,168	1.013	0.557	2.001	-5.42***	-14.40***
Trading by Managers	fraction	4,331	1.407	0.131	9.155	6,575	2.529	0.122	117.703	-0.63	0.82
Expenditure on M&A	fraction	24,736	0.025	0.000	0.134	16,448	0.051	0.000	0.182	-16.98***	-35.01***
CEO Turnover	0/1	25,552	0.023	-	-	17,253	0.051	-	-	-15.71***	-15.66***
Tobin's Q	fraction	25,552	1.970	1.367	1.886	17,253	1.568	1.269	1.016	25.58***	15.80***
Size	logarithm	25,552	4.672	4.477	1.900	17,253	6.233	6.186	1.837	-84.46***	-80.32***
Leverage	fraction	25,552	0.170	0.114	0.178	17,253	0.264	0.260	0.176	-53.79***	-57.23***
Cash	fraction	25,552	0.224	0.121	0.260	17,253	0.104	0.042	0.156	54.26***	54.77***
Cashflow	fraction	25,552	0.023	0.068	0.195	17,253	0.080	0.085	0.114	-34.52***	-25.92***
Return on Assets	%	25,552	-2.71%	2.74%	19.578	17,253	2.61%	3.83%	11.003	-32.42***	-20.95***
Capital Expenditure	fraction	25,552	0.062	0.039	0.081	17,253	0.075	0.048	0.097	-15.03***	-21.90***
Market-to-Book	logarithm	22,828	1.172	1.057	0.587	16,091	1.122	1.043	0.513	8.64***	4.44***
Industry Tobin's Q	fraction	25,552	2.120	2.069	0.655	17,253	1.888	1.667	0.589	37.39***	36.11***
Institutional Holdings	fraction	14,181	0.379	0.339	0.225	12,885	0.494	0.507	0.225	-41.98***	-41.16***
Analysts	thousands	16,033	0.058	0.033	0.067	14,270	0.081	0.055	0.077	-27.62***	-33.59***
NYSE	0/1	25,552	0.206	-	-	17,253	0.493	-	-	-65.45***	-62.40***
Ratings Dummy	0/1	25,552	0.172	-	-	17,253	0.487	-	-	-74.16***	-69.81***
Governance Index	0/1	25,552	0.092	-	-	17,253	0.229	-	-	-40.17***	-39.43***
Proximity	fraction	-	-	-	-	17,253	0.256	0.050	0.346	-	-
Exclusivity	logarithm	-	-	-	-	17,014	7.433	7.419	1.395	-	-
Average Distance	thousands km.	-	-	-	-	17,220	1.218	0.904	1.042	-	-
Dispersedness	logarithm	-	-	-	-	16,994	-3.128	-2.996	1.132	-	-

*, **, and *** indicate significance at 10%, 5%, and 1% level, respectively.

Table 2

Loan-taking decision of the firm and the choice of loan-characteristics

In this table, we address the selection bias inherent in our sample of the loan-taking firms as well as the endogeneity of loan-characteristics. It is not by chance that these firms borrow from banks and nor are the characteristics of the loan incidental; rather, it's an endogenous decision affected by the firm's characteristics as well as the local bank-lending market.

In Table 2a below, the dependent variable is a dummy variable (*LoanDummy*) that equals 1 for all the firm-years during which there is an active loan; this variable is zero otherwise. The firm-years where LoanDummy is equal to one are derived from the Loan Pricing Corporation's *DealScan* database and the firm-years where LoanDummy takes the value zero are those firm-years from Compustat for which we had historical firm-location available (see Section 4 for details on our sources of data). Coefficient estimates from a Probit regression for the loan-taking decision are reported in Table 2a. In Table 2b, we present the instruments that we propose as potential determinants of the firms' loan-characteristics. The dependent variable *Proximity* is the fraction of the firm's loan borrowed from banks located within 200 miles (or 320 kilometers) of the firm's headquarter. *Exclusivity* is the logarithm of the Herfindahl index of the lending syndicate. The dependent variable *Average Distance* is the average distance in kilometers between the firm and all the banks in the lending syndicate; the distance is measured between firm's and banks' headquarters. Finally, *Dispersedness* is the logarithm of number of banks in the lending syndicate. OLS estimates for the instrumental variables (besides some other controls) used to instrument for the loan characteristics are reported in Table 2b.

Our independent variables can be grouped into five categories: a) pre-loan characteristics of the local bank-lending market, b) several pre-loan firm-level characteristics, c) lagged banking-market characteristics, d) lagged industry characteristics (of the industry to which the borrowing firm belongs), and e) loan-characteristics of other firms in the industry. All "lagged" variables are recorded at the beginning of the fiscal year while the "pre-loan" variables are measured the year before the loan is initiated.

In order to capture the distinctive features of the local bank-lending market, we employ the following three variables: median size in millions of dollars of *all* banks (weighted by the number of branches) available to the borrower in its county of location; median distance in thousands of kilometers (*inversely* weighted by the number of branches) between the borrower and *all* local bank-branches' headquarter location; and concentration of bank-lending market in the county of borrower's location. We measure this concentration by calculating a Herfindahl Index (ranging between 0–1) of the deposit size across all bank branches in the county; our results are robust if we instead use a Herfindahl Index based simply on the number of branches.

The firm-level control variables that we include in our analysis are the following. First of all, a dummy variable that equals 1 if the firm is located in one of the six largest metropolises in the US (Boston, Chicago, Los Angeles, New York, Philadelphia, and San Francisco); this is done to account for firms located near large financial markets. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and *Cashflows* are defined as income before extraordinary items (item 18) plus depreciation and amortization (item 14), standardized by lagged assets. *Capital Expenditure* is the ratio of capital expenditures (item 128) to lagged assets. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Industry Tobin's Q* is the average Q in the industry to which the borrower belongs. *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the borrowing firm's stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes the value 1 if the firm is listed on the New York Stock Exchange; otherwise the variable is equal to zero. Finally, *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Industry's *Proximity, Exclusivity, Average Distance, Dispersedness,* and *Loan-to-Debt Ratio* are the averages of those variables for all the loan-taking firms in the corresponding industry except the specific borrowing firm itself. *Proximity, Exclusivity, Average Distance,* and *Dispersedness* are as described above, and *Loan-to-Debt Ratio* is the ratio of loan amount to lagged long-term debt (item 9) used as a control variable. Industry's size, leverage, cash, cashflow, capital expenditure, and market-to-book is average of these variables (as defined above) for all other firms in the corresponding industry except the borrowing firm itself.

Of course, besides all the variables described above, there might be some macroeconomic or regulatory variables that can also influence the firm's loan-taking decision. We hope to capture those using year effects through the Time Dummies used in our regressions.

We use the estimates of column (2) of Table 2a below to calculate the *Lambda* (Inverse Mills' Ratio) used in subsequent analyses. Industries are categorized by 1-digit SIC Code. All z-statistics in Table 2a and t-statistics in Table 2b are calculated using robust standard errors clustered by firm.

Table 2a: Loan-taking Decision

Independent variables:	(1)	(2)
Median Size of Banks		0.262
		[0.22]
Median Distance from Banks		-0.353**
		[2.52]
Lending market Concentration		0.310
		[1.41]
Metropolis		-0.098*
		[1.65]
Size	0.081***	0.112***
	[4.63]	[5.90]
Leverage	1.320***	1.320***
	[12.96]	[12.87]
Cash	-0.610***	-0.611***
	[6.26]	[6.09]
Cashflows	0.571***	0.658***
	[4.56]	[4.98]
Capital Expenditure	0.494***	0.398**
	[2.74]	[2.16]
Market-to-Book	-0.051*	-0.044
	[1.76]	[1.48]
Institutional Holdings	0.773***	0.470***
	[9.44]	[5.50]
Analysts	-1.152***	-1.211***
	[3.79]	[3.87]
NYSE	0.108**	0.119***
	[2.56]	[2.77]
Ratings Dummy	0.267***	0.330***
	[5.99]	[7.32]
Constant	-1.080***	-1.775***
	[12.46]	[5.99]
Observations	23085	23084
Pseudo R-squared	0.14	0.17
Time Dummies	No	Yes
Industry Dummies	No	Yes

Robust z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2b: Instruments for loan characteristics

	Proximity	Exclusivity	Average Distance	Dispersedness
Independent variables:				
Pre-loan Median Size of Banks	-1.290**	0.069	8.505***	-0.408
	[2.24]	[0.04]	[4.34]	[0.29]
Pre-loan Median Distance from Banks	-0.194**	0.702***	2.177***	-0.646***
	[2.38]	[3.08]	[7.07]	[3.67]
Pre-loan Lending market Concentration	-0.032	0.271	-0.545**	-0.197
	[0.33]	[0.80]	[2.05]	[0.80]
Metropolis	0.114***	0.06	-0.176**	-0.082*
	[5.69]	[0.97]	[2.41]	[1.78]
Pre-loan Leverage	-0.065*	-1.478***	0.003	1.043***
	[1.80]	[11.93]	[0.03]	[11.36]
Pre-loan Size	-0.035***	-0.462***	0.086***	0.436***
	[9.40]	[40.06]	[7.82]	[55.30]
Pre-loan Cash	0.038**	0.110**	-0.001	-0.067
	[2.31]	[2.09]	[0.02]	[1.28]
Pre-loan Cashflows	-0.029	-0.463***	0.112	0.451***
	[0.66]	[3.90]	[0.71]	[4.65]
Pre-loan Capital Expenditure	-0.117***	-0.299**	0.254*	0.028
	[2.84]	[1.97]	[1.72]	[0.24]
Pre-loan Market-to-Book	0.460***	-0.523**	-0.862*	0.491**
	[4.17]	[2.02]	[1.82]	[2.09]
Lagged Median Size of Banks	-0.100	0.446	7.619***	-0.663
	[0.18]	[0.24]	[4.03]	[0.48]
Lagged Median Distance from Banks	0.000	0.000***	0.001***	-0.000**
	[0.67]	[3.27]	[6.43]	[2.40]
Lagged Lending market Concentration	0.11	-0.149	-1.079***	0.074
	[1.18]	[0.43]	[4.19]	[0.29]
Lagged Industry Size	0.01	0.116***	-0.034	-0.090***
	[0.91]	[3.06]	[0.90]	[3.03]
Lagged Industry Leverage	-0.052	-0.262	0.612**	-0.086
	[0.66]	[0.81]	[2.10]	[0.37]
Lagged Industry Cash	0.126**	0.052	0.266	-0.196
	[2.53]	[0.32]	[1.60]	[1.58]
Lagged Industry Cashflows	-0.066	-0.365	0.462*	0.287
	[0.85]	[1.47]	[1.73]	[1.47]
Lagged Industry Capital Expenditure	-0.183*	-0.142	0.236	0.257
	[1.86]	[0.40]	[0.63]	[0.94]
Lagged Industry Market-to-Book	-0.001	-0.006***	0.000	0.005***
	[1.37]	[2.68]	[0.20]	[3.35]
Lagged Industry s Proximity	0.074	0.139		
	[1.05]	[0.62]		
Lagged Industry s Exclusivity	0.002	0.081		
	[0.15]	[1.48]		
Lagged Industry s Avg. Distance			0.146**	-0.049
			[2.17]	[0.94]
Lagged Industry s Dispersedness			-0.051	0.037
			[0.79]	[0.66]
Lagged Industry s Loan-to-Debt Ratio	0.000**	0.000	-0.000*	0.000
	[2.14]	[0.51]	[1.90]	[1.07]
Constant	0.289*	9.882***	0.221	-5.631***
	[1.82]	[18.05]	[0.56]	[13.94]
Observations	11712	11530	11700	11518
(pseudo/adj) R-square	0.09	0.44	0.16	0.55
Time Dummies	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes

Robust t statistics are in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3

Lending relationship and firm's stock illiquidity

This table presents coefficient estimates for the regression formalizing the effect of different characteristics of the bank's lending relationship on the borrowing firm's stock illiquidity. Our dependent variable *Illiquidity* is the logarithm of (1 + AvgILLIQ), where AvgILLIQ is the yearly average (multiplied by 10^7) of ILLIQ (Amihud, 2002), which is defined as:

$$\text{ILLIQ}_{\text{j,t}} = \frac{1}{\text{Days}_{\text{j,t}}} \sum_{d=1}^{\text{Days}_{\text{j,t}}} \frac{\left|R_{j,t,d}\right|}{DVol_{j,t,d}}$$

Here, $Days_{j,t}$ is the number of valid observation days for stock j in the month t, $R_{j,t,d}$ is the return and $DVol_{j,t,d}$ the dollar volume of stock j on day d of month t.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Illiquidity* is the level of illiquidity (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 3: ILLIQUIDITY

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	0.142***	1.248***	1.234***	0.860**	1.208***					
	[3.06]	[3.06]	[3.11]	[2.55]	[3.36]					
Exclusivity	0.028***	0.469**	0.448*	0.374*	0.520**					
	[2.72]	[2.13]	[1.91]	[1.74]	[2.02]					
Average Distance						-0.037***	-0.217*	-0.267**	-0.216**	-0.189*
						[2.75]	[1.82]	[2.53]	[1.97]	[1.90]
Dispersedness						-0.052***	-1.079**	-1.089**	-0.979**	-0.654**
						[3.47]	[2.50]	[2.55]	[2.20]	[2.04]
Loan-to-Debt Ratio	0.000	-0.014	-0.012*	-0.010	0.003	0.000	-0.029*	-0.025**	-0.021**	-0.011**
	[0.70]	[1.60]	[1.65]	[1.59]	[0.58]	[0.72]	[1.93]	[2.22]	[2.07]	[2.31]
Size	-0.325***	-0.151	-0.131	-0.094	-0.108	-0.319***	-0.006	0.047	0.059	-0.099
	[20.00]	[1.64]	[1.60]	[1.27]	[1.17]	[19.31]	[0.04]	[0.35]	[0.45]	[1.02]
Leverage	0.899***	1.238**	1.403***	1.098***	1.591***	0.913***	0.952	1.318***	1.114***	0.964***
	[9.88]	[2.39]	[3.40]	[2.90]	[3.56]	[10.15]	[1.47]	[3.35]	[2.74]	[3.33]
Cash	-0.676***	-0.692***	-0.835***	-0.684***	-1.243***	-0.664***	-0.849**	-1.084***	-0.944***	-1.106***
	[8.24]	[2.60]	[4.72]	[4.44]	[4.96]	[7.94]	[1.98]	[3.60]	[3.35]	[3.88]
ROA	-0.006***	-0.007***	-0.006***	-0.008***	-0.009***	-0.006***	-0.007**	-0.006**	-0.007***	-0.007***
	[4.21]	[2.69]	[2.66]	[3.89]	[3.53]	[4.31]	[2.40]	[2.10]	[3.09]	[3.25]
Market-to-Book	-0.487***	-0.447***	-0.470***	-0.421***	-0.456***	-0.483***	-0.393***	-0.434***	-0.387***	-0.454***
	[14.20]	[10.13]	[11.44]	[11.24]	[8.74]	[13.99]	[6.84]	[8.06]	[7.79]	[8.78]
Institutional Holdings	-1.135***	-0.713***	-0.737***	-0.505***	-0.607***	-1.126***	-0.336	-0.336	-0.193	-0.604***
	[18.08]	[3.96]	[4.05]	[3.15]	[3.20]	[17.72]	[1.11]	[1.10]	[0.70]	[3.14]
Analysts	1.946***	1.850***	1.872***	1.815***	2.623***	1.984***	1.820***	1.912***	1.924***	2.785***
	[9.04]	[5.03]	[5.19]	[5.76]	[6.15]	[9.20]	[4.36]	[4.57]	[5.25]	[6.70]
NYSE	-0.170***	-0.138***	-0.105**	-0.025	-0.024	-0.171***	-0.056	0.007	0.057	0.032
	[5.79]	[2.78]	[2.17]	[0.58]	[0.43]	[5.77]	[0.66]	[0.09]	[0.80]	[0.51]
Ratings Dummy	-0.084**	0.019	0.086	0.056	0.118	-0.086**	0.018	0.161	0.124	0.109
	[2.51]	[0.21]	[1.37]	[1.03]	[1.35]	[2.55]	[0.14]	[1.64]	[1.38]	[1.22]
Lambda			0.288	0.224	-0.269			0.537	0.404	0.222
			[0.87]	[0.79]	[0.88]			[1.13]	[0.95]	[0.84]
Pre-Loan Illiquidity				0.290***	0.354***				0.278***	0.325***
				[8.99]	[15.75]				[7.96]	[13.61]
Governance Index				-0.001	-0.017				-0.051	-0.052
				[0.03]	[0.30]				[0.90]	[0.86]
Constant	3.363***	-1.386	-2.148	-1.598	-2.357	3.561***	-2.094	-3.089	-2.985	-0.770
	[18.04]	[0.58]	[0.89]	[0.79]	[0.91]	[18.64]	[0.79]	[1.35]	[1.31]	[0.43]
Observations	10743	9547	9508	9508	9475	10715	10042	9954	9954	9954
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.23	0.23	0.29			0.64	0.61	0.63	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4

Lending relationship and firm's stock liquidity

This table presents results that serve as a robustness check for those presented in Table 3 (for stock's illiquidity) above; here, we formalize the effect of different characteristics of the lending relationship on the firm's stock liquidity (instead of illiquidity). Our dependent variable *Liquidity* is the logarithm of "Amivest" liquidity ratio, which is obtained from Prof. Joel Hasbrouck's webpage: http://pages.stern.nyu.edu/~jhasbrou/Research/GibbsEstimates/Liquidity%20estimates.htm. In fact, it is simply the reciprocal of the illiquidity ratio defined in Table 3 above.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Liquidity* is the level of liquidity (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 4: LIQUIDITY

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.060	-1.392**	-1.364**	-1.186**	-1.163**					
	[1.21]	[2.31]	[2.33]	[2.14]	[2.45]					
Exclusivity	-0.005	-1.040***	-0.746**	-0.861**	-0.860**					
	[0.44]	[2.76]	[2.10]	[2.54]	[2.20]					
Average Distance						0.051***	0.519*	0.543*	0.502**	0.560**
						[3.10]	[1.67]	[1.96]	[2.04]	[2.20]
Dispersedness						0.006	2.120**	1.853**	1.523**	1.508**
						[0.30]	[2.42]	[2.16]	[2.17]	[2.27]
Loan-to-Debt Ratio	0.000	0.056***	0.060***	0.053***	0.029***	0.000	0.063*	0.070**	0.061**	0.026***
	[0.09]	[2.81]	[2.98]	[2.88]	[3.58]	[0.09]	[1.74]	[2.40]	[2.42]	[2.93]
Size	0.986***	0.672***	0.688***	0.494***	0.536***	0.987***	0.387	0.379	0.313	0.367*
	[46.77]	[5.02]	[5.31]	[3.56]	[3.46]	[46.17]	[1.24]	[1.43]	[1.31]	[1.66]
Leverage	-2.143***	-2.467***	-2.402***	-2.320***	-2.035***	-2.173***	-2.490*	-2.655***	-2.165***	-2.208***
	[18.57]	[3.75]	[3.71]	[3.86]	[3.13]	[18.87]	[1.78]	[2.97]	[2.86]	[3.31]
Cash	1.243***	0.816*	1.030***	1.059***	1.425***	1.206***	1.262	1.392**	1.232**	1.708***
	[9.49]	[1.80]	[2.58]	[2.91]	[3.47]	[9.27]	[1.45]	[2.24]	[2.35]	[3.22]
ROA	0.015***	0.024***	0.022***	0.023***	0.025***	0.015***	0.024***	0.022***	0.024***	0.024***
	[8.33]	[4.25]	[3.97]	[4.71]	[5.91]	[8.36]	[3.30]	[3.39]	[4.26]	[5.43]
Market-to-Book	1.287***	1.185***	1.259***	1.169***	1.046***	1.286***	1.086***	1.164***	1.091***	0.972***
	[20.51]	[11.57]	[13.24]	[12.69]	[11.02]	[20.61]	[8.06]	[8.94]	[9.07]	[8.35]
Institutional Holdings	1.841***	0.802**	0.962***	0.609*	0.634*	1.853***	0.207	0.315	0.277	0.451
	[21.22]	[2.01]	[2.64]	[1.66]	[1.76]	[21.28]	[0.31]	[0.48]	[0.49]	[0.96]
Analysts	2.769***	3.019***	2.750***	1.770***	2.039***	2.676***	2.386***	2.241**	0.979	1.115
	[8.35]	[4.16]	[3.98]	[2.76]	[2.73]	[8.07]	[2.68]	[2.56]	[1.30]	[1.28]
NYSE	-0.329***	-0.371***	-0.482***	-0.520***	-0.476***	-0.325***	-0.526***	-0.634***	-0.622***	-0.592***
	[8.23]	[3.53]	[4.00]	[4.50]	[4.71]	[8.13]	[3.05]	[3.51]	[3.98]	[4.65]
Ratings Dummy	0.172***	0.072	-0.111	-0.128	-0.004	0.167***	-0.089	-0.298	-0.266	-0.155
	[3.88]	[0.51]	[0.70]	[0.87]	[0.02]	[3.78]	[0.32]	[1.35]	[1.38]	[0.83]
Lambda			-1.291	-1.068	-0.079			-1.356	-1.300	-0.200
			[1.63]	[1.55]	[0.16]			[1.21]	[1.35]	[0.39]
Pre-Loan Liquidity				0.186***	0.193***				0.211***	0.200***
				[5.57]	[6.14]				[4.30]	[5.53]
Governance Index				0.165*	0.306***				0.231**	0.336***
				[1.85]	[2.73]				[2.12]	[2.78]
Constant	-10.586***	0.575	-1.363	1.186	1.051	-10.725***	0.104	1.078	0.903	-0.866
	[19.23]	[0.14]	[0.37]	[0.32]	[0.25]	[20.58]	[0.02]	[0.23]	[0.22]	[0.23]
Observations	9536	8421	8384	8384	8481	9513	8411	8372	8372	8372
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.29	0.34	0.47			0.30	0.48	0.27	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5

Lending relationship and trading volume

This table presents coefficient estimates for the regression depicting the effect of the characteristics of bank's lending relationship on the borrowing firm's stock trading volume. If volume is defined as the number of shares traded as a fraction of total shares outstanding, then our dependent variable, *Trading Volume*, is the logarithm of average monthly volume over the year.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Volume* is the level of trading volume (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 5: TRADING VOLUME

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.136***	-1.355***	-1.368***	-0.988***	-0.697***					
	[3.73]	[5.01]	[4.88]	[3.84]	[3.27]					
Exclusivity	-0.026***	-0.515***	-0.548***	-0.519***	-0.440***					
	[2.81]	[3.24]	[3.40]	[3.55]	[2.94]					
Average Distance						0.065***	0.162***	0.165***	0.109***	0.095***
						[5.25]	[4.01]	[3.99]	[2.87]	[2.64]
Dispersedness						0.014	0.695***	0.663***	0.617***	0.651***
						[1.01]	[3.22]	[3.31]	[3.48]	[3.12]
Loan-to-Debt Ratio	0.001**	0.015**	0.016**	0.013**	0.005*	0.001***	0.020**	0.023***	0.017**	0.006*
	[2.53]	[2.06]	[2.23]	[2.05]	[1.68]	[2.89]	[2.16]	[2.61]	[2.39]	[1.80]
Size	0.015	-0.161***	-0.160**	-0.130**	-0.108*	0.022	-0.174***	-0.174***	-0.133**	-0.160**
	[1.12]	[2.68]	[2.57]	[2.33]	[1.93]	[1.60]	[2.64]	[2.67]	[2.39]	[2.44]
Leverage	-0.231***	-0.759***	-0.725***	-0.669***	-0.488*	-0.204***	-0.310	-0.294	-0.291*	-0.425*
	[2.99]	[2.88]	[2.69]	[2.75]	[1.82]	[2.67]	[1.48]	[1.53]	[1.68]	[1.83]
Cash	1.426***	1.510***	1.459***	1.151***	1.290***	1.373***	1.494***	1.494***	1.224***	1.470***
	[17.65]	[8.00]	[8.17]	[7.42]	[7.44]	[17.11]	[7.61]	[7.60]	[7.42]	[6.88]
ROA	-0.007***	-0.006***	-0.005**	-0.002	-0.001	-0.007***	-0.006***	-0.006***	-0.003	-0.004*
	[6.47]	[2.73]	[2.49]	[1.27]	[0.77]	[6.24]	[2.61]	[2.64]	[1.55]	[1.95]
Market-to-Book	0.213***	0.178***	0.169***	0.162***	0.152***	0.208***	0.138***	0.148***	0.141***	0.138***
	[8.34]	[4.60]	[4.40]	[4.80]	[3.83]	[8.19]	[3.27]	[3.70]	[4.11]	[3.24]
Institutional Holdings	1.306***	0.875***	0.843***	0.570***	0.710***	1.326***	0.801***	0.802***	0.561***	0.671***
	[20.02]	[5.11]	[4.97]	[3.83]	[5.51]	[20.35]	[4.03]	[4.40]	[3.74]	[4.70]
Analysts	1.047***	1.049***	1.037***	0.454	0.685**	0.963***	0.967***	0.925***	0.315	0.620*
	[4.81]	[3.04]	[2.91]	[1.45]	[2.11]	[4.46]	[3.00]	[2.85]	[1.15]	[1.95]
NYSE	-0.487***	-0.513***	-0.506***	-0.365***	-0.355***	-0.484***	-0.532***	-0.550***	-0.397***	-0.404***
	[16.81]	[10.64]	[9.19]	[6.93]	[7.79]	[16.73]	[9.91]	[9.05]	[7.12]	[7.94]
Ratings Dummy	0.185***	0.078	0.104	0.057	0.028	0.182***	0.127**	0.101	0.060	-0.003
	[5.77]	[1.27]	[1.63]	[1.02]	[0.43]	[5.72]	[2.05]	[1.42]	[1.01]	[0.04]
Lambda			0.117	0.059	0.163			-0.209	-0.160	-0.049
			[0.46]	[0.27]	[0.76]			[0.67]	[0.64]	[0.24]
Pre-Loan Volume				0.369***	0.405***				0.369***	0.395***
				[12.39]	[16.06]				[12.50]	[15.22]
Governance Index				0.064	0.078*				0.069*	0.081*
				[1.59]	[1.79]				[1.86]	[1.82]
Constant	-3.480***	1.779	2.412	2.548*	2.318	-3.900***	-0.043	0.057	0.861	1.238
	[13.91]	[1.10]	[1.34]	[1.72]	[1.45]	[18.28]	[0.04]	[0.05]	[0.84]	[1.07]
Observations	10743	9547	9508	9508	9508	10715	9532	9492	9492	9492
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.48	0.57	0.92			0.26	0.32	0.70	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6

Lending relationship and information asymmetry

This table describes the impact of the characteristics of bank's lending relationship on the degree of information asymmety around the stock in the financial market – the basic question being: does asymmetric information increase or decrease with the characteristics measuring the strength of the bank's lending relationship. Our dependent variable is a measure of the degree of information asymmetry, and as in Bharath, Pasquariello, and Wu (2006), we also construct this measure following the model of Llorente, Michaely, Saar, and Wang (2002). Thus, the degree of information asymmetry is measured by the coefficient C_2 from the following regression:

$$R_{i,t+1} = C_0 + C_1.R_{i,t} + C_2.\left(V_{i,t} \times R_{i,t}\right) + \varepsilon_{i,t+1}$$

where

$$V_t = \log Turnover_t - \frac{1}{200}\sum_{s=-200}^{-1} \log Turnover_{t+s} \quad , \qquad \log Turnover = \log\left(Turnover_t + 0.00000255\right)$$

and *Turnover* is defined as the total number of shares traded each day as a fraction of total shares outstanding. (See Llorente et al., 2002, for details.)

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Information Asymmetry* is the level of information asymmetry (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 6: INFORMATION ASYMMETRY

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	0.007**	0.101***	0.103***	0.105***	0.061*					
	[2.00]	[2.75]	[2.71]	[2.65]	[1.81]					
Exclusivity	0.002**	0.059**	0.062**	0.064*	0.052*					
	[2.04]	[2.17]	[1.96]	[1.93]	[1.77]					
Average Distance						-0.004***	-0.013**	-0.011**	-0.010**	-0.010*
						[3.25]	[2.08]	[2.01]	[1.96]	[1.92]
Dispersedness						-0.004**	-0.133**	-0.111**	-0.106**	-0.069**
						[2.55]	[2.44]	[2.21]	[2.14]	[2.04]
Loan-to-Debt Ratio	0.000	0.000	0.000	0.000	0.001	0.000	0.000	-0.001	-0.001	0.000
	[0.51]	[0.32]	[0.14]	[0.20]	[1.61]	[0.40]	[0.15]	[0.90]	[0.87]	[0.51]
Size	0.001	0.024**	0.023**	0.023*	0.019*	0.001	0.044**	0.035**	0.032**	0.022**
	[0.44]	[2.23]	[2.04]	[1.94]	[1.77]	[0.63]	[2.34]	[2.30]	[2.20]	[2.08]
Leverage	0.010	0.125**	0.114**	0.118**	0.098**	0.010	0.129*	0.089**	0.090**	0.073**
	[1.15]	[2.44]	[2.24]	[2.26]	[2.18]	[1.18]	[1.91]	[2.18]	[2.21]	[2.14]
Cash	-0.035***	-0.075***	-0.064***	-0.065***	-0.079***	-0.033***	-0.119**	-0.090***	-0.088***	-0.087***
	[3.91]	[3.38]	[3.66]	[3.59]	[2.99]	[3.61]	[2.55]	[3.12]	[3.11]	[2.76]
ROA	0.000	0.000	0.000	0.000	0.000	-0.000*	0.000	0.000	0.000	0.000
	[1.54]	[0.70]	[1.28]	[1.15]	[0.72]	[1.67]	[0.14]	[0.90]	[0.73]	[0.15]
Market-to-Book	-0.009***	-0.007*	-0.005	-0.006	0.000	-0.009***	-0.002	-0.001	-0.002	0.000
	[3.13]	[1.77]	[1.25]	[1.30]	[0.04]	[3.02]	[0.46]	[0.23]	[0.40]	[0.08]
Institutional Holdings	-0.024***	0.017	0.021	0.019	-0.014	-0.023***	0.060*	0.050	0.040	-0.005
	[3.67]	[0.76]	[0.83]	[0.71]	[0.61]	[3.58]	[1.66]	[1.45]	[1.24]	[0.23]
Analysts	-0.012	-0.036	-0.038	-0.041	-0.079*	-0.006	-0.035	-0.032	-0.033	-0.058
	[0.49]	[0.91]	[0.90]	[0.96]	[1.76]	[0.24]	[0.78]	[0.78]	[0.85]	[1.43]
NYSE	-0.018***	-0.009*	-0.011**	-0.012**	-0.015**	-0.017***	0.000	-0.004	-0.006	-0.009
	[6.00]	[1.84]	[2.17]	[2.31]	[2.40]	[5.65]	[0.04]	[0.56]	[0.89]	[1.33]
Ratings Dummy	0.004	0.024***	0.019***	0.020***	0.020**	0.004	0.030**	0.021**	0.021**	0.022**
	[1.20]	[2.84]	[2.72]	[2.69]	[2.12]	[1.32]	[2.07]	[2.47]	[2.45]	[2.42]
Lambda			-0.018	-0.015	-0.031			-0.010	-0.003	-0.003
			[0.64]	[0.55]	[0.98]			[0.25]	[0.09]	[0.12]
Pre-Loan Information Asymmetry				-0.005	-0.010				0.001	-0.007
				[0.41]	[1.22]				[0.08]	[0.99]
Governance Index				0.002	0.007				-0.002	0.007
				[0.29]	[1.14]				[0.31]	[1.11]
Constant	0.026	-0.562**	-0.558*	-0.686**	-0.442	0.080***	-0.697**	-0.606**	-0.570**	-0.311
	[1.05]	[1.96]	[1.79]	[1.98]	[1.43]	[3.44]	[2.08]	[2.27]	[2.19]	[1.52]
Observations	10742	9476	9474	9474	9630	10714	9666	9626	9626	9578
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.88	0.88	0.91			0.72	0.55	0.55	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7

Lending relationship and trading by institutional investors

This table examines the impact of loan characteristics on trading by institutional investors. The dependent variable *Trading by Institutional Investors* is the average trading by institutions of all types (as per CDA/Spectrum 13f data) over the four quarters in a given fiscal year.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Institutional Trading* is the level of trading by institutional investors (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 7: TRADING BY INSTITUTIONAL INVESTORS

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.002**	-0.024**	-0.026**	-0.028***	-0.019*					
	[2.28]	[2.39]	[2.45]	[2.60]	[1.90]					
Exclusivity	-0.001***	-0.006**	-0.010***	-0.009***	-0.011***					
	[4.75]	[2.15]	[3.02]	[2.86]	[2.60]					
Average Distance						0.001***	0.003***	0.003***	0.003***	0.003***
						[4.21]	[3.49]	[3.62]	[3.65]	[3.25]
Dispersedness						0.001**	0.011**	0.009**	0.009**	0.011**
						[2.12]	[2.30]	[2.03]	[2.08]	[2.15]
Loan-to-Debt Ratio	0.000	-0.000**	-0.000*	-0.000*	0.000	0.000	-0.000*	0.000	0.000	0.000
	[0.59]	[2.12]	[1.85]	[1.83]	[0.76]	[0.41]	[1.86]	[1.13]	[1.13]	[1.15]
Size	-0.002***	-0.005***	-0.005***	-0.004***	-0.004***	-0.002***	-0.006***	-0.004***	-0.004***	-0.004***
	[6.06]	[4.21]	[4.01]	[3.32]	[2.69]	[5.33]	[3.37]	[3.18]	[2.75]	[2.63]
Leverage	0.005**	-0.013**	-0.013**	-0.015**	-0.010	0.006***	-0.014*	-0.003	-0.007	-0.006
	[2.47]	[2.42]	[2.21]	[2.57]	[1.28]	[3.22]	[1.74]	[0.67]	[1.30]	[1.05]
Cash	0.023***	0.031***	0.027***	0.027***	0.025***	0.022***	0.032***	0.025***	0.026***	0.024***
	[10.05]	[8.01]	[6.97]	[7.01]	[5.16]	[9.43]	[5.79]	[6.67]	[6.67]	[4.82]
ROA	-0.000**	-0.000**	0.000	-0.000*	0.000	-0.000**	-0.000**	-0.000*	-0.000**	0.000
	[2.41]	[2.48]	[1.53]	[1.72]	[0.71]	[2.07]	[2.36]	[1.77]	[2.05]	[1.19]
Market-to-Book	0.000	0.000	-0.001	-0.001	-0.001	0.000	0.000	-0.001	-0.001	-0.001
	[0.32]	[0.05]	[1.06]	[0.92]	[0.85]	[0.47]	[0.44]	[1.30]	[1.20]	[0.56]
Institutional Holdings	0.028***	0.026***	0.024***	0.026***	0.033***	0.029***	0.024***	0.025***	0.027***	0.035***
	[17.92]	[8.09]	[7.17]	[7.71]	[8.42]	[18.59]	[6.37]	[7.36]	[7.75]	[8.97]
Analysts	-0.030***	-0.033***	-0.031***	-0.029***	-0.025**	-0.032***	-0.032***	-0.032***	-0.030***	-0.029***
	[6.05]	[4.96]	[4.39]	[4.22]	[2.44]	[6.47]	[4.91]	[5.69]	[5.38]	[3.34]
NYSE	-0.003***	-0.004***	-0.002**	-0.001	-0.002	-0.003***	-0.004***	-0.003***	-0.002	-0.002*
	[4.44]	[3.73]	[2.11]	[1.17]	[1.54]	[4.53]	[3.51]	[2.74]	[1.59]	[1.76]
Ratings Dummy	0.002**	-0.002	0.001	0.001	0.000	0.002**	-0.002	0.001	0.001	0.000
	[2.44]	[1.17]	[0.38]	[0.35]	[0.19]	[2.55]	[1.01]	[0.98]	[0.93]	[0.11]
Lambda			0.014**	0.012*	0.012			0.007	0.006	0.006
			[1.98]	[1.84]	[1.56]			[1.17]	[1.00]	[0.83]
Pre-Loan Institutional Trading				0.013	0.023**				0.019**	0.027***
				[1.42]	[2.02]				[2.25]	[2.59]
Governance Index				0.000	-0.001				0.000	-0.001
				[0.31]	[0.64]				[0.39]	[0.86]
Constant	0.045***	0.129***	0.135***	0.136***	0.121***	0.037***	0.108***	0.071***	0.072***	0.073**
	[7.44]	[4.10]	[3.98]	[3.88]	[2.80]	[5.32]	[3.34]	[2.90]	[2.76]	[2.43]
Observations	9968	8785	8783	8783	8783	9942	8943	8905	8905	8905
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.20	0.39	0.57			0.76	0.40	0.42	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8

Lending relationship and stock volatility

This table presents coefficient estimates for the relationship between the loan characteristics and the borrowing firm's volatility. The dependent variable in this case, *Stock Volatility*, is logarithm of one plus the standard deviation (rescaled by 10^4) of daily returns over the year; this variable is also rescaled for the convenience of obtaining normally-scaled coefficient estimates.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Volatility* is the level of stock volatility (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 8: STOCK VOLATILITY

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.051***	-0.487***	-0.507***	-0.382***	-0.283**					
	[3.19]	[3.25]	[2.96]	[2.70]	[2.18]					
Exclusivity	-0.018***	-0.335**	-0.433**	-0.332**	-0.263**					
	[3.97]	[2.46]	[2.51]	[2.40]	[2.17]					
Average Distance						0.024***	0.065***	0.065***	0.047***	0.053***
						[4.91]	[4.05]	[3.98]	[3.11]	[2.82]
Dispersedness						0.014**	0.203**	0.222**	0.188**	0.231**
						[2.14]	[2.05]	[2.15]	[2.00]	[2.52]
Loan-to-Debt Ratio	0.000***	-0.005	-0.004	-0.002	0.003*	0.000***	0.004	0.004*	0.004*	0.005***
	[3.68]	[1.10]	[0.82]	[0.41]	[1.73]	[3.88]	[1.34]	[1.71]	[1.76]	[2.77]
Size	-0.096***	-0.229***	-0.224***	-0.163***	-0.147***	-0.093***	-0.149***	-0.150***	-0.108***	-0.129***
	[15.34]	[4.17]	[3.74]	[3.40]	[3.46]	[14.53]	[4.43]	[4.62]	[3.81]	[4.46]
Leverage	0.160***	-0.600**	-0.520*	-0.363	-0.088	0.181***	0.072	0.085	0.076	0.105
	[4.57]	[2.09]	[1.82]	[1.56]	[0.47]	[5.17]	[0.58]	[0.95]	[0.88]	[0.98]
Cash	0.484***	0.792***	0.638***	0.493***	0.416***	0.462***	0.527***	0.515***	0.408***	0.395***
	[12.98]	[5.85]	[6.07]	[5.65]	[3.97]	[12.56]	[5.82]	[7.24]	[6.03]	[4.12]
ROA	-0.012***	-0.014***	-0.012***	-0.011***	-0.010***	-0.012***	-0.012***	-0.012***	-0.011***	-0.011***
	[22.26]	[11.51]	[11.50]	[12.40]	[10.70]	[22.22]	[14.50]	[15.28]	[14.93]	[12.37]
Market-to-Book	-0.028***	-0.018	-0.051**	-0.046**	-0.062***	-0.029***	-0.047***	-0.051***	-0.047***	-0.064***
	[2.71]	[0.95]	[2.22]	[2.51]	[2.80]	[2.84]	[3.14]	[3.37]	[3.53]	[3.17]
Institutional Holdings	-0.025	-0.207*	-0.274**	-0.179*	-0.200**	-0.022	-0.142*	-0.155**	-0.094	-0.156**
	[0.91]	[1.94]	[2.12]	[1.79]	[2.14]	[0.78]	[1.88]	[1.97]	[1.40]	[2.29]
Analysts	0.327***	0.460**	0.536**	0.352**	0.317*	0.294***	0.298***	0.295***	0.168*	0.196
	[3.63]	[2.53]	[2.46]	[2.04]	[1.80]	[3.29]	[2.72]	[2.61]	[1.73]	[1.31]
NYSE	-0.240***	-0.270***	-0.226***	-0.169***	-0.188***	-0.240***	-0.251***	-0.249***	-0.181***	-0.199***
	[18.23]	[10.84]	[7.23]	[6.46]	[7.80]	[18.04]	[12.51]	[12.11]	[9.45]	[8.63]
Ratings Dummy	0.015	-0.105**	-0.015	-0.026	-0.071*	0.017	-0.010	-0.001	-0.015	-0.063**
	[1.02]	[2.19]	[0.33]	[0.80]	[1.89]	[1.11]	[0.33]	[0.02]	[0.71]	[2.06]
Lambda			0.501**	0.287	0.024			0.057	-0.014	-0.126
			[1.97]	[1.49]	[0.19]			[0.61]	[0.18]	[1.30]
Pre-Loan Volatility				0.267***	0.312***				0.292***	0.310***
				[9.07]	[12.71]				[15.06]	[13.84]
Governance Index				-0.006	-0.003				-0.013	-0.006
				[0.29]	[0.12]				[0.84]	[0.29]
Constant	6.226***	10.053***	10.309***	7.755***	7.137***	6.139***	7.245***	7.252***	5.245***	5.593***
	[45.10]	[6.47]	[5.77]	[5.16]	[5.62]	[53.51]	[11.71]	[12.01]	[9.48]	[9.80]
Observations	10743	9600	9598	9598	9598	10715	9532	9492	9492	9492
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.20	0.63	0.41			0.25	0.30	0.25	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 9

Lending relationship and cashflow variation

This table examines how cashflow volatility of the borrowing firm changes with the characteristics of its bank loan. The dependent variable *Cashflow Volatility* is constructed in the following manner. It is the absolute change in cashflows with respect to the average cashflows over the previous three years. Our measure is in the same realm as the cashflow-shock measures of Guay and Harford (2000).

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and *Cashflows* are defined as income before extraordinary items (item 18) plus depreciation and amortization (item 14), standardized by lagged assets. We do not use *ROA (return on assets)* because it is important to control for the level of cashflows when explaining cashflow volatility, and moreover, there is a high correlation between *Cashflows* and *ROA* (97% in our data sample), so replacing *ROA* shouldn't pose a problem. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Cashflow Variation* is the level of cashflow variation (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 9: CASHFLOW VARIATION

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.089	-1.931**	-1.959*	-2.002*	-2.425**					
	[1.14]	[1.98]	[1.83]	[1.80]	[2.03]					
Exclusivity	-0.034	-2.279***	-2.675***	-2.702***	-2.783***					
	[1.59]	[3.60]	[3.29]	[3.27]	[3.10]					
Average Distance						0.091***	0.218**	0.198**	0.208**	0.267**
						[3.88]	[2.41]	[2.15]	[2.10]	[2.52]
Dispersedness						0.039	1.095***	1.319***	1.405***	1.864***
						[1.24]	[2.66]	[2.90]	[2.93]	[3.47]
Loan-to-Debt Ratio	-0.001	-0.023	-0.010	-0.012	-0.025	-0.001	-0.042*	-0.046**	-0.049**	-0.001
	[0.99]	[0.85]	[0.35]	[0.41]	[1.22]	[0.95]	[1.89]	[2.16]	[2.22]	[0.12]
Size	-0.163***	-1.095***	-1.097***	-1.095***	-1.165***	-0.161***	-0.597***	-0.539***	-0.540***	-0.800***
	[5.43]	[4.38]	[3.80]	[3.80]	[3.76]	[5.21]	[3.64]	[3.66]	[3.65]	[4.76]
Leverage	-0.212	-4.785***	-4.480***	-4.472***	-4.699***	-0.183	-2.308***	-1.910***	-2.026***	-1.879***
	[1.17]	[3.77]	[3.08]	[3.00]	[3.13]	[1.02]	[2.72]	[3.25]	[3.17]	[2.94]
Cash	0.784***	2.319***	1.725***	1.793***	2.941***	0.714***	2.024***	1.648***	1.738***	2.327***
	[3.38]	[3.58]	[2.96]	[2.96]	[3.25]	[3.07]	[3.42]	[3.63]	[3.56]	[3.96]
Cashflows	-4.722***	-5.941***	-5.461***	-5.636***	-6.204***	-4.716***	-5.754***	-5.375***	-5.489***	-6.254***
	[10.49]	[7.92]	[7.74]	[7.72]	[7.90]	[10.46]	[8.62]	[9.05]	[8.97]	[12.43]
Market-to-Book	0.040	0.145	0.030	0.043	-0.070	0.035	0.125	0.022	0.031	-0.063
	[0.59]	[1.13]	[0.23]	[0.33]	[0.38]	[0.52]	[1.24]	[0.23]	[0.31]	[0.54]
Institutional Holdings	-0.307**	-1.809***	-2.118***	-2.082***	-1.686**	-0.289**	-0.795**	-0.885***	-0.825**	-1.089***
	[2.14]	[3.30]	[3.39]	[3.42]	[2.49]	[2.00]	[2.52]	[2.59]	[2.48]	[2.98]
Analysts	0.215	1.704	1.929	1.659	1.729	0.106	0.349	0.430	0.361	0.392
	[0.41]	[1.64]	[1.60]	[1.40]	[1.20]	[0.21]	[0.54]	[0.63]	[0.52]	[0.45]
NYSE	-0.112*	-0.372**	-0.248	-0.256	-0.458**	-0.123*	-0.291***	-0.148	-0.125	-0.543***
	[1.73]	[2.58]	[1.41]	[1.39]	[2.31]	[1.91]	[2.63]	[1.12]	[0.89]	[4.07]
Ratings Dummy	0.236***	-0.448*	-0.149	-0.129	-0.719**	0.213***	-0.213	0.088	0.092	-0.478***
	[3.62]	[1.93]	[0.66]	[0.57]	[2.34]	[3.26]	[1.21]	[0.50]	[0.51]	[2.64]
Lambda			1.513	1.509	0.862			1.690*	1.756*	-0.969
			[1.29]	[1.26]	[0.74]			[1.65]	[1.65]	[1.63]
Pre-Loan Cashflow Variation				-0.004*	-0.004				0.001	0.001
				[1.80]	[0.70]				[0.32]	[0.31]
Governance Index				0.064	0.027				-0.034	-0.027
				[0.43]	[0.14]				[0.38]	[0.22]
Constant	2.625***	26.641***	27.767***	30.469***	32.080***	2.199***	9.544***	8.189***	8.101***	14.107***
	[5.58]	[4.02]	[3.57]	[3.59]	[3.54]	[6.01]	[3.55]	[3.33]	[3.17]	[4.83]
Observations	10517	9412	9373	9373	9496	10491	9326	9324	9324	9324
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.76	0.74	0.67			0.27	0.63	0.64	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 10

Lending relationship and managerial appropriation

This table examines the impact of loan characteristics on potential appropriation of rents by managers. We measure *Managerial Appropriation* as the borrowing firm's CEO's total compensation as a fraction of the average CEO compensation for all firms (except the firm under consideration) in the corresponding industry.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Lagged CEO-Compensation* is the logarithm of CEO's total compensation ("TDC1" from *ExecuComp*) in the previous fiscal year. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and *Cashflows* are defined as income before extraordinary items (item 18) plus depreciation and amortization (item 14), standardized by lagged assets. We do not use *ROA (return on assets)* because it is important to control for the level of cashflows when explaining cashflow volatility, and moreover, there is a high correlation between *Cashflows* and *ROA* (97% in our data sample), so replacing *ROA* shouldn't pose a problem. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Lagged Appropriation* is the level of managerial appropriation (our dependent variable in this table) in the previous fiscal year; we do not use the pre-loan figure in this case because the CEO could be different before the loan starts. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 10: MANAGERIAL APPROPRIATION

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.076	-2.316	-2.416	-1.83	-0.259					
	[1.09]	[1.42]	[1.51]	[1.28]	[0.29]					
Exclusivity	-0.075***	-0.779**	-0.807**	-0.781**	-0.624**					
	[2.75]	[1.97]	[2.06]	[2.29]	[2.20]					
Average Distance						0.057	0.078	0.058	0.070	0.090
						[1.33]	[1.39]	[1.10]	[1.29]	[1.30]
Dispersedness						0.044	0.504*	0.610**	0.731***	0.657**
						[1.43]	[1.89]	[2.16]	[2.58]	[2.02]
Loan-to-Debt Ratio	0.000	0.035*	0.024	0.016	0.011	0.000	0.014	0.011	0.013	0.012
	[0.62]	[1.85]	[1.44]	[1.08]	[1.30]	[0.33]	[0.98]	[0.66]	[0.86]	[1.24]
Lagged CEO-Compensation	0.818***	0.606***	0.614***	0.206	-0.190	0.846***	0.773***	0.760***	0.313**	-0.198
	[7.15]	[3.94]	[3.82]	[1.33]	[1.44]	[7.10]	[5.61]	[5.35]	[2.08]	[1.34]
Size	0.229***	0.105	0.141	0.181*	-0.016	0.233***	0.151**	0.189**	0.194**	-0.021
	[5.76]	[1.03]	[1.41]	[1.95]	[0.18]	[5.27]	[2.31]	[2.37]	[2.50]	[0.23]
Leverage	-0.522***	-1.565*	-1.556*	-1.527**	-1.091*	-0.404**	-0.572	-0.377	-0.496	-0.430
	[2.79]	[1.86]	[1.94]	[2.12]	[1.79]	[2.24]	[1.61]	[1.07]	[1.43]	[0.98]
Cash	0.836***	0.432	0.272	0.327	0.922**	0.749***	0.794**	0.585*	0.651**	1.070**
	[3.37]	[0.92]	[0.64]	[0.90]	[2.20]	[2.79]	[2.22]	[1.76]	[1.99]	[2.11]
ROA	-0.001	-0.002	0.000	0.001	-0.010	0.000	-0.002	0.000	0.001	-0.008
	[0.21]	[0.23]	[0.02]	[0.13]	[1.58]	[0.04]	[0.30]	[0.09]	[0.20]	[1.40]
Market-to-Book	0.303***	0.363***	0.335***	0.338***	0.167*	0.285***	0.296***	0.255***	0.266***	0.066
	[3.80]	[3.16]	[3.11]	[3.17]	[1.86]	[3.61]	[3.37]	[2.80]	[2.75]	[0.76]
Institutional Holdings	-0.165	-0.857*	-0.828*	-0.685*	-0.634**	-0.119	-0.499*	-0.552**	-0.540**	-0.585*
	[1.06]	[1.89]	[1.95]	[1.90]	[2.17]	[0.80]	[1.87]	[1.99]	[1.98]	[1.91]
Analysts	0.146	-0.270	-0.208	-0.096	0.640	0.051	0.021	0.124	0.036	0.453
	[0.26]	[0.28]	[0.22]	[0.11]	[0.88]	[0.09]	[0.03]	[0.20]	[0.06]	[0.77]
NYSE	-0.084	-0.114	-0.035	0.007	-0.121	-0.071	-0.116	-0.029	-0.013	-0.129
	[1.03]	[0.91]	[0.24]	[0.05]	[1.20]	[0.88]	[1.18]	[0.23]	[0.10]	[1.23]
Ratings Dummy	-0.133**	-0.146	-0.005	0.070	-0.253*	-0.128**	-0.138	0.053	0.064	-0.268*
	[2.13]	[1.15]	[0.02]	[0.41]	[1.72]	[1.98]	[1.56]	[0.35]	[0.42]	[1.73]
Lambda			0.947	1.229	-0.405			1.019	1.003	-0.490
			[1.08]	[1.42]	[0.53]			[1.10]	[1.12]	[0.68]
Lagged Appropriation				0.194**	0.684***				0.194**	0.732***
				[2.54]	[17.74]				[2.50]	[19.88]
Governance Index				0.031	0.011				0.012	0.001
				[0.37]	[0.15]				[0.17]	[0.01]
Constant	-2.068***	6.216	3.924	3.200	5.907**	-1.827***	0.356	0.164	0.419	3.465
	[5.79]	[1.48]	[1.19]	[1.08]	[2.06]	[5.01]	[0.27]	[0.09]	[0.25]	[1.55]
Observations	6005	5671	5670	5670	5670	5990	5690	5667	5667	5667
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.79	0.79	0.75			0.23	0.37	0.47	

Robust t statistics in brackets; * significant at 10%, ** significant at 5%, and *** significant at 1%

Table 11

Lending relationship and trading by managers

This table examines the impact of loan characteristics on the trading behavior of borrowing firm's managers. More specifically, we measure *Trading by Managers* as the ratio of the borrowing firm's CEO's trades to the average trading by CEOs of all firms (except the firm under consideration) in the corresponding industry; we calculate CEO's trades according to Jenter (2005).

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Lagged CEO-Compensation* is the logarithm of CEO's total compensation ("TDC1" from *ExecuComp*) in the previous fiscal year. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and *Cashflows* are defined as income before extraordinary items (item 18) plus depreciation and amortization (item 14), standardized by lagged assets. We do not use *ROA (return on assets)* because it is important to control for the level of cashflows when explaining cashflow volatility, and moreover, there is a high correlation between *Cashflows* and *ROA* (97% in our data sample), so replacing *ROA* shouldn't pose a problem. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Lagged CEO-trading* is the level of trading by managers (our dependent variable in this table) in the previous fiscal year; we do not use the pre-loan figure in this case because the CEO could be different before the loan starts. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 11: TRADING BY MANAGERS

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	0.103	-1.152	-1.098	-1.959*	-1.933					
	[0.77]	[1.02]	[0.93]	[1.75]	[1.48]					
Exclusivity	-0.107***	-0.732**	-0.901**	-0.650*	-0.124					
	[3.63]	[2.08]	[2.37]	[1.85]	[0.27]					
Average Distance						-0.058*	0.138*	0.150*	0.144*	0.038
						[1.84]	[1.76]	[1.69]	[1.65]	[0.37]
Dispersedness						0.129***	0.692**	0.798**	0.643**	-0.234
						[3.23]	[1.97]	[2.45]	[1.99]	[0.46]
Loan-to-Debt Ratio	0.000	-0.003	-0.004	0.009	0.002	0.000	-0.005	0.000	0.014	-0.009
	[0.23]	[0.13]	[0.24]	[0.62]	[0.14]	[0.21]	[0.29]	[0.02]	[0.84]	[0.90]
Lagged CEO-Compensation	0.133**	-0.007	-0.040	0.012	0.087	0.163**	0.087	0.070	0.094	0.247*
	[2.03]	[0.05]	[0.35]	[0.11]	[0.49]	[2.22]	[0.86]	[0.74]	[0.95]	[1.69]
Size	-0.159***	-0.351***	-0.349***	-0.282***	-0.150	-0.171***	-0.319***	-0.320***	-0.297***	-0.117
	[3.30]	[3.52]	[3.31]	[2.95]	[1.14]	[3.39]	[3.89]	[3.59]	[3.49]	[0.97]
Leverage	-0.398	-2.071***	-2.187**	-1.547*	-0.342	-0.346	-1.164**	-1.046**	-0.731	-0.243
	[1.40]	[2.62]	[2.51]	[1.78]	[0.30]	[1.24]	[2.29]	[2.43]	[1.52]	[0.31]
Cash	0.912**	1.149**	0.973**	0.985**	1.300**	1.064***	1.315***	1.218**	1.329**	1.043
	[2.28]	[2.42]	[2.13]	[1.98]	[2.02]	[2.63]	[2.69]	[2.51]	[2.48]	[1.54]
ROA	0.012**	0.011*	0.013**	0.011*	0.008	0.011**	0.013**	0.013**	0.010	0.009
	[2.13]	[1.91]	[2.13]	[1.83]	[1.02]	[1.97]	[2.21]	[2.06]	[1.63]	[1.11]
Market-to-Book	0.119	0.201*	0.179	0.165	0.255*	0.095	0.114	0.101	0.091	0.175
	[1.33]	[1.85]	[1.61]	[1.44]	[1.81]	[1.06]	[1.21]	[0.99]	[0.84]	[1.36]
Institutional Holdings	-0.997***	-1.534***	-1.659***	-1.258***	-0.686	-0.981***	-1.367***	-1.455***	-1.098***	-0.183
	[4.81]	[3.68]	[4.16]	[3.16]	[1.42]	[4.73]	[3.73]	[4.37]	[3.36]	[0.40]
Analysts	-1.040*	-1.184	-1.035	-1.552*	-2.222**	-0.966	-1.351**	-1.343**	-1.329*	-1.227
	[1.69]	[1.58]	[1.29]	[1.77]	[1.99]	[1.56]	[2.10]	[1.97]	[1.70]	[1.40]
NYSE	-0.133	-0.211*	-0.152	-0.082	-0.168	-0.129	-0.189*	-0.168	-0.094	-0.031
	[1.38]	[1.81]	[1.19]	[0.61]	[1.09]	[1.36]	[1.68]	[1.38]	[0.73]	[0.21]
Ratings Dummy	0.019	-0.084	0.076	0.013	0.001	0.010	-0.095	-0.033	-0.085	0.02
	[0.19]	[0.58]	[0.41]	[0.07]	[0.00]	[0.11]	[0.78]	[0.16]	[0.42]	[0.10]
Lambda			0.803	0.157	-0.182			0.245	-0.550	-0.252
			[0.88]	[0.19]	[0.15]			[0.21]	[0.53]	[0.26]
Lagged CEO-Trading				0.067***	0.123***				0.063***	0.121***
				[2.82]	[9.64]				[2.75]	[10.40]
Governance Index				-0.050	-0.188				-0.065	-0.199*
				[0.54]	[1.51]				[0.83]	[1.81]
Constant	5.707***	12.926***	13.620***	11.806***	1.520	5.512***	8.456***	8.417***	8.390***	-0.884
	[3.44]	[3.20]	[3.42]	[3.09]	[0.36]	[3.40]	[3.62]	[3.27]	[3.23]	[0.31]
Observations	5192	4985	4948	4110	4110	5179	4970	4932	4098	4098
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.86	0.93	0.78			0.47	0.46	0.26	

Robust t statistics in brackets; * significant at 10%; ** significant at 5%; *** significant at 1%

Table 12

Lending relationship and expenditure on M&As

This table presents coefficient estimates for the relationship between the loan characteristics and the amount spent by the borrowing firm's managers on acquisitions. The dependent variable in this case is measured as the ratio of Compustat item 129 to lagged assets.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Pre-loan Expenditure on M&A* is the level of M&A expenditure (our dependent variable in this table) in the year before the loan deal is initiated. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 12: EXPENDITURE ON M&As

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.002	-0.063	-0.084	-0.134	0.024					
	[0.40]	[0.94]	[0.93]	[1.47]	[0.45]					
Exclusivity	-0.007***	-0.117**	-0.171**	-0.181**	-0.106**					
	[4.26]	[2.16]	[2.15]	[2.09]	[2.20]					
Average Distance						-0.002	0.006	-0.006	-0.002	-0.009
						[1.32]	[1.20]	[0.84]	[0.24]	[1.24]
Dispersedness						0.009***	0.099**	0.141***	0.172**	0.113***
						[4.34]	[2.57]	[2.94]	[2.38]	[2.99]
Loan-to-Debt Ratio	0.000***	0.006***	0.009***	0.008***	0.002**	0.000***	0.000	0.000	0.001	0.001
	[5.90]	[2.93]	[3.58]	[3.25]	[2.39]	[5.89]	[0.08]	[0.02]	[0.54]	[1.36]
Size	0.005***	-0.028	-0.032	-0.038	-0.008	0.005**	-0.027**	-0.006	-0.016	-0.005
	[2.71]	[1.39]	[1.13]	[1.22]	[0.47]	[2.48]	[2.01]	[0.41]	[0.70]	[0.43]
Leverage	0.153***	0.145	0.187	0.147	0.175**	0.160***	0.073*	0.217***	0.181***	0.190***
	[10.63]	[1.44]	[1.41]	[1.03]	[2.37]	[10.90]	[1.72]	[3.82]	[2.71]	[4.50]
Cash	0.016	-0.026	-0.099	-0.090	-0.153***	0.020	0.090**	-0.024	-0.006	-0.092**
	[1.02]	[0.49]	[1.60]	[1.37]	[3.38]	[1.26]	[2.56]	[0.58]	[0.12]	[2.27]
ROA	0.001***	0.002***	0.003***	0.002***	0.001***	0.001***	0.001***	0.002***	0.002***	0.001***
	[5.98]	[3.22]	[3.42]	[3.00]	[3.17]	[5.95]	[4.12]	[5.82]	[4.86]	[3.35]
Market-to-Book	0.032***	0.024**	0.010	0.012	0.030***	0.032***	0.032***	0.007	0.007	0.027***
	[5.70]	[2.43]	[0.79]	[0.95]	[3.12]	[5.74]	[4.83]	[0.77]	[0.67]	[3.40]
Institutional Holdings	0.029***	-0.084*	-0.134**	-0.111*	-0.021	0.030***	-0.025	-0.044	-0.046	-0.003
	[3.42]	[1.67]	[1.99]	[1.65]	[0.57]	[3.39]	[0.88]	[1.33]	[1.06]	[0.10]
Analysts	-0.207***	-0.140*	-0.102	-0.081	-0.159**	-0.209***	-0.192***	-0.160***	-0.130**	-0.178***
	[6.40]	[1.73]	[0.90]	[0.71]	[1.99]	[6.45]	[4.59]	[3.33]	[2.30]	[3.03]
NYSE	-0.019***	-0.028**	-0.014	-0.008	-0.010	-0.020***	-0.034***	0.002	0.005	-0.012
	[4.27]	[2.50]	[0.92]	[0.48]	[0.97]	[4.37]	[4.16]	[0.15]	[0.35]	[1.38]
Ratings Dummy	-0.002	0.001	0.035*	0.034*	0.031**	-0.001	-0.022**	0.061***	0.051**	0.035***
	[0.52]	[0.06]	[1.76]	[1.73]	[2.07]	[0.32]	[2.24]	[2.61]	[2.27]	[2.91]
Lambda			0.165*	0.184**	0.222***			0.415***	0.367***	0.242***
			[1.81]	[2.13]	[4.23]			[3.53]	[3.30]	[6.21]
Pre-Loan Expenditure on M&A				-0.013	-0.006				-0.004	-0.001
				[1.41]	[0.78]				[0.74]	[0.26]
Governance Index				0.015	0.016				0.005	0.006
				[1.02]	[1.43]				[0.61]	[0.70]
Constant	-0.041*	1.040*	1.284	1.355	0.577	-0.034	0.518**	0.031	0.313	0.157
	[1.67]	[1.79]	[1.60]	[1.56]	[1.14]	[1.07]	[2.14]	[0.10]	[0.80]	[0.68]
Observations	10164	9063	9060	8503	8503	10137	9488	9404	8614	8406
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.86	0.76	0.94			0.21	0.23	0.52	

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 13

Lending relationship and CEO turnover

This table presents coefficient estimates for the relationship between the loan characteristics and the probability of CEO-turnover at the borrowing firm. Thus, the dependent variable in this case is simply a dummy that takes value 1 if the CEO changes in the given fiscal year, and 0 otherwise.

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. These firm-level variables are contemporaneous with the dependent variable. *ROA in year (t-1)* is the first lag of ROA and *ROA in year (t-2)* is the second lag of ROA. The remaining firm-characteristics are recorded at the beginning of the fiscal year. *Market-to-Book* is the logarithm of the firm's market-to-book ratio where market-to-book is (item25 x item199)/(item60). *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 1-digit SIC Code. The bottom row displays the p-value for Hansen's J-test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 13: CEO TURNOVER

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.233	0.475	0.623	0.457	0.388					
	[1.27]	[0.50]	[0.64]	[0.46]	[0.39]					
Exclusivity	0.125***	0.753***	0.805***	0.813***	0.742***					
	[3.13]	[2.73]	[2.89]	[2.91]	[2.62]					
Average Distance						0.029	-0.286*	-0.232	-0.193	-0.202
						[0.62]	[1.85]	[1.48]	[1.22]	[1.23]
Dispersedness						-0.101*	-0.864***	-0.904***	-0.907***	-0.830**
						[1.81]	[2.62]	[2.72]	[2.73]	[2.48]
Loan-to-Debt Ratio	0.001	-0.003	-0.002	-0.002	-0.001	0.001	-0.001	0.000	0.000	0.000
	[0.35]	[0.93]	[0.57]	[0.49]	[0.40]	[0.43]	[0.43]	[0.11]	[0.10]	[0.05]
Size	0.056	0.045	-0.106	-0.112	-0.106	0.04	0.041	-0.083	-0.089	-0.08
	[0.96]	[0.80]	[1.22]	[1.28]	[1.27]	[0.69]	[0.74]	[0.96]	[1.04]	[0.97]
Leverage	-0.674*	-0.061	-0.636	-0.617	-0.659	-0.715**	0.056	-0.448	-0.426	-0.439
	[1.86]	[0.13]	[1.20]	[1.16]	[1.24]	[2.01]	[0.12]	[0.83]	[0.78]	[0.81]
Cash	0.033	-0.023	0.587	0.621	0.537	0.063	0.141	0.625	0.654	0.547
	[0.08]	[0.05]	[1.15]	[1.22]	[1.08]	[0.14]	[0.32]	[1.26]	[1.32]	[1.11]
ROA	-0.027***	-0.024***	-0.026***	-0.026***	-0.026***	-0.026***	-0.024***	-0.026***	-0.026***	-0.025***
	[3.73]	[3.17]	[3.50]	[3.53]	[3.35]	[3.55]	[3.14]	[3.41]	[3.42]	[3.25]
ROA in year (t-1)	-0.032***	-0.030***	-0.032***	-0.033***	-0.032***	-0.032***	-0.031***	-0.032***	-0.032***	-0.032***
	[3.70]	[3.31]	[3.65]	[3.68]	[3.86]	[3.70]	[3.37]	[3.62]	[3.59]	[3.80]
ROA in year (t-2)	0.006	0.007	0.006	0.007	0.006	0.007	0.007	0.006	0.007	0.006
	[0.56]	[0.60]	[0.57]	[0.59]	[0.92]	[0.61]	[0.58]	[0.56]	[0.58]	[0.90]
Market-to-Book	0.082	0.049	0.152	0.147	0.172	0.086	0.059	0.144	0.140	0.163
	[0.76]	[0.43]	[1.31]	[1.26]	[1.48]	[0.79]	[0.53]	[1.27]	[1.23]	[1.42]
Institutional Holdings	0.124	0.002	-0.018	-0.031	-0.056	-0.03	-0.076	-0.096	-0.121	-0.148
	[0.42]	[0.01]	[0.06]	[0.10]	[0.20]	[0.10]	[0.26]	[0.33]	[0.41]	[0.53]
Analysts	0.321	0.175	0.087	0.097	0.112	0.427	0.316	0.211	0.166	0.203
	[0.44]	[0.24]	[0.12]	[0.13]	[0.15]	[0.60]	[0.43]	[0.29]	[0.23]	[0.26]
NYSE	0.378***	0.355***	0.138	0.113	0.120	0.371***	0.339**	0.164	0.130	0.136
	[2.83]	[2.62]	[0.86]	[0.70]	[0.78]	[2.78]	[2.52]	[1.03]	[0.80]	[0.89]
Ratings Dummy	-0.073	-0.083	-0.534**	-0.542**	-0.516**	-0.061	-0.085	-0.452**	-0.460**	-0.435**
	[0.54]	[0.61]	[2.34]	[2.37]	[2.35]	[0.46]	[0.62]	[2.00]	[2.03]	[1.98]
Lambda			-2.207**	-2.226**	-2.094**			-1.800*	-1.817**	-1.647*
			[2.33]	[2.36]	[2.36]			[1.94]	[1.96]	[1.86]
Governance Index				0.193**	0.176*				0.170*	0.156*
				[2.00]	[1.85]				[1.75]	[1.65]
Constant	-4.045***	-8.207***	-4.062**	-4.124**	-3.787*	-2.786***	-3.841***	-1.585	-2.187	-2.137
	[4.50]	[3.48]	[2.06]	[2.08]	[1.76]	[2.77]	[3.75]	[1.04]	[1.33]	[1.24]
Observations	4642	4438	4437	4437	4437	4627	4421	4420	4420	4420
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust t statistics in brackets; * significant at 10%; ** significant at 5%; *** significant at 1%

Table 14

Lending relationship and Tobin's Q

This table examines the relationship between the loan characteristics and firm value, as captured by Tobin's Q. *Tobin's Q* is calculated as (item6 + item25 x item199 – item60 – item74)/(item6).

Our independent variables consist of loan characteristics and several firm-level control variables. We look at two complementary pairs of loan characteristics: either *Proximity* and *Exclusivity* or *Average Distance* and *Dispersedness*. *Proximity* is the fraction of loans taken from banks whose headquarters are located within 200 miles (or 320 kilometers) of the borrower's location; historical location of the firm is available to us at county level so we also identify the banks' location at county level. *Exclusivity* is the logarithm of the Herfindahl Index (ranging between 0–10,000) of the lending syndicate. *Average Distance* is the average distance of the borrower from each of the lenders in its lending syndicate; it is measured in thousands of kilometers. *Dispersedness* is the logarithm of the number of lenders counted in hundreds; this rescaling is done for the convenience of obtaining normally-scaled coefficient estimates. The results for the first pair (*Proximity* and *Exclusivity*) are in columns (1)-(5) and coefficient estimates using the second pair of characteristics (*Average Distance* and *Dispersedness*) are listed in columns (6)-(10). Columns (1) and (6) present OLS estimates while the remaining columns present results from an IV2SLS regression. Of the IV 2SLS regressions, columns (5) and (10) present the *between-effects* estimate. While our focus is on these loan characteristics, we also control for the *Loan-to-Debt Ratio*; it is measured as the ratio of firm's total loan to outstanding long-term debt (item 9) in the previous fiscal year.

The firm-level control variables that we include in our analysis are the following. *Size* is measured as the logarithm of book value of assets (item 6). *Leverage* is the sum of long-term debt (item 9) and debt in current liabilities (item 34), standardized by lagged assets (item 6). *Cash* is the ratio of total cash (item 1) to lagged assets and the *ROA* (return on assets) is income before extraordinary items (item 18) as a percentage of lagged assets. *Capital Expenditure* is capital expenditure (item 128) as a fraction of lagged assets. *Industry Tobin's Q* is the average Q in the industry to which the borrowing firm belongs. These firm-level variables are contemporaneous with the dependent variable while the remaining firm-characteristics are recorded at the beginning of the fiscal year. *Lagged Tobin's Q* is the first lag of Tobin's Q, our dependent variable in this table. *Institutional Holdings* is the fraction of shares held by those institutional investors that hold at least a 5% position in the firm. *Analysts* is the number of analysts following the stock, and is expressed in thousands for the convenience of obtaining normally-scaled coefficient estimates. *NYSE* is a dummy variable that takes a value 1 if the firm is listed on the New York Stock Exchange, and zero otherwise. *Ratings Dummy* is a dummy variable that equals one if the firm has a credit-rating, and equals zero otherwise.

Lambda – the inverse Mills' ratio from the Probit analysis of loan-taking decision – is included in order to account for the selection bias inherent in our sample of loan-taking firms. We do not include the pre-loan level of Tobin's Q because the lagged value of Q is already used as a control in all the reported regressions of this table. *Governance index* is a dummy variable that equals 1 if the Gompers, Ishii, and Metrick (2003) index of corporate governance is greater than 9 and equals 0 if this index is less than or equal to 9; recall, the higher the index, the poorer the corporate governance. Industries are categorized by 2-digit SIC Code. The bottom row displays the p-value for Hansen's J test of the null hypothesis that the instrumental variables employed are orthogonal to the errors. All t-statistics are calculated using robust standard errors clustered at firm level.

Table 14: TOBIN's Q

Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Proximity	-0.065**	0.037	0.046	0.059	0.001					
	[2.32]	[0.26]	[0.29]	[0.37]	[0.01]					
Exclusivity	0.008	0.389*	0.460**	0.480**	0.352**					
	[1.15]	[1.94]	[2.03]	[2.03]	[2.40]					
Average Distance						0.030***	-0.004	0.027	0.023	-0.039
						[3.00]	[0.11]	[0.72]	[0.58]	[0.78]
Dispersedness						0.005	-0.391**	-0.346**	-0.357**	-0.511***
						[0.50]	[2.50]	[2.22]	[2.24]	[2.78]
Loan-to-Debt Ratio	0.000	-0.010*	-0.012**	-0.013**	-0.001	0.000	-0.003	-0.006	-0.006	-0.003
	[0.67]	[1.82]	[2.01]	[2.01]	[0.20]	[0.65]	[0.79]	[1.36]	[1.39]	[1.06]
Size	-0.038***	0.110	0.105	0.110	0.070	-0.043***	0.098*	0.038	0.038	0.101*
	[3.61]	[1.47]	[1.29]	[1.30]	[1.27]	[3.82]	[1.85]	[0.80]	[0.78]	[1.70]
Leverage	-0.424***	0.054	-0.034	0.007	0.013	-0.445***	-0.057	-0.386**	-0.356**	-0.145
	[7.11]	[0.16]	[0.10]	[0.02]	[0.05]	[7.34]	[0.29]	[2.36]	[2.08]	[0.66]
Cash	0.650***	0.491***	0.616***	0.602***	0.265*	0.629***	0.304**	0.521***	0.511***	0.143
	[5.38]	[3.15]	[3.82]	[3.65]	[1.85]	[5.28]	[1.99]	[3.66]	[3.53]	[0.80]
ROA	0.015***	0.013***	0.012***	0.012***	0.007***	0.015***	0.014***	0.012***	0.012***	0.007***
	[6.08]	[6.31]	[5.63]	[5.61]	[4.24]	[6.13]	[7.35]	[6.64]	[6.66]	[3.96]
Capital Expenditure	0.258**	0.116	0.088	0.094	0.179	0.251**	-0.005	-0.032	-0.018	0.106
	[2.51]	[0.78]	[0.51]	[0.53]	[1.04]	[2.42]	[0.04]	[0.23]	[0.13]	[0.57]
Lagged Tobin's Q	0.461***	0.587***	0.603***	0.602***	0.688***	0.462***	0.578***	0.603***	0.602***	0.704***
	[7.47]	[19.19]	[19.07]	[19.02]	[34.95]	[7.51]	[19.19]	[19.36]	[19.36]	[34.02]
Industry Tobin's Q	0.159***	0.124***	0.129***	0.131***	0.097***	0.158***	0.126***	0.131***	0.133***	0.097***
	[5.82]	[4.67]	[4.32]	[4.26]	[3.80]	[5.83]	[5.50]	[5.66]	[5.66]	[3.55]
Institutional Holdings	-0.045	0.248	0.303*	0.301	0.230*	-0.048	0.195*	0.169	0.151	0.322**
	[0.98]	[1.51]	[1.67]	[1.59]	[1.91]	[1.04]	[1.69]	[1.48]	[1.34]	[2.49]
Analysts	1.328***	0.653**	0.581**	0.565*	0.423	1.322***	0.918***	0.856***	0.843***	0.594**
	[5.38]	[2.50]	[2.02]	[1.92]	[1.61]	[5.37]	[4.61]	[4.44]	[4.36]	[2.19]
NYSE	0.013	0.043	0.011	0.012	0.022	0.012	0.064**	0.007	0.002	0.055
	[0.68]	[1.38]	[0.27]	[0.28]	[0.61]	[0.63]	[2.15]	[0.21]	[0.06]	[1.33]
Ratings Dummy	0.040**	0.065	-0.007	-0.004	0.010	0.036*	0.094**	-0.038	-0.036	0.021
	[2.10]	[1.27]	[0.12]	[0.07]	[0.19]	[1.88]	[2.07]	[0.86]	[0.80]	[0.35]
Lambda			-0.359	-0.357	-0.460***			-0.508**	-0.496**	-0.434**
			[1.30]	[1.28]	[2.78]			[2.36]	[2.29]	[2.54]
Governance Index				-0.06	-0.053				-0.041	-0.061
				[1.54]	[1.46]				[1.62]	[1.58]
Constant	0.640***	-3.247	-3.889	-4.040	-2.538	0.908***	-1.633*	-0.715	-0.779	-1.442
	[4.53]	[1.55]	[1.60]	[1.60]	[1.61]	[6.58]	[1.70]	[0.84]	[0.92]	[1.28]
Observations	10745	9602	9598	9598	9598	10717	9462	9458	9458	9458
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen s J (p-value)		0.32	0.46	0.55			0.87	0.47	0.51	

Robust t statistics in brackets; * significant at 10%; ** significant at 5%; *** significant at 1%

Table 15

Impact of the lending relationship on the firm's stock returns

This table exhibits abnormal returns from trading strategies devised on the basis of the firms' loan characteristics. The abnormal returns in all the following panels are calculated with respect to four factors: the Fama-French 3-factors as well as momentum factor.

Panel A presents returns using the Ibbotson *Returns Across Time and Securities* (RATS) estimation. Therefore, the returns in this panel are returns over the indicated holding period. The numbers in brackets at the head of each column represent months after the loan, over which these stocks are held. E.g., [1, 6] would represent the 6-month period immediately *after* the month in which the loan started. *Hi* indicates the return on a portfolio consisting of firms whose loan-characteristic (proximity, or exclusivity, or average distance, or dispersedness) is *above* median in a given month, and *Lo* indicates the return on a portfolio consisting of firms whose loan-characteristic is either *equal to* or *below* median in that month.

Panels B and C present returns using a calendar-time portfolio strategy; Panel B shows returns of an equally-weighted portfolio and Panel C those of a value-weighted portfolio. I.e., the column under the heading [1, 6] shows returns of a portfolio consisting of all stocks that started a loan *within* the past 6 months. Therefore, the returns in this panel are returns per month over the indicated period (i.e., the returns under [1, 6] are monthly returns for a period of 6 months immediately after the month in which the loan started.) *Hi* indicates the return on a portfolio consisting of firms whose loan-characteristic (proximity, or exclusivity, or average distance, or dispersedness) is *above* median in a given month, and *Lo* indicates the return on a portfolio consisting of firms whose loan-characteristic is either *equal to* or *below* median in that month. *Hi* – *Lo* represents a trading strategy where we go long in the *Hi* portfolio and short the *Lo* portfolio.

	Panel A: Returns Across Time and Securities (RATS)							
Months:	[1, 1]		[1, 3]		[1, 6]		[1, 12]	
	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
Proximity	0.47%	0.02%	0.36%	0.02%	-0.24%	0.37%	0.07%	**1.27%***
	[1.44]	[0.11]	[0.65]	[0.07]	[-0.31]	[0.79]	[0.06]	[1.90]
Exclusivity	**0.65%*** **	**-0.38%***	**0.84%** **	**-0.63%***	**2.17%*** **	**-1.64%*** **	**4.37%*** **	**-2.27%*** **
	[2.63]	[-1.92]	[2.01]	[-1.78]	[3.45]	[-3.23]	[4.79]	[-3.06]
Average Distance	-0.05%	0.33%	-0.17%	0.39%	0.21%	0.28%	**1.56%***	0.41%
	[-0.21]	[1.50]	[-0.44]	[1.02]	[0.36]	[0.49]	[1.89]	[0.49]
Dispersedness	-0.32%	**0.50%** **	-0.51%	0.61%	**-1.71%*** **	**1.89%*** **	**-2.12%*** **	**3.62%*** **
	[-1.50]	[2.15]	[-1.39]	[1.54]	[-3.25]	[3.17]	[-2.76]	[4.18]

t-statistics are reported in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Panel B: Equally-weighted calendar-time portfolio strategies

	[1, 1]			[1, 3]			[1, 6]			[1, 12]		
	Hi	Lo	Hi - Lo	Hi	Lo	Hi - Lo	Hi	Lo	Hi - Lo	Hi	Lo	Hi - Lo
Proximity	0.41%	0.14%	0.27%	0.12%	0.07%	0.05%	0.13%	0.11%	0.02%	0.07%	0.15%	-0.09%
	[1.05]	[0.62]	[0.68]	[0.57]	[0.52]	[0.26]	[0.69]	[0.84]	[0.11]	[0.47]	[1.12]	[-0.68]
Exclusivity	**0.51%***	-0.12%	**0.63%****	**0.29%***	-0.09%	**0.38%****	**0.41%****	-0.15%	**0.56%*****	**0.37%****	-0.09%	**0.46%*****
	[1.70]	[-0.54]	[2.08]	[1.74]	[-0.58]	[2.32]	[2.59]	[-0.99]	[3.61]	[2.40]	[-0.68]	[3.35]
Avg. Distance	0.30%	0.10%	0.19%	0.09%	0.10%	0.00%	0.14%	0.11%	0.03%	**0.27%***	0.01%	**0.26%***
	[1.13]	[0.38]	[0.59]	[0.57]	[0.57]	[-0.02]	[0.90]	[0.71]	[0.23]	[1.82]	[0.07]	[1.85]
Dispersedness	-0.12%	0.42%	**-0.54%****	-0.10%	**0.27%***	**-0.37%****	-0.16%	**0.38%****	**-0.54%*****	-0.08%	**0.34%****	**-0.42%*****
	[-0.57]	[1.50]	[-1.98]	[-0.63]	[1.67]	[-2.47]	[-1.07]	[2.52]	[-3.82]	[-0.56]	[2.27]	[-3.14]

Panel C: Value-weighted calendar-time portfolio strategies

	[1, 1]			[1, 3]			[1, 6]			[1, 12]		
	Hi	Lo	Hi - Lo	Hi	Lo	Hi - Lo	Hi	Lo	Hi - Lo	Hi	Lo	Hi - Lo
Proximity	-0.33%	-0.22%	-0.12%	-0.16%	-0.17%	0.02%	0.20%	**-0.20%***	**0.40%***	-0.21%	-0.09%	-0.12%
	[-0.76]	[-0.78]	[-0.22]	[-0.57]	[-0.95]	[0.05]	[1.04]	[-1.78]	[1.88]	[-1.19]	[-0.80]	[-0.64]
Exclusivity	-0.31%	-0.23%	-0.08%	-0.26%	-0.20%	-0.06%	-0.02%	-0.18%	0.15%	0.02%	-0.15%	0.17%
	[-0.72]	[-0.86]	[-0.18]	[-0.85]	[-1.20]	[-0.17]	[-0.12]	[-1.43]	[0.63]	[0.14]	[-1.31]	[0.97]
Avg. Distance	-0.41%	-0.09%	-0.32%	-0.21%	-0.21%	0.00%	-0.20%	-0.08%	-0.12%	-0.02%	-0.21%	0.19%
	[-1.17]	[-0.31]	[-0.69]	[-1.08]	[-1.08]	[-0.01]	[-1.49]	[-0.58]	[-0.64]	[-0.18]	[-1.42]	[1.11]
Dispersedness	-0.23%	-0.25%	0.02%	-0.23%	-0.22%	-0.01%	-0.14%	-0.10%	-0.04%	-0.11%	-0.05%	-0.07%
	[-0.89]	[-0.63]	[0.04]	[-1.31]	[-0.76]	[-0.03]	[-1.14]	[-0.54]	[-0.16]	[-0.95]	[-0.33]	[-0.41]

Robust t-statistics are reported in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%