THE CERTIFICATION ROLE OF BANK DIRECTORS ON CORPORATE BOARDS

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Abstract

There is a large literature on the effects of the presence of bankers on firms'boards as these bankers may reduce monitoring costs by facilitating information flows between the lender and the borrower, may credibly certify the financial soundness of the firm to other creditors who are not represented in the board and may act as financial experts for the management. At the same time, lending bankers on boards may have a conflict of interests. In this paper, we study the impact of the presence of bankers on firms' boards on interest rates charged to firms. We have two results. First, as interest rates on loans from the board director's bank and from other banks are very similar we do not find evidence of a conflict of interests effect. Second, we have strong evidence of certification effects played by bank directors as rates charged by all banks on loans to firms with bankers on boards are lower than those charged by all banks to firms without bankers. The certification effect is even stronger if the banker on board has itself loaned to the firm.

1   Introduction

The presence of bank directors in company boards of industrial firms is a known fact in several industrialized countries. According to data of Kroszner and Strahan (2001a), 75 per cent of large firms have bankers on their boards in Germany, 53 per cent in Japan, and 31 per cent in the US.

Recently, a number of papers have explained benefits and costs of bank representation on corporate boards by resorting mainly to the 'information view' and a 'conflict of interest hypothesis'.

The 'information view' predicts roles for bank directors on corporate boards as efficient monitors of borrowers' private information and credible certifiers of their ability to repay a loan. First, sitting on a firm's board is an obvious

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way for a lender for performing a good screening of borrowers, observing the outcomes of financed projects and discouraging their potential opportunistic behaviors. Second, bank presence on corporate boards prevents other lenders from duplicating monitoring costs as risks assumed by informed agents - banks represented on a corporate boards - indirectly certify the borrowers' soundness to financial markets.

The possible dark side of bank presence corporate boards is the conflict of interests. A general definition of conflict of interests in financial market is provided by Crockett et al, 2003

> 'conflicts arise when a financial service provider, on an agent within such a service provider, has multiple interests which create incentives to act in such a way as to misuse or conceal information need for the effective functioning of financial markets'

As well as bank presence on corporate boards is concerned, potential conflicts arise as bank directors have the fiduciary duty to serve interests - not aligned - of lenders and borrowers (Kroszner and Strahan, 2001b). If corporate governance of banks does not work well enough bank managers may take actions for benefits of firms'shareholders - or of their own - at the expense of both banks' shareholders and the regulator.

The empirical literature on conflicts of interests in financial institutions is large and growing. For a survey see Mehran and Stulz (2007). Overall, the literature using large samples reaches conclusions that are often more benign than those drown by journalist and politicians. The reputation of banks as certifiers of quality for securities they underwrite or as efficient predictors of credit risk, determines strong incentives limiting the adverse effects of conflicts of interests.

In this paper, we analyze implications of bank presence on corporate boards by performing an extensive study of the pricing behavior in the market of corporate loans. We resort to a loan pricing analysis for a few reasons. First, the study of loan pricing is a direct way for measuring risk premia applied to firms and quantify the impact of bank presence on corporate boards on the lender-borrower relationship. Lower levels of risk premia asked to firms having bank presence on their boards may suggest roles for bank directors as monitors and certifiers of borrowers' soundness.

Second, the analysis of pricing behaviors adopted in credit markets marked by a 'multiple lending' structure, as the one we have at disposal, permits to trace reductions of risk premia back to one of the two competing explanations we mentioned above. Mainly, the credibility of on-the boards lenders as valuable certifiers of firms' quality may be assessed by comparing reductions of risk premia granted to a firm by its lender on boards with those granted by its 'out-of the boards' financiers. If these two types of lenders behave similarly, certification effects provide to be significant. On the contrary, if lending behaviors diverge conflicts of interests would not be discarded.

For assessing the link between bank presence on corporate boards and loan pricing behavior we build a new database. We merged four archives in a cross-section including around 300,000 loan contracts stipulated with 32,000 Italian companies. The archives are the Italian Central Credit Register', the 'Organi Sociali delle Banche' archive, the 'InfoCamere - Chambers of Commerce' archive, the 'Balance Sheet Register'.

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Our findings are briefly documented as follows. First, we do not find evidence of conflict of interests effects as lenders on corporate boards do not apply borrowing costs deviating from those applied, to the same firm, by its lenders out of the boards. Second, we have strong evidence of certification effects played by bank directors as rates charged by all banks on loans to firms with bankers on boards are lower than those charged by all banks to firms without bankers. The certification effect is even stronger if the banker on board has itself loaned to the firm.

Our results are in line with those of Kroszner and Strahan (2001a) while they are at odds with those of La Porta et al (2003). Kroszner et Strahan (2001) do not find evidence of conflicts of interest as firms with bank presence on boards do not receive generous non-price terms from their connected banks. La Porta et al (2003) find out adverse effects of conflicts of interest, as 'related' loans provide to be cheaper and more likely to default than the 'unrelated' ones. These two studies have some differences with our research. Kroszner e Strahan (2001a) compare lending conditions applied by inside and outside lenders only to firms endowed with lenders on boards while we compare lending conditions applied by inside and outside lenders either to firms having bank presence on boards and to their peer. La Porta et al (2003) do not scrutinize bank presence on corporate boards 'per se' as the subject of their study is 'related lending', a phenomenon which includes bank presence on corporate boards[1].

The remainder of the paper is organized in three sections: Section 2 describes the main theoretical contributions to the analysis of bank's presence on corporate boards. In Section 3, we estimate the effects on loan pricing of the bank representation on corporate boards. Section 4 concludes.

2 Theories

In this section we review theories on the link between bank representation on corporate boards and loan pricing behavior.

Briefly, according to the 'information view', *lenders* on boards, i.e. directors of banks who are lenders of the firms where they have the seat, lower monitoring costs of - and risk premia charged by - all the banking system. Risks assumed with a firm by a bank represented on its boards signal to financial markets that that borrower is fundamentally sound. According to alternative theories, *lenders* on boards generate conflicts of interests. Finally, both lending and non lending bankers on boards (i.e., directors of banks who are not lenders of the firms where they have the seat) may hold an advisory role by providing financial complementary expertise to the firms' management able to fetch lower costs of financing.

Monitoring hypothesis. Bank directors on boards decrease monitoring costs, and risk premia charged by lenders, by directly providing to creditors with private information on borrowers. Monitoring costs decrease as being on boards provides the flexibility to adapt to changing circumstances and to obtain information relevant for the current situation, without the cost of producing data relevant to each contingency described in the original contract (Kroszner and Strahan, 2001). On a similar perspective, bank presence on corporate boards

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[1]In Mexico, the notion of 'Related loans' comprises financing extended to a firm having the lender on its company boards.

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may be seen as a tool for enhancing 'relationship banking' practices[2]. According to Pfeffer (1972), bank presence on corporate boards is the powerful channel to be aware of the internal environment of companies while Williamson (1988) views the outcomes arising to banks represented on the boards of their borrowers as superior to those originated by loan covenants. The empirical literature on the bank presence on corporate boards has identified monitoring roles for lenders on boards in Japan (Kaplan and Minton, 1994) and in the United States (Byrd and Mizruchi, 2005).

Certification hypothesis. The literature on reputational signaling predicts that actions of an individual with a reputation of a relatively informed agent generate valuable signals for the markets as these actions indirectly reveal part of information in their possession (Lummer and McConnel (1989). Banks represented on a firm's boards have a deep knowledge of the internal environment of the company where they have the seat. Therefore, risks assumed by these banks are perceived as valuable signals certifying the borrowers' creditworthiness to financial markets. Similarly, Boot (1992) points out how monitoring costs sustained by a lender may decrease as a result of information produced through cross-monitoring activities by another claimant. The benefit of the cross-monitoring activity may involve simply noting the presence of another claimant, information associated with monitoring other claims. Certification effects played by lenders on boards are documented by Byrd and Mizruchi (2005).

Conflict of interest hypothesis. Lending bankers on boards may generate conflict of interests. As board members of banks, they have the fiduciary duty to serve the interests of debtholders, but as directors with firms, they have the duty to serve the interests of firms' shareholders (Kroszner and Strahan, 2001). Conflicts arise as pay-offs of these two types of agents are not aligned (Jensen and Meckling, 1976) [3]. As well as loan pricing is concerned, conflict of interests may cause pressures for special treatment of the borrower not normally justifiable on economic ground (Laeven, 2001; La Porta et al, 2003). In a multiple lending context, conflicts of interest should pick out a firm paying a lower interest rate to the bank represented on its boards, compared to that paid to other financiers which are out of its boards.

Financial expertise hypothesis. Fama and Jensen (1983) claim that outside directors may add complementary knowledge to the management, depending on their performance as managers in other organizations. As well as (non-lending) bank directors are concerned, they may be requested to join firms' boards for providing to the management with their financial expertise (Booth and Deli, 1999). Compared to financially unskilled directors, they have comparative advantages in evaluating alternative debt contracts or pricing arrangements and in dealing with firms' financial statements (Mace, 1971) [4]. Rosenstein and Wy-

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[2]. Relationship banking has been defined as 'the provision of financial services by a financial intermediary that invests in obtaining customer-specific information, which is proprietary in nature; and that evaluates profitability of these investments through multiple interactions with the costumer (Boot and Thakor, 2000).

[3]Pay-offs of creditors are low if firms go bankrupt but are limited if firms' profits are high as creditors aim at the repayment of the loans by discouraging risky investments whose benefits are not fully gained while borrowers are protected by large losses. They maximize the return to shareholders by promoting projects with both high expected pay-off and variances.

[4]In the US, the Sarbanes-Oxley Act (2002) explicitly calls for financial literacy on audit committees (Section 407). "An understanding of generally accepted accounting principles and financial statements has been quoted as a requisite for taking up the positions on the boards.

att (1990) document how the addition of directors who are officers of financial companies may increases the value of a firm.

3 Data and methodology

In this section, we move to empirical methods and study the link between bank presence on corporate boards and loan pricing in order to discriminate between the 'information view' and the 'conflict of interests' hypothesis.

Sections 3.1 describes our variables and sources of statistics. Section 3.2 presents bivariate statistics while section 3.3 reports results of multivariate analysis and the outcomes of some robustness checks. Section 4 concludes.

3.1 Variables

We need information on boards' members of banks and industrial firms on the one hand, and data on banks' lending activity to retail customers on the other. We also need financial statements of companies for taking into account risk profile of borrowers. We resorted to four sources of data: Balance Sheet Register (BRS), Central Credit Register (CCR), Organi Sociali delle Banche (Or.So.) and the Infocamere archive. We performed a cross-section analysis based on 2005 data. In Table 1, the variables are listed. They are broken down into four groups: *governance-signaling characteristics, loan contract characteristics, firms' financial characteristics, and traditional relationship characteristics.*

The Balance Sheet Register provided us with the sample of firms used in the study. It consists of around 32,000 industrial firms [5] which were registered in the BSR [6] in the fiscal year 2005, and which survived after cleaning outliers from the dataset [7]. The auxiliary companies *(enti strumentali)* were excluded from the exercise.

Governance-signaling terms. Bank presence on corporate boards are the key variables of our study. The Organi Sociali delle Banche (OR.SO., by the Bank of Italy) and the Infocamere archives are our sources of information. As for the lender side, OR.SO. collects data on board members from the entire population of banks [8]. As for the borrower side, the 'Infocamere' archive (by the Italian Chamber of Commerce) collects data on the board composition of all the firms which are registered with the Chamber.

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[5] Size of our sample lines-up with those as of some previous studies on relationship banking as for Italy: Conigliani et al (1997) and Ferri et al (2000) exploit a samples of 33,000 firms. Further, D'Auria et al (1999) use an unbalanced panel of 2,331 firms, which spans from 1987 to 1994. Petersen and Rajan (1994) verify predictions of relationship banking literature investigate looking at 3,404 firms.

[6] Firms eligible for joining the BSR database were those indebted with (at least) a lender participating in the consortium of creditors put up by banks for sharing data on financial statements of their borrowers. The consortium includes all larger credit institutions operating in the Italy.

[7] Row data on interest rates reported by credit institutions to the Central Credit Register and by firms to Balance Sheet Register were cleared of severe outliers. These outliers make up about 0.0002 percent (two per million) of a Gaussian population and have substantial effects on means, standard deviations and other statistics.

[8] Data include identities, hierarchical positions - president, vicepresident, executive director, director - the date of appointment and resignation, for each of the members of either the board of directors and the Supervisory board

We followed two methods for insulating firms with bank presence on corporate boards. According to the first one, a firm was defined as having a bank presence on its boards (BANKPRES) if its company boards include (at least) a member of a bank's board of directors. Therefore, we separated firms whose company boards include (at least) a *lending* bank director (LEND-BANKPRES) from firms whose company boards include only *non-lending* bank directors (NOLEND-BANKPRES)[9]. These types of borrowers were identified through firm-level dummy variables.

We exploit the multiple lending structure of our database (the median number of lenders for each of the firms is equal to 4, see Table 4) and distinguish loans that a firm (having a lender on boards) is granted by its lender on boards (BY-IN) from loans that the same firm is granted by the rest of its financiers (BY-OUT). These loan contracts were captured by loan-level dummy variables.

Afterward, we extend our analysis by adopting a stricter notion of bank presence on company boards. In this context, which is discussed in the section on robustness, we considered firms having bank presence on boards only those companies admitting members of bank CEOs in their boards. The remaining governance signaling variables (LEND-BANKPRES, NOLEND-BANKPRES, BY-IN, BY-OUT) are defined accordingly. We perform this extension in order to control whether results vary after enforcing the directionality of the board linkage toward the bank side.

Contract characteristics. Data exploited in our analysis were provided by the Central Credit Register of the Bank of Italy. Loans are reported when tranches exceed Euro 75,000 by a sample of 213 credit institutions. These entities account for 90 percent of Italian banking credit to firms. Contract information include the interest rate asked for by creditors on credit lines (CREDIT LINES), on loans secured by accounts receivable (ACCOUNT RECEIV.), and on fixed-term loans (FIXED-TERM)). Further information includes the size of loans (TRANCHE) and if financing are secured by real collateral (COLLATERAL).

In our baseline regressions, and in line with the most of the literature, we exploited credit lines contacts as our indicator for cost of corporate financing while in the section on robustness all type of contracts are analyzed. Results are qualitatively the same.

Levels of interest rates depend on the types and characteristics of loan contracts[10] (Berger and Udell, 1995; Petersen and Rajan, 1994). According to Berger and Udell (1995), credit lines (CREDIT LINES) are the most attractive vehicle for studying the impact of the lender-borrower relationship. As they represent a forward commitment to provide capital financing under specified terms, credit lines formalize the relationship between the two parties. On the borrower side, they provide the firm with the option to use less than the amount granted by the creditor, and to pay interests only on disbursed facilities. On the lender side, credit lines are a relatively flexible instrument as terms of contracts may be changed at any point in time. Previous research on the lender-borrower

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[9]Firms with lending bank directors are companies having a member of its company boards that serves as a director of a bank which is a creditor of the firm. Firms with with non lending bank directors are companies having a member of its corporate boards that serves as a director of a bank which is not a creditor of the firm.

[10]In Italy, the means and dispersions of the distributions of interest rates strongly varies across instrument categories. As for interest rates on credit lines, they are twice and three times greater than the means and standard deviations of the other categories, respectively.

relationship existing in Italy was conducted by D'Auria et al (1999), Angelini et al (1998), Guiso (2007). All these studies focus on credit lines extended by credit institutions to the borrower firms[11]. Loans secured by accounts receivable (ACCOUNT RECEIV.) consist of (short-term) loans which are assisted by trade credit guarantees. Ceteris paribus, they are expected to be cheaper than credit lines and fixed term loans. Carmignani and Omiccioli (2007) regard credit lines and and accounts receivable as two devices for generating flows of proprietary information on borrowers[12].

TRANCHE matters in reducing the interest rate charged by banks, as it proxies for scale economies achieved by banks (Booth, 1992). Further, larger loans are expected to be extended to firms having a stronger bargaining power with the banks. As Berger and Udell (1990) pointed out, COLLATERAL decreases the riskness of a given loan, since it gives the lender a specific claim on an asset without diminishing its general claim against the borrower. If borrowers who pledge collateral are riskier on average than borrowers who do not, then secured loans may be either safer (interest rate lower) or riskier (interest rate higher) than unsecured loans. These statements line-up with results obtained by Calcagnini et al (2007) for Italy. They find a positive linkage between collateral and cost of credit, which reflects the greater riskiness of borrowers pledging collateral. The linkage turns out to be negative once the risk profile of borrower firms is properly controlled for.

Firms' financial characteristics. This group of variables includes key information on firms. Firms' financial characteristics are considered by analysts as broadly exhaustive for controlling for observable risk of borrowers. As proxies of SIZE, we look at sales, the number of employees and total assets. Larger companies usually pay lower interest rates as they are expected to have a lower default risk. PROFITABILITY of companies is proxied by the return on equity (ROE). In principle, more profitable firms signal to credit institutions a lower probability of default. TANGIBILITY of assets negatively affects the risk premium of lenders as it reduce the potential costs of bankruptcy for lenders. Banks interpret tangible assets as an index of borrowers' transparency making these assets a collaterals eligible for refunding creditors (Kroszner and Strahan, 2001b). COVERAGE (interest expenses/gross operating margins) reveals the difficulty the firm has in paying interests out of cash-flows and without resorting to additional debt (Hoshi et al 1990; Hall and Weinstein, 2000). A higher COVERAGE index predicts greater risk for banks owing to the increased probability of financial distress. LIQUIDITY (short term assets/short term liabilities) alerts banks to the difficulties borrowers may incur when they face short-term liquidity needs. More liquid borrowers are expected to be asked for lower liquidity risk premiums. As an alternative measure of firm credit-worthiness we adopt the Z-SCORE indicator computed and available in the Company Accounts database. The Z-SCORE (Altman, 1968 and 1993) is an indicator of the probability of default obtained from estimating a discriminant function on balance sheet data. The numerical scores obtained are classified into 9 qualitative risk classes.

Traditional relationship characteristics. In this category we included those phenomena traditionally considered by the literature on relationship banking

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[11]Sapienza (2002) uses this instrument for investigating the impact of bank mergers on the cost of credit.

[12]Lenders may get information about borrowers by having access to firms' transaction accounts.

(Boot, 2000). LENGTH captures the duration of a lending relationship. The probability of loan repayment is expected to increase when a previous experience with the borrower is available to the lender (Petersen and Rajan, 1994). TOP-LENDER captures the *scope* of the relationship. The main bank of a firm may be expected to 'cross-sell' several lending and non lending products to its client. The cost of a single loan may reflect the lessening in monitoring expenses which turn out to be spread over the entire duration of the relationship and across the array of products cross-sold to the firm. MULTIPLE shows the number of creditors from which the firm borrows. It correlates negatively with the cost of credit if it is assumed to proxy for the degree of competition in banking. Alternatively, a positive link is expected when it is assumed to proxy for firms' quality (Petersen and Rajan, 1994). Lower quality firms which are unable to borrow additional money from their original bank may be compelled to approach other creditors.

Finally, in order to avoid to avoid potential losses of information owing to loan strategies set out at level of bank group instead of individual bank, we control for group affiliation of lenders when we defined the *governance-signaling* and the *traditional relationship characteristics* terms[13].

3.2 Bivariate statistics

Table 2 presents statistics on the size of loans for firms having bank presence on boards. The bottom of the table shows the importance of the phenomenon, in terms of business coverage. Loans granted to firms having some bank directors on boards account for 13 per cent of total credit to industrial firms. Within this aggregate, 8 per cent is granted to firms having *lending* bankers on their boards. This group of firms is indebted with the *lenders* on boards for an amount which accounts for 2 per cent of credit. Firms having a *lending* bank director on their boards are indebted with banks without board positions in the firms, for an amount which accounts for 6 per cent of credit. Another 5 percent of credit is extended to firms with *non-lending* bankers on their boards[14].

Table 3 reports basic data on lending terms for each of the firms in the sample. Bivariate analysis seem to indicate pricing behavior and bank presence on corporate boards not to be orthogonal. As well as credit lines are concerned, a firm with some bankers on its boards is charged 6.9 percentage points to be compared with 8.09% for a firm without bankers.
A firm with a *lending* banker on boards is charge 5.93 percentage points by the lender on boards and 6.65 percentage points by lenders out of its boards.

Now we turn to firm-level data (Table 4). In 2005, BSR data included 1,440 companies with (at least) one bank director on their boards. Within this group, 918 companies had a non-lending bank director while 523 have a lending one.

Firms with bank directors on their boards are larger in SIZE. Companies without bank directors employed 37 individuals to be compared with 46 individuals employed in firms with non-lending bank directors and 54 in firm with

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[13]All individual banks joining a bank group were treated as they were a sole entity.

[14]In terms of number of contracts, 12,433 loans (4.2 per cent) are granted to firms with some bank director on boards, 6973 (2.3 per cent) are granted to firms having non lending bank directors on boards. Firms having lending bank directors on boards are granted 996 contracts by the lenders on board (less than 1 per cent) and 4,464 by lenders outside the board (1.5 per cent).

lending ones. In Italy, the average number of employees in a firm is equal to 4. Similar patterns are exhibited by other proxies for size, such as revenues and assets. Bankers serve on boards of companies whose assets are more tangible. TANGIBILITY of firm's assets - given by the net value of plant, property, and equipment as a share of total assets of firms - increases when we move from firms without bankers on boards (0.09) to firms with non-lending (0.14) and lending (0.25) bank representation on boards. Firms with bank directors on boards seem to have greater debt-servicing ability (COVERAGE). They show lower flows of interest expenses - as a share of gross operating margins (0.73) - with respect to firms without bank directors on boards (0.78). The ASSET LIQUIDITY term reveal that firms with bank directors on boards (0.70), are likely to be less liquid than their peers (0.79) [15]. Firms with bank directors have lower ratios of short-term to total bank debt (ST-DEBT). These findings are broadly in line with those reported by Kroszner and Strahan (2001b) for the United States.

3.3 Econometric results

3.3.1 Baseline

We turn to multivariate analysis and investigate the link between bank presence on corporate loans and loan pricing for discriminating between the 'information view' and the 'conflict of interest view'.

Our strategy consists of regressions which are based on loans extended to two different samples of firms. The first sample includes all the companies for which we have data available (full sample). This sample is used for comparing risk premia asked to a firm having bank presence on boards with risk premia asked to their peer.

A second sample, including only firms having lenders on their boards, was arranged in order to test whether potential reductions in risk premia are ascribable to the 'information view'. This sample allows comparisons of risk premia asked to a firm between its on-the boards and out-of the boards financiers. If deviations of pricing behavior across these two types of lenders were small, some certification effects would be at work. If reductions were exclusively charged by the bank with positions in the firm's boards, the certification effects would not receive support and adverse effects of conflict of interests could not be discarded.

Table 5 shows summary statistics for the variables employed in the model. We run regressions of alternatives based on the following specification:

Interest rates = β(Contract characteristics) +γ(Governance/signaling characteristics) +δ(Firm's financial characteristics) +ζ(Traditional bank -firm relationship characteristics) .

Each regression also includes 20 'fixed effect' (FE) dummies for geographical localization of firms (Italian regions), 23 'fixed effect' dummies for economic activity of borrowers - which are based on the economic branch classification adopted by the Bank of Italy - and the dummy PUBLIC to insulate state-owned companies from the private ones. Characteristics of lenders are controlled by

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[15]Kroszner and Strahan (2001b) have a similar findings for the United States. They quote Mulligan (1997) who pointed out how as large firms tend to exhibit scale economies in their demand to hold cash and liquid assets. Therefore, differences in liquidity ratios may be driven by firms' size .

'fixed effects' individual bank-level or bank group-level dummies. As well as analysis based on firms having lenders on boards are concerned (small sample), the use of individual 'fixed effects' at both bank and firm level rules out any possible bias due to omitted characteristics of lenders and borrowers in driving the level of the independent variable[16].

Results. In Table 7 we presents the results of the baseline regression we run on credit lines data (CREDIT LINES). The goodness of fit as expressed by R^2 statistics ranges from 0.26 to 0.34. In modeling interest rates on credit lines, Petersen and Rajan (1994) found R^2 equal to 0.15 while in the case of Italy, Angelini et al(1998) found R^2 equal to 0.17.

Governance-signaling characteristics. In column (1) we measure the reduction of interest rates benefited by firms having (at least) one bank directors on boards (BANKPRES). The coefficient is equal to -0.47 and it is significant at a 1 per cent probability-level. It means that the risk premium asked to a firm having bank presence on boards is 47 basis points lower than the risk premium asked to a firm without bank presence. We need to bone up on this subject in order to trace such a reduction back to the 'information' or to the 'conflict of interest' views.

In columns (2) firms having *lending* bankers on boards (LEND-BANKPRES) are separated from those having *non-lending* bankers (NOLEND-BANKPRES). The coefficients for NOLEND-BANKPRES and LEND-BANKPRES are now equal to -0.35 and -0.67, respectively. It means that the reduction of risk premium applied to a firm having a lender on boards is stronger than that applied to a firm having on boards directors of banks which are not creditors of that firm. According to 'information view' such a difference should be traced back to the more valuable certification role played by lenders on boards. A firm having a lender on boards is subjected to a stronger monitoring than a firm having only a non lending banker on boards - the lending banker on boards has assumed a credit risk with that company. Financial markets are aware of that and, accordingly, reduce the risk premium applied to that firm.

The existence of a reduction in the risk premia applied to firms having lenders on boards (LEND-BANKPRES) is not a sufficient condition for validating the soundness of the 'information view'. A valuable certification role requires that the agents operating in lending markets assess as credible those signals transmitted by lenders on boards through. In a multiple lending context, it means that the out-of the boards financiers of a firm (having a lender on its boards) should apply reduced risk premia to that firm, as well. Alternatively, reductions in risk premia granted to a firm only by its lender on boards could reflect factors other than those predicted by the information view, i.e conflicts of interests.

The coefficient for BY-IN measure, in regression run over the small sample, the estimated deviation between lending terms applied by the on-the boards and the out of the boards financiers of the same borrower. If lenders on boards play a credible certification role in the lending market, such a deviations should be relatively small.

Results of column (4) show that the estimated deviation is not significantly

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[16]Individual fixed effects at firm-level may not be included in regressions run over the full sample as they are collinear with firm level financial characteristics of borrowers. In this case, individual 'random effects' at firm-level (RE) were included in the regressions. We also run regression excluding random effects for firms, available upon request, whose outcomes are very similar to those presented in this paper.

different from zero. In column (5), we have a similar results after controlling for the pledging of collateral in some of the loans.

We repeated this exercise modify controls form banks by replacing 'fixed effects' dummies at the bank-level with dummmies at level of bank group. Related outcomes, not presented but available upon request, still hold.

Traditional relationship characteristics. In Table 7 are displayed the estimated coefficients for our control variables. Firms pay the TOP-LENDER bank 3 basis points less than they pay other lenders. Some effects due to the cross-selling activity of the main lenders are at work. The parameter for LENGTH is equal to 0.343. It means that a firm with an 11-year banking relationship is expected to pay an interest rate which is 1.27 percentage points (i.e., -0.53x(ln 11 - ln 1) higher than a firm with a 1-year relationship. A positive linkage between the length of relationship and the cost of financing were found by Petersen and Rajan (1994), D'Auria et al (1997), and Degryse and Van Cayseele (2000). The coefficient for MULTIPLE is positive and equal to 0.13 percentage points. Firms increasing the number of creditors by 1 unit are expected to be charged 13 basis points more. The existing evidence on this issue is mixed. A positive link between number of creditors and interest rates is established by Ferri et al (2000) and Petersen et al (1994) while a negative one is found out by Angelini et al (1998) and D'Auria et al (1997).

Firm's financial characteristics. In Table 7 we present variables for controlling for borrowers' riskiness. TANGIBILITY negatively affects interest rates. The estimated coefficient is equal to -0.38. Guiso (2007) finds out coefficients for the same variable ranging from -0.62 to -0.74. The coefficient for EQUITY/DEBT is negative (-0.26). Creditors ask for higher risk premiums for more leveraged customers. The same coefficient estimated by Guiso (2007) is equal to -0.26. Larger firm size, represented by the log of SALES, lowers the cost of credit (-0.29). Guiso (2007) uses the log of the number of employees as a proxy for size and estimates a coefficient which is equal to -0.50. COVERAGE positively affects interest rates. It means that firms with difficulties in meeting interest expenses from their own cash flows are asked to pay higher risk premiums by creditors. D'Auria et al (1999) find similar results. The coefficients for PROFITABILITY, negative and significant show that more profitable companies are awarded a lower interest rate by creditors. Finally, firms with higher liquid assets - as a share of liquid liabilities (LIQUIDITY) - are requested to pay lower risk premiums as they may be perceived as having a lower probability of financial distress.

In a nutshell, as well the link between bank presence on corporate boards and loan pricing behavior is concerned, we have two results. First, lenders on boards do not apply preferential lending terms to the borrowers where they have the seat. This result indicate that we do not find sign of *conflicts of interest* effects. Second, rates charged (by all banks) on loans to firms having bank presence on their boards are lower with respect to rates charged (by all banks) to firms without bank presence on boards.

3.3.2 Robustness

In this section, we consider the robustness of our results under alternative types of loan contracts, variable definitions and econometric specifications.

Tables 6 and 8 enlarge the analysis to the whole categories of loans extended

to firms. We considered risk premia applied by banks to Credit lines, Fixed-term loans and Accounts receivable. In the 'all contracts regressions' (Table 8), type of contract was controlled for by mean of 'fixed effects' dummies at loan level. Further, we run separated regressions for each of the instrument categories we have mentioned above. As well as our key variables are concerned, outcomes of regressions for 'accounts receivable' and 'fixed-term loans' are shown in Tables 13 while the full set of outcomes is available upon request ('credit lines' regressions are presented in Tables 7).

The goodness of the estimates in the 'all contracts regressions' (Table 8), as expressed by R^2, now reaches 0.55 percent for regressions 1-2 (full sample) and 0,42 percent for regression 4-5 (only loans to firms having lenders on bords). In line with theoretical predictions, the estimates for fixed effects show less expansive conditions for Accounts receivable, compared to Fixed-term loans, and more expansive conditions for Credit lines, compared to Fixed-term loans.

Columns 1-3 consider reductions in the cost of loans benefited by firms with bank directors on boards. The point estimate for BANK-PRES which is significant and equal to -0.27 reveals reductions for loan terms applied to firms admitting bank directors on their boardrooms. The reduction is even stronger for those firms having on boards representatives of creditors rather than simple bank directors[17].

Consistently with the strategy followed in the previous section, we have to check whether these results are consistent with the 'information view'. If deviations in lending terms applied to a firm by its on-the boards and out-of the boards lenders were small, the certification role of lenders on boards should receive a support. On the contrary, if reductions were only granted by its lenders on boards, the 'conflicts of interest' hypothesis could not be discarded. In columns 4-5 we measure such deviations. The coefficients for BY-IN do not provide to be significant and results are confirmed when the model include a control for real collateralisation of contracts.

Table 9 presents some exercises aimed to verify whether the results are driven by the definition adopted for 'bank presence on firms' boards'. Now we restrict the notion of 'bank presence on firms boards' only to those connections defined by the presence of a bank CEO - instead of a bank director - in the corporate boards. On this accounts, firms having bank presence on boards (BANKPRES) are now only those admitting, on their boards, a bank CEO while a firm having *lenders* on boards (LEND-BANKPRES) is now a company admitting, on its boardrooms, a CEOs of a bank who is a creditor of the firm. The terms NOLEND-BANKPRES and BY-IN are modified accordingly.

In columns 1-3 the coefficient for LEND-BANKPRES and NOLEND-BANKPRES are negative and statistically different from zero. The regressions conducted on loans to firms having *lenders* on boards (columns 4-5) show that there are not deviations in pricing behavior across inside and the outside lenders of the same firm so that certification effects are significant.

In Tables 10-11, we change the controls adopted for riskiness of firms. We introduce the Altman Z-score indicator which proxies for borrowers' probability of default. This variable is extensively used by researchers and available to lenders when charging risk premia to their borrowers, as well. Columns 1-3 of

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[17]The coefficients terms for NOLEND-BANKPRES and LEND-BANKPRES are equal to -0.21 and -0.37 basis points, respectively.

Table 10 depict a scenario which is consistent to that we have met previously. Bank presence on on boards decrease the cost of loans for firms (BANKPRES) especially if the banker has itself loaned to the firm (LEND-BANKPRES).

The estimated coefficients for the Altman Z-Score probability of default grows monotonically with respect to the risk classes in which firms are partitioned[18]. It provides support to the fact that risk profile of borrowers is properly taken into account by the model.

In Table 11, the Altman Z-SCORE indicators are adopted when bank representation on corporate boards is defined by the presence of a bank CEO on the boards of a company. As well as the outcomes of our key variables are concerned, all results are confirmed as well as the monotonic positive relation between probability of default class and risk premium charged by lenders.

In Table 14 we summarized the estimates for the 'certification effects' benefited by firms having bank directors on boards, i.e. the reductions of risk premia indicated by the coefficients for BANKPRES, NOLEND-BANKPRES, LEND-BANKPRES, that we have already presented. These results are presented with breakdowns by type of notion adopted for defining bank presence on boards (simple bank director vs bank CEOs in corporate boards) and by type of control for borrowers' riskiness (firms' financial characteristics vs Altman Z-Score). In all regressions the certification effects provide to be significant stronger when the a firm has in its boards *lenders* bank directors (or CEOs) expressed by banks which are creditors of the firm.

Finally, Table 15 reports the coefficients for the variable signaling potential adverse conflicts of interest (BY-IN) which we presented in Tables 7-8 for the 'all loan contracts' and the 'credit line' regressions. In this Table, we also included outcomes for BY-IN obtained by running separated regressions for 'Accounts receivable' and 'Fixed-term' loans. The estimated coefficients are never significant.

4   Conclusions

A large literature studies the effects of the presence of bankers on firms' boards. First, lending bankers on boards may reduce monitoring costs, having access to borrowers' proprietary information (*monitoring hypothesis*); second, as informed creditors, lending bankers on boards may certificate the financial soundness of firms to other creditors which are not represented on their boards (*certification hypothesis*). According to an alternative view, lending bankers on boards may generate conflicts as they have incentives to pursue interests of both debtholders - as board's member of the banks - and firm's shareholders - as board's member of the firms, under the assumption that the pay-offs of these two groups are not aligned (*conflict of interests hypothesis*).

Our analysis shows that interest rates on loans from banks with a director who is also a director of a borrowing firm are not significantly lower than those charged, to the same firm, by the other (out of the boards) firm's financiers. As we have not evidence of pressures for special treatment of borrowers not normally justifiable on economic ground we do not find adverse conflict of interest effects.

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[18]The estimated set of coefficients say that, for example, a firm belonging to the 9th risk Altman Z-Score class is charged 213 basis points more than one included in the 1st risk class.

In contrast, we find a significant *certification* effect supporting the 'information view' as rates charged by all banks on loans to firms with bankers on boards are lower than those charged to firms without bankers. This effect is stronger if the banker on board has itself loaned to the firm.

Finally, we find that firms with bank directors on boards are larger in size, have a higher fraction of tangible assets and a greater debt-servicing ability than their peers.

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Table 1: Variable description

Variable name	Description
Dep. var: Interest rate on loan (loan-level)	
Contract characteristics:	
CREDIT LINES (loan-level)	=1 for loans extended through credit lines
ACCOUNT/REC (loan-level)	=1 for loans secured by accounts receivable
FIXED-TERM (loan-level)	=1 for fixed term loans
TRANCHE (loan-level)	(log of) amount of loan in Euros
COLLATERAL (loan-level)	=1 if loan is secured by real collateral
Governance-signaling characteristics:	
BANKPRES (firm -level)	=1 if firm has (at least) a bank director on boards
NOLEND-BANKPRES* (firm-level)	=1 if firm has non-lending bank director on boards
LEND-BANKPRES * (firm-level)	=1 if firm has (at least) one lending bank director on boards
BY-IN* (loan-level)	=1 if loan is granted by the lender on boards (to a firm with lenders on boards)
BY-OUT * (loan-level)	=1 if loan is granted by other lenders without board positions (to a firm with lenders on boards)
Firms'financial characteristics:	
EQUITY/DEBT (firm-level)	Equity to debt
COVERAGE (firm-level)	Interest expenses to gross operating margins
LIQUIDITY (firm-level)	Short term assets to short term liabilities
ASSETS LIQUIDITY (firm-level)	Liquid assets to total assets
TANGIBILITY (firm-level)	Tangible assets to total assets
PROFITABILITY (firm-level)	Return on equities
ST-DEBT (firm-level)	Short term debt to total debt
SIZE (firm-level)	(log of) Sales
	Assets
	Number of employees
SCORE (1-9) (firm-level)	Altman Z-Score (probability of default)
Traditional relationship characteristics :	
MULTIPLE* (firm-level)	Number of creditors of the firm
TOP-LENDER* (bank/firm-level)	=1 if creditor is the main lender for the firm
LENGTH* (bank/firm-level)	Duration of the bank-firm relationship (number of years)
Industry characteristics: (firm-level)	23 economic branch-level dummies
Local mark.characteristics: (firm-level)	20 regional area-level dummies
Creditor characteristics: (bank-level)	213 individual bank (or 138 bank group) level dummies

* This variable is defined at bank group-level. All individual banks who join a bank group are treated as they were a sole entity.

Table 2: The size of loans to firms having bank directors on boards.
All loans (number of contracts and business coverage)
Firms having bank presence are those with any bank directors on company boards. .

	Loans to firms with bank presence on company boards				
	No	Yes (BANKPRES)	To firms having non-lending bankers (NOLEND-BANKPRES)	To firms having lending bankers (LEND-BANKPRES)	
				Loans from lenders out of the boards (BY-OUT)	Loans from lenders on boards (BY-IN)
Total	293,062	12,433	6,973	4,464	996
Business coverage		13%	5%	6%	2%

Table 3: The cost of loans charged to firms having bank directors on boards
(Average interest rates on loans in percentage points (loan-level data)
Firms having bank presence are those having (at least) a bank directors on their company boards.

	Loans to firms with bank presence on company boards				
	No	Yes (BANKPRES)	To firms having non-lending bankers (NOLEND-BANKPRES)	To firms having lending bankers (LEND-BANKPRES)	
				Loans from lenders out of the boards (BY-OUT)	Loans from lenders on boards (BY-IN)
ALL LOANS	5.19	4.46	4.59	4.32	4.16
CREDIT LINES	8.09	6.89	7.21	6.65	5.93
ACCOUNT REC.	3.99	3.45	3.56	3.29	3.33
FIXED-TERM	4.00	3,69	3.78	3.60	3.57

Table 4: Characteristics of firms having bank directors on boards (medians of firm-level data).

Firms having bank presence are those having (at least) a bank directors on their company boards.

| | | No | Yes | Firms having bank directors on boards | |
				Firms having non-lending bankers	Firms having lending bankers
SIZE	employees	37	47	46	54
	assets	7,165	10,175	9,617	11,816
	sales	8,902	11,650	11,789	12,740
COVERAGE		0.78	0.73	0.74	0.72
TANGIBILITY		0.09	0.18	0.14	0.25
LIQUIDITY		1.14	1.15	1.16	1.13
ASSETS LIQUIDITY		0.79	0.70	0.71	0.69
EQUITY/DEBT		0.45	0.57	0.56	0.62
ST-DEBT		0.83	0.74	0.76	0.72
ROE		4.60	4.13	4.19	3.98
MULTIPLE		4	4	4	5
TOP-LENDER'S SHARE		0.54	0.54	0.59	0.47
N		32,407	1,441	918	523

Table 5: Descriptive statistics: Variables used in the 'Credit lines' regressions.

Table presents summary statistics for the variables used in the Credit lines regressions. The sample consist of a cross-section based on 2005 data of loan contracts reported in the Central Credit Register for 32,407 firm. The definition of variables can be found in Table 2. BANKPRES (firm with bank presence on boards) is a binary variable that equals 1 if the firm has a member of its company that serves as a director of a bank. LEND-BANKPRES (firm with a lending bank presence on boards) is a binary variable that equals 1 if the firm has a member of its company boards that serves as a director of a bank which is a creditor of the firm . NOLEND-BANKPRES (firm with a non lending bank presence on boards) is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director of a bank which is not a creditor of the firm. BY-IN is a binary variable, defined at loan-level, that equals 1 if the loans is extended by the lender on boards (to the firm having a lender on board). BY-OUT is a binary variable that equal 1 if the loan is extended by a lender out of the board (to the firm having a lender on boards). FE means 'fixed effects' dummy variables , RE means ' random effects' dummy variables. LENGTH is the natural log of one plus the length of the relationship.

Variable	Mean	Std. Dev.	Min.	Max.	N
INTEREST RATE	8.074	3.057	0	16.629	87,426
CREDIT LINE (0,1)	1	0	1	1	87,426
ACCOUNTS RECEIV. (0,1)	0	0	0	0	87,426
FIXED-TERM (0,1)	0	0	0	0	87,426
TRANCHE	275,157	6,268,270	1	1,319,996,288	87,426
COLLATERAL (0,1)	0.027	0.161	0	1	87,426
BANKPRES (0,1)	0.038	0.191	0	1	87,426
LEND-BANKPRES (0,1)	0.017	0.129	0	1	87,426
NOLEND-BANKPRES (0,1)	0.021	0.144	0	1	87426
BY-IN (0,1)	0.003	0.057	0	1	87,426
BY-OUT (0,1)	0.014	0.116	0	1	87,426
TANGIBILITY	0.239	0.306	0	1	85,650
PROFITABILITY	4.445	14.038	-41.2	55.22	76,784
COVERAGE	0.739	0.24	0	1	82,660
LIQUIDITY	1.108	0.361	0	2.749	86,069
SALES	13,951	11,521	0	57,318	79,214
EQUITY/DEBT	0.509	0.54	0	3.47	78,425
Z-SCORE	5.589	1.516	1	9	87,309
PUBLIC (0,1)	0.002	0.044	0	1	87,426
MULTIPLE	6.88	3.515	1	33	87,426
TOPLENDER (0,1)	0.209	0.407	0	1	87,426
LENGTH	6.94	3.543	1	11	86,269

Table 6: Descriptive statistics: Variables used in the 'All contracts' regressions.

Table presents summary statistics for the variables used in the Credit lines regressions. The sample consist of a cross-section based on 2005 data of loan contracts reported in the Central Credit Register for 32,407 firm. The definition of variables can be found in Table 2. BANKPRES (firm with bank presence on boards) is a binary variable that equals 1 if the firm has a member of its company that serves as a director of a bank. LEND-BANKPRES (firm with a lending bank presence on boards) is a binary variable that equals 1 if the firm has a member of its company boards that serves as a director of a bank which is a creditor of the firm. NOLEND-BANKPRES (firm with a non lending bank presence on boards) is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director of a bank which is not a creditor of the firm. BY-IN is a binary variable, defined at loan-level, that equals 1 if the loans is extended by the lender on boards (to the firm having a lender on board). BY-OUT is a binary variable that equal 1 if the loan is extended by a lender out of the board (to the firm having a lender on boards).

Variable	Mean	Std. Dev.	Min.	Max.	N
INTEREST RATE	5.153	2.772	0	16.629	305,530
CREDIT LINE (0,1)	0.286	0.452	0	1	305,530
ACCOUNTS RECEIV. (0,1)	0.397	0.489	0	1	305,530
FIXED-TERM (0,1)	0.317	0.465	0	1	305,530
TRANCHE	799,962	8,348,697	1	2,163,180,032	305,530
COLLATERAL (0,1)	0.067	0.249	0	1	299,827
BANKPRES (0,1)	0.041	0.198	0	1	305,530
NOLEND-BANKPRES (0,1)	0.023	0.149	0	1	305,530
LEND-BANKPRES (0,1)	0.018	0.132	0	1	305,530
BY-IN (0,1)	0.003	0.057	0	1	305,530
BY-OUT (0,1)	0.015	0.12	0	1	305,530
TANGIBILITY	0.254	0.317	0	1	300,594
PROFITABILITY	5.222	13.959	-41.2	55.22	275,229
COVERAGE	0.72	0.247	0	1	291,472
LIQUIDITY	1.152	0.361	0	2.75	300,865
SALES	146,60	11,732	0	57,318	273,771
EQUITY/DEBT	0.551	0.570	0	3.47	276,444
Z-SCORE	5.362	1.542	1	9	305,202
PUBLIC (0,1)	0.001	0.039	0	1	305,530
MULTIPLE	6.836	3.532	1	33	305,530
TOPLENDER (0,1)	0.251	0.434	0	1	305,530
LENGTH	7.091	3.499	1	11	302,873

Table 7: Bank directors on corporate boards and loan interest rates: 'Credit lines' regressions.

Table reports results from regression where the dependent variable is the interest rates charged by bank i to firm j. The sample consist of a cross-section based on 2005 data on loan contracts reported by 32,407 firms in the Central Credit Register. The definition of variables can be found in Table 2. The definition of variables can be found in Table 2. BANKPRES (firm with bank presence on boards) is a binary variable that equals 1 if the firm has a member of its company that serves as a director of a bank. LEND-BANKPRES (firm with a lending bank presence on boards) is a binary variable that equals 1 if the firm has a member of its company boards that serves as a director of a bank which is a creditor of the firm . NOLEND-BANKPRES (firm with a non lending bank presence on boards) is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director of a bank which is not a creditor of the firm. BY-IN is a binary variable, defined at loan-level, that equals 1 if the loans is extended by the lender on boards (to the firm having a lender on board). FE means 'fixed effects' dummy variables , RE means ' random effects' dummy variables. LENGTH is the natural log of one plus the length of the relationship.t statistics are reported in brackets. Robust Huber-White standard errors are computed. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

DEP VAR: INTEREST RATE	(1) full sample	(2) full sample	(3) full sample	(4) only to firms having lenders on boards	(5) only to firms having lenders on boards
Contract characteristics					
TRANCHE	-0.169***	-0.169***	-0.165***	-0.316***	-0.315***
	(-32.04)	(-32.03)	(-31.27)	(-8.21)	(-8.09)
COLLATERAL			-0.500***		-0.284
			(-7.90)		(-0.45)
Governance-signaling characteristics					
BANK-DIR	-0.467***				
	(-5.30)				
NOLEND-DIR		-0.349**	-0.349**		
		(-3.16)	(-3.17)		
LEND-DIR		-0.671***	-0.672***		
		(-4.74)	(-4.74)		
BY-IN				-0.190	-0.193
				(-0.88)	(-0.88)
Traditional relationship characteristics					
TOP-LENDER	-0.200***	-0.200***	-0.190***	0.250	0.257
	(-8.79)	(-8.79)	(-8.39)	(1.08)	(1.10)
MULTIPLE	0.327***	0.328***	0.317***		
	(9.94)	(9.98)	(9.65)		
LENGTH	0.658***	0.658***	0.662***	0.587**	0.586**
	(37.47)	(37.47)	(37.70)	(3.16)	(3.15)
Other controls					
FIRM	RE	RE	RE	FE	FE
ECON. BRANCH	FE	FE	FE		
GEOGR. LOC.	FE	FE	FE		
BANK	FE	FE	FE	FE	FE
Firm's financial characteristics					
TANGIBILITY	-0.600***	-0.599***	-0.604***		
	(-11.13)	(-11.11)	(-11.21)		
PROFITABILITY	-0.00716***	-0.00715***	-0.00696***		
	(-6.51)	(-6.50)	(-6.33)		
COVERAGE	0.240***	0.240***	0.232***		
	(3.47)	(3.47)	(3.35)		
LIQUIDITY	-0.547***	-0.548***	-0.549***		
	(-9.81)	(-9.82)	(-9.84)		
SALES	-0.483***	-0.483***	-0.485***		
	(-20.39)	(-20.39)	(-20.43)		
EQUITY/DEBT	-0.422***	-0.420***	-0.425***		
	(-13.93)	(-13.89)	(-14.05)		
PUBLIC	-0.199	-0.175	-0.189		
	(-0.25)	(-0.22)	(-0.24)		
Observations	57,136	57,136	57,136	1,386	1,386
R^2	0.345	0.345	0.345	0.260	0.301

Table 8: Bank directors on corporate boards and loan interest rates ('all contracts').

Table reports results from regression where the dependent variable is the interest rates charged by bank i to firm j. The sample consist of a cross-section based on 2005 data on loan contracts reported by 32,407 firms in the Central Credit Register. The definition of variables can be found in Table 2. BANKPRES is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director or executive of a bank. NOLEND-BANKPRES is a binary variable that equals 1 if the firm has a *non-lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is not a creditor of the firm. LEND-BANKPRES is a binary variable that equals 1 if the firm has a *lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is a creditor of the firm. BY-IN is a binary variable defined at loan level only for firms having *lending* bankers on boards (LEND-BANKPRES=1), that equals 1 if the loans is extended by the lender on board. FE means 'fixed effects', RE means ' random effects'. LENGTH is the natural log of one plus the length of the relationship. t statistics are reported in brackets. Robust Huber-White standard errors are computed. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

DEP VAR INTEREST RATE	(1) full sample	(2) full sample	(3) full sample	(4) only firms with lenders on boards	(5) only firms with lenders on boards
Contract characteristics					
TRANCHE	-0.158***	-0.158***	-0.156***	-0.207***	-0.205***
	(-52.30)	(-52.29)	(-50.89)	(-10.29)	(-10.06)
COLLATERAL			-0.246***		-0.132
			(-13.95)		(-1.18)
FIXED-TERM	0.101***	0.101***	0.137***	0.543***	0.557***
	(14.97)	(14.97)	(19.30)	(7.89)	(7.70)
CREDIT LINES	3.713***	3.713***	3.720***	2.942***	2.947***
	(286.49)	(286.49)	(286.69)	(23.52)	(23.54)
Governance-signaling characteristics					
BANKPRES	-0.265***				
	(-6.63)				
NOLEND-BANKPRES		-0.210***	-0.210***		
		(-4.24)	(-4.16)		
LEND-BANKPRES		-0.362***	-0.369***		
		(-5.53)	(-5.55)		
BY-IN				0.0664	0.0904
				(0.94)	(1.31)
Traditional relationship characteristics					
TOP-LENDER	-0.0334***	-0.0334***	-0.0206*	0.0104	-0.00484
	(-3.67)	(-3.67)	(-2.21)	(0.15)	(-0.07)
MULTIPLE	0.134***	0.134***	0.134***		
	(9.11)	(9.15)	(8.96)		
LENGTH	0.343***	0.343***	0.349***	0.244***	0.252***
	(43.81)	(43.81)	(44.23)	(4.08)	(4.18)
Other controls					
FIRM	RE	RE	RE	FE	FE
ECON.BRANCH	FE	FE	FE		
GEOGR. LOCAL.	FE	FE	FE		
BANK	FE	FE	FE	FE	FE
Firms' financial characteristics					
TANGIBILITY	-0.378***	-0.377***	-0.385***		
	(-15.65)	(-15.63)	(-15.65)		
PROFITABILITY	-0.00497***	-0.00496***	-0.00496***		
	(-9.52)	(-9.51)	(-9.39)		
COVERAGE	0.0768*	0.0770*	0.0528		
	(2.47)	(2.47)	(1.66)		
LIQUIDITY	-0.334***	-0.334***	-0.350***		
	(-13.06)	(-13.06)	(-13.39)		
SALES	-0.294***	-0.294***	-0.302***		
	(-25.54)	(-25.53)	(-25.79)		
LEVERAGE	-0.263***	-0.262***	-0.265***		
	(-20.36)	(-20.34)	(-20.23)		
PUBLIC	-0.142	-0.131	-0.119		
	(-0.46)	(-0.42)	(-0.38)		
Observations	204,005	204,005	200,246	5,177	5,046
R^2	0.554	0.554	0.553	0.420	0.422

Table 9: Bank CEOs on corporate boards and loan interest rates ('all contracts').

Table reports results from regression where the dependent variable is the interest rates charged by bank i to firm j. The sample consist of a cross-section based on 2005 data of loan contracts reported in the Central Credit Register for 32,407 firm. The definition of variables can be found in Table 2. BANKPRES is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director or executive of a bank. NOLEND-BANKPRES is a binary variable that equals 1 if the firm has a *non-lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is not a creditor of the firm. LEND-BANKPRES is a binary variable that equals 1 if the firm has a *lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is a creditor of the firm. BY-IN is a binary variable defined at loan level only for firms having *lending* bankers on boards (LEND-BANKPRES=1), that equals 1 if the loans is extended by the lender on board. FE means 'fixed effects', RE means ' random effects'. LENGTH is the natural log of one plus the length of the relationship. t statistics are reported in brackets. Robust Huber-White standard errors are computed. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

DEP VAR INTEREST RATE	(1) full sample	(2) full sample	(3) full sample	(4) only firms with lenders on boards	(5) only firms with lenders on boards
Contract characteristics					
TRANCHE	-0.158***	-0.158***	-0.156***	-0.212***	-0.206***
	(-52.33)	(-52.33)	(-50.92)	(-8.00)	(-7.61)
COLLATERAL			-0.246***		-0.231
			(-13.93)		(-1.41)
FIXED-TERM	0.101***	0.101***	0.137***	0.494***	0.536***
	(14.96)	(14.96)	(19.28)	(4.63)	(4.67)
CREDIT LINES	3.713***	3.713***	3.720***	2.930***	2.954***
	(286.45)	(286.47)	(286.66)	(17.13)	(17.24)
Governance-signaling characteristics					
BANK-PRES	-0.276***				
	(-4.60)				
NOLEND-BANKPRES		-0.177*	-0.171*		
		(-2.36)	(-2.24)		
LEND-BANKPRES		-0.443***	-0.434***		
		(-4.51)	(-4.33)		
BY-IN				0.0192	0.0504
				(0.13)	(0.38)
Traditional relationship characteristics					
TOP-LENDER	-0.0335***	-0.0335***	-0.0207*	0.148	0.111
	(-3.68)	(-3.68)	(-2.22)	(1.29)	(0.95)
MULTIPLE	0.134***	0.135***	0.134***		
	(9.13)	(9.15)	(8.96)		
LENGTH	0.343***	0.343***	0.349***	0.167	0.192*
	(43.80)	(43.80)	(44.22)	(1.90)	(2.15)
Other controls					
FIRM	RE	RE	RE	FE	FE
ECON. BRANCH	FE	FE	FE		
GEOGR. LOCAL.	FE	FE	FE		
BANK	FE	FE	FE	FE	FE
Firms' financial characteristics					
TANGIBILITY	-0.381***	-0.380***	-0.388***		
	(-15.76)	(-15.74)	(-15.76)		
PROFITABILITY	-0.00492***	-0.00493***	-0.00493***		
	(-9.43)	(-9.45)	(-9.32)		
COVERAGE	0.0779*	0.0786*	0.0545		
	(2.50)	(2.53)	(1.71)		
LIQUIDITY	-0.334***	-0.334***	-0.350***		
	(-13.04)	(-13.06)	(-13.38)		
SALES	-0.296***	-0.296***	-0.304***		
	(-25.73)	(-25.73)	(-26.00)		
EQUITY/DEBT	-0.264***	-0.264***	-0.266***		
	(-20.47)	(-20.43)	(-20.33)		
PUBLIC	-0.147	-0.154	-0.142		
	(-0.47)	(-0.49)	(-0.45)		
Observations	204,011	204,011	200,252	2,502	2,451
R^2	0.554	0.554	0.554	0.406	0.404

Table 10: Bank directors on corporate boards and loan interest rates: Altman Z-Score.

Table reports results from regression where the dependent variable is the interest rates charged by bank i to firm j. The sample consist of a cross-section based on 2005 data of loan contracts reported in the Central Credit Register for 32,407 firm. The definition of variables can be found in Table 2. BANKPRES is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director or executive of a bank. NOLEND-BANKPRES is a binary variable that equals 1 if the firm has a *non-lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is not a creditor of the firm. LEND-BANKPRES is a binary variable that equals 1 if the firm has a *lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is a creditor of the firm. BY-IN is a binary variable defined at loan level only for firms having *lending* bankers on boards (LEND-BANKPRES=1), that equals 1 if the loans is extended by the lender on board. The Z-Score (Altman, 1968 and 1993) is an indicator of the probability of default obtained from estimating a discriminant function on balance sheet data. The numerical scores obtained are classified into 9 qualitative risk classes. FE means 'fixed effects', RE means ' random effects'. LENGTH is the natural log of one plus the length of the relationship. t statistics are reported in brackets. Robust Huber-White standard errors are computed. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	(1)	(2)	(3)
DEP VAR INTEREST RATE	full sample	full sample	full sample
Contract characteristics			
TRANCHE	-0.163***	-0.162***	-0.160***
	(-64.86)	(-64.84)	(-63.18)
COLLATERAL			-0.263***
			(-17.89)
FIXED-TERM	0.128***	0.128***	0.171***
	(21.52)	(21.53)	(27.10)
CREDIT LINES	3.629***	3.629***	3.635***
	(329.19)	(329.21)	(329.50)
Governance-signaling characteristics			
BANK-DIR	-0.345***		
	(-10.16)		
NOLEND-DIR		-0.274***	-0.277***
		(-6.37)	(-6.31)
LEND-DIR		-0.456***	-0.471***
		(-8.50)	(-8.63)
Traditional relationship characteristics			
TOP-LENDER	-0.0352***	-0.0352***	-0.0221**
	(-4.39)	(-4.39)	(-2.69)
MULTIPLE	-0.0643***	-0.0631***	-0.0698***
	(-5.72)	(-5.61)	(-6.07)
LENGTH	0.338***	0.338***	0.346***
	(49.26)	(49.27)	(49.90)
other controls			
FIRM	RE	RE	RE
ECON. BRANCH	FE	FE	FE
GEOGR. LOCAL.	FE	FE	FE
Altman Z-Score			
SCORE=2	0.0411	0.0417	0.0444
	(0.88)	(0.90)	(0.94)
SCORE=3	0.0313	0.0324	0.0330
	(0.72)	(0.75)	(0.75)
SCORE=4	0.176***	0.177***	0.177***
	(4.41)	(4.43)	(4.37)
SCORE=5	0.532***	0.533***	0.541***
	(13.16)	(13.18)	(13.17)
SCORE=6	0.894***	0.894***	0.910***
	(21.39)	(21.40)	(21.42)
SCORE=7	1.319***	1.319***	1.340***
	(31.52)	(31.52)	(31.54)
SCORE=8	1.526***	1.526***	1.551***
	(27.11)	(27.12)	(27.17)
SCORE=9	2.135***	2.135***	2.165***
	(24.27)	(24.27)	(24.30)
Observations	279,275	279,275	274,026
R^2	0.55	0.55	0.55

Table 11: Bank CEOs on corporate boards and loan interest rates: Altman Z-Score.

Table reports results from regression where the dependent variable is the interest rates charged by bank i to firm j. The sample consist of a cross-section based on 2005 data of loan contracts reported in the Central Credit Register for 32,407 firm. The definition of variables can be found in Table 2. BANKPRES is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director or executive of a bank. NOLEND-BANKPRES is a binary variable that equals 1 if the firm has a *non-lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is not a creditor of the firm. LEND-BANKPRES is a binary variable that equals 1 if the firm has a *lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is a creditor of the firm. BY-IN is a binary variable defined at loan level only for firms having *lending* bankers on boards (LEND-BANKPRES=1), that equals 1 if the loans is extended by the lender on board. The Z-Score (Altman, 1968 and 1993) is an indicator of the probability of default obtained from estimating a discriminant function on balance sheet data. The numerical scores obtained are classified into 9 qualitative risk classes. FE means 'fixed effects', RE means ' random effects'. LENGTH is the natural log of one plus the length of the relationship. t statistics are reported in brackets. Robust Huber-White standard errors are computed. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	(1)	(2)	(3)
	full sample	full sample	full sample
Contract characteristics			
TRANCHE	-0.163***	-0.163***	-0.160***
	(-58.88)	(-58.87)	(-57.27)
COLLATERAL			-0.263***
			(-15.71)
FIXED-TERM	0.128***	0.128***	0.170***
	(15.88)	(15.89)	(20.63)
CREDIT LINES	3.628***	3.628***	3.635***
Governance-signaling characteristics			
BANK-DIR	-0.363***		
	(-6.98)		
NOLEND-DIR		-0.263***	-0.261***
		(-4.11)	(-4.01)
LEND-DIR		-0.506***	-0.513***
		(-5.92)	(-5.86)
Traditional relationship characteristics			
TOP-LENDER	-0.0351***	-0.0351***	-0.0221**
	(-4.42)	(-4.42)	(-2.71)
MULTIPLE	-0.0658***	-0.0652***	-0.0721***
	(-6.07)	(-6.01)	(-6.50)
LENGTH	0.338***	0.338***	0.346***
	(46.50)	(46.50)	(46.94)
Other controls			
FIRM	RE	RE	RE
ECON.BRANCH	FE	FE	FE
GEOGR. LOCAL.	FE	FE	FE
Altman Z-Score			
SCORE=2	0.0416	0.0418	0.0442
	(0.95)	(0.95)	(1.00)
SCORE=3	0.0317	0.0318	0.0321
	(0.77)	(0.78)	(0.77)
SCORE=4	0.178***	0.178***	0.178***
	(4.68)	(4.69)	(4.63)
SCORE=5	0.535***	0.534***	0.542***
	(13.75)	(13.76)	(13.78)
SCORE=6	0.898***	0.897***	0.913***
	(22.17)	(22.18)	(22.25)
SCORE=7	1.324***	1.323***	1.344***
	(32.65)	(32.65)	(32.74)
SCORE=8	1.530***	1.530***	1.555***
	(26.77)	(26.77)	(26.82)
SCORE=9	2.144***	2.144***	2.174***
	(25.30)	(25.29)	(25.31)
Observations	279,287	279,287	274,038
R^2	0.55	0.55	0.55

Table 12: Certification effects: Reductions in the cost of loans benefited by firms with bank presence on boards.

This table summarizes results on the effect of bank presence on corporate boards on loan pricing. BANKPRES is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director or executive of a bank. NOLEND-BANKPRES is a binary variable that equals 1 if the firm has a *non-lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is not a creditor of the firm. LEND-BANKPRES is a binary variable that equals 1 if the firm has a *lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is a creditor of the firm. BY-IN is a binary variable defined at loan level only for firms having *lending* bankers on boards (LEND-BANKPRES=1), that equals 1 if the loans is extended by the lender on board.

Controlling for observable risks:
ALTMAN Z-SCORE OF BORROWERS

	only firms having bank directors on boards	firms having bank CEOs on boards
BANKPRES	-0.345***	-0.363***
NONLEND-BANKPRES	-0.274***	-0.263***
LEND-BANKPRES	-0.456***	-0.506***

Controlling for observable risks:
FINANCIAL STATEMENTS OF BORROWERS

	firms having bank directors on boards	firms having bank CEOs on boards
BANKPRES	-0.265***	-0.276***
NONLEND-BANKPRES	-0.21***	-0.17*
LEND-BANKPRES	-0.37***	-0.44***

Table 13: Conflicts of interest effects. Differences in the interest rates applied, to a borrower, by its on-the boards and out-of the boards financiers (BY-IN coefficients) .

This table summarizes results on the effect of bank presence on corporate boards on loan pricing. BANKPRES is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director or executive of a bank. BANKPRES is a binary variable that equals 1 if the firm has a member of its corporate boards that serves as a director or executive of a bank. NOLEND-BANKPRES is a binary variable that equals 1 if the firm has a *non-lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is not a creditor of the firm. LEND-BANKPRES is a binary variable that equals 1 if the firm has a *lending* banker on its boards, i.e. if the firm a member of its corporate boards that serves as a director or executive of a bank which is a creditor of the firm. BY-IN is a binary variable defined at loan level only for firms having *lending* bankers on boards (LEND-BANKPRES=1), that equals 1 if the loans is extended by the lender on board.

		BY-IN COEFFICIENTS	
Type of contract		firms having bank directors on boards	firms having bank CEOs on boards
ALL LOANS	coeff.	0.06	0.01
	t	(-0.94)	(0.13)
CREDIT LINES	coeff.	-0.19	-0.42
	t	(-0.88)	(-1.02)
ACCOUNTS RECEIVABLE	coeff.	0.07	0.05
	t	(1.07)	(0.38)
FIXED TERM-LOANS	coeff.	0.05	-0.01
	t	(0.57)	(-0.07)