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How many banks does it take to lend ?
Empirical evidence from Europe

Christophe J. Godlewski / Ydriss Ziane

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Faculté des
sciences économiques
et de gestion

PEGE
61, avenue de la Forêt Noire
67085 STRASBOURG Cedex
Tél. : (33) 03 90 24 21 52
Fax : (33) 03 90 24 20 64
www-ulp.u-strasbg.fr/large

Institut d'Etudes Politiques
47, avenue de la Forêt Noire
67082 STRASBOURG Cedex

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Christophe J. Godlewski*

University of Strasbourg, Faculty of Business and Economics, LaRGE

Ydriss Ziane♦

University of Nancy, Faculty of Law and Economics, BETA CNRS

Abstract

We provide empirical evidence on the determinants of the number of bank lenders using a sample of more than 3000 loans to firms from 24 European countries. Our testable hypotheses are built upon different theoretical frameworks drawn from the existing literature, referring to firm characteristics, strategic considerations, geographical distances, bank market concentration, efficiency of legal system, and development of alternative sources of funds. Our main results show that the number and the international diversity of lenders is increased by loan and firm characteristics which reduce agency costs, and by financial structure and legal environment characteristics which mitigate expropriation risk.

Keywords: lending relationships, number of lenders, bank loans, financial governance, asymmetric information, Europe.

JEL Classification: G21, G32, G33.

*Pôle Européen de Gestion et d'Economie, 61 avenue de la Forêt Noire, 67000 Strasbourg. Phone : 33-3-90-24-21-21. Fax : 33-3-90-24-20-64. E-mail : godlewski@cournot.u-strasbg.fr

♦Faculté de Droit, Sciences Economiques et Gestion, 13 Place Carnot, C.O. n°26, 54035 Nancy Cedex. Phone : 33-3-83-19-26-05. Fax : 33-3-83-19-25-91. E-mail : ydriss.ziane@univ-nancy2.fr

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I. Introduction

During the last decade, an important number of contributions addressed the issue of the optimal number of bank lending relationships for non-financial firms in capitalistic market economies (Ongena and Smith, 2000; Farinha and Santos, 2002; Elsas et al., 2004; Bris and Welch, 2005; Carletti et al., 2007). Regarding firm's financial structures in bank-oriented European countries, bank credit is a vital source of funds for current assets, in complementary of trade credit, and investment with internal generated cash flows and market funds for biggest or fast growing firms. In this framework, the optimal number of lenders plays a key role to comprehensively manage finance planning and firm's governance within a context of markets globalization, intense competition and consolidation of banking industries in many European countries (Boot, 2000; Tirole 2006).

Following the classical theory of financial intermediation (Diamond, 1984), banks emerge as the "best" agents for reducing information asymmetries by creating valuable information through time and repeated interactions within an enhanced long-term lending relationship with firms. In that sense, the "book keeping" function of financial institutions coupled with scale economies in monitoring loans give them a predominant advantage over other economic agents. Thus, maintaining multiple bank lending relationships would induce first an inefficient duplication of information costs for firms, and second would significantly reduce information accumulation for lending institutions. In other words, to efficiently reduce information asymmetries and credit rationing, it appears that firms should be faithful and develop long-term exclusive lending relationship with a single bank.

However, in contradiction with these theoretical predictions, empirical results (Detragiache et al., 2000; Ongena and Smith 2001) indicate that maintaining lending relationships with only one bank became the exception rather the rule in both bank- and market-oriented financial countries. To explain the economic phenomenon of multiple banking, different theoretical patterns emerge in the literature referring mainly to firm's characteristics, strategic considerations in touch with repayment defaults or geographical distances between contractors, bank market's concentration or macroeconomic variables, as well as the efficiency of legal system or the development of alternative sources of funds (Berger et al., 2001).

The extant knowledge on the determinants of the number of bank lenders for non-financial firms is rich but suffers from a lack of established empirical results to really form a heavy and

independent core of the literature concerning financial intermediaries. In fact, little evidence is provided in Europe due to the lack of specific data as the Surveys of Small Business Finances (1987, 1993, 1998 and 2003) in US, and researchers have to reach with restrictive surveys with regional or national obedience in better cases. Consequently, few empirical contributions dealing with European data permitting vast comparisons exist, as far as we know.

To tackle this issue, we provide some empirical evidences on the determinants of the number of bank lenders for 3182 loans subscribed by firms from 24 European countries. Using different datasets to combine loan and firm's characteristics, but also macroeconomic variables and country/industry level data, we explore the number and diversity of funds' providers over a recent period of nine years (1998-2006) in Western but also Eastern European countries. Furthermore, cross-sectional regressions differentiated for small, medium and large firms permit to contribute to the debate, testing – on an international basis – some simple but fundamental hypothesis offered by theoretical models recently developed to explain the strategic change toward a multiple banking environment.

The rest of the paper is organized as follow. Section II reviews the literature and presents the main hypotheses. Section III describes data and methodology to test the predictions. Results are discussed in Section IV, and we conclude in Section V.

II. Literature review

Banks are fundamental financial institutions in modern economies, assuming management and creation of money, but also intertemporal risks of assets' transformation. Because there is little uncertainty on the value of deposits, banks permit assets' transformation through simultaneous financing of risky and illiquid investment projects proposed by firms (Diamond, 1984; Rajan 1992). Allowing for remuneration of savings for a part, jobs and economic growth for another, this intermediate financing is mainly provided through proprietary information and multiple interactions, i.e. a relationship lending, or arm's-length transactions (Boot and Thakor 2000). In the first case, the loan officer gathers information beyond readily available public information that has to remain confidential. Over time and interactions, he develops "soft information" about small firms notably, that serves more efficiently in a decentralized financial institution where his power decision about fund's allocation is large. In the second case, centralized banks, with complex hierarchical divisions and clearer separations between expertise and authority, will rely more on tangible and verifiable

knowledge about borrowers based upon financial statements, “hard information” is so predominant inversely (Stein, 2002).

Whatever the configuration, the number of bank lenders is relevant with respect to the process of generating valuable information and allocating capital to firms with positive NPV investment project. In that framework, the pervasive act of switching² from single to multiple banking is highly relevant, inducing information and risks sharing, asymmetric financing and consequently strategic behaviors between lenders. Literature dealing with creditor concentration leads to considerations in touch with varied determinants to explain the optimal number of bank lenders. Firm’s characteristics (size, quality, opaqueness and liquidity), bankruptcy considerations, hold-up problem but also environmental and legal perspectives will be briefly discussed below to address testable hypothesis for our empirical work.

Firm’s characteristics are certainly the most obvious reasons for explaining creditors’ concentration. Intuitively, large firms face more complex and diversified financing needs than small and medium ones. Regarding fixed costs of maintaining lending relationships (Machauer and Weber, 2000), in touch with information gathering and coordination inside the firm but also between lenders, it appears that small firms should have a reduced number of bank lenders to minimize transaction costs (Detragiache et al., 2000),. In a competitive environment, Campbell (1979) point out that bilateral financing can be viewed as an attempt for innovative firms to conceal private information on their technologies. Yosha (1995) develops a model under the hypothesis that multiple lenders regime, permitting information leakage to competitors, is chosen by low-quality firms to prevent from aggressive price reactions on their part. Alternatively, high-quality firms will prefer bilateral financing to preserve confidence about their comparative advantages and to avoid disclosure of information. For the same reason, Bhattacharya and Chiesa (1995) explain the fact that high growing firms and those developing R&D activities prefer venture capital financing or exclusive credit relationship. Von Rheinbaben and Ruckes (1998) incorporate the tradeoff between firm quality and the necessity of competition among creditors to mitigate the hold up problem and to reduce interest rates.

² Among others, Farinha and Santos (2002) and Ioannidou and Ongena (2007) empirically analyze the decision to switch bank relationship for Portuguese and Bolivian firms, respectively.

Firm opacity, leading to higher monitoring costs and more asymmetric information for lenders is attempted to significantly reduce their number. In fact, banks will be reluctant to engage in parcellization of lending with opaque firms because it reduces their ability to exert strict discipline and increases their costs. Berger et al. (2001) define that prediction under the “single-bank firm-opacity” hypothesis. Dealing with firm’s liquidity position, the number of lenders can also appear as a protection since a cut-off in financing investment project for single-bank firms can lead to high losses and insolvency (Detragiache et al., 2000). With no other creditors ex-ante, the decision to not provide additional funds by the unique bank will be interpreted as a bad signal for potential new lenders. Coming from the financial institution, that “illiquidity risk” for weak firms especially can be avoided by establishing multiple lending relationships. This increases the chance that at least one informed lender will accept to refinance the project in the future and hence reduce the probability of early liquidation.

To summarize, firm’s characteristics theories predict that the number of borrowing relationships will be decreasing for small, high-quality, informationally opaque and constrained firms, all other things being equal.

A second core of theories about creditor concentration focus on the renegotiation problems arising in the case of default – with or without asymmetric borrowing by lenders – to explain the number of lending relationships used by firms.

Within an optimal contracting framework, where firm’s default could be driven by either strategic considerations in touch with manager’s incentives to reroute money, or by classical liquidity constraints not permitting to face debt repayment, Bolton and Scharfstein (1990) built models where specific financial structures can discourage strategic default and deter perverse ex-ante incentives from firm’s managers. Derived predictions imply that poor credit quality firms should minimize the number of creditors in order to maximize the liquidation value and to facilitate renegotiation in case of default. Conversely, firms with low probability of default would prefer multiple banking in order to give interests to lenders in asset’s valuation and to prevent from strategic default.

Choosing multiple banks with sensible asymmetries in borrowing between each lender (each one being from a different country from the borrower for instance) is justified theoretically by Bannier (2005) as a way for firms to assure a minimum of interactions and confidence with the lead bank and, consequently to benefit indirectly from advantages related to a relationship. Bannier (2006) also demonstrates how asymmetric borrowing can be interpreted as a signal of

good incentives from managers, far from considerations in touch with strategic default, and to preserve firm's ability to refinance investment project in the future. In the same context, Guiso and Minetti (2004) reveal how an informed lender could strategically act to extract financial rents during the renegotiation process. That is notably possible when information in possession of the lender, due to both asymmetric information and borrowing, permits to advantageously manage firm's valuable assets.

Due to coordination failure, asymmetric information and strategic behaviors, multiple lenders could also face high collection costs when default is pronounced and the sale of assets is effective. In that particular framework explored by Bris and Welch (2005), choosing the multiple lenders regime could be a way for poor credit quality firms to ensure themselves, ex ante, a minimum of renegotiation power in case of default. Inversely, a reduced number of fund providers would be interpreted as a signal for identification of high quality firms with confidence in the success of their investment project.

To sum up, theoretical predictions relative to the behavior of firms and banks during the possible reorganization process in case of distress are mixed, and credit quality indicators tend to be predominant for empirical analysis.

A next issue relative to multiple banking theories is the hold-up problem (Sharpe, 1990; Rajan, 1992). Firms with unique relationship banking are subject to the threat of being informationally captured or "locked in" by the single lender, due to the proprietary information created through multiple interactions and book-keeping activities in time. In that sense, extracting rents under the form of higher interest rates by financial institutions in situation of information monopoly could lead firms to deter from investing in positive NPV projects and be consequently suboptimal. Switching from single to multiple bank lending relationships can restore in those circumstances a minimum of competition among lenders and limit for firms inter-temporal transfers of value in aid of the bank (von Thadden, 1995), but it also worsens the availability of credit, exacerbates adverse selection and the "winner's curse" problem.

In a recent contribution, Ionnidou and Ongena (2007) highlight that turning to a new financial provider initially involves better loan conditions (lower rates, higher maturity and amounts) but, quickly, conditions tight up again to become, in the medium term (about four years), around equal to those involving the switch. Bank reputation (Sharpe, 1990) and the possibility for firms to use ex-ante pre-specified terms for future loans (Von Thadden, 1995) are also

viewed as factors likely to limit ex-post rent extraction for firms in relationship with one bank. Finally, we can note that, in some cases, the informational hold-up exerted by banks can present advantages in terms of availability of funds for firms, in reference to the “soft-budget constraint” (Kornai, 1980).

The influence of the hold up problem on firm’s choice concerning the number of bank lenders is clearly driven by the level of competition among banks (Boot and Thakor, 1994). Banks in highly competitive loan markets don’t have the luxury to take temporary losses hoping to charge relatively high rates in the future. In other words, level of competition of the firm’s bank local market limits fund provider’s ability to increase loan rates and profits. Firms in developed and competing bank markets are consequently less exposed to the lock in phenomenon even if one bank has an informational advantage over others lenders.

Carling and Lundberg (2002) present predictions related to geographical distances between co-contractors. Under the “church tower principle”, they argue that difficulties for a lending bank to assess the firm quality ex-ante, and to monitor loans ex-post, increases with the physical distances separating them. In that situation, loan conditions will be for a part determined by geographical distances and firms would be exposed to credit rationing exerted to mitigate asymmetric information created by lender-borrower distances. From the lender’s point of view, the legal tradition in contract law and dispute settlements within the firm’s financial system is a determinant parameter to decide, first, to invest in risky projects, and second, to consider the possibility of competition with others lenders. Legal rules protecting investors and the quality of their enforcement differ greatly and systematically among countries (La Porta et al., 1997), explaining the development of market and bank external financing for firms (Djankov et al., 2007). For example, we know that the English law is a common one, made by judges and incorporated into legislature, which is different from the civil law tradition of French, German or Scandinavian countries. The number of bank lenders is consequently also function of legal determinants and we can predict that in countries with low legal protection, firms should have more external financing sources to allow for risk diversification.

III. Data

We combine different databases to gather loans characteristics at the firm level and we merge these data with firm information and external characteristics for a sample of 3182 loans to

borrowers from 24 European countries over the period 1998-2006³. Loans sample is obtained from the Dealscan database, provided by the Loan Pricing Corporation (LPC, Reuters). Firm characteristics are extracted from the Amadeus database provided by Bureau Van Dijk Editions Electroniques (2007). Governance variables in touch with bank concentration and market structure are gathered from Beck et al. (2006) whereas indicators of legal environment come from Djankov et al. (2007).

Firm Variables

Size is a relevant factor to understand behavior in touch with financial needs and transaction costs associated with the existence of one lending relationship with a bank. To proxy firm's opaqueness and asymmetric information for lenders, we use the logarithm of total assets as a quantitative measure for size (*Firm size*) and we also separate firms with binary variables according to the European definition for small, medium and large enterprises⁴. Furthermore, financial leverage is an important determinant of firm's dependence to bank credit and, simultaneously, for exposition to default risk supported by lenders. We compute the (*Leverage*) variable as the ratio of total financial debt to total assets.

To consider how likely the borrower's ability to meet long-term obligations as bank credit, we use a solvency ratio (*Solvability*) measuring the size of a firm's after-tax income, excluding non-cash depreciation expenses, as compared to the firm's total debt obligations. Acceptable ratios vary across industry but a solvency ratio greater than 20% is considered as satisfactory. Firm's liquid position is taken into account through the *Liquidity* variable. To meet its financial obligations and debt repayment in particular, a firm has to compare its relatively liquid assets (i.e. quickly and easily convertible into cash) with the debt coming due in the near term. A stringent test of a firm's liquidity is given by the acid-test (or quick) ratio including only cash and accounts receivable as liquid assets and not current assets (as in the current ratio).

For profitability (*Profitability*), an important factor with opposed predictions according to theoretical backgrounds, we employ operating profit rather than net income to total assets because that measure is not impacted by the debt-to-equity mix and firm's cost of debt.

³ Sample size is mainly driven by data availability.

⁴ Recommendation 2003/361/EC adopted the 6 May 2003 by the Commission and regarding the SME definition which replaced Recommendation 96/280/EC as from 1 January 2005.

Interest expense is considered for an entire part with the variable *Debt coverage* measured as a classical interest coverage ratio. We suppose that how easily a firm can pay interest on outstanding debt has an impact on the credit risk level and consequently on the number of bank creditors. In touch with the level of informational opaqueness and asymmetric information, we identify firms quoted on financial markets (*Quoted*). Quotation is synonymous of large and public information on firm's activities and financial planning over time, and can easily mitigate adverse selection and hazard moral. Due to specific information constraints imposed by the quotation on a Euronext list, we also discriminate firms according to that criterion using the binary variable *Euronext* (equal to 1 if the firm's shares are quoted on Euronext).

Firm's independence vis-à-vis its shareholders plays a role when interest conflicts and agency costs due to asymmetric information between managers and shareholders could be mitigated by the presence of lenders. In the agency theory framework (Jensen and Meckling 1976), by inducing frequent repayment and strict monitoring, bank debt is a potential solution for adjusting interests of both stakeholders. We use a measure of firm's independence provided by the Amadeus based on two characteristics, the identity of known shareholders (public, private, family or individual) and the concentration of capital. The variable (*Independence*) takes the values 1 (A – strong independence) to 4 (D - low independence). Finally, we geographically separate firm's from east and western Europe (*Eastern Europe*, equal to 1 if the firm is from an Eastern Europe country). It is now a widespread practice for banks to diversify their loans portfolio and to benefit from opportunities given by new markets all around Europe. Prior evidence (Claeys and Vander Vennet, 2003; Claeys and Hainz, 2006) show that weak performance of many local banks in transition economies can be attributed to low efficiency and non-competitive market conditions combined with a high degree of information asymmetry.

Loan Variables

Loan size is measured as the log of the loan amount (*Loan size*). For large loans, a single bank may not be able or willing to lend the whole amount. To deter from unacceptable risk of failure on the part of one of their borrowers, bankers prefer to syndicate loans but that practice tend to reduce long term lending relationships in favor of transactional ones. We consider that information using the dummy variable *Syndicated* taking the value of 1 if the loan is syndicated or 0 otherwise. We also measure loan maturity in months (*Duration*). A dummy

variable (*Guarantors*) indicating if the debt issue is secured by the presence of at least one guarantor who guarantees to pay for firm's debt if it should default on a loan obligation is included. The presence of a guarantor is a factor reducing risk, which might impact significantly the number of bank lenders. In the same vein, solemn agreement taken by the borrower under the form of restrictive covenants are a way of protecting providers of debt finance and may, for example, limit certain activities or how much further firm's debt can be raised,. The dummy variable *Covenants* takes the value of 1 if the loan is designed with such covenants and 0 otherwise. We are also able to discriminate if the debt issue observed is a senior with the dummy variable *Seniority*. A senior debt takes priority over other debt securities sold by the firm. In the event of bankruptcy it must be repaid before other creditors receive any payment.

Loan Level Control Variables

Typically, different type of repayment can be considered for a defined loan with specific purposes. We discriminate between the main forms which are term and revolving loans. Under a revolving credit agreement (*Revolver*), the firm pays a commitment fee and is then allowed to use funds under a maximum amount when they are needed. More flexible, the revolving practice is usually used for operating purposes and permits to control interest expenses in accordance with the loaned amount. In a more classical term loan (*Term loan*), the funds are granted for a specific amount that has a specified repayment schedule and a floating interest rate. Terms loans are used by firms to purchase fixed assets and bring more information about collaterals for banks. Differentiating revolving and term loan from others loans (*Other loan*), we address the question whether the type of credit agreement directly influences the number of lenders. We also control for the effects of debt's purpose using dummy variables indicating if the loan is granted for debt repayment (*Debt repayment*), for a leverage-buy-out operation (*Lbo*), for a corporate purpose (*Corporate*), for financing a project (*Project finance*), for a recapitalization task (*Recapitalization*) or for a takeover purpose (*Takeover*). Finally, in relation with the price argument and the "lock-in" phenomenon, we introduce a dummy variable (*Libor*) equals to one if the loan benchmark rate is the Libor and zero otherwise.

Governance Variables

Finance, legal and judicial structures existing within a country are prevalent when firms and banks decide to contract at the microeconomic level. An important aspect of the relationship

between finance and growth is the way in which the financial structure, proxied by the importance of bank institutions relative to financial public and private markets, affects the allocation of financial resources (Boot and Thakor 1994). Another interaction to understand the ability of banks to reduce asymmetric information in a better way than markets is relative to the degree of competition. Strong competition might result in disintermediation, undermining bank's ability to efficiently provide inter-temporal risk smoothing (Allen and Gale, 1997). Moreover, legal determinants in relation with bankruptcy procedures, judicial efficiency and creditor rights can be strongly related to the process of firm's financing and especially with loan's contract design, although the strength and the sign of such relationships might vary with the level of economic development and other country-specific factors (Mauro, 1995, La Porta et al., 1997; Qian and Strahan; 2007).

On the basis of those arguments, we include governance variables taken from Beck et al. (2006) for finance and concentration considerations and from Djankov et al. (2007) for legal arguments. We consider a bank concentration ratio indicating the share of the three largest banks in proportion of total banking assets for each year (*Concentration*). We measure the development of financial markets with a variable *Stock markets* defined as the ratio of stock market capitalization to gross domestic product. We distinguish the magnitude of public and private bonds markets with two variables, *Public bonds* and *Private bonds*, calculated as the ratio of the market value of domestic public (private) sector debt securities to GDP for each year. Finally, we use two legal indicators frequently used by "Law and Finance" empirical studies. Variable *Rule of law* is an index of the law and order tradition in the country, scaling from 0 to 10, and variable *Creditor rights* ranges from 0 to 4 to indicate how lender's interests are – by tradition and law – protected from others stakeholders⁵.

IV. Results

We focus on the determinants of the number of bank lenders for firms using bank loans during the period 1998-2006. We use robust ordinary least squares to test the effects of explanatory variables relative to firm, loan and governance country-level variables. The definition and measurement of both – dependant and independent – variables are summarized

⁵ The index is formed by adding 1 when: (1) the country imposes restrictions, such as creditor's consent or minimum dividends, to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) the debtor does not retain the reorganization; (4) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm.

in Table 1. Table 2 reports the number of loan observations across the 24 countries and for each year between 1998 and 2006. Most of observed loans are for borrowers from France (25%), Spain (24%) and Germany (14%) whereas all others European countries count less than 10% of observations. The panel is consequently well-diversified between countries across the continent permitting to test for geographic hypotheses in touch with the number and the origin of bank lenders. The number of observations increases with time until the year 2005 (21.7%) where a maximum is reached.

In table 3, we present the composition of the data by lender country. Bank lenders for our European firms are from 48 different countries. European banks are predominant, notably from France (18.4%), Germany (13.5%), Netherlands (10.5%), United Kingdom (7%), and Italy (6.2%). U.S banks represent one lender out of ten, while lenders from Japan represent more than 6% of the sample. Once again, we note a high degree of heterogeneity for others countries at the exception of African countries which are very poorly represented.

Table 4 presents the descriptive statistics for all variables used in our regressions. Details on dependant variables in function of binary variables are given by table 5. In table 4, the average number of lenders for all firms is about 9.6, which is relatively high. However, we can note that the number is associated with a very important standard deviation (9.9) indicating heterogeneity across firms. In their seminal paper, Ongena and Smith (2000) reported an average number of bank relationships of 15.2 for Italy, 11.5 for Portugal, 11.3 for France and 8.1 for Germany. Looking for the composition of our data, the observed number of lenders seems consistent with that previous work. We also notice that on average only 1/3 of the lenders are from the same country as the borrower, for a given loan, although, on average more than ¾ of the lenders are from Western Europe.

Others interesting patterns for the number of bank lenders are noteworthy in table 5. When we distinguish according to firm's size, large firms tend to borrow from significantly more sources with an average number of 14.1 lenders and a median equal to 11. In average, small and medium firms maintain half the number exhibited by large ones but the similitude between them is not observed in median. Small firms have only 3 bank lenders in median whereas twice is reported for medium firms. The median number of lenders is multiplied by two for each size class, which is consistent with theoretical predictions relative to financial costs of maintaining lending relationships (Machauer and Weber 2000, Detragiache et al. 2000). Consistent with this view, firm's quotation has a positive influence on the number of

bank lenders. Unquoted firms report 8 lenders in average and 5 in median, against 13.8 and 11 respectively for quoted ones. Eastern Europe firms count roughly half the number of lenders for western countries, which was a prior result from Ongena and Smith (2000).

Logically, when loans are syndicated, the number of lenders is higher. It's twice in average and median in comparison with non-syndicated loans. If the presence of at least one guarantor is not a discriminate factor to explain the number of financing sources, loans including covenants are granted by an upper number of lenders in average like in median. The situation is identical for loans representing firm's senior debt. In touch with governance variables, index of creditor rights as origin of law do not permit to conclude clearly regarding mean and median of the number of bank lenders.

In our series of regression analysis with the *Number of lenders* as the dependent variable, we try to identify possible determinants of this variable and test different theoretical predictions discussed in section II. Using ordinary least squares (OLS) with White (1980) correction for heteroscedasticity, we use several specifications to measure the influence of independent variables. The estimated equation is:

$$\text{Number of lenders} = f(\text{Loan characteristics, firm characteristics, governance characteristics})$$

(1)

Different specifications presented in tables 6 to 9 refer respectively to specifications with loan characteristics only (I), with loan and firm characteristics (II)⁶ and with loan, firm and governance characteristics (III)⁷. In all equations, we also control for the impact of loan type, loan purpose, benchmark rate, year and industry sector including specific dummy variables.

Results for the full sample over the period 1998-2006 are presented in table 6. To consider specifically the effect of firm's size on the dependant variable, we run the equation separating for small (table 7), medium (table 8) and large firms (table 9) according to the last European definition for SME (2003).

For all firms, in regression I in table 6, it appears that loan characteristics are relevant to explain the number of financial sources. Except for the variable indicating the presence of at

⁶ We match borrowers by their country, name and industry sector. This procedure reduces somehow the size of the sample. Borrower's variables are one year lagged to the loan completion year.

⁷ The sample size is reduced again due to missing information regarding the governance characteristics.

least one guarantor to secure lenders (*Guarantors*), all others variables are highly significant and signs are not altered by the inclusion of firm and governance characteristics in models II and III. However, R^2 indicators for the quality of models are greater when including those characteristics, suggesting a good set of variables and the necessity to consider not only microeconomic considerations in touch with loans and firms but also country level variables. As expected by descriptive statistics, *Loan size* has a positive impact on the number of lenders in all tested models. The case is similar when the loan is granted by a group of banks under a syndicated cooperation, which generally involve a bigger loan. Larger firms with important financial needs and specific services maintain more lending relationships as expected by theories dealing with transaction costs (D'Auria et al., 1999). That first result is clearly the most obvious and observed one concerning the empirical literature on creditor concentration in Europe (Ongena and Smith, 2000; Machauer and Weber, 2000; Guiso and Minetti, 2004).

The variable of loan's maturity (*Duration*) reports a negative and significant impact on the dependent variable in regressions I and II in table 6. Long maturity is consequently associated with more creditor concentration. We can suppose that, in opposite to arm's-length transactions, long-term exclusive relationships with financial institutions are beneficial for firms to borrow funds on a long period of time (Boot et al., 1993). They allow banks to develop expertise in understanding firm's financial needs, risks and problems (Petersen and Rajan 1994). In that perspective, time and "book-keeping" will give relationship's banks an advantage over potential competitors and consequently reduce their number.

The variable indicating the presence of covenants in loan contracts (*Covenants*) is positive and significant at the 1% level in all regressions in table 6. Covenants tend to reduce exposition to default risk for lenders and to reduce ex-post free riding problems and agency costs. The higher the loan is secured, the higher the number of potential lenders might be, given the necessity for banks to manage risks and to mitigate asymmetric information during the process of monitoring. In the same sense, we can also justify the positive and significant impact of the variable *Seniority* on the number of lenders in all regressions in table 6. Seniority claims can protect lenders giving their actions more credibly and facilitate timely intervention (Boot, 2000).

Considering firm's characteristics in regressions II and III, without controlling for governance variables, the variable of liquidity has a positive and relevant impact on the number of bank lenders. Liquidity is a proxy for good risks and could facilitate credit availability (Berger et

al., 2001). In touch with the impact of borrower profitability on the number of lenders, results in regressions II and III indicate that most profitable firms tend to borrow from more financial sources than others. Consistent with predictions by Bolton and Scharfstein (1990), better firms prefer to signal their quality to borrowers and to prevent from strategic default considerations. If we consider that profitable firms are those presenting low probability of default in a near future, the strong and negative impact of *Profitability* is not reliable with predictions by Bris and Welch (2005). However, considering the “hold up” problem, the observed fact that profitability is related to less credit concentration goes in the way that multiple banking could limit the information monopoly and forestall the deliverance of loans at non-competitive terms (Sharpe, 1990). With multiple competitors, banks are less encouraged to charge high loan interest rates in the first time (Ionnidou and Ongena, 2007).

For listed firms, legal obligations of financial communication and market discipline reduce asymmetric information and facilitate monitoring for stakeholders as shareholders, bondholders but also bank lenders. Moreover, listed firms are generally larger, consistent with previous results, but they are in addition more exposed to agency problems with a large and dilute shareholding. Consequently, numerous lenders could facilitate transparency by controlling with acuity the use of firm’s free cash flows and limiting hazard moral considerations. In that way, we also find in regression III including all available information that the most independent firms count a reduced number of bank lenders. Consistent with the agency theory view, this result stipulates that less independent firms have to borrow from multiple creditors to engage large and diversified monitoring. Lastly, Eastern Europe firms present a higher and significant level of creditor concentration in regression II in table 6. The lowest level of competition and the high degree of asymmetric information about investment projects in those countries are potential factors explaining that result.

In regression III, we finally include governance characteristics. We find that the coefficient measuring the development of public bonds markets is negative and significant. Public bonds markets are imperfect substitutes to firm’s loans by allowing banks lending money to less risky agents. Consequently, financial structure affects the way firms borrow through the degree of development of public bonds markets notably. In touch with the legal environment, firms from countries where the application of law is stricter tend to reduce significantly the number of their creditors because a good law application protects banks against expropriation and helps them imposing their rights upon the borrower and others creditors. Differences in

regulation and law application really matters in the sense that good law enforcement has a positive effect on the development of relationship lending (La Porta and al. 1997).

After the discussion of those aggregate results, we are now able to distinguish between firms according to size's effect. Table 7 reports the estimated results for small firms, medium-sized firms are analyzed in table 8 whereas coefficients for large firms are presented in table 9. If globally, the results are in line with those exposed in table 6, we can note some interesting variations between the three populations that are discussed below.

Looking for small firms in table 7, we can note that a vast majority of loan characteristics are significant in regression I. The presence of a guarantor leads to an increase in the number of lenders, giving more security and reducing risks in the same vein that *Covenants* and *Seniority*. In touch with default risk in the long term, the maturity variable (*Duration*) is negative and significant for small firms even when all characteristics are considered together in regression III. Consistent with the previous discussion on the maturity effect, we can stipulate that the difficulty to forecasts borrower's ability to repay debt in the long term is superior when the firm is small, in line with the "single bank firm-opacity hypothesis" (Berger and al., 2001).

For firm's characteristics, we can notice in regressions II and III in table 7 that the independence factor is significant to a higher level in explaining creditor concentration than for the full sample. In addition, the fact that firm is quoted on a Euronext list is no more relevant to explain the number of bank lenders. A possible explanation is that, apart for fast growing unity, smallest firms suffer from a "finance gap" and access to financial markets is not a perspective even in long term. At the opposite, the absolute necessity to preserve independence for insiders could explain the first difference with the full sample. In the search for an optimal financial structure, managers of small business tend to give much attention to independence considerations (Myers 1984). Conversely to the result observed for all firms in table 6, the coefficient for *Profitability* turns negative and still significant when considering only small firms. Due to their opaqueness, small firms are more prone to develop relationship lending with few banks, considering that asymmetric information are enhanced by the size effect. The "locked in" phenomenon is a possible explanation for that negative relation observed between profitability of small business and creditor concentration.

We are also interested in variations of governance characteristics for small firms. The coefficient of the *Rule of law* variable is more significant in regression III in table 7 indicating

that the efficiency of judicial system is particularly predominant for banks lending to small firms. The development of public bonds markets is no longer significant, probably because there is not enough similarity to lend to small business exposed to asymmetric information and to invest in public bonds. All others results are similar to those observed for the full sample in table 6.

For medium-sized firms in table 8, we note few differences with prior results except for firm's characteristics dealing with profitability and the *Creditor rights* variable. In regressions II and III, the effect of the *Profitability* indicator is not significant for medium firms while the *Solvability* ratio becomes highly significant and reports a positive impact on the number of bank lenders. Solvability can be a signal for lenders in competition to obtain a large part of the loan without incitation to capture the viable firm (Rajan, 1992). Moreover, the independence index is no longer significant for medium firms as for large ones (table 9). When turning to governance characteristics, the *Public bond's* effect is still irrelevant when the *Stock Market* indicator becomes significant and shows a positive impact on the number of bank lenders. It is also interesting to note that the *Creditor rights* variable turns positive and significant, indicating that lenders are more prone to invest jointly when credit investor-friendly laws exist.

Finally, we present specific coefficients for large firms in table 9. We can first observe that loan characteristics do not differ from previous results for the full sample. The most relevant results are relative to firm characteristics where *Leverage* and *Liquidity* ratios exhibit positive and significant coefficients at the 1% level in regressions II and III. Large and leveraged firms borrow from more numerous banks in concordance with transactional considerations. From the bank's point of view, if we consider that leveraged firms are more risky, an association with other lenders can be interpreted as an insurance against large potential losses (Detragiache et al., 2000). In this respect, the positive and significant coefficient reported by the *Debt coverage* variable in regression II is not surprising. Contrary to small firms, large ones tend to have a higher number of bank lenders. Large firms are the most prone to be listed, and the *Quoted* effect is positive and significant on the number of lenders. Due to a higher degree of diversification on international markets, large firms from Eastern Europe don't report again a negative impact of their localization on the number of financing sources.

V. Conclusion

In this paper, we provide empirical evidence regarding the determinants of the number of bank lenders for 3182 loans subscribed by firms from 24 European countries over the period 1998-2006. Overall, our results suggest that not only microeconomic factors related to firm or loan characteristics but also country level variables such as financial structure and legal environment are economically significant drivers of the number of lenders in Europe. Therefore, it is important from a policy perspective to take all of these factors into account in order to provide valuable and efficient bank funding to European firms.

As expected, larger firms with important financial needs and specific services maintain more lending relationships. Longer maturity is associated with more creditor concentration and securitization through the presence of guarantors, covenants and debt seniority, involves a higher number of potential lenders, in order to manage risks and to mitigate asymmetric information during the process of monitoring.

Furthermore, consistent with Bolton and Scharfstein (1990), better firms prefer to signal their quality to lenders in order to prevent from strategic default considerations. Multiple banking can also limit the information monopoly and forestall the deliverance of loans at non-competitive terms (Sharpe 1990). Numerous lenders can also facilitate transparency by controlling the use of firm's free cash flows and limiting hazard moral considerations. In that way, we find that more independent firms count a reduced number of bank lenders. Consistent with the agency theory view, that result stipulates that less independent firms have to borrow from multiple creditors to engage large and diversified monitoring.

Finally, we find that financial structure affects the way firms borrow through the degree of development of public bonds markets notably. Differences in regulation and law application really matters in the sense that good law enforcement has a positive effect on the development of relationship lending. Firms from countries where the application of law is stricter tend to reduce significantly the number of their creditors because a good law application protects banks against expropriation and helps them in imposing their rights upon the borrower and others creditors.

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Table 1. Definition of Variables

<i>Type</i>	<i>Variables</i>	<i>Definition</i>	<i>Source</i>
Dependent variable	Number of lenders	Number of bank lenders	DEALSCAN
Firm variables	Firm size Leverage Solvency Liquidity Profitability Debt capacity Quoted Euronext Independence Eastern Europe	Log (Total assets) + Small (1/0) + Medium (1/0) + Large (1/0) Total financial debt / Total assets (After tax net profit + depreciation) / (Long term and short term liabilities) (Cash + accounts receivable) / (Current liabilities) Operating profit / Total assets Earnings before interest and taxes / Interest expense = 1 if the firm is quoted and 0 otherwise = 1 if the firm is quoted on a Euronext list, 0 otherwise Indicator characterizing the degree of independence of a company with regard to its shareholders (A: strong independence to D) = 1 if the firm is from Eastern Europe, 0 otherwise	AMADEUS
Loan variables	Loan size Syndicated Duration Guarantors Covenants Seniority	Log (Loan amount) = 1 if the loan is syndicated, 0 otherwise Loan maturity in months = 1 if one guarantor exists for the loan, 0 otherwise = 1 if the loan includes covenants, 0 otherwise = 1 if the debt is a senior one, 0 other wise	DEALSCAN
Control variables	Term loan Revolver Other loan Debt repayment Lbo Corporate Project finance Recapitalization Takeover Libor	= 1 if the loan is a term one, 0 otherwise = 1 if the loan is a revolving one, 0 otherwise = 1 if the loan has another form, 0 otherwise = 1 if the loan is made for a debt repayment purpose, 0 otherwise = 1 if the loan is made for a LBO purpose, 0 otherwise = 1 if the loan is made for a corporate purpose, 0 otherwise = 1 if the loan is made for a project financing purpose, 0 otherwise = 1 if the loan is made for a recapitalization purpose, 0 otherwise = 1 if the loan is made for a takeover purpose, 0 otherwise = 1 if the loan benchmark rate is the Libor, 0 otherwise	
Governance variables	Concentration Public bonds Private bonds Stock markets Rule of law Creditor rights	Assets of the three largest banks / Total banking assets Domestic public debt securities / GDP Domestic private debt securities / GDP Stock market capitalization / GDP Index of assessment of the law and order tradition (0: less tradition for law to 10) Index aggregating creditor rights (0:poor creditor rights to 4)	Beck et al. (2006) Beck et al. (2006) Beck et al. (2006) Beck et al. (2006) Djankov et al. (2007) Djankov et al. (2007)

Table 2. Composition of data by country and year

<i>Country</i>	<i>Number of loans</i>	<i>Percent</i>
Austria	14	0.44
Belgium	38	1.19
Bulgaria	16	0.50
Croatia	20	0.63
Cyprus	4	0.13
Czech Republic	16	0.50
Estonia	6	0.19
Finland	81	2.55
France	792	24.89
Germany	449	14.11
Greece	47	1.48
Hungary	5	0.16
Italy	194	6.10
Luxembourg	5	0.16
Netherlands	226	7.10
Poland	185	5.81
Portugal	7	0.22
Romania	46	1.45
Slovakia	13	0.41
Slovenia	9	0.28
Spain	753	23.66
Sweden	181	5.69
Switzerland	74	2.33
Ukraine	1	0.03
<i>Year</i>	<i>Number of loans</i>	<i>Percent</i>
1998	122	3.83
1999	221	6.95
2000	243	7.64
2001	273	8.58
2002	307	9.65
2003	349	10.97
2004	411	12.92
2005	690	21.68
2006	566	17.79

Table 3. Composition of data by lender country

<i>Country</i>	<i>Number of lenders</i>	<i>Percent</i>
Argentina	4	0.04
Australia	52	0.57
Austria	230	2.50
Belgium	241	2.62
Bulgaria	11	0.12
Canada	126	1.37
China	18	0.20
Croatia	12	0.13
Cyprus	4	0.04
Czech Republic	56	0.61
Denmark	126	1.37
Egypt	2	0.02
Estonia	1	0.01
Finland	237	2.58
France	1 689	18.37
Germany	1 246	13.55
Greece	173	1.88
Hong Kong	114	1.24
Hungary	23	0.25
Iceland	29	0.32
Ireland	58	0.63
Israel	2	0.02
Italy	569	6.19
Japan	577	6.28
Jordan	1	0.01
Korea (South)	4	0.04
Latvia	4	0.04
Luxembourg	102	1.11
Macedonia	2	0.02
Morocco	1	0.01
Netherlands	965	10.49
Nigeria	1	0.01
Norway	122	1.33
Poland	151	1.64
Portugal	42	0.46
Romania	14	0.15
Saudi Arabia	2	0.02
Singapore	17	0.18
Slovakia	37	0.40
Slovenia	1	0.01
South Africa	4	0.04
Spain	199	2.16
Sweden	185	2.01
Switzerland	124	1.35
Taiwan	18	0.20
USA	937	10.19
United Arab Emirates	1	0.01
United Kingdom	651	7.08

Table 4. Descriptive statistics

<i>Type</i>	<i>Variables</i>	<i>Mean</i>	<i>Std Dev.</i>	<i>Min.</i>	<i>Max.</i>
Dependent variable	Number of lenders	9.57	9.88	1.00	61.00
Firm variables	Firm size	12.92	2.57	1.09	19.19
	Small firms	0.35	0.48	0.00	1.00
	Medium firms	0.27	0.44	0.00	1.00
	Large firms	0.38	0.49	0.00	1.00
	Leverage	9.05	23.43	0.24	81.14
	Solvency	32.54	20.74	-55.36	98.00
	Liquidity	1.37	3.77	0.04	83.69
	Profitability	5.54	15.59	-82.02	91.21
	Debt capacity	2.65	1.69	-14.02	42.77
	Quoted	0.27	0.44	0.00	1.00
	Euronext	0.09	0.28	0.00	1.00
	Independence	3.14	1.21	1	4
	Eastern Europe	0.09	0.29	0.00	1.00
Loan variables	Loan size	12.37	1.50	6.49	17.26
	Syndication	0.85	0.36	0.00	1.00
	Duration	69.74	38.15	2.00	720.00
	Guarantee	0.08	0.27	0.00	1.00
	Covenants	0.13	0.33	0.00	1.00
	Seniority	0.94	0.22	0.00	1.00
Governance variables	Concentration	0.64	0.16	0.28	1.00
	Public bonds	0.47	0.15	0.12	1.02
	Private bonds	0.38	0.11	0.02	0.63
	Stock markets	0.76	0.46	0.01	3.03
	Rule of law	8.88	0.79	7.80	10.00
	Credit rights	1.54	1.07	0.00	3.00

Table 5. Summary statistics for the number of bank lenders in function of binary variables

<i>Type</i>	<i>Binary Variables</i>	<i>Values of variables</i>	<i>Mean</i>	<i>Median</i>
Firm variables	Small firms	1	7.0	3.0
	Medium firms	1	7.8	6.0
	Large firms	1	14.1	11.0
	Quoted	0 / 1	8.0 / 13.8	5.0 / 11.0
	Euronext	0 / 1	9.2 / 12.7	6.0 / 10.0
	Eastern Europe	0 / 1	6.1 / 9.9	3.0 / 6.0
Loan variables	Syndication	0 / 1	4.6 / 10.5	2.0 / 7.0
	Guarantee	0 / 1	9.6 / 8.8	6.0 / 5.0
	Covenants	0 / 1	8.7 / 15.2	5.0 / 12.0
	Seniority	0 / 1	5.3 / 9.8	3.0 / 6.0
Governance variables	Creditor rights	0 / 1	9.6 / 9.7	6.0 / 7.0
		2 / 3	10.0 / 10.5	6.0 / 6.0
	Origin of law	French	9.9	6.0
		German	9.1	5.0
	Scandinavian	8.6	7.0	

Table 6
Results for the number of bank lenders – full sample

OLS regression results for the full sample. The dependent variable is *Number of lenders*. Definitions of variables appear in table 1. Regression I includes loan characteristics only; regression II includes loan and firm characteristics; regression III includes loan, firm and governance characteristics. Robust standard errors clustered at the borrower level in brackets. Dummy variables for loan type (*Term loan*, *Revolving loan*, *Other loan*), loan purpose (*Debt repayment*, *Lbo*, *Corporate purpose*, *Project finance*, *Recapitalization*, *Takeover*), benchmark rate (*Libor*), year, and industry sector (1-digit SIC codes) are included in the regressions but are not reported. ***, **, and * indicate coefficient statistically significant at the 1%, 5% and 10% level.

Variables	I	II	III
<i>Firm characteristics</i>			
Firm size	-	0.3061** (0.1286)	0.2530* (0.1525)
Leverage	-	0.0002 (0.0021)	0.0019 (0.0022)
Solvability	-	0.1171 (0.0126)	-0.0066 (0.0156)
Liquidity	-	0.3993*** (0.1530)	0.0094 (0.2216)
Profitability	-	0.0397*** (0.0149)	0.0490*** (0.0173)
Debt coverage	-	-0.0008 (0.0004)	0.0002 (0.0010)
Quoted	-	0.0142 (0.6578)	0.0173 (0.8084)
Euronext	-	1.7429** (0.7112)	2.1061** (0.9359)
Independence	-	-0.1911 (0.1927)	-0.4909** (0.2254)
Eastern Europe	-	-2.0311** (0.9514)	-
<i>Loan characteristics</i>			
Loan size	3.6319*** (0.1165)	3.4295*** (0.1997)	3.8182*** (0.2259)
Syndicated	3.0282*** (0.4603)	3.4056*** (0.6578)	3.8086*** (0.7409)
Duration	-0.0101** (0.0044)	-0.0148** (0.0070)	-0.0007 (0.0086)
Guarantors	-0.4734 (0.5244)	0.5427 (0.7451)	0.5671 (0.8191)
Covenants	2.7354*** (0.4213)	3.1955*** (0.5863)	2.4687*** (0.6367)
Seniority	3.6650*** (0.7655)	3.0967*** (1.1023)	2.3840** (1.0384)

Table 6 (continued)

<i>Governance characteristics</i>			
Concentration	-	-	-0.8799 (3.2892)
Public bonds	-	-	-6.6564*** (2.3235)
Private bonds	-	-	2.7972 (3.7979)
Stock market	-	-	-0.6505 (0.7439)
Rule of law	-	-	-3.4614*** (0.6490)
Creditor rights	-	-	-0.3350 (0.2835)
Intercept	-44.1370*** (4.9742)	-44.7599*** (3.0857)	-45.5322*** (5.3219)
N	2901	1625	1231
R ²	0.4672	0.4880	0.5052
F	73.92***	70.35***	74.61***

Table 7
Results for the number of bank lenders – small firms

OLS regression results for small firms of the sample. The dependent variable is *Number of lenders*. Definitions of variables appear in table 1. Regression I includes loan characteristics only; regression II includes loan and firm characteristics; regression III includes loan, firm and governance characteristics. Robust standard errors clustered at the borrower level in brackets. Dummy variables for loan type (*Term loan*, *Revolving loan*, *Other loan*), loan purpose (*Debt repayment*, *Lbo*, *Corporate purpose*, *Project finance*, *Recapitalization*, *Takeover*), benchmark rate (*Libor*), year, and industry sector (1-digit SIC codes) are included in the regressions but are not reported. ***, **, and * indicate coefficient statistically significant at the 1%, 5% and 10% level.

Variables	I	II	III
<i>Firm characteristics</i>			
Firm size	-	-	-
Leverage	-	-0.0018 (0.0014)	-0.0007 (0.0023)
Solvability	-	-0.0055 (0.0128)	0.0071 (0.0200)
Liquidity	-	0.2967** (0.1475)	0.0710 (0.2144)
Profitability	-	-0.0470** (0.0270)	-0.0662* (0.0326)
Debt coverage	-	0.0000 (0.0003)	-0.0008 (0.0007)
Quoted	-	0.7573 (1.8959)	1.3599 (3.6148)
Euronext	-	2.4288 (3.2815)	2.9941 (2.2105)
Independence	-	-0.4380** (0.1797)	-1.1433*** (0.3838)
Eastern Europe	-	-2.3257** (1.0385)	-2.3941** (1.0487)
<i>Loan characteristics</i>			
Loan size	4.2049*** (0.1902)	3.4605*** (0.2532)	3.8873*** (0.3318)
Syndicated	2.8166*** (0.7160)	1.7002** (0.9903)	3.9410** (0.014)
Duration	-0.0350*** (0.0074)	-0.0293*** (0.0088)	-0.0232* (0.0122)
Guarantors	1.5323* (0.7902)	1.4805** (0.8301)	1.9196* (0.7132)
Covenants	2.8736*** (0.7434)	3.2665*** (0.8789)	2.5744*** (0.6854)
Seniority	2.3396** (1.1883)	1.6711*** (1.2763)	0.8314* (0.4176)

Table 7 (continued)

<i>Governance characteristics</i>			
Concentration	-	-	-9.5438 (6.3480)
Public bonds	-	-	-3.3153 (3.9749)
Private bonds	-	-	-9.0836 (10.8104)
Stock market	-	-	-2.4426 (3.3791)
Rule of law	-	-	-5.2040** (2.5607)
Creditor rights	-	-	0.8581 (0.6192)
Intercept	-44.0793*** (2.9105)	-37.9503*** (3.5777)	-42.2015*** (3.4928)
N	717	503	289
R ²	0.6606	0.6907	0.7345
F	47.60***	50.78***	64.19***

Table 8
Results for the number of bank lenders – medium firms

OLS regression results for medium firms of the sample. The dependent variable is *Number of lenders*. Definitions of variables appear in table 1. Regression I includes loan characteristics only; regression II includes loan and firm characteristics; regression III includes loan, firm and governance characteristics. Robust standard errors clustered at the borrower level in brackets. Dummy variables for loan type (*Term loan*, *Revolving loan*, *Other loan*), loan purpose (*Debt repayment*, *Lbo*, *Corporate purpose*, *Project finance*, *Recapitalization*, *Takeover*), benchmark rate (*Libor*), year, and industry sector (1-digit SIC codes) are included in the regressions but are not reported. ***, **, and * indicate coefficient statistically significant at the 1%, 5% and 10% level.

Variables	I	II	III
<i>Firm characteristics</i>			
Firm size	-	-	-
Leverage	-	-0.0001 (0.0133)	-0.1872* (0.1047)
Solvability	-	0.0689*** (0.0217)	0.0424** (0.0205)
Liquidity	-	0.9433*** (0.3286)	1.0920*** (0.3139)
Profitability	-	-0.0159 (0.0294)	0.0176 (0.0307)
Debt coverage	-	0.0002 (0.0070)	-0.0015 (0.0068)
Quoted	-	0.1855 (0.1890)	0.9796 (1.2392)
Euronext	-	2.2957* (1.2962)	0.6136 (1.5548)
Independence	-	-0.0971 (0.4081)	0.2933 (0.4038)
Eastern Europe	-	-4.0723** (1.8888)	-3.6769** (1.7431)
<i>Loan characteristics</i>			
Loan size	3.4469*** (0.3564)	2.6191*** (0.4174)	3.1664*** (0.4101)
Syndicated	2.3782*** (0.7297)	3.0182** (1.5762)	2.4068** (1.1994)
Duration	-0.0250** (0.0100)	-0.0158 (0.0121)	-0.0148 (0.0124)
Guarantors	0.2492 (1.0946)	1.2705 (1.2214)	-2.0554* (1.2009)
Covenants	-0.5825 (0.8444)	0.6984 (0.9902)	2.1477** (1.0114)
Seniority	1.8088*** (0.3552)	3.3532** (1.6112)	2.7259** (1.4490)

Table 8 (continued)

<i>Governance characteristics</i>			
Concentration	-	-	-2.8875 (4.1448)
Public bonds	-	-	-2.3236 (2.9054)
Private bonds	-	-	-8.0754 (4.9340)
Stock market	-	-	2.2324** (1.0351)
Rule of law	-	-	-3.5214*** (0.8286)
Creditor rights	-	-	0.9221** (0.3835)
Intercept	-34.9522*** (5.3520)	-28.3905*** (6.2810)	-36.7622*** (5.4928)
N	538	418	362
R ²	0.5196	0.5769	0.6271
F	37.17***	42.26***	47.21***

Table 9
Results for the number of bank lenders – large firms

OLS regression results for large firms of the sample. The dependent variable is *Number of lenders*. Definitions of variables appear in table 1. Regression I includes loan characteristics only; regression II includes loan and firm characteristics; regression III includes loan, firm and governance characteristics. Robust standard errors clustered at the borrower level in brackets. Dummy variables for loan type (*Term loan*, *Revolving loan*, *Other loan*), loan purpose (*Debt repayment*, *Lbo*, *Corporate purpose*, *Project finance*, *Recapitalization*, *Takeover*), benchmark rate (*Libor*), year, and industry sector (1-digit SIC codes) are included in the regressions but are not reported. ***, **, and * indicate coefficient statistically significant at the 1%, 5% and 10% level.

Variables	I	II	III
<i>Firm characteristics</i>			
Firm size	-	-	-
Leverage	-	0.0493*** (0.0168)	0.0444*** (0.0166)
Solvability	-	0.0272 (0.0280)	-0.0099 (0.0330)
Liquidity	-	1.3673*** (0.2985)	2.0786*** (0.7486)
Profitability	-	0.1027*** (0.0289)	0.0712** (0.0315)
Debt coverage	-	0.01433** (0.0069)	0.0066 (0.0111)
Quoted	-	2.1681** (0.9708)	3.4997*** (1.1800)
Euronext	-	1.4261 (0.9806)	2.6303* (1.5403)
Independence	-	-0.2431 (0.3138)	-0.4166 (0.3310)
Eastern Europe	-	-0.3185 (1.7941)	-0.1917 (0.2748)
<i>Loan characteristics</i>			
Loan size	4.2164*** (0.3000)	3.7543*** (0.3315)	4.2631*** (0.3585)
Syndicated	2.7041*** (0.9962)	5.3479*** (1.0643)	5.5009*** (1.1257)
Duration	-0.0044 (0.0113)	-0.0122 (0.0129)	0.0080 (0.0152)
Guarantors	1.0433 (1.2955)	2.3126* (1.3315)	2.5331* (1.3871)
Covenants	2.3659*** (0.8834)	2.6767*** (0.9279)	2.2786** (0.9561)
Seniority	1.7115*** (0.8437)	1.6335*** (0.6782)	1.2194*** (0.3949)

Table 9 (continued)

<i>Governance characteristics</i>			
Concentration	-	-	-8.2185 (5.8207)
Public bonds	-	-	-14.4163*** (4.6197)
Private bonds	-	-	-5.3832 (6.1401)
Stock market	-	-	-1.8496 (1.1859)
Rule of law	-	-	-1.7481 (1.0819)
Creditor rights	-	-	-0.8772 (0.5733)
Intercept	-58.7798*** (5.7282)	-57.1037*** (6.2157)	-21.4372*** (6.5239)
N	795	704	580
R ²	0.4506	0.4738	0.5503
F	36.02***	43.82***	45.43***

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