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**Working Paper**

## Universal banks and corporate control: evidence from the global syndicated loan market

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**WORKING PAPER SERIES**

**NO 1066 / JULY 2009**

**UNIVERSAL BANKS AND  
CORPORATE CONTROL**

**EVIDENCE FROM THE  
GLOBAL SYNDICATED  
LOAN MARKET**

by Miguel A. Ferreira  
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### EVIDENCE FROM THE GLOBAL SYNDICATED LOAN MARKET<sup>1</sup>

by Miguel A. Ferreira<sup>2</sup>  
and Pedro Matos<sup>3</sup>

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## **Abstract**

Banks play a role in the corporate governance of firms as well as acting as debt financiers around the world. Universal banks can have control over borrowing firms by representation on the board of directors or by holding shares through direct stakes or institutional holdings. We investigate the effects of these bank-firm governance links on the global syndicated loan market. We find that banks are more likely to act as lead arrangers, charge higher interest rate spreads and face less credit risk after origination when they have some role in firm's governance. This increase in interest rate spread is less pronounced for borrowers with access to international capital markets. Our results are robust to several methods to correct for the endogeneity of the bank-firm governance link. Our findings suggest that the benefits of bank involvement in firms' governance accrue mostly to the banks.

Keywords: Universal banking, Syndicated loans, Corporate boards, Ownership

JEL Classification: G21, G32



## Non-Technical Summary

Banks play a vital role in providing capital to corporations around the world. Even if we count only syndicated loans, bank loan amounts exceed public debt and equity issuance. Corporations tend to establish long-term lending relationships with banks. There is a large literature on the benefits of “relationship banking”, namely in the form of better loan pricing and better loan terms if the firm does repeated business with a bank. However, close bank-firm ties can work to a firm’s disadvantage. The bank can potentially exploit its special access to private information and charge higher interest rate spreads. Firms without other financing alternatives can potentially be locked in to the bank.

Recent transformations in the financial industry have led to the rise of large universal banking groups. Universal banks act as lenders but also underwrite and trade securities, have equity stakes in corporations, and manage mutual funds. This is very common in continental Europe, but the credit crisis of 2007-2008 has led to the disappearance of independent investment banks and to industry consolidation in the U.S.

Besides their importance in terms of size, universal banks can also play a prominent role in the governance of firms. First, bankers seat on a large fraction of boards of directors of firms in the U.S., and this is even more frequent in countries like Germany or Japan. When a banker sits on a board, he or she may gain access to special information. Second, banks can take equity stakes in non-financial firms. We find that bank stakes are rare, however. In the U.S. there have even been historical restrictions on bank ownership of non-financial firms (the Glass-Steagall Act). Third, a new channel of bank influence is institutional holdings. Many universal banks have asset management arms, such as bank trust services, mutual funds, and pension funds that invest in the same publicly listed firms to which banks make loans.

In this paper, we examine the effects of banks’ involvement in corporate governance on firms’ access to the syndicated loan market. We use a large international sample of syndicated loans to publicly listed non-financial firms over 2003-2006 to study the lending and governance relationships between banks and firms. Our sample is extensive, covering firms and banks in over 40 countries with very different legal environments, creditor and shareholder rights, and

financial development. The sample includes the 500 largest banks in the world, both universal banks and specialized banks.

Our main findings are as follows:

(1) We find that banks lend more to firms to which they have governance links (board seats, direct equity stakes or through institutional holdings). For example, banks represented on a firm's board of directors are 21 percentage points more likely to be picked as lead arrangers than banks with no such representation. Bank-firm governance links are more important for firms with fewer financing choices in international capital markets and located in bank-based economies.

(2) We find that banks charge higher interest rate spreads, without significantly relaxing other loan terms, to firms in which they have control rights. For example, the presence of a banker on the firm's board of directors is associated with a higher spread of about 9 basis points. There is no evidence of an effect on spreads if the bank only has a direct equity stake.

(3) We find that banks with influence in firm's governance also gain by having less credit risk subsequent to loan initiation. This favors the creditors but not necessarily shareholders.

Our evidence suggests that the benefits accrue mainly to banks if a bank has an influence in the firm's governance. Yet we do not observe other value-adding services the banks may be providing the firm (such as investment banking or deposit-related services), and so we cannot conclude whether the firm loses in overall terms. Our findings illustrate the governance role played by universal banks in companies and the implications for financial intermediation. Few regulatory issues have been as controversial as the separation of investment and commercial banking. Our findings suggest possible conflicts of interest between the role of lender and the role of insider in the firm. This is especially important, given the increasing importance of a small number of large universal banks.



## 1. Introduction

Banks are the most important source of external finance for corporations around the world. Even if we count only syndicated loans, bank loan amounts exceed public debt and equity issuance by firms (Drucker and Puri (2006)). Banks have advantages in accessing and producing information on the companies they lend to by exploiting economies of scale and scope and by developing close relationships with firms. Recurring loan transactions and delivery of other financial services imply that non-transferable information can be accumulated in the bank-firm relation. Thus, even in a market-oriented system like the U.S., “relationship banking” is an important element of the syndicated loan market (Bharath, Dahiya, Saunders, and Srinivasan (2007)).

Bank-firm relationships extend beyond just repeated lending interactions. Universal banks act as lenders, but they also underwrite and trade securities, hold equity stakes in corporations, and manage mutual funds. This is most common in continental Europe, although recent developments in the U.S. financial system have eroded the separation of commercial and investment banking. Indeed, the credit crisis of 2007-2008 has led to the disappearance of independent investment banks and to industry consolidation, with the emergence of a relatively small number of universal banks in the U.S. (Economist (2008), Wall Street Journal (2008)).

Banks also play a prominent role in the governance of corporations as board members and large shareholders. Kroszner and Strahan (2001a) find that over 30% of the largest U.S. firms have bankers on their boards of directors. The percentages are even higher in Germany and Japan (Kaplan and Minton (1994) and Dittman, Maug, and Schneider (2007)). Bank executives are frequently named directors of non-financial corporations in the U.S. for their financial expertise (Guner, Malmendier, and Tate (2008)). In other countries, like Germany, bank representation on boards may stem either from proxy voting (as banks hold votes of unregistered bearer shares of their depositors) or from a direct equity stake. Whenever a banker sits on a board, he or she will gain access to additional information that can provide some control over a borrower. This may affect the firm’s access to the credit market if the bank is a potential lender.

Most publicly listed firms around the world have concentrated equity holders like families, non-financial firms, and banks (La Porta, Lopes-de-Silanes, and Shleifer (1999)). Bank stakes are rare in the U.S., given the historical restrictions of the Glass-Steagall Act on bank ownership of non-financial firms. Even since repeal of the Act, commercial and investment banks have held limited shares. Several other countries allow banks to take equity stakes in non-financial

corporations (see Santos (1998) for a survey). Although bank equity holdings are not predominant across firms, banks have concentrated positions in some firms (Berlin (2000)).

A growing channel of bank influence over firm governance is through institutional holdings. Many universal banking groups have developed large asset management arms in recent years, such as bank trust services, mutual funds, and pension funds. Allen (2007) describes the dominant presence of banks in marketing financial products such as mutual funds in Europe. These mutual funds can and do invest in the same publicly listed firms to which banks make loans and in which they have equity stakes.

We examine the effects of banks' involvement in corporate governance on firms' access to the syndicated loan market, namely, the choice of lead arranger bank, loan pricing, and the subsequent performance of the loans. We entertain two hypotheses. The first is that a connected bank can be a more effective monitor and mitigate financial constraints (*information rent sharing hypothesis*). When a bank is both a shareholder and a creditor, it may be better able to monitor borrower actions, and reduce the chances of premature liquidation. A bank holding a mixed debt-equity claim can potentially mitigate the problems of asset substitution and under- or over-investment (Jensen and Meckling (1976) and Myers (1977)). Even if the bank has no direct cash flow rights, as is the case with indirect institutional holdings, or holds just some control rights, as in the case of board representation, the bank-firm link may improve information flow between the bank and the firm. The borrower may be inclined to reveal more information to the bank, and the bank itself has greater incentives to produce information (Boot (2000)). With this additional information, banks may be better able to screen loans and obtain private information on the financial status of the borrower firm. Bankers can also add financial expertise and play a monitoring role (Byrd and Mizruchi (2005)). If banks share these information rents with firms, we expect to see more lending and lower interest rates when a bank plays a role in the governance of a firm.

An alternative hypothesis is that banks can use their board seats or equity stakes in a firm to promote their interests as creditors by directing more business to and arranging more favorable terms for the bank (*diversion and rent extraction hypothesis*). There are two potential explanations for this bank behavior. The first is a consequence of the separation of ownership and control in the borrower firm. As with other large shareholders, if the bank has control rights (board seats, voting rights through institutional holdings) but is not a direct shareholder then, as a

dominant shareholder, it may be inclined to divert resources away from the firm (La Porta, Lopes-de-Silanes, and Shleifer (1999) and Johnson et al. (2000)). The second is that the bank's special position as an insider may allow it to extract rents from its information monopoly and potentially to "hold-up" a firm due to information asymmetries between other lenders and the borrower (Sharpe (1990) and Rajan (1992)). Thus, if the bank acts on its own interest, then it can charge higher spreads and get a disproportionate share of firms' borrowing, particularly when the firm has fewer financing options available and operates in a bank-based economy.

We use a large international sample of syndicated loans to publicly listed non-financial firms over 2003-2006 to study the lending and governance relationships between banks and firms. Our sample is extensive, covering firms and banks in over 40 countries with very different legal environments, creditor and shareholder rights, and financial development. The sample includes the 500 largest banks in the world, both universal banks and specialized banks. We examine three type of governance links between the lead arranger bank and the borrowing firm: (1) whether a bank executive sits on a firm's board of directors; (2) whether the bank holds a direct equity ownership stake in the firm; and (3) whether fund management companies affiliated with the same financial conglomerate as the lead arranger bank have equity holdings in the firm.

To illustrate our sample of bank-firm governance links, let us take the example of Deutsche Bank. In December 2002 (the start of our sample period), Deutsche Bank's board members held a staggering number of 65 board seats in other firms. As one of the best connected universal banks in the German corporate network, Deutsche Bank had three board members in E.ON (energy), two in Bayer (pharmaceutical), and two in Linde (engineering). In the case of Linde, the bank also had a direct stake of about 10% of the firm equity. In the case of Bayer, DWS Investments, the asset management arm of Deutsche Bank, had a large holding of \$680 million (4.4% of the firm equity). These bank-firm ties may relate to the fact that, over the next four-year period (2003-2006), Deutsche Bank acted as a lead arranger in seven syndicated loans to E.ON, six loans to Bayer, and eight loans to Linde. Deutsche Bank is a good example because of recent corporate governance developments in Germany, in particular a change in capital gains taxation that gave an incentive to reduce equity stakes in the corporate sector.<sup>1</sup>

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<sup>1</sup> Dittman, Maug, and Schneider (2007) report that banks have substantially divested their equity holdings in the last decade. However, banks have retained board seats in firms, and bank fund management divisions have become large (minority) shareholders in the largest German firms.

We first investigate whether a bank-firm governance link makes it more likely that the bank will be chosen as a lead arranger for future loans. To conduct this test, we pair each firm with each of the top 20 banks (in terms of syndicated loans activity in a country) and estimate a logit model. The results indicate that firms tend to get more loans from banks to which they have governance links than from banks with no such links. Banks represented on a firm's board of directors are 21 percentage points more likely to be picked as lead arrangers than banks with no such representation (the probability increases from 11% to 32%). The effects are similar if the bank has a direct equity stake (probability is increased by 28 percentage points) and if the bank has affiliated institutional holdings (probability is increased by 8 percentage points). Bank-firm governance links are more important for firms with fewer financing choices in foreign capital markets and those in less developed stock markets or bank-based economies.

We then examine whether a bank-firm governance link affects the interest rate spread and other non-pricing terms of the loan. We find that banks with board seats or with institutional holdings in the borrower firm charge significantly higher spreads than banks with no such link. The effects are also economically significant; the presence of a banker on the firm's board of directors is associated with a higher spread of about 9 basis points (12 basis points in the case of institutional holdings). There is no evidence of an effect on spreads if the bank has a direct equity stake.

These findings suggest that banks are able to charge higher spreads to firms when they play a role in the corporate governance of the firms. Interestingly, we do not observe any significant effect when the bank is a direct shareholder. So the outcome is different when the bank has cash flow rights as a shareholder or when the bank simply has control rights, through a board seat or through equity holdings by affiliated funds. The effects on loan pricing are consistent with the diversion and rent extraction hypothesis. Moreover, the increase in interest rate spread is less pronounced for borrowers with access to international capital markets as proxied by a U.S. cross-listing (level 2 and 3 ADRs and ordinary listings). This finding strengthens our interpretation as a U.S. cross-listing changes significantly the borrower's information environment and the bank's ability to extract rents from the relationship borrower.<sup>2</sup> We find no evidence that higher spreads come at the cost of relaxing

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<sup>2</sup> A firm that cross-lists on a U.S. exchange must commit to an increased level of disclosure and scrutiny in order to comply with U.S. Securities and Exchange Commission (SEC) regulations and U.S. Generally Accepted Accounting Principles (GAAP).

non-pricing contract terms such as collateral, covenants, or maturity. We also find that bank-firm governance links have a negative and significant effect on the number of lead arrangers and lenders used by the borrower, which is consistent with the idea that the lead arranger bank is not willing to share the benefits of its governance link to a borrower.

One important concern is that a bank's presence as a board member or equity insider arises endogenously in response to governance issues (Adams, Hermalin, and Weisbach (2008)). One alternative explanation for our findings that a bank presence is associated with higher spreads is that a bank becomes an insider in firms with lower credit quality that face higher costs of financing to start with. We address this selection bias in three ways. We first use propensity score matching, which measures the average difference in spreads between each loan with a bank-firm governance link and matched non-link loans. The other two approaches involve an instrumental variable estimation and a treatment effects model, where the first stage models the presence of the bank-firm link. Our international sample allows us to use banking regulation restrictions in place in each country as an instrument for the presence of a bank-firm link (Laeven and Levine (2006)). We also use other firm-level and bank-level characteristics as instrumental variables following Kroszner and Strahan (2001a). The results are robust to all these sample selection bias corrections.

Finally, we investigate the ex-post performance of firms that borrow in the syndicated loan market. We examine whether firms that get loans from linked banks have lower ex-post credit risk. We find that a bank-firm governance link at the time of the loan initiation is associated with a reduction in the expected default probability (EDF) from Moody's KMV in the years following the loan initiation. Therefore, banks with governance links seem to benefit from an improvement in the credit quality of the firms to which they lend to as compared to banks with no links. The evidence suggests that connected banks have access to private information on the financial condition of the borrowers. This improvement in credit risk favors the creditors but not necessarily outsider shareholders. In fact, we test the overall effects on return on assets (ROA) and find some evidence of value creation, but we observe no improvement in the return on equity (ROE) accruing to shareholders.

Previous U.S. evidence on the presence of bankers on the board of non-financial firms is mixed. Guner, Malmendier, and Tate (2008) find that firms obtain more loans when bankers join the board, but these loans are mostly to financially unconstrained firms. Kroszner and Strahan



(2001b) find that bankers hold seats on the board of large and low-risk firms, i.e., firms unlikely to be bank-dependent, but they do not find significant effects on loan pricing. Santos and Rumble (2006) show that bankers who have both a voting stake in a firm and a lending relationship with it have a higher likelihood of joining the firm's board of directors. Byrd and Mizruchi (2005) find that the presence of bankers (with an outstanding lending relationship with the company) on a board is negatively related to firm leverage, while Ciamarra (2007) finds a positive relation and that the presence of a bank executive on a borrowing firm's board of directors is associated with a lower cost of financing and more favorable non-pricing terms in loan contracts. Evidence from international studies on the influence of banks on corporations through board seats and equity stakes is also mixed (Drucker and Puri (2006)). In Germany, Gorton and Schmid (2000) find that banks use their equity holdings and board seats to improve firm performance, while more recently Dittman, Maug, and Schneider (2007) find evidence that bank representation on the boards of non-financial firms is not necessarily in the best interest of firms. In Japan, firms with close bank ties have higher borrowing costs (Weinstein and Yafeh (1998)). They also experience poorer profitability (Morck, Nakamura, and Shivdasani (2000)); adopt policies that favor creditors over shareholders (Morck and Nakamura (1999)); and face higher bond underwriting fees (Yasuda (2007)). In Europe, Kracaw and Zenner (1998) find a negative stock price reaction to bank loans if a banker sits on a borrower's board of directors.

Our research contributes to the literature on relationship banking by using a new measure, bank-firm governance links, to capture how dependent the firm is on its lender. Other authors focus on other measures of the intensity of bank-firm relationships such as the geographic distance between bank and borrower (Petersen and Rajan (1994), Degryse and Ongena (2005)); the duration of the relationship (Petersen and Rajan (1994), Berger and Udell (1995), Degryse and Van Cayseele (2000), and Ongena and Smith (2001)); and the nationality of both bank and borrower (Carey and Nini (2007) and Houston, Itzkowitz, and Naranjo (2007)). The evidence favors improved credit availability, but there is mixed evidence regarding borrowing costs. Berger and Udell (1995) find that firms with longer lending relationships pay lower interest rates, while Degryse and Van Cayseele (2000) find contract terms deteriorate with the duration of relationships in Europe. Other authors have studied prior lending activity and its effect on the probability that banks extend loans and win underwriting mandates (Yasuda (2005), Bharath et al. (2007), and Drucker and Puri (2007)). The effect of prior lending activity on borrowing costs



is also mixed. Bharath et al. (2008) find repeated borrowing from the same lender is associated with lower interest rate spreads. In contrast, Schenone (2009) finds evidence that lending relationships can help banks earn information rents in the form of higher interest rate spreads when firms face high switching costs (i.e., before going public). We also complement the relationship banking literature by investigating bank-firm relationships for large publicly listed and widely held firms, rather than small privately held firms.

One important feature of our work is to study bank-firm links using a large cross-section of countries, in a range of legal and regulatory environments and stages of financial development. Our results add to studies on the workings of the syndicated loan market worldwide. Qian and Strahan (2007) and Bae and Goyal (2008) examine how creditors and property rights affect loan contract design. Carey and Nini (2007) and Houston, Itzkowitz, and Naranjo (2007) compare the U.S. and European syndicate loan market and find that borrowers issue debt mainly in their home markets and that a home bias seems to affect loan pricing. Aslan and Kumar (2008) find that the separation of control rights from cash flow rights of the dominant (non-bank) shareholder is associated with higher loan spreads.

Finally, to the best of our knowledge, we are the first to examine the effects of banks' influence on firm's governance through institutional ownership on the international syndicated loan market, although some authors address related issues for the U.S. Santos and Wilson (2007) examine the role of voting rights of U.S. banks (as banks hold stock in trust for their clients). They find that banks charge lower interest rate spreads and impose less strict covenants on firms when they hold a voting stake. Massa and Rehman (2008) find that information generated inside banking groups by the lending arm is used by the asset management arm, in violation of the "Chinese walls" intended to separate the two activities. They find that bank-affiliated mutual funds invest heavily in the stock of borrowing firms and obtain abnormal performance on these holdings. Jiang, Li, and Shao (2008) find that the presence of institutional investors with simultaneous holdings of equity and loans reduces spreads.

The remainder of the paper is organized as follows. Section 2 presents our main hypotheses and testable predictions. Section 3 describes the data. Section 4 presents the results for effects of bank-firm governance links on the choice of the lead arranger bank. Section 5 examines the effects on loan pricing and other contract terms. Section 6 examines the ex-post loan performance of the borrower firm. Section 7 concludes.

## 2. Hypotheses

A bank's influence over a firm's governance, whether through board representation, a direct equity stake, or an indirect stake through institutional holdings, can potentially benefit the borrower firm. Such a close relationship increases the information flow to the bank through screening (Allen (1990)) and monitoring (Diamond (1984)). The bank gathers information over time, some of it proprietary and not disseminated to financial markets, and that can facilitate the provision of multiple financial services (Boot (2000)). Banks providing arm's-length finance are at a disadvantage. If a bank has an influence on a firm's governance, the borrower firm may be inclined to reveal more information to the bank than in a straight transaction-oriented relation with a lender. Given the bank's stake in the borrower firm, the bank itself has stronger incentives to invest in producing information. Furthermore, bankers' financial expertise can be useful for advice and counsel. Finally, bank equity stakes can reduce agency costs (Jensen and Meckling (1976)) and costs of financial distress, and enhance bank efficiency (Berlin, John, and Saunders (1996)). Overall, a close bank-firm relationship produces information rents that can be shared between the bank and the borrower. This leads us to posit the *information rent sharing* hypothesis and its testable predictions. First, we expect to find more lending by linked banks than by similar non-linked banks. Second, banks can share information rents by way of lower interest rate spreads and relaxing non-pricing loan features such as collateral, covenants, and maturity. Finally, a special relationship with a bank that can provide uninterrupted access to funding will allow firms to avoid financial distress, so we expect that firms with loans from linked banks to see an improvement in value, with gains accruing to creditors (in the form of reduced credit risk) and to shareholders as well.

An alternative hypothesis is that banks can use their influence in a firm's governance to promote the banks' particular interests. A bank that has control rights (board seats or voting rights through institutional holdings) or is a dominant shareholder may be inclined to divert resources away from the firm like other large shareholders (La Porta, Lopes-de-Silanes, and Shleifer (1999) and Johnson et al. (2000)). It can do so by influencing the firm to direct its borrowing to the bank and at favorable terms to the bank. If the bank is a shareholder, these effects are attenuated, but as long as it does not have full control, it will be inclined to promote its interests as a creditor over the interests of outside shareholders.

A connected bank can also increase its bargaining power by limiting a firm's outside opportunities. The proprietary information about the borrower that the banker obtains from sitting on the board or being a shareholder can create an information monopoly. It can potentially allow the bank to extract information rents from the borrower firm in the form of higher loan interest rate spreads (Sharpe (1990) and Rajan (1992)). Banks can pressure firms to lock in a loan at uncompetitive interest rates, and then make it difficult for the firm to access alternative banks as the connected bank has information that a new lender does not. Conflicts of interest can arise when the bank pushes its interests to mitigate credit risk and reduce shareholders' risk-taking incentives (Jensen and Meckling (1976)).

Thus, we posit the *diversion and information rent extraction* hypothesis and derive testable predictions. As with the information rent sharing hypothesis, we expect to find more lending by connected banks than by non-connected banks. The reason now, however, this is that the connected bank diverts business to itself and the firm is "informationally captured" as in Sharpe (1990). We predict that the bank appropriates its information rent in the form of uncompetitive interest rates, as well as that the loan syndicate will include fewer lead arrangers. We also expect ex-post gains to the bank (lower credit risk) but, contrary to the information rent sharing hypothesis, no gains (or even losses) to shareholders.

We posit that the particular governance role of the bank will matter. In particular, it depends on whether the bank has cash flow rights (a direct equity stake) or just control rights (a board seat or indirect institutional holdings). If the bank has an equity stake, it has less of an incentive to engage in "rent extraction" because that negatively impacts its residual claim as a shareholder. So we expect to find an effect on lending but not necessarily an adverse impact on pricing.

The extent of information rents and its sharing between firms and banks is also likely to vary across different countries. Banking regulations will determine the scope of banking activities, and the flow of information across these different activities (namely, between lending and board or shareholder positions), as well as the fiduciary duties that may bind bank directors. There are also international differences in terms of lender liability that the bank itself faces as a major creditor.<sup>3</sup> We expect that bank-firm links are more important when banking regulations are less

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<sup>3</sup> U.S. bankruptcy law permits a bankruptcy court to subordinate the claim of a lender to that of other claimants if the lender's behavior was inequitable, namely, if it has been responsible for improper business decisions that improved its own position at the expense of other claimants' (Berlin (2000)). Dittman, Maug, and Schneider (2007) observe that Germany does not have as stringent lender liability laws as the U.S.

stringent. The level of financial development and a firm's access to alternative sources of financing in the capital market (as well as foreign capital markets) are also likely to affect the ability of local banks to extract information rents.

### **3. Data**

This section describes the data. The Appendix provides detailed definitions and the data sources for all variables in the tests.

#### *3.1. Sample of Syndicated Loans*

Data on syndicated bank loans are drawn from the Reuters Loan Pricing Corporation DealScan database (DealScan). DealScan is a large commercial database of loans that includes information on loan contract terms (e.g., amount, all-in drawn spread, maturity, structure, purpose, type). Information on syndicated loans worldwide allows us to identify the lead arranger banks and lenders of each loan. Santos and Wilson (2007), Qian and Strahan (2007), and Sufi (2007) also use this database.

Our sample covers all loans initiated between January 2003 and December 2006. Syndicated loan deals include multiple tranches (or loan facilities) that differ in price, type, and maturity (such as a line of credit and a term loan). Following Carey and Nini (2007), Qian and Strahan (2007), and Santos and Wilson (2007), we perform our main tests at the facility level.<sup>4</sup>

We exclude certain loan facilities from the sample: (1) loans in which the borrower is a financial firm (SIC 6000-6999); (2) sovereign loans and loans in which the borrower is in the public sector (SIC 9000-9999); (3) deals with amounts below \$100 million (amounts converted to U.S. dollars when they are in a different currency) for the sum of the tranches; and (4) loans without information on all-in drawn spread. Loans with several lead arrangers in the syndicate are included in the sample separately for each lead arranger.

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<sup>4</sup> There is no straightforward way to identify which facilities are part of a deal in DealScan. We assume that facilities make part of the same deal if (1) the borrower is the same; (2) the deal date is the same; (3) the primary purpose is the same; (4) the deal amount is the same; and (5) the sum of the tranche amounts add up to the deal amount. We find similar results (not tabulated here) using only deals with a single facility or performing the tests at the deal level.

### *3.2. Sample of Lead Arranger Banks*

To determine the most important banks worldwide, we use the “Top World Banks” list published by *The Banker* magazine in 2005, which ranks the world's leading commercial banks sorted by Tier 1 capital. For tractability, we restrict the sample to the top 500 banks.

We focus on the lead arranger banks of each loan facility, which usually hold the largest share of the syndicated loan (see Kroszner and Strahan (2001a)). The lead arranger is frequently the administrative agent, with a fiduciary duty to other syndicate members to provide timely information about the default of the borrower. Thus, the responsibilities of a lead bank best fit the description of a relationship lender. We treat loans granted by a parent bank and loans granted by a subsidiary or a branch of this bank, as loans originating from the same lead arranger. For example, loans arranged by bank subsidiaries like ABN AMRO Australia Ltd, ABN AMRO Bank Shanghai, and ABN AMRO Bank Taipei are considered loans made by ABN AMRO Holding NV. Wholly owned subsidiaries like CCF or HSBC CCF in France are also considered part of the banking group HSBC. Of a total of 1,232 different lead arrangers in syndicated loans during our sample period, 852 are affiliated with and matched to 237 of the top 500 banks. The lead arrangers included in the top 500 banks are responsible for 88% of the number (and 90% of the volume) of syndicated loans in our sample.

In the regression tests, we control for several bank characteristics such as rank in *The Banker* list of top banks (*BANK\_RANK*) and nationality in terms of bank headquarters. Given the findings of Carey and Nini (2007) and Houtson, Itzkowitz, and Naranjo (2007), we include country and region dummies (*BANK\_EUROPE\_DUMMY*). In addition, we draw bank characteristics from the BankScope database, namely, bank market capitalization (*BANK\_SIZE*) and return on equity (*BANK\_ROE*).

### *3.3. Sample of Borrower Firms*

The initial sample drawn from DealScan includes 6,315 borrowers (\$7.7 trillion in loan amount) over the 2003-2006 sample period. We focus only on loans to publicly listed non-financial borrowers, which gives us a sample of 2,526 firms.

We draw firm-level accounting and market information for borrower firms from Worldscope. We merge the loan item “Borrower-Parent” in DealScan with Worldscope data using country and ticker (when available) and make a manual match by firm name. Only firms that we are able

to identify as a publicly listed firm in Worldscope are included in our sample. The final sample includes 2,461 publicly listed non-financial borrower firms from 43 countries (1,319 U.S. firms and 1,142 non-U.S. firms), for a total of 15,630 bank-loan facilities and \$3.4 trillion in loan amount.

### *3.4. Bank-Firm Governance Links*

In order to measure whether banks are insiders in borrower firms we consider three bank-firm governance links: (1) direct equity stakes; (2) board seats; and (3) indirect institutional holdings through bank-affiliated money managers. We measure the bank-firm links at the end of the year prior to the loan initiation.

#### *3.4.1. Bank as an Equity Insider*

We use FactSet/LionShares to obtain bank insider ownership in borrower firms. FactSet/LionShares provides ownership data of publicly listed firms in over 50 countries. Insider holders are families, states, other companies, and financial institutions. FactSet/LionShares data sources are public filings by investors with regulatory agencies around the world (like SEC forms 3, 4, and 144 in the U.S.) and company annual reports.

We focus on insider ownership by the top 500 banks. We can manually match insider names for 362 of the top banks. The match is particularly good for the top banks (92 of the top 100). In the end, we are able to measure insider equity ownership by the lead arranger bank in the borrower firm for each loan facility at the end of the year prior to the loan initiation. The bank-firm governance link variables are: a dummy variable that takes the value of one if the bank has a direct equity stake of at least 1% of shares outstanding in the borrower (DUMMY\_BANK\_INSIDER) and an insider ownership variable (BANK\_INSIDER). Total equity insider holdings by banks on borrower firms in our sample add up to \$18 billion as of December 2002. Given that the total market capitalization of firms in our sample is \$9.4 trillion, we note that these direct bank equity stakes are not very sizable. This is due to structural changes in banking activities over the last decades in some of the traditionally bank-dominated countries. Dittman, Maug, and Schneider (2007) describe how German banks have substantially divested



their equity holdings over recent years, despite having retained board seats in firms, and fund management divisions have become large (minority) shareholders in the largest German firms.

### *3.4.2. Bank as a Board Member*

We use the BoardEx database to find the board composition of publicly listed borrower firms and banks involved in the syndicated loan market. BoardEx covers more than 9,000 firms and 80,000 directors across Europe and the U.S. For each firm, BoardEx provides information on individual board director individual roles and network links of directors (i.e., all board positions occupied by an individual in other firms).

We then extract data on board links between banks and firms. We consider only first-degree network connections between the list of banks and of firms. There is a bank-firm link when a bank executive is on the board of a firm or when there is a board member common to the bank and the firm, except we exclude cases where the common board member is an executive in the firm. We are able to obtain board composition for 140 of the top 500 banks, but coverage is far better for the largest banks (62 of the top 100 banks). The bank-firm governance link variables are: a dummy variable that takes the value of one when there is (at least) one board member from the bank who is simultaneously on the board of directors of the firm (DUMMY\_BANK\_INBOARD); the number of board members common to the bank and the firm (NUMBER\_BANK\_INBOARD); and the sum of the number of years of tenure of common board members (TENURE\_BANK\_INBOARD). We find that banks sit on the board of 454 borrower firms out of the 2,461 firms in our sample as of December 2002, meaning that about 18% of the firms have at least one banker on the board of directors. So this bank-firm governance link is reasonably frequent. This is even more prevalent in larger capitalization firms – if we restrict our sample to firms with at least \$10 billion in equity market value, we find that 62% have a banker on board.

### *3.4.3. Bank as an Institutional Holder*

Banking groups increasingly provide asset management services for their clients worldwide, including bank trust services, mutual funds, and pension fund portfolio management. Many of the banks involved in the syndicated loan market are part of universal banking groups that have

asset management divisions that can invest in the same publicly listed companies to which the groups are lending. Others are specialized banks that have no investment management arms.

FactSet/LionShares is a leading source for institutional equity holdings worldwide. Ferreira and Matos (2008) use this data set to study the role of institutional investors in corporations around the world. Institutions are defined as professional money managers: mutual fund companies, pension funds, bank trusts, and insurance companies. The data sources are public filings by investors (such as 13-F filings with the SEC in the U.S.) and company reports. This data set contains holdings at the investor-stock level by over 5,300 institutions (and over 30,000 funds) from 26 countries, with positions totaling \$18 trillion as of December 2005. Institutional ownership data represent, on average, over 40% of the world stock market capitalization in the 2000-2005 period.

Some of the largest money management companies in the world are divisions of banks. For example, of the top five money managers in the U.S., two are bank-affiliated (Barclays Global Investors, State Street Global Advisors) and three are stand-alone investment companies (Capital RM, Fidelity, Vanguard). In France, in contrast, all top five managers are bank- or insurance company-affiliated. In Germany, four of the top five are divisions of banks (Dresdner Bank Investment Management, DWS Investments, Deka Investments, Union Investment), and one is independent (Universal Investment). Massa and Rehman (2008) report that 40% of equity mutual funds in the U.S. belong to financial conglomerates.

We match the ultimate parent company of the institution to the list of top 500 banks (for example, the ultimate parent for DWS Investments is Deutsche Bank). Thus, for each lead arranger bank, we identify the total institutional holdings of affiliated money managers. We are able to obtain institutional holdings for 172 out of the top 500 bank groups, corresponding to 638 institutions (i.e., 13-F filing entities) and 13,748 funds (mutual funds and other investment vehicles). Coverage is better among the larger banks, with holdings for 74 of the top 100 banks. The bank-firm governance link variable is a dummy variable that takes the value of one if at least one institutional money manager affiliated with the lead arranger bank has an equity position of at least 1% of shares outstanding in the borrower (DUMMY\_BANK\_INSTHOLD). We also use a continuous variable of institutional ownership (BANK\_INSTHOLD). We find that banks have institutional holdings in 1,955 of the 2,461 borrower firms in our sample, meaning that nearly 80% of the firms have at least one of the top 500 banks as an institutional holder. Total

institutional equity holdings by bank-affiliated fund managers are \$993 billion, which corresponds to 11% of the market capitalization of the firms in our sample.

#### *3.4.4. Examples of Top Banks*

Table 1 provides examples of bank-firm governance links for six of the top banks operating in the syndicated loan market. We highlight the firms for which banks simultaneously arrange loans and have a board or equity link.

JP Morgan was the most active lead arranger bank during the sample period. Board members from JP Morgan held a total of 62 board seats in publicly listed firms in December 2002, including Motorola, Exxon-Mobil, and Verizon, which accessed the syndicated loan market during the next four-year period (2003-2006). JP Morgan arranged four loans for Exxon-Mobil (supplying a total of \$10 billion in financing or 30% of the firm's financing in the syndicated loan market in the sample period) and four loans for Verizon (\$11 billion, 50% of financing). JP Morgan had no equity stakes in publicly listed firms, as the Glass-Steagall Act historically prohibited banks from taking equity stakes in non-financial firms.<sup>5</sup> JPMorgan Asset Management (with a total of 293 funds through divisions in the U.S., U.K., Hong Kong, and Singapore), however, held large equity stakes. Interestingly, the top holding of JP Morgan Asset Management in December 2002 was Exxon-Mobil (\$10.6 billion, 4.5% of the firm equity).

A second example is Royal Bank of Scotland (RBS), where bank-firm governance links seem not to play a role. RBS had board connections to non-financial firms, but none of these firms were among its top ten borrowers in the syndicated loan market. The bank had no equity stakes in publicly listed firms. Finally, RBS-affiliated institutional holdings were quite small as the bank outsourced its asset management business through a partnership with Aviva in the U.K. to manage its investment products.

One of the more interesting examples of a bank with multiple connections is Deutsche Bank. As the largest of the universal banks, Deutsche Bank was also the best connected bank in the German corporate network, with 65 positions on other firms' boards. This indicates that some of its directors had multiple appointments in corporate boards. For example, Josef Ackermann

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<sup>5</sup> Interestingly, however, during the last quarter of the 19th and early 20th century, JP Morgan's financial services were not "arm's-length" and entailed the presence of Morgan men on corporate client boards and raising funds only through the Morgan partnership (Ramirez (1995)).

(Deutsche Bank's Chairman and CEO) had five other board positions, in Linde, Bayer, Nasdaq, Stora Enso, and Vodafone. Deutsche Bank had three common board members in E.ON, 2 in Bayer, and 2 in Linde.<sup>6</sup> In the case of Linde, FactSet/LionShares data show that Deutsche Bank also had a direct stake of over \$436 million (about 10% of the firm's equity). In the case of Bayer, Deutsche Bank asset management companies, DWS Investments (in Germany and Spain) and Deutsche Asset Management (in the U.S., U.K. and other countries), had a large holding of \$680 million (4.4% of the firm equity). These bank-firm links might be related to the fact that, over the subsequent four-year period, Deutsche Bank acted as a lead arranger in seven syndicated loans to E.ON, six loans to Bayer, and eight loans to Linde.

Banks in other countries also offer interesting cases. Société Generale in France had links to firms for which it acted several times as lead arranger: eleven loan facilities to Vivendi (two board seats and \$84 million invested by SGAM and TCW, divisions of Société Generale) and four loan facilities to Peugeot (one board member and direct equity stake of \$300 million). Banco Bilbao Vizcaya Argentaria of Spain acted as lead arranger in four loan facilities to Telefonica (seven common board members, direct equity stake of \$266 million, and \$135 million holding through its fund management division, BBVA Gestion, which was its top holding). Bank-firm governance links, however, do not always translate into loans as the case of ING Bank based in the Netherlands, which had large direct equity stakes in Unilever (\$738 million directly and \$390 million through its funds).

#### 3.4.5. *Country Variables*

Legal and institutional differences have been shown to shape the terms of bank loans worldwide (Qian and Strahan (2007) and Bae and Goyal (2008)). Thus, we consider country-level variables in borrower firms' countries as controls: creditor rights index (CREDITOR\_RIGHTS) and legal origin dummy (COMMON\_LAW) from La Porta et al. (1997), and International Country Risk Guide (ICRG) property rights index (PROPERTY\_RIGHTS) from Bae and Goyal (2008). We control for a country's level of economic development using GDP per capita (GDPC). In addition, we measure the level of development of capital markets using the ratio of stock market capitalization to GDP (MARKETCAP\_GDP). In some tests, we use an index of regulatory

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<sup>6</sup> In total, Deutsche Bank had 18 common board members with firms that eventually accessed the syndicated loan market over the period.

restrictions on the activities of banks (BANKING\_RESTRICTIONS) computed by Laeven and Levine (2006) based on the World Bank Survey by Barth, Caprio, and Levine (2004). The index measures impediments to banks engaging in security market, insurance, real estate activities, and ownership of non-financial firms. As an alternative to country-level variables we use country dummies (of borrower and bank countries) in some specifications to take into account all the unobserved heterogeneity across countries.

#### 4. Do Bank-Firm Links Affect the Choice of Lead Arranger Bank?

##### 4.1. Main Results

We first test whether banks are more likely to arrange loans for firms where they play a role in the firm's governance. To evaluate this possibility, the unit of analysis is the potential pairing between a company and a bank, and we need to consider both realized matches (a specific bank  $i$  lends to firm  $j$ ) and unrealized matches (a specific bank  $i$  does not lend to firm  $j$ ). For each borrower firm ( $j$ ), we create a choice set of potential banks that would reasonably act as lead arranger for the loan. We want to economize on the size of the data set but still retain most of the loans. We thus choose the top 20 banks operating in each country, as ranked by volume of loans arranged for firms headquartered in that country; 2,461 firms have at least one syndicated loan arranged by a top 20 bank operating in their country.<sup>7</sup> We then form 49,220 bank-firm ( $i, j$ ) pairs by combining  $i = 1, \dots, 20$  (top banks) with  $j = 1, \dots, 2,461$  borrower firms. To test whether a bank-firm link impacts the choice of the lead arranger bank, we estimate a logit model:

$$\text{Prob}(\text{DUMMY\_LOAN}) = a_0 + a_1 \text{BANK\_FIRM\_LINK}_{i,j} + a_2 Y_j + a_3 X_i + \varepsilon_{i,j}, \quad (1)$$

where the dependent variable is a dummy variable (DUMMY\_LOAN) that equals one if bank  $i$  acts as lead arranger in at least one loan to firm  $j$  over the 2003-2006 period, and zero otherwise. The explanatory variable of interest is BANK\_FIRM\_LINK, which indicates whether the bank is an insider at the beginning of the sample period (December 2002). We use three alternative types

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<sup>7</sup> Bharath et al. (2007) also economize on the size of their data set by selecting the top 40 banks in the U.S., while Yasuda (2005) uses the top 15 banks active in Japan. In our case, while a bank like Banco Santander is number 1 in Spain, it is not in the top 20 banks in France and the U.S. Société Generale, which is number 4 in Spain and number 3 in France, is not ranked in the top 20 in the U.S. Finally, Citigroup is number 3 in Spain, number 7 in France, and number 2 in the U.S. See panel C of Table II for rankings of the largest banks in the syndicated loan market in each of the local markets of origin of the bank.

of bank-firm governance link variables as detailed in the data section and we control for other bank-level ( $X_i$ ) and firm-level variables ( $Y_j$ ).

Table 2 describes the sample used in the bank choice tests. Panel A presents summary statistics for the sample variables. Panel B gives details of the sample for the 16 countries for which data are comprehensive (mostly in North America and Europe). Out of 49,220 bank-firm pairs, in 6,597 cases a bank arranged a loan for a firm (an overall ratio of 13%). We can see that there are relatively few instances of bank direct equity stakes, only 80 cases, but in 51 of these (i.e., 64%) the bank acts simultaneously as a lead arranger. More common are cases where a bank director has a board seat in the borrower firm. There are a total of 830 bank-firm board links in December 2002, and 382 translate into a lending relationship (i.e., 46%). Finally, the most frequent bank-firm governance link is indirect equity holdings through affiliated institutional investors, with 14,139 bank-firm pairs. In 2,557 of these cases there is a subsequent lending relationship (i.e., 18%). This univariate analysis suggests that banks lend more to firms when there is a bank-firm governance link.

Panel C of Table 2 gives details for the 30 most active banks in our sample. This list includes some of the largest banks in the world, as can be seen by the rank number in The Banker's top list of commercial banks. Others are investment banks (like Morgan Stanley, Goldman Sachs, and Lehman Brothers) or banc assurance companies (like Allianz). The top banks have a large number of board connections, and very often their asset management divisions have equity positions in the same firms to which the banks are lending. It is not common, however, for banks to own equity directly.

Table 3 presents the results of the logit model for the lead arranger bank choice. The coefficients for a bank-firm governance link are positive and significant in all specifications for DUMMY\_BANK\_INSIDER (equity stakes), DUMMY\_BANK\_BOARD (board seats), and DUMMY\_BANK\_INSTHOLD (institutional holdings). The evidence is consistent with the idea that bank involvement in a firm's governance increases the likelihood that the bank will provide a future loan.

Columns (1), (4), and (8) of Table 3 show estimates of a conditional logit model that includes firm and bank fixed effects. The fixed effects control for interdependence in the bank-firm pair observations between those for the same firm (whose decisions to borrow across banks are



interdependent) and those for the same bank (whose lending decisions to different firms are also likely interdependent).

Next, we run specifications that include bank, industry, and country factors. Estimates in column (2) illustrate the economic significance of the bank-firm governance links on the probability of being chosen to provide future loans. The predicted probability that a bank is chosen as lead arranger if it does not have an insider stake in the borrower is 11% (keeping all other variables at their means), while the predicted probability that it is chosen if it does have an insider stake is 39%. Thus, the probability that a bank will be chosen as a lead arranger is increased by 28 percentage points if it has an insider stake in the borrower firm. Similarly, the probability that a bank will be chosen is increased by 21 percentage points if the bank is represented on the borrower's board of directors (using the estimates in column (5)). Finally, institutional holdings are associated with an increase of 8 percentage points in the probability that the bank will act as a lead arranger (using the estimates in column (9)).

We also consider continuous versions of the variables measuring the governance links between banks and firms. In column (3) we use the bank's insider stake as a percentage of shares outstanding (BANK\_INSIDER). In column (6) we use the number of bank board members in the firm (NUMBER\_BANK\_BOARD) and in column (7) we measure the aggregate tenure of the bankers on board (TENURE\_BANK\_BOARD). In column (10) we use the bank's indirect stake through affiliated institutional holdings (BANK\_INSTHOLD). All these variables are also positively associated with the likelihood that the bank will arrange loans for the firm in the syndicated loan market. In column (11) we consider jointly the three bank-firm governance link dummy variables, and find that the three links are positive and significant.

The regressions control for other aspects of the relationship between firms and banks noted in the literature. We construct a dummy variable (DUMMY\_PAST\_LOAN) that takes the value of one if there is a syndicated loan between the lead arranger bank and the borrower firm in the five-year period prior to the beginning of our sample period (1998-2002). Past loans are positively associated with the likelihood that the bank will provide future loans to the same firm, which is consistent with the evidence in Bharath et al. (2007). We also control for the distance between the borrower and its potential lead arrangers by using a dummy variable that takes the value of one if the bank and firm are headquartered in the same geographic region (DUMMY\_SAME\_REGION). We find evidence consistent with a home bias effect; i.e.,

borrowers tend to select local lead arranger banks (Houston, Itzkowitz, and Naranjo (2007)). Finally, we include a dummy variable for European banks to control for special conditions of the European syndicated loan market (Carey and Nini (2007)).

We also control for bank characteristics such as rank in *The Banker*, size (market capitalization), and profitability (return on equity). We include firm industry dummies and dummies for the country of origin of the firm and of the bank. Finally, we adjust t-statistics for clustering at the firm-level. Results are robust if we adjust for bank-level clustering as well.

#### *4.2. When are Bank Links More Important for Directing Lending Business?*

To investigate when bank-firm links matter most for the lead arranger bank choice, we run additional tests that include several interaction variables. Columns (1)-(3) of Table 4 present the results. We find that bank board seats and institutional holdings are associated with direction of more lending business to the bank for firms that are more constrained in their financing opportunities. Firms that access foreign capital markets (as proxied by a cross-listing on a U.S. exchange) or an institutional investor clientele (proxied by membership in the MSCI World Index) are found to direct less of their borrowing to bankers who sit on their boards or banks that are shareholders through one of their funds.

The level of development of capital markets where a firm operates also seems to matter for the effect of bank-firm governance ties. Including an interaction variable with the ratio of stock market capitalization to GDP of the country where the firm is headquartered, we find that board links and institutional holdings are less likely to affect lending in countries with more developed stock markets. In other words, bank-firm governance links seem to have a more pronounced effect on a firm's lead arranger bank choice in bank-based economies.

#### *4.3. Robustness*

We check the robustness of our findings by estimating alternative specifications of the logit model in Table 3. The results are presented in columns (4)-(7) of Table 4. First, we implement a different bank-firm pairs scheme by matching each firm with the top 100 world banks instead of the top 20 banks operating in each country. These alternative bank-firm pairs account for the fact

that banks and firms may operate in foreign markets and may not be limited to choose among the top 20 banks operating in the local market.<sup>8</sup> We find that all three bank-firm governance links positively affect the lead arranger choice using the alternative pairs. Next, we run specifications that do not use the dichotomous variable of whether a firm got a loan from a bank as in the logit model in Table 3. We run instead an OLS regression whose dependent variable is the number of actual loans from bank *i* to firm *j* (NUMBER\_LOANS) and the logarithm of the amount of the loans (AMOUNT\_LOANS).<sup>9</sup> We also run a Tobit model where the dependent variable is the share that loans from bank *i* to firm *j* represent of all loans received by firm *j* (SHARE\_LOANS). Our findings are robust to all these alternative tests.

#### *4.4. Endogeneity*

An important concern with our findings is the endogeneity of the presence of a bank as board member or equity holder. We cannot conclude that a board or equity link is a determinant of the firm's lead arranger choice without further investigation. For example, it may be the case that the banking group has common information across its units that leads both its loan officer to lend and its fund manager to hold equity of the same firm without one necessarily causing the other.

Our international sample allows us to use instrumental variables likely to determine a bank-firm governance link but not directly the choice of the lead arranger bank. One important instrument is the regulatory impediments in place in each country to commercial banks engaging in other activities, namely, securities market activities (e.g., mutual funds) and having ownership in non-financial firms. Following Laeven and Levine (2006), we use an index of restrictions on the activities of banks (BANKING\_RESTRICTIONS) based on the World Bank survey of banking regulations developed by Barth, Caprio, and Levine (2004). Different countries have different limits on the activities in which banks can participate. This index sums the regulatory impediments to banks engaging in (1) securities market activities (e.g., underwriting, brokering, dealing, and all aspects of the mutual fund industry); (2) insurance activities (e.g., insurance underwriting and selling); (3) real estate activities; and (4) the ownership of non-financial firms.

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<sup>8</sup> Note that the top 20 banks in a country do not have to be all domestic banks. In fact, even in the top 20 banks only 13 are domestic, and 7 are non-U.S. (Credit Suisse, Deutsche Bank, RBS, UBS, BNP Paribas, ABN AMRO). In France, for example, 14 of the top 20 banks are foreign.

<sup>9</sup> In untabulated regressions, we also try a Poisson model for the number of loans, given that this is a count variable, but our main results for the bank-firm link variables still hold.

The index is lowest in Germany, Austria, Switzerland, and the U.K. (values of 5) and highest in the U.S. (value of 12) within our sample of countries.

We use other firm-level and bank-level instruments likely to determine the presence of a bank in the firm. We adopt some of the same variables used by Kroszner and Strahan (2001a) to explain banker representation on boards of non-financial firms, namely, firm size (SIZE), leverage (TOTAL\_DEBT, SHORT\_DEBT), tangible assets (TANG), and risk (STDEV). For bank-level instruments, we use a dummy indicating whether a bank is state-owned (e.g., WestLB in Germany) or a cooperative bank (e.g., Credit Agricole in France or Rabobank in the Netherlands), which are potentially more constrained than publicly-listed banks from owning direct equity or sitting on corporate boards.

Panel A of Table 5 presents the results for a two-stage treatment effects model for the number of loans for each bank-firm pair. The first stage is a treatment probit regression where the dependent variable is a dummy variable indicating the presence of a bank-firm governance link. Like Kroszner and Strahan (2001a), we find that banks are more present in larger firms, and in firms with low leverage and risk. Thus, bankers are present in “good” firms and not in “bad” firms that might require bank presence for access credit. This eases concerns as to the endogeneity of the bank-firm governance link. We find that banking restrictions strongly limit banks’ presence (board and direct equity stakes) in firms and that non-publicly listed banks have lower insider stakes. In the second-stage regression we find that bank-firm governance links (board, insider equity, institutional holdings) affect bank choice even after controlling for the endogeneity of a bank’s presence.<sup>10</sup> The significance of the coefficient of the Heckman lambda selection variable indicates that selection bias is indeed an issue.

Panel B of Table 5 addresses the direction of causality between banker presence and lending activity. We build a panel data of bank-firm pairs for each of the four years of the sample period and test whether bank lending follows bank presence as an insider, whether alternatively, it is the case that a banker comes on to a firm’s board after a lending relationship is initiated. Our working hypotheses posit that a bank-firm governance link influences a firm’s choices in the loan market. It could be the case, however, that bankers are added to boards of firms in distress,

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<sup>10</sup> To implement the treatment effects model we use a continuous variable for the second-stage dependent variable (the number of loans as in column (5) of Table 4) instead of the dummy variable (as in the logit model of Table 3).

and a firm's securing financing from a bank leads to the bank appointing a member to the firm's board of directors.

We restrict our tests here to board seats.<sup>11</sup> We regress a dummy variable that takes a value of one if the bank has arranged a loan to the firm in year  $t$  ( $DUMMY\_LOAN_t$ ) on two dummies: (1) whether the bank has entered the firm's board between year  $t-1$  and year  $t$  ( $BANK\_ENTERS\_BOARD_{t-1,t}$ ); and (2) whether a banker has entered the firm's board in the following year ( $BANK\_ENTERS\_BOARD_{t,t+1}$ ). The  $BANK\_ENTERS\_BOARD_{t-1,t}$  coefficient is positive and statistically significant, while the  $BANK\_ENTERS\_BOARD_{t,t+1}$  coefficient is insignificant. We conclude that the addition of a banker to a board in the previous year leads to initiation of lending in the current year, but there is no evidence that a lending relation starts first and then a banker takes a board position in the year following.

## 5. Do Bank-Firm Governance Links Affect Loan Pricing and Non-Pricing Terms?

We have so far provided evidence that when a bank plays a role in a firm's governance (as a board member or shareholder) there is a higher probability that the bank will secure future lending business with that firm. Now, we examine the implications of the presence of the bank for the pricing of the loan and other contract terms.

### 5.1. Main Results

We perform the tests of the effects of bank-firm governance links on the loan contract terms at the loan facility level. The sample consists of 15,630 bank-loan facilities for which we have bank-firm link variables, loan characteristics, and the borrower's firm variables from WorldScope/Datastream. Table 6 presents summary statistics on the sample of loan facilities. We estimate the following regression of loan spreads:

$$ALL\_SPREAD_{i,j,k} = a_0 + a_1BANK\_FIRM\_LINK_{i,j,k} + a_2Y_j + a_3Z_k + a_4X_i + \varepsilon_{i,j,k}, \quad (2)$$

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<sup>11</sup> There are not enough events in our sample period of banks buying (or selling) an insider equity position to make tests feasible for this case. For institutional holdings, there are too many portfolio changes. Board seat decisions are the more natural setting for this test.

where the dependent variable is the all-in spread drawn of the loan facility (*ALL\_SPREAD*), which includes the spread over LIBOR plus annual fees and up-front fees pro rated over the life of the loan. We control for borrower-firm characteristics ( $Y_j$ ), loan characteristics ( $Z_k$ ), and bank-level characteristics ( $X_i$ ). Our explanatory variable of interest is *BANK\_FIRM\_LINK*<sub>*i,j,k*</sub>, i.e., whether a bank has a link to the borrower firm at the end of the year prior to the loan initiation by having an insider stake (*DUMMY\_BANK\_INSIDER*), a board seat (*DUMMY\_BANK\_BOARD*), or equity holdings through its asset management arm (*DUMMY\_BANK\_INSTHOLD*).

Table 7 presents estimates of regression equation (2). We test each bank-firm link measure separately and then in a final specification in column (8) we consider the three bank-firm governance link variables jointly. In some specifications we consider alternatively continuous variables of the bank-firm governance link. We use the level of insider ownership (*BANK\_INSIDER*) in column (2). For board membership, in columns (4) and (5) we use both the number of common board members (*NUMBER\_BANK\_BOARD*) and the sum of the tenure of all bankers on the firm's board (*TENURE\_BANK\_BOARD*). Finally, in column (7) we also use the level of bank-affiliated institutional ownership (*BANK\_INSTHOLD*)

The coefficient on bank-firm governance links through board seats (*DUMMY\_BANK\_BOARD*) is significantly positive and implies that the presence of a bank member in the firm's board of directors is associated with an extra 9 basis points spread charged to the firm. The alternative board link variables (*NUMBER\_BANK\_BOARD*, *TENURE\_BANK\_BOARD*) coefficients are also positive and significant. An institutional holdings link (*DUMMY\_BANK\_INSTHOLD*) is associated with higher spreads by 12 basis points. The coefficient on the insider stake link (*DUMMY\_BANK\_INSIDER*) is negative by contrast, though insignificant (columns (1) and (2)).

In support of the diversion and rent extraction hypothesis, loan pricing is less favorable to the firm if the bank has control rights (board seat and institutional holdings), but there is no such evidence if the bank has cash flow rights (direct equity stake). As we have posited, if the bank is simultaneously an equityholder and a debtholder, there is less incentive to charge a higher interest rate spread. A mixed claim can potentially mitigate the agency costs of debt and even reduce interest rate spreads, although we do not find statistically significant evidence of lower spreads. In column (8), the inclusion of the three bank-firm governance link variables jointly



confirms the findings of a positive loan spread effect of a link through boards or institutional money managers, but not through insider ownership.

The regressions control for other proxies of the bank-firm relationship such as past loan activity (DUMMY\_PAST\_LOAN) as in Bharath et al. (2007) and proximity (DUMMY\_SAME\_REGION) as in Houston, Itzkowitz, and Naranjo (2007). With respect to these other bank-firm relationship variables, we find no evidence that they impact loan spreads after controlling for bank-firm governance links.

In all specifications in Table 7 we control for borrower firm characteristics and other non-pricing loan terms. As expected, we find that spreads are lower for larger firms (SIZE), less levered firm (TOTAL\_DEBT), and more profitable firms (PROFIT), while firm's stock risk (STDEV) tends to widen spreads. We adjust for borrower credit quality using ratings (RATING) and a dummy variable that equals one for firms without rating (UNRATED). In terms of loan characteristics, we control for loan size (AMOUNT\_LOAN); whether the loan has collateral, is secured, or has a guarantor (SECURED, SENIOR, GUARANTOR); loan maturity (MATURITY); covenants (DIVRESTRICT); number of lenders (LENDERS); and loan purpose and type dummy variables (not shown in Table 7 to save space). We find that loans with higher ratings, senior loans or with a guarantor and with more lenders participating in the loan deal tend to have lower spreads. The regressions also include borrower firm industry dummies to account for heterogeneity across industries and year dummies.

In untabulated regressions, we examine loan spreads without including fees as the dependent variables and results are similar. Separately examination of U.S. and non-U.S. firms yields similar results (these results are available from the authors upon request).

Country factors such as legal environment and economic development can also have an effect on loan spreads (e.g., Qian and Strahan (2007) and Bae and Goyal (2008)). Therefore, in columns (1)-(3) of Table 8 we control for borrower country variables using country-level variables. Like Qian and Strahan (2007), we find a rise in the index of creditor rights (CREDITOR\_RIGHTS) reduces loan spreads. We then investigate the circumstances under which bank-firm governance links are more likely to affect loan pricing. Additional tests include several interaction variables that proxy for capital market access. We find that firms that have access to foreign capital markets (as proxied by a cross-listing on a U.S. exchange) have less of a disadvantage in loan pricing if the lead arranger bank is an insider in the borrower firm. We also

find some evidence that the increase in spreads is stronger for firms located in bank-based economies, with fewer financing alternatives in the capital markets. Finally, in columns (4)-(6) of Table 8 we run regressions including bank dummies to account for all the potential heterogeneity across lead arranger banks. The results are robust to this alternative specification.

## 5.2. Endogeneity

An important concern with our findings on spreads is endogeneity of the bank-firm link. The evidence so far is consistent with the diversion and information rent extraction hypothesis that banks with control rights (board seats and institutional holdings) are able to charge uncompetitive interest rates to connected firms.<sup>12</sup> Without further investigation, we cannot, however, conclude that the bank's position influences the loan spread. It may be the case that we find higher spreads because banks tend to have governance links to lower-quality firms. This selection bias is indeed a concern because low quality firms would pay higher spreads, and banks may play a role in governance precisely when a firm is in financial difficulty.

Our international sample offers the opportunity to address these concerns because we can observe bank-firm lending and governance links in different environments. Some countries have prohibited bank security market activities and ownership of non-financial firms (e.g., U.S. historically with the Glass-Steagall Act), while others have not (e.g., Germany). To proxy for these regulatory constraints, we use an index of regulatory restrictions on bank activities (BANKING\_RESTRICTIONS) developed by Barth, Caprio, and Levine (2004). This regulatory restrictions index on bank activities can be used as an exogenous determinant of a bank's involvement in firm governance. We also employ a bank-level instrumental variable likely to affect the presence of a bank-firm link but not loan spread directly: a dummy variable (BANK\_PUBLICLY\_LIST) indicating whether the bank is publicly listed (in our sample, private banks are usually state-owned or cooperative banks). Privately held banks are typically more constrained in holding board seats and equity stakes.

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<sup>12</sup> Evidence on the effects on loan spreads is mixed. Kroszner and Strahan (2001b) and Guner, Malmendier, and Tate (2006) find that U.S. banks do not favor their connected borrowers on loan pricing. Ciamarra (2007) and Santos and Wilson (2007) find evidence of lower spreads in the U.S.. For Japan and Germany the evidence suggests that firms with bank ties have higher costs (Weinstein and Yafeh (1998), and Dittman, Maug, and Schneider (2007)).

We first use the propensity score matching methodology as employed in Drucker and Puri (2005) and Bharath et al. (2008). For every loan with a governance link, the method identifies a set of matching non-governance link loans that has the same predicted probability (using a probit model).

Panel A of Table 9 presents the average difference in loan spread between a loan with bank-firm governance link and a set of matched loans with no governance link. We use the Nearest Neighbor estimator with the closest  $n = 10$  and  $n = 50$  loans with non-governance link, and the Gaussian and Epanechnikov methods with propensity score bandwidth  $h = 0.01$  to limit the sample of loans with no governance link. The results show that loans from banks that hold board seats in the borrower are 7 to 8 basis points higher. Loans arranged by banks with institutional equity holdings in the borrower are also found to have higher spreads, by 11 to 15 basis points. The difference is not statistically significant in the case of direct equity stakes. These results confirm our findings in Table 7. Results are robust to use of four alternative matching specifications as in Bharath et al. (2008). We also implement two other methodologies to handle the endogeneity issue. The first is an instrumental variables (IV) estimation using the bank regulatory restrictions index and the publicly listed bank dummy variable as instruments, i.e., variables that are correlated with the presence of a bank as an insider but do not affect directly loan spreads, except through this channel. Panel B of Table 9 presents results of the IV model for the loan spread (as in Bharath et al. (2008)). The first stage is used to estimate the probability of a bank governance link, and this predicted probability is used as an instrument in the second stage estimation. The second stage shows that the presence of the bank on the firm's board or as an institutional shareholder raises loan spreads, correcting for the endogeneity of these bank-firm governance links.

The second method is the treatment effects model in Panel C of Table 9. The first stage is a treatment probit regression where the dependent variable is a dummy variable indicating a bank-firm link. We find that banking restrictions limit banks' presence in firm boards. We find that bank-firm governance links (board and institutional holdings) affect loan spreads positively even after correcting for the endogeneity of a bank's presence. Direct insider stakes, however, do not have a significant effect on loan spreads. The significance of the coefficient of the Heckman lambda selection variable for the board and institutional holdings links indicates that selection bias is indeed an issue.

### *5.3. Do Bank-Firm Governance Links Affect Other Non-Pricing Loan Terms?*

The role of a lead arranger bank in the borrower firm's governance could also potentially impact other non-pricing loan terms, such as the inclusion of financial covenants, collateral, and maturity. We investigate the relation between these non-pricing loan terms and bank-firm governance links in Table 10. Specifications are similar to those in Table 9 for loan spreads. In the interest of conserving space, we do not report the coefficients of the borrower firm variables and loan variables.

Columns (1)-(4) of Table 10 present the results of a probit model for the inclusion of collateral in the loan contract (SECURED). There is no evidence that any type of bank-firm link impacts the collateral requirements of the loan.<sup>13</sup> Columns (5)-(8) present the results of a probit model for the inclusion of dividend restrictions (DIVRESTRICT), which is a form of financial covenant. There is some evidence that these restrictions would be alleviated if there is a governance link. Finally, columns (9)-(12) of Table 10 present the results of the regression where the dependent variable is the logarithm of the loan maturity. We do not find evidence that maturity is extended, but it is actually shortened if bankers are equityholders.

Overall, we conclude there is some evidence that banks benefit from information rents by charging higher interest rate spreads, while there is no evidence of the relaxing of non-pricing loan features.

### *5.4. Do Bank-Firm Links Affect Loan Syndicate Concentration?*

Bank-firm governance links might also affect the number of lead arrangers and lenders in the syndicate. If a bank is indeed able to "capture" a firm we expect to find a higher level of loan syndicate concentration, i.e., fewer lead arrangers used by connected borrower firms. Under the diversion and rent extraction hypothesis, bank presence as an insider can create a "lemons" problem in that other banks may be skeptical of the quality of a firm that does not use its universal bank as a lead arranger (Rajan (2002)). In fact, the presence of multiple banking relationships can allow firms to reduce the value of information acquisition to any one individual bank (Boot and Thakor (2000), Ongena and Smith (2000)).

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<sup>13</sup> In DealScan, the secured variable is missing for a large number of cases. Following other authors (e.g., Ciamarra (2007)), we assume that a missing value corresponds to a non-secured loan.

Table 11 presents the results of the regressions where the dependent variables are the number of lenders and lead arrangers in each loan. We find that the presence of a bank on a firm's board of directors and direct equity stakes are negatively associated with the number of lead arrangers and lenders in the syndicate. There is also evidence that affiliated institutional ownership increases loan concentration. The results on loan syndicate concentration are consistent with the diversion and information extraction hypothesis.

## **6. What is the Ex-Post Loan Performance of Firms with Bank Governance Links?**

So far, we have focused on the role that banks with governance links to borrowers play at the loan contracting stage. We now look at the ex-post performance of syndicated loans, i.e., whether connected banks take on good or bad loans. If a bank's governance link to the borrower firm improves its flow of private information on the credit prospects of the borrower, we expect (in both the information sharing and diversion and the information rent extraction hypotheses) that firms with governance links to banks that receive loans experience less ex-post credit risk. We therefore examine how the connected borrowers perform ex-post in terms of credit risk and default likelihood as compared to other borrowers without governance links. The information sharing hypothesis would also predict gains to shareholders.

To proxy for the level of credit risk of the borrower after loan initiation, we use the estimate of default probability (Expected Default Frequency or EDF) produced by Moody's KMV CreditMonitor implementation of Merton's (1974) structural model. Moody's KMV uses equity market information to determine a firm's probability of default. EDF is the probability that a firm will default within one year, which by construction ranges from 0.01 to 35.00.<sup>14</sup>

We calculate two alternative measures of loan credit risk performance: (1) the change in EDF of the borrower firm from the year before the loan origination to one-year after; and (2) the change in EDF of the borrower firm from before the loan origination to two-years after. Yu (2007) and Jiang, Li, and Shao (2008) use similar windows to evaluate the ex-post performance of the loan. We then regress this ex-post measure of credit risk of the borrower firm on a bank-firm governance link at the time of loan origination. Panel A of Table 12 presents the results. When a bank is represented on the board of directors or has a direct equity stake in the borrower

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<sup>14</sup> We thank Shisheng Qu at Moody's KMV for providing the EDF data.

firm, there is a lessened probability of default in the years following the loan initiation. Indeed, the coefficients of the `DUMMY_BANK_BOARD` and `DUMMY_BANK_INSIDER` variables are negative and significant at the 5% level. For example, there is a reduction of about 0.47% in the default probability from one-year prior to two-years after the loan initiation when the bank is represented on the board of directors. There is also some evidence of a reduction in the default probability following the loan when the bank has institutional holdings through affiliated money managers. These findings suggest that banks take less risk when they can potentially exert an influence on the borrower.

Overall, we find evidence that banks face less credit risk (in other words, a higher chance that the firm will repay) if banks have an influence on firm governance. This favors their main interest as creditors but may not be necessarily aligned with the interest of outside shareholders.

To see whether banks stand to gain at the expenses of equityholders, we test for overall effects on firm value. In Panel B of Table 12, we examine whether return on assets (ROA) is improved or reduced around the time of the loan, depending on whether loans are originated by a connected bank or a non-connected bank. Our evidence suggests there is no wealth destruction but that board and institutional holding links actually are associated with an improvement in performance. We then turn to shareholder value to see if gains to creditors come at the expense of shareholders. The evidence in Panel C of Table 12 shows no improvement in return on equity (ROE) accruing to shareholders (and in one of the specifications actually a net loss). Taken together with the EDF evidence, the results on firm performance favor the diversion and information extraction hypothesis.

## **7. Conclusion**

We provide evidence on the effects of bank-firm governance links in the syndicated loan market around the world. Using a large sample of loans, we examine the effects of banks' role in corporate governance through board seats, direct equity stakes, and indirect equity holdings via bank-affiliated institutional money managers. The evidence suggests that banks gain from lending relationships with firms if a bank has an influence in the firm's governance. We find that banks lend more and charge higher interest rate spreads, without significantly relaxing other loan terms, to firms in which they have control rights. The banks also gain by experiencing less credit risk subsequent to loan initiation. The combination of these ex-ante and ex-post patterns suggests



that relationship benefits accrue mainly to the lender. Yet we do not observe other value-adding services the banks may be providing the firm (such as investment banking or deposit-related services), and so cannot conclude whether the firm loses in overall terms.

Our findings illustrate the governance role played by universal banks in companies and the implications for financial intermediation. Few regulatory issues have been as controversial as the separation of investment and commercial banking. Unlike international regulations on bank capital requirements (Basel Accords), there is no similar international coordination on regulation of bank control over non-financial firms in the form of board seats, equity stakes, and indirect equity holdings through bank-affiliated asset management divisions. Our findings suggest possible conflicts of interest between the role of lender and the role of insider in the firm. This is especially important, given the current upheavals in the U.S. banking industry in the 2007-2008 credit crisis, and the decline of independent investment banks, and the move toward a smaller number of large universal banks.

We leave several issues for future research. One is that the special bank-firm governance links we document can provide uninterrupted access to funding and may allow firms to avoid financial distress during credit crunches. It might be the case, however, that corporations will actually be hurt if they are connected to banks that face difficulties. Explorations of these issues will provide us a more complete picture of the effects of banks involvement in firms' governance around the world.

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**Table 1**  
**Detail of Bank-Firm Governance and Lending Links – Selected Top Banks**

This table shows bank-firm governance links for 6 selected banks as of December 2002 and the subsequent loans arranged in the 2003-2006 period. Board of directors lists the top 10 industrial firms in which the bank has the highest number of common board members. Equity insider lists the top 10 direct equity positions (in percentage of shares outstanding) of each bank. Our tests consider only non-financial firms, so entries in italics denote firms that are not included in our sample. Institutional holdings lists the top 10 holdings (in percentage of shares outstanding for firms with market capitalization above \$10 billion) by institutional money managers (e.g., bank trusts, mutual funds) affiliated with bank groups. Loans as lead arranger lists the top firms for which the banking group acted as a lead arranger. Shaded entries indicate that the bank is a lender and there is a bank-firm governance link with the borrower firm.

Bank	Board of Directors		Equity Insider		Institutional Holdings		Loans as Lead Arranger (2003-2006)
	(nr. board members)	Firm name	(value, % shares outstanding)	Firm name	(value, % shares outstanding)	(nr. loans, amount loans, % financing)	
JP Morgan Chase (US)	Honeywell Intl (2)	-	United Technologies (\$1391 mi; 4.8%)	Walmart (10 Loans; \$23 bi; 83%)			
	Merck & Co (2)	-	Procter & Gamble (\$5157 mi; 4.6%)	E.ON (11 Loans; \$13 bi; 16%)			
	Motorola (2)	-	Exxon Mobil (\$10583 mi; 4.5%)	Constellation (22 Loans; \$11 bi; 64%)			
	Exxon Mobil (1)	-	Target (\$1132 mi; 4.2%)	IBM (3 Loans; \$11 bi; 50%)			
	Alcoa (1)	-	Kraft Foods (\$887 mi; 4.1%)	Verizon (4 Loans; \$11 bi; 50%)			
	Pfizer (2)	-	Automatic Data (\$928 mi; 3.9%)	Exxon Mobil (4 Loans; \$10 bi; 30%)			
	Black & Decker (1)	-	Conocophillips (\$1258 mi; 3.8%)	Bellsouth (6 Loans; \$10 bi; 85%)			
	Kimberly-Clark (1)	-	Wyeth (\$1860 mi; 3.8%)	Ford Motor (3 Loans; \$10 bi; 30%)			
	Procter & Gamble (1)	-	Pfizer (\$6754 mi; 3.6%)	Automatic Data (7 Loans; \$10 bi; 53%)			
	Verizon (1)	-	IBM (\$4680 mi; 3.6%)	Boeing (11 Loans; \$8 bi; 50%)			
Royal Bank of Scotland (UK)	Scottish Inv Trust (2)	-	Illinois Tool Works (\$37 mi; 0.2%)	Vodafone (6 Loans; \$10 bi; 10%)			
	<i>Banco Santander (1)</i>	-	Sysco (\$34 mi; 0.2%)	Conocophillips (5 Loans; \$9 bi; 23%)			
	BP (1)	-	Costco Wholesale (\$21 mi; 0.2%)	E.ON (2 Loans; \$8 bi; 2%)			
	BT (1)	-	TJX Co (\$11 mi; 0.1%)	Gala (33 Loans; \$5 bi; 33%)			
	<i>Mastercard (1)</i>	-	Automatic Data (\$22 mi; 0.1%)	Telefonica (9 Loans; \$4 bi; 5%)			
	<i>Old Mutual (1)</i>	-	Gannett Co (\$16 mi; 0.1%)	Linde (4 Loans; \$4 bi; 11%)			
	Scottish & Newcastle (1)	-	Applied Materials (\$17 mi; 0.1%)	Supervalu (3 Loans; \$4 bi; 42%)			
	Trinity Mirror (1)	-	Medtronic (\$41 mi; 0.1%)	Grupo Ferrovial (11 Loans; \$3 bi; 9%)			
	Veolia Environnement (1)	-	Stryker (\$9 mi; 0.1%)	Pirelli (9 Loans; \$3 bi; 7%)			
	Yell Group (1)	-	Avon (\$8 mi; 0.1%)	Xstrata (9 Loans; \$3 bi; 16%)			
Deutsche Bank (Germany)	E.ON (3)	-	Bristol-Myers Squibb (\$2642 mi; 5.9%)	E.ON (7 Loans; \$12 bi; 10%)			
	BASF (2)	-	Altria Group (\$4380 mi; 5.2%)	VNU (9 Loans; \$7 bi; 18%)			
	Bayer (2)	-	Bayer (\$680 mi; 4.4%)	Linde (8 Loans; \$5 bi; 23%)			
	Glaxosmithkline (2)	-	United Technologies (\$862 mi; 3%)	Owens-Illinois (20 Loans; \$4 bi; 58%)			
	Henkel (2)	-	International Paper (\$494 mi; 2.9%)	Xstrata (13 Loans; \$4 bi; 23%)			
	Linde (2)	-	Baxter International (\$490 mi; 2.9%)	Enel (10 Loans; \$4 bi; 17%)			
	Siemens (2)	-	Conocophillips (\$915 mi; 2.8%)	Celanese (12 Loans; \$4 bi; 100%)			
	Daimlerchrysler (1)	-	BASF (\$607 mi; 2.8%)	Telefonica (9 Loans; \$4 bi; 5%)			
	Saint Gobain (1)	-	Boston Scientific (\$454 mi; 2.6%)	Saint Gobain (3 Loans; \$3 bi; 14%)			
	Tui (1)	-	UPS (\$724 mi; 2.4%)	Invensys (12 Loans; \$3 bi; 37%)			

Table 1: Continued

Bank	Bank-Firm Governance Link (December 2002)		Loans as Lead Arranger (2003-2006)	
	Board of Directors	Equity Insider	Institutional Holdings	Firm name
	(nr. board members)	(value, % shares outstanding)	(value, % shares outstanding)	(nr. loans, amount loans, % financing)
Société Generale (France)	Total (3) Geodis (2) Vivendi (2) Alstom (1) Altadis (1) Danone (1) Pernod Ricard (1) Peugeot (1) Schlumberger (1) Veolia (1)	Banque Paribas (\$133 mi; 76.4%) Boursorama (\$49 mi; 20.0%) Orpea (\$18 mi; 7.7%) Komercni Banka (\$129 mi; 4.9%) Groupe Gascogne (\$7 mi; 4.7%) Manitou (\$25 mi; 4.5%) Peugeot (\$300 mi; 2.8%) Accor (\$110 mi; 1.8%) Total (\$650 mi; 0.7%)	Suez (\$90 mi; 0.3%) Vivendi (\$84 mi; 0.5%) BNP Paribas (\$152 mi; 0.4%) Saint Gobain (\$39 mi; 0.4%) Lafarge (\$39 mi; 0.4%) Carrefour (\$106 mi; 0.3%) Danone (\$62 mi; 0.3%) Peugeot (\$33 mi; 0.3%) France Telecom (\$63 mi; 0.3%) Bayer (\$40 mi; 0.3%)	Vivendi (11 Loans; \$7 bi; 13%) Sanofi-Aventis (2 Loans; \$6 bi; 20%) Gas Natural (3 Loans; \$5 bi; 17%) Merck & Co (5 Loans; \$5 bi; 35%) Telefonica (9 Loans; \$4 bi; 5%) Arcelor (9 Loans; \$3 bi; 7%) Volkswagen (2 Loans; \$3 bi; 6%) Baden-Wuert (6 Loans; \$3 bi; 25%) RWE (4 Loans; \$2 bi; 16%) BMW (4 Loans; \$2 bi; 14%)
ING Bank (Netherlands)	Akzo Nobel (2) BHP Billiton (2) Ahold (1) CSM (1) DSM (1) Getronics (1) Hormel Foods (1) Oce (1) TCF Financial (1) Tessenderlo Chemie (1)	Eurocomm (\$267 mi; 44.5%) Numico (\$190 mi; 9.5%) ING Bank Slaski (\$104 mi; 8.0%) Nutreco (\$45 mi; 7.3%) CSM (\$116 mi; 6.7%) Vopak (\$41 mi; 5.3%) Wolters Kluwer (\$258 mi; 5.2%) Kookmin Bank (\$463 mi; 4.0%) Unilever (\$738 mi; 2.1%) ABN AMRO (\$196 mi; 0.8%)	Inbev Sa (\$144 mi; 1.4%) Electrabel (\$181 mi; 1.4%) Unilever (\$390 mi; 1.1%) Philips Electronics (\$250 mi; 1.1%) Ahold (\$121 mi; 1%) Royal Dutch Petroleum (\$947 mi; 1%) KPN (\$156 mi; 1%) Heineken (\$79 mi; 0.5%) Air Liquide (\$55 mi; 0.4%) Suez (\$65 mi; 0.4%)	Arcelor (3 Loans; \$1 bi; 2%) France Telecom (8 Loans; \$1 bi; 4%) Ahold (7 Loans; \$1 bi, 8%) Kabel New Media (6 Loans; \$1 bi, 13%) Liberty (18 Loans; \$1 bi; 20%) Pirelli (3 Loans; \$0 bi; 2%) Cemex (5 Loans; \$0 bi; 3%) VNU (5 Loans; \$0 bi; 10%) Peugeot (2 Loans; \$0 bi; 6%) Charbonnages (2 Loans; \$0 bi; 20%)
Banco Bilbao Vizcaya Argentaria (Spain)	Telefonica SA (7) Repsol YPF SA (4) Acerinox SA (2) Iberdrola SA (2) Acciona SA (1) Gas Natural SDG SA (1) Iberia (1) Lafarge (1) Prisa SA (1) Sogecable SA (1)	Tubos Reunidos (\$106 mi; 72.6%) BBVA Banco Frances (\$173 mi; 42.4%) BNL (\$355 mi; 14.9%) Iberia (\$125 mi; 9.3%) Cementos Lemona (\$16 mi; 6.2%) Iberdrola (\$114 mi; 0.9%) Repsol YPF (\$131 mi; 0.8%) Telefonica (\$266 mi; 0.6%)	Endesa (\$58 mi; 0.5%) Iberdrola (\$51 mi; 0.4%) Repsol-YPF (\$65 mi; 0.4%) Telefonica (\$135 mi; 0.3%) Lafarge (\$19 mi; 0.2%) Autostrade (\$17 mi; 0.2%) BNP Paribas (\$48 mi; 0.1%) Peugeot (\$12 mi; 0.1%) Carrefour (\$30 mi; 0.1%) Danone (\$16 mi; 0.1%)	Arcelor (5 Loans; \$2 bi; 4%) Hochtief (4 Loans; \$2 bi; 26%) Telefonos Mexico (7 Loans; \$1 bi, 24%) Vivendi (6 Loans; \$1 bi, 7%) Cemex (16 Loans; \$1 bi; 10%) Telefonica (4 Loans; \$1 bi; 2%) France Telecom (4 Loans; \$1 bi; 2%) Endesa (14 Loans; \$1 bi; 10%) Grupo Ferrovial (15 Loans; \$1 bi; 13%) Carrefour (3 Loans; \$1 bi; 12%)

**Table 2**  
**Summary Statistics**

This table presents summary statistics on dataset of 49,220 bank-firm (i, j) pairs formed by combining i = 1, ..., 20 top banks in terms of lending activity in each country with j = 1, ..., 2,461 firms with syndicated loans in LPC/DealScan for which we are able to obtain accounting and financial information on the borrower firm in Datastream/Worldscope. Financial borrowers (SIC 6000-6999) are excluded. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix. Variables are winsorized at the bottom and top 1% level. Panel A offers summary statistics on sample variables. Panel B provides details on lending and bank-firm governance links for the major countries in our sample. Panel C provides details on the top 30 banks in terms of lending activity.

<b>Panel A: Summary Statistics of Sample Variables</b>					
	Mean	Std Dev	Min	Max	Obs
<b>Loan Variables</b>					
DUMMY_LOAN	0.134	0.341	0.000	1.000	49,220
NUMBER_LOANS	0.379	1.330	0.000	33.000	49,220
AMOUNT_LOANS	84	503	0	26,000	49,173
SHARE_LOANS	0.050	0.168	0.000	1.000	44,220
<b>Bank-Firm Governance Link Variables</b>					
DUMMY_BANK_INSIDER	0.002	0.040	0.000	1.000	49,220
BANK_INSIDER	0.000	0.003	0.000	0.320	47,520
DUMMY_BANK_BOARD	0.017	0.129	0.000	1.000	49,220
NUMBER_BANK_BOARD	0.032	0.283	0.000	12.000	49,220
TENURE_BANK_BOARD	0.038	0.550	0.000	28.000	49,220
DUMMY_BANK_INSTHOLD	0.287	0.452	0.000	1.000	49,220
BANK_INSTHOLD	0.004	0.019	0.000	1.000	47,520
<b>Bank-Firm Lending Link Variables</b>					
DUMMY_PAST_LOAN	0.019	0.137	0.000	1.000	49,220
DUMMY_SAME_REGION	0.443	0.497	0.000	1.000	49,220
BANK_EUROPE_DUMMY	0.465	0.499	0.000	1.000	49,220
<b>Borrower Firm Variables</b>					
SIZE	4,583	9,767	8	62,200	44,560
TOTAL_DEBT	0.279	0.202	0.000	0.940	49,220
SHORT_DEBT	0.256	0.270	0.000	1.000	42,800
TANG	0.342	0.257	0.000	0.931	49,220
STDEV	0.469	0.295	0.000	1.806	47,000
ADR	0.074	0.262	0.000	1.000	49,020
MSCI	0.276	0.447	0.000	1.000	48,400
<b>Borrower Firm Country Variables</b>					
CREDITOR_RIGHTS	1.573	1.103	0.000	4.000	49,060
PROPERTY_RIGHTS	27.856	1.880	21.611	29.000	48,680
COMMON_LAW	0.724	0.447	0.000	1.000	49,060
GDP	29,423	10,115	471	48,269	47,280
MARKETCAP_GDP	1.059	0.411	0.092	2.980	49,060
BANKING_RESTRICTIONS	10.112	2.717	5.000	14.000	47,200
<b>Bank Variables</b>					
RANK_BANK	33.774	49.886	1.000	444.000	40,664
BANK_LOG_SIZE	49,300	44,700	1,472	188,000	37,282
BANK_ROE	10.944	6.384	-3.840	21.280	37,449
BANK_PUBLICLY_LISTED	0.866	0.340	0.000	1.000	49,220

Table 2: Continued

Panel B: Summary Statistics by Country												
Country	Nr. of firms	Nr. of bank-firm pairs	Nr. of bank-firm pairs with loan	Nr. of loans for bank-firm pairs	Amount of loans (\$ bin)	Nr. of bank-firm pairs with bank equity stake	Nr. of bank-firm pairs with bank equity stake & loan	Nr. of bank-firm pairs with banker on board	Nr. of bank-firm pairs with banker on board & loan	Nr. of bank-firm pairs with institutional holdings	Nr. of bank-firm pairs with institutional holdings & loan	% of firm-bank pairs
Australia	58	1,160	200	636	54.7	0	0	48	21	94	18	
Austria	6	120	31	41	4.8	0	0	3	2	31	13	
Belgium	13	260	40	67	15.5	1	1	9	8	50	22	
Canada	78	1,560	116	289	74.9	0	0	39	10	351	41	
Denmark	9	180	45	148	24.3	0	0	2	1	47	20	
Finland	24	480	105	144	28.4	5	3	12	7	139	55	
France	98	1,960	490	1,490	305.0	3	3	89	56	573	263	
Germany	73	1,460	319	1,097	373.0	10	10	84	49	376	154	
Italy	28	560	124	561	118.0	2	1	30	16	127	51	
Luxembourg	3	60	28	152	52.6	0	0	2	2	15	15	
Netherlands	45	900	214	542	78.2	12	7	48	34	248	93	
Norway	23	460	77	150	19.7	2	0	5	3	97	32	
Spain	40	800	236	926	143.0	9	9	19	18	271	126	
Sweden	39	780	174	310	41.1	0	0	29	22	260	88	
UK	186	3,720	693	1,948	248.0	0	0	89	39	998	269	
US	1,319	26,380	2,198	5,892	1,980.0	0	0	322	94	9,815	1,163	
Other	419	8,380	1,507	4,253	556.0	36	17	0	0	647	134	
Total	2,461	49,220	6,597	18,646	4,120.0	80	51	830	382	14,139	2,557	18%
% of firm-bank pairs			13%				64%		46%			

**Table 2: Continued**

**Panel C.: Summary Statistics by Bank (Top 30 Banks in Loan Volume)**

Bankname	Rank The Banker	Rank in loan volume (home country)	Country	Nr. of firms with loans	Nr. of loans	Amount of loans (\$ bn)	Nr. of bank- firm pairs with bank equity stake	Nr. of bank- firm pairs with bank equity stake & loan	Nr. of bank- firm pairs with banker on board	Nr. of bank- firm pairs with banker on board & loan	Nr. of bank- firm pairs with institutional holdings	Nr. of bank-firm pairs with institutional holdings & loan
JPMorgan Chase & Co.	2	1	US	694	2,060	783	0	0	42	1,070	437	
Citigroup	1	2	US	574	1,688	607	2	1	55	650	186	
Bank of America	4	3	US	540	1,347	372	0	0	43	800	323	
Deutsche Bank	21	2	Germany	231	772	191	2	1	59	1,019	129	
BNP Paribas	10	1	France	310	815	168	1	1	27	19	137	
Royal Bank of Scotland	6	1	UK	277	1,018	164	0	0	9	97	2	
Barclays Bank	13	2	UK	247	718	145	0	0	20	1,117	144	
ABN AMRO Holding	20	1	Netherlands	270	718	115	0	0	35	371	84	
HSBC Holdings	3	3	UK	242	697	111	0	0	20	244	115	
Credit Suisse Group	27	6	Switzerland	126	404	108	0	0	18	700	48	
Wachovia	18	4	US	184	462	104	0	0	15	637	98	
Societe Generale	23	3	France	180	551	87	2	2	26	19	186	
Credit Agricole	5	2	France	228	698	87	0	0	15	14	183	
Merrill Lynch & Co	115	12	US	47	129	56	0	0	40	2	27	
Allianz		4	Germany	91	288	54	8	8	33	15	195	
UBS	19	16	Switzerland	78	167	44	0	0	7	2	687	
Morgan Stanley		16	US	58	156	37	0	0	40	4	792	
Goldman Sachs Group		8	US	61	181	34	0	0	20	2	761	
Commerzbank	45	7	Germany	40	141	33	1	1	6	4	52	
UniCredito Italiano	39	1	Italy	62	222	33	0	0	15	8	96	
Lehman Brothers Holdings		9	US	37	135	30	0	0	9	1	445	
ING Group	12	1	Spain	43	201	30	0	0	5	5	39	
Banco Santander Central Hispano	17	2	Netherlands	120	306	29	0	0	14	10	164	
Banco Bilbao Vizcaya Argentaria	33	5	Spain	68	206	28	3	3	12	10	51	
SunTrust Banks	61	19	US	55	122	26	0	0	16	1	383	
Mitsubishi UFJ Financial Group	7	3	Japan	69	170	21	8	4	0	0	11	
Wells Fargo & Co.	16	14	US	61	121	21	0	0	36	1	525	
Fortis	34	1	Belgium	52	122	20	3	1	11	8	108	
WestLB	111	15	Germany	77	189	19	0	0	0	0	71	
Banque Federale des Banques Pop.	36	6	France	55	144	19	0	0	9	7	54	

**Table 3**  
**Bank-Firm Governance Links and Lead Arranger Bank Choice**

This table presents results for a logit model of whether the existence of a bank-firm (i, j) link (through a common board member, an equity insider position or institutional holdings) in December 2002 affects the probability that firm j chooses bank i as lead arranger in the syndicated loan market. The dependent variable is DUMMY\_LOAN, which equals one if bank i acted as lead arranger in at least one loan facility to firm j over the sample period from 2003 to 2006. Financial borrowers (SIC 6000-6999) are excluded. Definitions of variables are detailed in the Appendix. Robust t-statistics adjusted for firm-level clustering are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Bank-Firm Governance Link Variables</b>											
DUMMY_BANK_INSIDER	2.735 (7.16)	1.664 (4.46)									1.333 (3.50)
BANK_INSIDER			17.096 (2.12)								
DUMMY_BANK_BOARD				1.245 (12.28)	1.364 (14.71)						1.135 (12.09)
NUMBER_BANK_BOARD						0.828 (11.22)					
TENURE_BANK_BOARD							0.254 (8.82)				
DUMMY_BANK_INSTHOLD								0.572 (11.62)	0.712 (17.54)		0.652 (16.06)
BANK_INSTHOLD										4.625 (2.10)	
<b>Bank-Firm Lending Link Variables</b>											
DUMMY_PAST_LOAN		2.083 (22.50)	2.111 (22.32)		2.057 (21.71)	2.052 (21.73)	2.072 (22.30)		2.020 (21.15)	2.107 (22.25)	1.998 (20.52)
DUMMY_SAME_REGION		1.031 (23.79)	1.039 (23.53)		0.996 (22.65)	0.997 (22.70)	1.021 (23.39)		0.963 (21.69)	1.039 (23.43)	0.926 (20.77)
BANK_EUROPE_DUMMY		0.205 (0.14)	0.282 (0.21)		0.372 (0.29)	0.348 (0.27)	0.397 (0.31)		0.385 (0.30)	0.389 (0.30)	0.452 (0.31)
<b>Bank Variables</b>											
RANK_BANK		-0.025 (-15.9)	-0.025 (-15.63)		-0.025 (-15.88)	-0.026 (-15.82)	-0.025 (-15.8)		-0.025 (-15.57)	-0.025 (-15.56)	-0.023 (-15.92)
BANK_SIZE (log)		-0.139 (-3.18)	-0.138 (-3.06)		-0.138 (-3.14)	-0.140 (-3.15)	-0.132 (-2.98)		-0.075 (-1.78)	-0.135 (-3.02)	-0.081 (-1.91)
BANK_ROE		-0.001 (-0.13)	0.000 (-0.08)		-0.001 (-0.27)	-0.001 (-0.20)	-0.002 (-0.41)		-0.004 (-0.88)	0.000 (0.10)	-0.004 (-0.92)
<b>Borrower firm dummies</b>											
Borrower firm industry dummies	Yes	No	No	Yes	No	Yes	No	Yes	No	No	No
Borrower firm country dummies	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Bank dummies	Yes	No	No	Yes	No	No	No	Yes	No	No	No
Bank country dummies	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	44,154	37,027	35,723	44,154	37,027	37,027	37,027	44,154	37,027	35,723	37,027



**Table 4**  
**Bank-Firm Governance Links and Lead Arranger Bank Choice: Robustness**

This table presents results for a logit model of a bank-firm (i, j) link (through a common board member, an equity insider position or institutional holdings) in December 2002 affects the probability that firm j chooses bank i as lead arranger in the syndicated loan market over the sample period from 2003 to 2006. The dependent variables are alternatively DUMMY\_LOAN, which equals one if bank i acted as lead arranger in at least one loan facility to firm j, NUMBER\_LOANS which equals the number of loans from bank i to firm j, AMOUNT\_LOANS, which equals the amount of loans from bank i to firm j, and SHARE\_LOANS, which equals the share that loans from bank i to firm j represent of all loans of firm j. Financial borrowers (SIC 6000-6999) are excluded. Definitions of variables are detailed in the Appendix. Robust t-statistics adjusted for firm-level clustering are in parentheses.

	Interactions			Robustness			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	DUMMY_	DUMMY_	DUMMY_	DUMMY_	NUMBER_	AMOUNT_	SHARE_
	LOAN	LOAN	LOAN	LOAN	LOANS (log)	LOANS (log)	LOANS
Estimation method:	Logit	Logit	Logit	Logit	OLS	OLS	Tobit
Sample of banks:	Top 20	Top 20	Top 20	Top 100	Top 20	Top 20	Top 20
<b>Bank-Firm Governance Link Variables</b>							
DUMMY_BANK_INSIDER	1.686 (1.16)			1.647 (3.93)	1.016 (2.45)	5.117 (3.93)	0.377 (3.16)
DUMMY_BANK_BOARD		3.057 (8.16)		1.325 (13.61)	0.747 (8.11)	4.729 (12.21)	0.349 (11.13)
DUMMY_BANK_INSTHOLD			1.109 (6.75)	0.724 (14.91)	0.201 (8.57)	1.601 (16.26)	0.107 (8.74)
<b>Borrower Firm Variables</b>							
ADR	0.397 (3.71)	0.399 (3.69)	0.412 (3.07)				
MSCI	0.604 (10.49)	0.576 (9.83)	0.518 (6.25)				
<b>Borrower Firm Country Variables</b>							
CREDITOR_RIGHTS	0.056 (1.91)	0.053 (1.84)	0.064 (2.21)				
PROPERTY_RIGHTS	-0.022 (-1.30)	-0.025 (-1.50)	-0.033 (-1.97)				
COMMON_LAW	-0.290 (-3.28)	-0.272 (-3.1)	-0.341 (-3.77)				
GDPC (log)	-0.352 (-6.11)	-0.362 (-6.32)	-0.406 (-7.02)				
MARKETCAP_GDP	0.227 (2.25)	0.250 (2.49)	0.361 (3.61)				
<b>Interactions</b>							
BANK_FIRM_GOV_LINK x ADR	-0.788 (-0.76)	-0.487 (-1.92)	-0.159 (-1.96)				
BANK_FIRM_GOV_LINK x MSCI	0.237 (0.27)	-0.700 (-3.39)	-0.183 (-1.99)				
BANK_FIRM_GOV_LINK x MARKETCAP_GDP	-0.209 (-0.14)	-1.352 (-4.00)	-0.491 (-3.55)				
Bank-firm lending link variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm country variables	No	No	No	Yes	Yes	Yes	No
Bank variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank country dummies	Yes	Yes	Yes	Yes	Yes	Yes	No
Observations	35,076	35,076	35,076	144,485	37,282	37,244	33,689
R-squared					0.09	0.14	

**Table 5**  
**Bank-Firm Governance Links and Lead Arranger Bank Choice: Endogeneity**

Panel A presents the results of a Heckman two-stage treatment effects model that corrects for the endogenous selection bias of a bank-firm governance link. The first stage is a probit regression predicting the existence of bank-firm governance link, and the second stage is a regression where the dependent variable is the number of loans for each bank-firm pair (NUMBER\_LOANS). Panel B presents results of a logit regression of the probability that firm *j* chooses bank *i* as lead arranger in year *t* on the changes on the bank presence in firm's board of directors: whether the bank has entered the firm's board between year *t-1* and year *t* (BANK\_ENTERS\_BOARD<sub>*t-1,t*</sub>); and whether a banker has entered the firm's board in the following year (BANK\_ENTERS\_BOARD<sub>*t,t+1*</sub>). Robust t-statistics adjusted for firm-level clustering are in parentheses.

<b>Panel A: Treatment Effects Model</b>			
Second Stage Regression: NUMBER_LOANS			
Bank-Firm Governance Link Variables			
DUMMY_BANK_INSIDER	19.283 (14.91)		
DUMMY_BANK_BOARD		4.122 (21.22)	
DUMMY_BANK_INSTHOLD			0.669 (15.96)
Heckman's Lambda	-5.891 (-14.12)	-1.542 (-18.04)	-0.304 (-11.16)
Bank-firm lending link variables	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes
Borrower firm country variables	Yes	Yes	Yes
Bank variables	Yes	Yes	Yes
Bank country dummies	Yes	Yes	Yes
Observations	29,359	29,359	29,359
First Stage Regression: BANK_FIRM_LINK			
	DUMMY_ BANK_ INSIDER	DUMMY_ BANK_ BOARD	DUMMY_ BANK_ INSTHOLD
SIZE (log)	0.1644 (4.71)	0.3106 (23.52)	0.3367 (59.98)
TOTAL_DEBT	0.5993 (1.86)	-0.3175 (-2.56)	-0.7182 (-14.45)
SHORT_DEBT	0.0236 (-0.10)	-0.2636 (-3.08)	-0.7033 (-20.43)
TANG	-0.0453 (-0.17)	-0.2051 (-2.11)	-0.3425 (-9.39)
STDEV	-0.2291 (-0.91)	-0.1718 (-1.86)	-0.5443 (-14.90)
BANKING_RESTRICTIONS	-0.0556 (-3.23)	-0.0682 (-10.82)	0.0374 (11.75)
BANK_PUBLICLY_LISTED	3.9273 (6.20)	0.2374 (1.97)	0.3560 (6.18)
Borrower firm industry dummies	Yes	Yes	Yes
Borrower firm country variables	Yes	Yes	Yes
Panel B: Changes			
Bank-Firm Governance Link Variables			
DUMMY_BANK_BOARD <sub><i>t-1</i></sub>	0.852 (8.63)	0.593 (5.74)	0.649 (4.98)
BANK_ENTERS_BOARD <sub><i>t-1,t</i></sub>	0.681 (3.25)		0.709 (2.79)
BANK_ENTERS_BOARD <sub><i>t,t+1</i></sub>		0.3226 (1.14)	0.3105 (1.04)
Bank-firm lending link variables	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes
Borrower firm country variables	Yes	Yes	Yes
Bank variables	Yes	Yes	Yes
Bank country dummies	Yes	Yes	Yes
Observations	124,213	124,241	123,774

**Table 6**  
**Summary Statistics of Loan-Level Sample**

This table presents summary statistics on the dataset of syndicated loan facilities in LPC/DealScan for which we are able to obtain accounting and financial information on the borrower firm in Datastream/Worldscope. Financial borrowers (SIC 6000-6999) are excluded. Variables are winsorized at the bottom and top 1% level. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix.

	Mean	Median	Std Dev	Min	Max	Obs
<b>Loan Variables</b>						
ALL_SPREAD	118.952	75.000	118.909	15.000	900.000	15,630
RATING	2.170	2.000	2.282	0.000	6.000	15,630
UNRATED	0.494	0.000	0.500	0.000	1.000	15,630
AMOUNT_LOAN	943	382	1,860	2	24,000	15,630
SECURED	0.218	0.000	0.413	0.000	1.000	15,630
MATURITY	4.811	5.000	2.418	0.750	18.000	15,630
CORPURPOSES	0.247	0.000	0.432	0.000	1.000	15,630
REFINANCE	0.317	0.000	0.465	0.000	1.000	15,630
TAKEOVER	0.077	0.000	0.267	0.000	1.000	15,630
WORKCAPITAL	0.094	0.000	0.292	0.000	1.000	15,630
CREDITLINE	0.505	1.000	0.500	0.000	1.000	15,630
TERMLOAN	0.353	0.000	0.478	0.000	1.000	15,630
BRIDGELOAN	0.013	0.000	0.112	0.000	1.000	15,630
DIVRESTRICT	0.188	0.000	0.391	0.000	1.000	15,630
SENIOR	0.988	1.000	0.108	0.000	1.000	15,630
GUARANTOR	0.091	0.000	0.287	0.000	1.000	15,630
SPONSOR	0.102	0.000	0.303	0.000	1.000	15,630
LENDERS	14.727	13.000	9.633	1.000	44.000	15,630
SYNDICATED	0.877	1.000	0.328	0.000	1.000	15,630
LEAD_ARRANGERS	5.988	4.000	5.472	1.000	24.000	15,630
EDF_CHG_P1_M1	-0.394	-0.043	3.961	-34.989	34.857	12,805
EDF_CHG_P2_M1	-0.565	-0.074	4.721	-34.793	34.851	8,969
ROA_CHG_P1_M1	0.097	0.075	0.542	-4.669	4.303	13,109
ROA_CHG_P2_M1	0.156	0.127	0.596	-6.117	4.181	9,278
ROE_CHG_P1_M1	1.160	1.133	18.620	-46.660	43.777	13,256
ROE_CHG_P2_M1	6.286	2.813	24.932	-42.753	82.004	9,394
<b>Bank-Firm Governance Link Variables</b>						
DUMMY_BANK_INSIDER	0.007	0.000	0.082	0.000	1.000	15,630
BANK_INSIDER	0.001	0.000	0.008	0.000	0.270	15,630
DUMMY_BANK_BOARD	0.041	0.000	0.198	0.000	1.000	15,630
NUMBER_BANK_BOARD	0.056	0.000	0.326	0.000	9.000	15,630
DUMMY_BANK_INSTHOLD	0.096	0.000	0.294	0.000	1.000	15,630
BANK_INSTHOLDINGS	0.007	0.000	0.053	0.000	1.000	15,630
<b>Bank-Firm Lending Link Variables</b>						
DUMMY_PAST_LOAN	0.283	0.000	0.450	0.000	1.000	15,630
DUMMY_SAME_REGION	0.709	1.000	0.454	0.000	1.000	15,630
DUMMY_BANK_EUROPE	0.524	1.000	0.499	0.000	1.000	15,630
<b>Borrower Firm Variables</b>						
SIZE	10,800	3,798	16,900	7	94,400	15,630
TOTAL_DEBT	0.338	0.310	0.198	0.000	1.243	15,630
SHORT_DEBT	0.245	0.182	0.231	0.000	1.000	15,630
TANG	0.367	0.343	0.224	0.006	0.901	15,630
R&D	0.009	0.000	0.020	0.000	0.108	15,630
MB	2.273	1.872	1.583	0.017	6.395	15,630
PROFIT	0.050	0.049	0.084	-0.168	0.225	15,630
INTCOV	10.557	7.000	10.632	0.687	44.499	15,630
NWCAPITAL	0.681	0.378	0.894	-0.113	3.597	15,630
STDEV	0.350	0.292	0.239	0.000	1.759	15,630
PAYOUT	0.604	0.228	1.524	-2.327	10.588	15,630
ADR	0.524	1.000	0.499	0.000	1.000	15,609
MSCI	0.198	0.000	0.399	0.000	1.000	15,630
<b>Bank Variables</b>						
BANK_PUBLICLY_LISTED	0.851	1.000	0.356	0.000	1.000	15,630
<b>Borrower Firm Country Variables</b>						
CREDITOR_RIGHT	0.505	1.000	0.500	0.000	1.000	15,630
PROPERTY_RIGHTS	26.202	26.667	1.611	20.889	30.000	15,172
COMMON_LAW	0.535	1.000	0.499	0.000	1.000	15,576
GDPC	25,892	26,413	10,587	471	48,269	15,576
MARKETCAP_GDP	0.974	0.989	0.465	0.136	2.980	15,630
BANKING_RESTRICTIONS	9.086	9.000	2.888	5.000	13.000	14,710

**Table 7**  
**Bank-Firm Governance Links and Loan Spread**

This table presents results for regression of loan spread (ALL\_SPREAD) on a bank-firm governance link (through a common board member, an equity insider position or institutional holdings). Financial borrowers (SIC 6000-6999) are excluded. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix. Robust t-statistics adjusted for deal-level clustering are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Bank-Firm Governance Link Variables</b>								
DUMMY_BANK_INSIDER	-7.883 (-0.83)							-10.382 (-1.05)
BANK_INSIDER		26.697 (0.17)						
DUMMY_BANK_BOARD			8.995 (2.39)					7.686 (1.98)
NUMBER_BANK_BOARD				4.123 (2.26)				
TENURE_BANK_BOARD					0.765 (2.35)			
DUMMY_BANK_INSTHOLD						11.884 (3.61)		11.412 (3.43)
BANK_INSTHOLDINGS							68.101 (2.05)	
<b>Bank-Firm Lending Link Variables</b>								
DUMMY_PAST_LOAN	0.686 (0.32)	0.640 (0.30)	0.483 (0.22)	0.528 (0.25)	0.551 (0.39)	0.439 (0.20)	-1.790 (-0.83)	0.354 (0.17)
DUMMY_SAME_REGION	0.658 (0.22)	0.552 (0.18)	0.118 (0.04)	0.273 (0.09)	0.286 (0.15)	0.070 (0.02)	-5.566 (-2.46)	-0.181 (-0.06)
DUMMY_BANK_EUROPE	14.137 (0.60)	14.059 (0.60)	14.973 (0.64)	14.492 (0.62)	-6.828 (-1.23)	14.010 (0.60)	-2.806 (-1.19)	14.874 (0.64)
<b>Borrower Firm Variables</b>								
SIZE (log)	-6.974 (-4.44)	-6.968 (-4.43)	-7.082 (-4.50)	-7.044 (-4.47)	-7.098 (-11.83)	-6.900 (-4.40)	-6.862 (-4.08)	-6.999 (-4.45)
TOTAL_DEBT	38.953 (1.77)	38.915 (1.77)	39.356 (1.79)	39.270 (1.79)	38.765 (7.09)	39.242 (1.79)	37.837 (1.74)	39.671 (1.81)
SHORT_DEBT	19.295 (1.67)	19.290 (1.67)	19.181 (1.66)	19.169 (1.66)	19.287 (5.71)	19.198 (1.67)	21.698 (1.87)	19.120 (1.66)
TANG	-7.546 (-0.85)	-7.592 (-0.85)	-7.602 (-0.86)	-7.612 (-0.86)	-7.470 (-2.16)	-7.445 (-0.84)	-2.436 (-0.26)	-7.402 (-0.84)
R&D	54.015 (0.60)	52.251 (0.58)	48.439 (0.54)	49.640 (0.55)	50.635 (1.29)	48.727 (0.54)	29.877 (0.33)	47.083 (0.52)
MB	-2.399 (-2.16)	-2.384 (-2.15)	-2.411 (-2.17)	-2.404 (-2.17)	-2.367 (-5.65)	-2.307 (-2.08)	-1.878 (-1.68)	-2.344 (-2.12)
PROFIT	-77.854 (-2.49)	-77.815 (-2.49)	-77.477 (-2.48)	-77.537 (-2.48)	-78.831 (-6.58)	-79.824 (-2.56)	-70.005 (-2.27)	-79.505 (-2.56)
INTCOV	-0.075 (-0.34)	-0.075 (-0.35)	-0.071 (-0.33)	-0.071 (-0.33)	-0.071 (-0.90)	-0.063 (-0.29)	-0.104 (-0.45)	-0.058 (-0.27)
NWCAPITAL	-4.245 (-1.90)	-4.234 (-1.89)	-4.197 (-1.87)	-4.201 (-1.87)	-4.320 (-4.58)	-4.208 (-1.89)	-3.489 (-1.49)	-4.181 (-1.87)
STDEV	88.941 (7.02)	89.033 (7.04)	88.679 (7.01)	88.718 (7.02)	89.066 (18.01)	87.389 (6.92)	90.019 (6.49)	87.044 (6.88)
PAYOUT	-0.829 (-1.27)	-0.819 (-1.25)	-0.834 (-1.27)	-0.834 (-1.28)	-0.844 (-2.35)	-0.809 (-1.24)	-0.853 (-1.27)	-0.831 (-1.27)

**Table 7: continued**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Loan Variables								
RATING	34.073 (13.80)	34.120 (13.81)	34.200 (13.83)	34.211 (13.84)	34.164 (28.21)	34.118 (13.82)	36.478 (14.68)	34.139 (13.82)
UNRATED	160.457 (15.04)	160.669 (15.05)	161.168 (15.07)	161.169 (15.07)	160.963 (33.01)	160.553 (15.08)	168.276 (15.35)	160.767 (15.07)
AMOUNT_LOAN	-3.463 (-1.98)	-3.465 (-1.98)	-3.526 (-2.01)	-3.520 (-2.01)	-3.493 (-4.60)	-3.532 (-2.02)	-2.245 (-1.17)	-3.583 (-2.04)
SECURED	34.623 (6.78)	34.606 (6.77)	34.550 (6.76)	34.564 (6.76)	34.389 (16.65)	34.345 (6.73)	34.535 (6.59)	34.317 (6.73)
LOG_MATURITY	6.125 (1.49)	6.159 (1.50)	6.186 (1.51)	6.202 (1.51)	6.211 (3.55)	6.360 (1.56)	6.762 (1.63)	6.339 (1.55)
DIVRESTRICT	-1.967 (-0.41)	-1.976 (-0.41)	-1.872 (-0.39)	-1.937 (-0.40)	-1.829 (-0.81)	-1.857 (-0.39)	-1.386 (-0.28)	-1.759 (-0.37)
SENIOR	-344.784 (-7.09)	-344.840 (-7.10)	-344.959 (-7.09)	-344.861 (-7.09)	-344.717 (-17.00)	-344.742 (-7.09)	-319.808 (-6.84)	-344.791 (-7.09)
GUARANTOR	-13.896 (-2.89)	-13.860 (-2.88)	-13.848 (-2.89)	-13.843 (-2.88)	-13.871 (-6.08)	-13.868 (-2.89)	-14.315 (-2.89)	-13.883 (-2.90)
SPONSOR	75.627 (8.97)	75.654 (8.96)	75.638 (8.97)	75.628 (8.97)	75.764 (22.54)	75.822 (9.00)	75.881 (8.75)	75.790 (8.99)
LOG_LENDERS	-11.957 (-4.25)	-11.914 (-4.22)	-11.875 (-4.21)	-11.880 (-4.21)	-11.868 (-9.76)	-11.735 (-4.18)	-14.863 (-5.12)	-11.759 (-4.19)
SYNDICATED	8.785 (1.23)	8.703 (1.22)	8.596 (1.20)	8.577 (1.20)	8.544 (4.30)	8.356 (1.17)	10.806 (1.49)	8.359 (1.17)
Loan purpose and type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,630	15,630	15,630	15,630	15,621	15,630	16,985	15,630
R-squared	0.642	0.642	0.643	0.643	0.643	0.643	0.629	0.643

**Table 8**  
**Bank-Firm Governance Links and Loan Spread: Robustness**

This table presents results for regression of loan spread (ALL\_SPREAD) on the existence of a bank-firm governance link (through a common board member, an equity insider position or institutional holdings). Financial borrowers (SIC 6000-6999) are excluded. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix. Robust t-statistics adjusted for deal-level clustering are in parentheses.

	Interactions			Bank Dummies		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Bank-Firm Governance Link Variables</b>						
DUMMY_BANK_INSIDER	38.655 (1.70)			-8.398 (-1.04)		
DUMMY_BANK_BOARD		24.181 (2.05)			8.057 (2.14)	
DUMMY_BANK_INSTHOLD			20.179 (2.62)			11.721 (3.68)
<b>Borrower Firm Variables</b>						
ADR	-11.980 (-6.97)	-11.270 (-6.53)	-9.847 (-5.68)			
MSCI	-21.352 (-9.75)	-21.508 (-9.79)	-20.248 (-9.14)			
<b>Borrower Firm Country Variables</b>						
CREDITOR_RIGHTS	-1.996 (-3.40)	-1.977 (-3.37)	-1.946 (-3.32)			
PROPERTY_RIGHTS	2.598 (3.87)	2.586 (3.86)	2.599 (3.88)			
COMMON_LAW	1.460 (0.74)	1.806 (0.91)	1.358 (0.69)			
LOG_GDPC	0.947 (0.57)	1.110 (0.67)	0.965 (0.58)			
MARKETCAP_GDP	0.462 (0.29)	0.347 (0.22)	0.392 (0.24)			
<b>Interactions</b>						
BANK_FIRM_GOV_LINK x ADR	-8.526 (-0.93)	-16.295 (-2.70)	-22.449 (-5.17)			
BANK_FIRM_GOV_LINK x MSCI	-12.401 (-1.19)	0.351 (0.06)	0.863 (0.18)			
BANK_FIRM_GOV_LINK x MARKETCAP_GDP	-51.659 (-1.98)	-9.054 (-1.98)	-11.233 (-2.19)			
Bank-firm lending link variables	Yes	Yes	Yes	Yes	Yes	Yes
Loan variables	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose and type dummies	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm variables	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm country variables	Yes	Yes	Yes	Yes	Yes	Yes
Bank dummies	No	No	No	Yes	Yes	Yes
Bank country dummies	Yes	Yes	Yes	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,020	15,020	15,020	16,484	16,484	16,484
R-squared	0.623	0.624	0.625	0.655	0.655	0.656

**Table 9**  
**Bank-Firm Governance Links and Loan Spread: Endogeneity**

Panel A reports the average difference in spread (ALL\_SPREAD) of loans with bank-firm governance link and loans with no link. We use propensity score matching that for every loan with a link identifies a set of matching loans with no link that has the same predicted probability of a bank-firm governance link. We compute the propensity scores using a probit model that controls for borrower firm variables, borrower firm industry and country heterogeneity, and loan variables. We use the Nearest Neighbor estimator with the closest  $n = 10$  and  $n = 50$  non-link loans and also the Gaussian and Epanechnikov methods with propensity score bandwidth  $h = 0.01$ . Panel B presents results of a instrumental variables (IV) estimation where the first stage predicts a bank-firm governance link, and the second stage is a regression of loan spread. Panel C presents results of a Heckman two-stage treatment effects model where the first stage is a treatment probit predicting a bank-firm governance link, and the second stage is a regression of loan spread. Financial borrowers (SIC 6000-6999) are excluded. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix. Robust t-statistics are in parentheses.

<b>Panel A: Propensity Score Matching</b>				
	Nearest Neighbor (n =10)	Nearest Neighbor (n =50)	Gaussian (h = 0.01)	Epanechnikov (h = 0.01)
Bank-Firm Governance Link Variables				
DUMMY_BANK_INSIDER	-2.830 (-0.39)	-10.245 (-1.46)	-13.753 (-1.62)	-9.428 (-1.08)
DUMMY_BANK_BOARD	8.430 (1.99)	9.438 (2.20)	7.029 (1.83)	8.209 (1.97)
DUMMY_BANK_INSTHOLD	15.304 (3.73)	13.470 (3.38)	11.281 (2.86)	11.204 (2.84)
<b>Panel B: Instrumental Variables Estimation</b>				
Second Stage Regression: ALL_SPREAD				
Bank-Firm Governance Link Variables				
DUMMY_BANK_INSIDER	42.298 (1.34)			
DUMMY_BANK_BOARD		211.102 (6.60)		
DUMMY_BANK_INSTHOLD			154.532 (6.42)	
Bank-firm lending link variables	Yes	Yes	Yes	
Loan variables	Yes	Yes	Yes	
Loan purpose and type dummies	Yes	Yes	Yes	
Borrower firm variables	Yes	Yes	Yes	
Borrower firm industry dummies	Yes	Yes	Yes	
Borrower firm country variables	Yes	Yes	Yes	
Year dummies	Yes	Yes	Yes	
Observations	16,004	16,416	16,004	
First Stage Regression: BANK_FIRM_LINK				
	DUMMY_ BANK_ INSIDER	DUMMY_ BANK_ BOARD	DUMMY_ BANK_ INSTHOLD	
LOG_SIZE	0.018 (0.70)	0.222 (14.09)	-0.005 (-0.49)	
TOTAL_DEBT	0.176 (0.77)	-0.365 (-2.80)	0.075 (0.95)	
SHORT_DEBT	-0.093 (-0.51)	0.025 (0.23)	-0.008 (-0.12)	
TANG	-0.422 (-1.91)	-0.229 (-1.95)	-0.122 (-1.67)	
STDEV	-0.193 (-0.92)	0.211 (2.15)	0.362 (5.98)	
RATING	-0.261 (-3.83)	-0.088 (-3.33)	0.015 (0.79)	
UNRATED	-1.077 (-4.07)	-0.525 (-4.63)	-0.033 (-0.36)	
BANKING_RESTRICTIONS	-0.021 (-1.15)	-0.058 (-6.06)	-0.006 (-0.80)	
BANK_PUBLICLY_LISTED	-0.498 (-6.09)	0.285 (4.62)	0.010 (0.23)	
Borrower firm industry dummies	Yes	Yes	Yes	
Borrower firm country variables	Yes	Yes	Yes	
Year dummies	Yes	Yes	Yes	



**Table 9: continued**

<b>Panel C: Treatment Effects Model</b>			
Second Stage Regression: ALL_SPREAD			
Bank-Firm Governance Link Variables			
DUMMY_BANK_INSIDER	-14.786 (-0.43)		
DUMMY_BANK_BOARD		49.324 (2.94)	
DUMMY_BANK_INSTHOLD			62.012 (3.53)
Heckman's Lambda	3.334 (0.24)	-19.866 (-2.45)	-33.655 (-4.42)
Bank-firm lending link variables	Yes	Yes	Yes
Loan variables	Yes	Yes	Yes
Loan purpose and type dummies	Yes	Yes	Yes
Borrower firm variables	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes
Borrower firm country variables	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Observations	14,703	14,703	14,703
First Stage Regression: BANK_FIRM_LINK			
	DUMMY_ BANK_ INSIDER	DUMMY_ BANK_ BOARD	DUMMY_ BANK_ INSTHOLD
LOG_SIZE	-0.019 (-0.69)	0.222 (13.11)	-0.003 (-0.28)
TOTAL_DEBT	0.309 (1.29)	-0.307 (-2.23)	-0.045 (-0.54)
SHORT_DEBT	-0.099 (-0.48)	0.016 (0.14)	-0.037 (-0.52)
TANG	-0.280 (-1.14)	-0.361 (-2.89)	-0.369 (-4.90)
STDEV	-0.237 (-1.10)	0.151 (1.24)	0.379 (5.85)
RATING	-0.301 (-4.03)	-0.073 (-2.57)	0.040 (1.94)
UNRATED	-1.196 (-4.16)	-0.447 (-3.60)	0.009 (0.09)
BANKING_RESTRICTIONS	0.004 (0.18)	-0.049 (-4.84)	0.037 (5.48)
BANK_PUBLICLY_LISTED	-0.442 (-4.71)	0.573 (6.49)	0.146 (2.77)
Borrower firm industry dummies	Yes	Yes	Yes
Borrower firm country variables	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes

**Table 10**  
**Bank-Firm Governance Links and Non-Pricing Loan Term**

This table presents estimates of regressions of loan characteristics on a bank-firm governance link (through a common board member, an equity insider position or institutional holdings). The dependent variables are a dummy that takes the value of one if the loan is secured by collateral (SECURED), a dummy that takes the value of one if the loan terms include dividend restrictions (DIVRESTRICT), and log loan maturity in years (MATURITY). Financial borrower (SIC 6000-6999) are excluded. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix. Robust t-statistics adjusted for deal-level clustering are in parentheses.

	PROBIT SECURED			PROBIT DIVRESTRICT			MATURITY (log)					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Bank-Firm Governance Link Variables												
DUMMY_BANK_INSIDER	-0.024 (-0.12)			-0.031 (-0.15)	-0.897 (-1.75)			-0.919 (-1.76)	-0.129 (-2.46)			-0.123 (-2.33)
DUMMY_BANK_BOARD		0.076 (0.85)		0.070 (0.78)		-0.062 (-0.67)		-0.047 (-0.50)		-0.022 (-1.18)		-0.011 (-0.60)
DUMMY_BANK_INSTHOLD			0.048 (0.99)	0.046 (0.93)			-0.161 (-3.13)	-0.171 (-3.32)			-0.045 (-3.55)	-0.043 (-3.39)
Bank-firm lending link variables												
Loan variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose and type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,444	15,444	15,444	15,444	11,155	11,155	10,495	11,155	15,619	15,630	15,630	15,630
R-squared									0.480	0.479	0.479	0.480

**Table 11**  
**Bank-Firm Governance Links and Number of Lenders and Lead Arrangers**

This table presents estimates of regressions of the syndicate structure on a bank-firm governance link (through a common board member, an equity insider position or institutional holdings). The dependent variables are the number of lenders (LENDERS) and the number of lead arrangers (LEAD\_ARRANGERS). Financial borrowers (SIC 6000-6999) are excluded. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix. Robust t-statistics adjusted for deal-level clustering are in parentheses.

	LENDERS			LEAD_ARRANGERS				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bank-Firm Governance Link Variables								
DUMMY_BANK_INSIDER	-0.281 (-3.90)			-0.269 (-3.77)	-0.258 (-4.81)			-0.214 (-3.87)
DUMMY_BANK_BOARD		-0.049 (-2.03)		-0.039 (-1.69)		-0.199 (-9.02)		-0.179 (-8.01)
DUMMY_BANK_INSTHOLD			-0.074 (-4.24)	-0.071 (-4.00)			-0.092 (-6.63)	-0.078 (-5.60)
Bank-firm lending link variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose and type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,779	15,779	15,779	15,779	15,779	15,779	15,779	15,779
R-squared	0.392	0.392	0.392	0.393	0.647	0.648	0.647	0.649

**Table 12**  
**Bank-Firm Governance Links and Ex-Post Loan Performance**

This table presents estimates of regressions of ex-post loan performance on the existence of a bank-firm governance link (through a common board member, an equity insider position or institutional holdings). The dependent variables are the change in expected default frequency (EDF), the change in return on assets (ROA), and the change in return on equity (ROE) using (-1, 1) and (-1, 2) windows. Financial borrower (SIC 6000-6999) are excluded. The sample period is from 2003 to 2006. Definitions of variables are detailed in the Appendix. Robust t-statistics adjusted for deal-level clustering are in parentheses.

<b>Panel A: Ex-post Change in Expected Default Frequency (EDF)</b>								
	EDF_CHG_P1_M1				EDF_CHG_P1_M2			
Bank-Firm Governance Link Variables								
DUMMY_BANK_INSIDER	-1.806			-1.774	-2.239			-2.182
	(-4.42)			(-4.28)	(-4.12)			(-3.96)
DUMMY_BANK_BOARD		-0.307		-0.224		-0.477		-0.458
		(-2.75)		(-2.01)		(-2.34)		(-2.15)
DUMMY_BANK_INSTHOLD			-0.110	-0.089			-0.321	-0.301
			(-0.79)	(-0.63)			(-1.91)	(-1.77)
Observations	12,805	12,805	12,805	12,805	8,969	8,969	8,969	8,969
R-squared	0.190	0.188	0.188	0.190	0.274	0.273	0.273	0.275
<b>Panel B: Ex-post Change in Return on Assets (ROA)</b>								
	ROA_CHG_P1_M1				ROA_CHG_P1_M2			
Bank-Firm Governance Link Variables								
DUMMY_BANK_INSIDER	0.084			0.079	-0.043			-0.053
	(1.24)			(1.15)	(-0.58)			(-0.71)
DUMMY_BANK_BOARD		0.022		0.014		0.041		0.044
		(1.19)		(0.75)		(2.04)		(2.13)
DUMMY_BANK_INSTHOLD			0.031	0.029			0.030	0.030
			(2.05)	(1.92)			(2.03)	(2.02)
Observations	13,109	13,109	13,109	13,109	9,278	9,278	9,278	9,278
R-squared	0.156	0.156	0.156	0.156	0.169	0.170	0.169	0.170
<b>Panel C: Ex-post Change in Return on Equity (ROE)</b>								
	ROE_CHG_P1_M1				ROE_CHG_P1_M2			
Bank-Firm Governance Link Variables								
DUMMY_BANK_INSIDER	-0.230			-0.314	-4.308			-4.492
	(-0.14)			(-0.19)	(-1.51)			(-1.57)
DUMMY_BANK_BOARD		0.000		-0.295		0.612		0.857
		(-0.00)		(-0.35)		(0.51)		(0.70)
DUMMY_BANK_INSTHOLD			0.438	0.440			-0.493	-0.554
			(0.66)	(0.66)			(-0.59)	(-0.65)
Observations	13,256	13,256	13,256	13,256	9,394	9,394	9,394	9,394
R-squared	0.153	0.153	0.154	0.154	0.213	0.213	0.213	0.213
Bank-firm lending link variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose and type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower firm country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## Appendix: Variables Definitions

Variable	Definition
<b>Panel A: Loan Variables</b>	
DUMMY_LOAN	Dummy variable that takes the value of one if bank <i>i</i> acted as lead arranger in at least one loan facility to firm <i>j</i> .
NUMBER_LOANS	Number of loan facilities from bank <i>i</i> to firm <i>j</i> .
AMOUNT_LOANS	Amount of loan facilities from bank <i>i</i> to firm <i>j</i> (\$ millions).
SHARE_LOANS	Share amount that loan facilities from bank <i>i</i> to firm <i>j</i> represent of all loans of firm <i>j</i> .
ALL_SPREAD	Loan spread over LIBOR in the issue data plus fees (DealScan item All-in spread Drawn).
RATING	Senior bond rating of the borrower firm at the close of the deal from Moody's, or, when not available, from S&P; ratings are converted into a numeric scale: Aaa equals 1, Aa equals 2, A equals 3, Baa equals 4, Ba equals 4, B or below equals 1, and missing rating equals zero (DealScan items Ratings-Moody's Senior Debt at Close, Ratings-S&P Senior Debt at Close).
UNRATED	Dummy variable that takes the value of one if the borrower firm does not have a senior bond rating the close of the deal from Moody's or S&P (DealScan items Ratings-Moody's Senior Debt at Close, Ratings-S&P Senior Debt at Close).
AMOUNT_LOAN	Loan facility amount in \$ millions (DealScan item Tranche Amount (Converted)).
SECURED	Dummy variable that takes the value of one if loan is secured by collateral (DealScan item Secured).
MATURITY	Loan maturity in years (DealScan item Tenor/Maturity).
CORPURPOSES	Dummy variable that takes the value of one if loan is for corporate purposes (DealScan item Primary Purpose).
REFINANCE	Dummy variable that takes the value of one if loan is to repay existing debt (DealScan item Primary Purpose).
TAKEOVER	Dummy variable that takes the value of one if loan to finance takeovers (DealScan item Primary Purpose).
WORKCAPITAL	Dummy variable that takes the value of one if loan for working capital purposes (DealScan item Primary Purpose).
CREDITLINE	Dummy variable that takes the value of one if loan for credit line (DealScan item Specific Tranche Type).
TERMLOAN	Dummy variable that takes the value of one if term loan (DealScan item Specific Tranche Type).
BRIDGELOAN	Dummy variable that takes the value of one if bridge loan (DealScan item Specific Tranche Type).
DIVRESTRICT	Dummy variable that takes the value of one if loan has restrictions on paying dividends (DealScan item Covenants: General-Material Restriction).
SENIOR	Dummy variable that takes the value of one if loan is senior in seniority (DealScan item Seniority).
GUARANTOR	Dummy variable that takes the value of one if loan has a guarantor (DealScan item Borrower-Guarantor).
SPONSOR	Dummy variable that takes the value of one if loan has a sponsor (DealScan item Borrower-Sponsor).
SYNDICATED	Dummy variable that takes the value of one if loan is syndicated (DealScan item Distribution Method).
LENDERS	Number of lenders (DealScan item Number of Lenders).
LEAD_ARRANGERS	Number of lead arrangers (DealScan).
EDF_CHG_P1_M1	Change in expected default frequency (EDF) from one year before to one year after the loan (Moody's KMV).
EDF_CHG_P2_M1	Change in expected default frequency (EDF) from one year before to two years after the loan (Moody's KMV).
ROA_CHG_P1_M1	Change in return on assets from one year before to one year after the loan (WS item 08326).
ROA_CHG_P2_M1	Change in return on assets from one year before to two years after the loan (WS item 08326).
ROE_CHG_P1_M1	Change in return on equity from one year before to one year after the loan (WS item 08301).
ROE_CHG_P2_M1	Change in return on equity from one year before to two years after the loan (WS item 08301).

## Appendix: Continued

### Panel B: Bank-Firm Governance Link Variables

DUMMY_BANK_INSIDER	Dummy variable that takes the value of one if lead arranger bank has direct equity positions (of at least 1% of shares outstanding) in borrower firm at the end of the year prior to the loan (Factset/Lionshares).
BANK_INSIDER	Direct equity positions in borrower firm at the end of the year prior to the loan as a percentage of number of shares outstanding (Factset/Lionshares).
DUMMY_BANK_BOARD	Dummy variable that takes the value of one if there is at least one common board member between borrower firm and lead arranger bank at the end of the year prior to the loan (Boardex).
NUMBER_BANK_BOARD	Number of common board member between borrower firm and lead arranger bank at the end of the year prior to the loan (Boardex).
TENURE_BANK_BOARD	Tenure of common board member between borrower firm and lead arranger bank at the end of the year prior to the loan (Boardex).
DUMMY_BANK_INSTHOLD	Dummy variable that takes the value of one if at least one institutional money manager (bank trust, mutual fund, investment adviser, pension fund) affiliated with the lead arranger bank has an equity position (of at least 1% of shares outstanding) in borrower firm at the end of the year prior to the loan (Factset/Lionshares).
BANK_INSTHOLD	Equity positions by institutional money managers (bank trust, mutual fund, investment adviser, pension fund) affiliated to the lead arranger bank in borrower firm at the end of the year prior to the loan as a percentage of number of shares outstanding (Factset/Lionshares).

### Panel C: Bank-Firm Lending Link Variables

DUMMY_PAST_LOAN	Dummy variable that takes the value of one if there is a loan between the lead arranger bank and the borrower firm in the five-year period before the start of the sample period, 1998-2002 (DealScan).
DUMMY_SAME_REGION	Dummy variable that takes the value of one if the lead arranger bank and the borrower firm are located in the same geographic region, Africa, Asia, Eastern Europe, Japan, Latin America, North America, Oceania, Western Europe (DealScan).
BANK_EUROPE_DUMMY	Dummy variable that takes the value of one if lead arranger bank is headquartered in a European country (DealScan).

### Panel D: Borrower Firm Variables

SIZE	Sales in \$ millions of the borrower firm in the year prior to the loan (WS item 01001).
TOTAL_DEBT	Total debt divided by total assets of the borrower firm in the year prior to the loan (WS item 03255 / WS item 02999).
SHORT_DEBT	Short-term debt divided by total debt of the borrower firm in the year prior to the loan (WS item 03051 / WS item 03255).
TANG	Net property, plant, and equipment divided by total assets of the borrower firm in the year prior to the loan (WS item 02501 / WS item 02999).
R&D	R&D expenditures divided by total assets of the borrower firm in the year prior to the loan (WS item 01201 / WS item MB).
PROFIT	Market value of equity divided by book value of equity of the borrower firm in the year prior to the loan (DS item MV / WS).
INTCOV	Net income before extraordinary items divided by sales of the borrower firm in the year prior to the loan (WS item 01551 / WS item 03051).
NWCAPITAL	EBITDA divided by interest expenses of the borrower firm in the year prior to the loan (WS item 18198 / item 01251).
STDEV	Current assets minus current liabilities to total debt of the borrower firm in the year prior to the loan ((WS item 02201 - WS item 03101 + WS item 03051) / WS item 03255).
PAYOUT	Annualized standard deviation of daily stock returns (DS item RI) of the borrower firm in the year prior to the loan.
ADR	Common dividends plus stock repurchases divided by operating income (WS item 05376 + WS item 03499) / WS item 03499.
MSCI	Dummy variable that takes the value of one if a firm is cross-listed on a US exchange, zero otherwise.
	Dummy variable that takes the value of one if a firm is in the MSCI World index, zero otherwise.

## Appendix: Continued

<b>Panel E: Bank Variables</b>	
RANK_BANK	Rank of lead arranger bank in Top 500 The Banker rankings in 2005.
BANK_SIZE	Market capitalization in \$ millions of the lead arranger bank in the year prior to the loan (Bankscope).
BANK_ROE	Return on equity of the lead arranger bank in the year prior to the loan (Bankscope).
BANK_PUBLICLY_LISTED	Dummy variable that takes the value of one if a bank is publicly listed, zero otherwise.
<b>Panel F: Borrower Firm Country Variables</b>	
CREDITOR_RIGHTS	Creditor rights index (La Porta et al. (1997)).
PROPERTY_RIGHTS	ICRG property rights index (Bae and Goyal (2008)).
COMMON_LAW	Dummy that equals one for countries with common legal origin (La Porta et al. (1997)).
GDPC	GDP per capita in \$ (WDI World Bank).
MARKETCAP_GDP	Stock market capitalization divided by gross domestic product (World Bank).
BANKING_RESTRICTIONS	Index of banking restrictions (Laeven and Levine (2006)).



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