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Large shareholders and agency costs of debt. Evidence from Spain

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ABSTRACT

This paper analyses the influence of large controlling shareholders on the terms of bank loans for a sample of 984 loans to 261 non-financial Spanish public and private firms over the period 2001-2017. The results show that the presence of large controlling shareholders increases the interest rate spread of bank loans only in public firms, whereas the influence is insignificant for private firms. Similarly, a less evenly balanced distribution of ownership among large shareholders is associated with higher loan spreads for public firms. Our results reveal that large controlling shareholders expropriate wealth from other investors in public firms, in line with the existence of lower benefits for borrowers due to having large controlling shareholders when they have other internal and external mechanisms of control.

Grandes accionistas y costes de agencia de la deuda. El caso español

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RESUMEN

El objetivo del presente trabajo consiste en analizar la influencia que los grandes accionistas tienen sobre las condiciones de los préstamos bancarios para una muestra compuesta por 984 préstamos realizados a 261 empresas cotizadas y no cotizadas españolas no financieras durante el periodo 2001-2017. Los resultados muestran que la presencia de grandes accionistas incrementa el tipo de interés pagado por los préstamos en el caso de las empresas cotizadas, mientras el efecto no es significativo para las empresas no cotizadas. De forma similar, una distribución de la propiedad menos equilibrada entre los grandes accionistas está asociada con un mayor tipo de interés pagado por las empresas cotizadas. Los resultados ponen de manifiesto que los grandes accionistas expropian riqueza de otros inversores en las empresas cotizadas, en línea con la existencia de menores beneficios para los prestatarios de la existencia de grandes accionistas cuando disponen de otros mecanismos, tanto internos como externos, de control.

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1. Introduction

Most listed firms worldwide have dominant shareholders in contrast to the idea of dispersed ownership of the modern corporation (Becht & Röell, 1999; Claessens et al., 2000; Faccio & Lang, 2002; Holderness, 2009; La Porta et al., 1999). This observation suggests that interest in most countries, especially in those with poor shareholder protection, should focus on the conflicts between controlling owners and minority shareholders as a major source of agency risk. From this point of view, the financial literature reveals that the presence of large controlling shareholders has a negative effect on equity values (Claessens et al., 2002; La Porta et al., 2002; and Lins, 2003). This result is consistent with controlling shareholders extracting private benefits of control by forcing decisions that expropriate minority shareholder wealth.

More recently, the focus has been placed on the effect of the co-existence of several large shareholders on corporate market value, providing evidence that the firm's market value increases with the presence of large shareholders beyond the controlling owner (Attig et al., 2008; Laeven & Levine, 2008; and Maury & Pajuste, 2005). Although debt is considered the most important form of external financing in most countries (Demirgüç-Kunt & Levine, 2001), the aforementioned papers have focused on the effects of controlling shareholders on the agency costs of equity. In contrast, their influence on the agency costs of debt has received much less attention. In this context, using a sample of 3,605 loan facilities from thirteen European and nine East Asian countries during 1996-2007, Aslan & Kumar (2012) provide results in line with a significant positive impact of controlling shareholders on bank loan prices.

Our paper builds on these arguments, analysing the influence of large shareholders on the cost and maturity of bank loans borrowed by non-financial Spanish firms, considering not only the existence of controlling shareholders and their typology, but also the presence of other large non-controlling shareholders. In any request for credit, banks must assess the quality of borrowers; among other aspects, they will consequently consider the potential monitoring and expropriation behaviours of controlling shareholders in the terms of the loans. If the presence of large controlling shareholders increases the agency costs of debt, then we should expect said presence to be related to higher loan prices and lower maturities. Likewise, suppose the large noncontrolling shareholders are important defenders of minority shareholders and debtor interests. In that case, their presence should result in lower loan prices and longer maturities, as they may obstruct the diversion of resources by controlling shareholders, the transference of assets and profits out of companies, or the commitment of funds to unprofitable projects generating private benefits.

To assess the relationship between the presence of controlling shareholders and the terms of bank loans, we compile data on the proportion of shares held by shareholders for a sample of non-financial Spanish firms that obtained a bank loan during the period 2001-2017. Our sample includes public and private companies. We thus distinguish between the effect of the presence of large shareholders on the terms of bank loans for public and private borrowers. In our empirical test, we control for firm- and loan-specific characteristics used in the literature as determinants of loan spreads and maturity of bank loans.

This paper contributes to the literature in several ways. First, we investigate the influence of the presence and identity of large controlling shareholders on the terms of bank loans. In most countries, debt usually takes the form of bank loans, as only a small number of countries have well-developed bond markets. The financial structure of the corporate sector in Europe relies heavily on bank finance. For instance, Ehrmann et al. (2003) report that bank loans to the corporate sector in 2001 amounted to 42.6 percent of GDP in the euro area, and to 18.8 percent in the US. Although, non-bank financing sources have become significantly more important since the onset of the 2007-2008 financial crisis, more than half of the funding to non-financial firms in the euro area was provided by banks in 2016 (de Guindos, 2020). As bank debt is the main source of debt financing all across Europe, it is of major importance to analyse the point of view of banks in relation to the role played by large shareholders. We carry out this analysis in Spain, a country with a natural setting for analysing this issue, as it features relatively weak protection of minority shareholders, high ownership concentration, and a corporate sector that is dependent on bank financing. These characteristics are common to many countries (La Porta et al., 1999) and hence the results may be extrapolated. Furthermore, Johnson et al. (2000) suggests that the expropriation of minority shareholders and debtholders by the controlling shareholder in a transaction with a plausible business purpose is often considered consistent with managers' duties, mainly in civil-law countries such as Spain. Sánchez-Ballesta & García-Meca (2011) and Fernández-Méndez & González (2019) have likewise analysed the effect of ownership concentration and shareholder identity on the conditions of debt of non-financial Spanish firms. In the former paper, the authors focus their analysis on the effect of ownership concentration on the cost of debt, considering the proportion of shares held by the five main shareholders. The latter paper considers the influence of banks as shareholders on the amount, cost, and maturity of debt. Hence, although these papers consider the effect of ownership concentration on the cost and maturity of debt, they do not specifically analyse the effect of the presence of controlling shareholders, but rather the effect of ownership concentration. Moreover, the aforementioned papers measure the cost of debt as the interest rate on the firm's debt, calculated as the interest expense for the year divided by the amount of interest-bearing debt. The average historical cost of debt could be considered a noisy proxy of the present market cost of debt for a company, as it is the product of the historical conditions under which a company has accessed the financial markets. The actual cost of new loans provides a clearer image of the assessment of the company's condition made by the market. Additionally, Fernández-Méndez & González (2019) measure maturity as the percentage of debt with a maturity of more than one year.

Second, we analyse the influence of the presence of large controlling shareholders on the terms of bank loans differentiating between public and private firms. Papers testing potential explanations for the higher spreads imposed on privately held firms show that one of the reasons is the difference in ownership structure, as private firms present a higher concentration of ownership compared to public firms (Saunders & Steffen, 2011). We extend this evidence by analysing whether ownership concentration influences the agency costs of debt differently for public and private firms.

Finally, our paper also considers the role played by significant shareholders other than large controlling shareholders. Faccio et al. (2001) study the influence of multiple large shareholders on dividends, revealing that the presence of multiple large shareholders reduces expropriation in Europe, but has the opposite effect in Asia. Maury & Pajuste

(2005) show that the relationship between corporate valuations and the presence of multiple large shareholders depends on the comparative sizes of the large shareholders, as a more evenly balanced distribution of ownership among large shareholders has a positive effect on firm value. Mangena et al. (2020) find that the existence of other blockholders limits the bank's power, being powerful banks associated with a higher probability of the firm entering financial distress. We analyse whether the comparative sizes between the large controlling shareholder and other large shareholders influence the spreads and maturity of loans or not and whether this effect is different for public and private firms. To the best of our knowledge, ours is the first paper to analyse how the comparative sizes of large shareholders influence the conditions of debt.

Our results indicate that the presence of large controlling shareholders increases loan spreads. We also obtain some evidence of this presence reducing loan maturity. However, the effect of the presence of large shareholders on loan spreads only affects public firms, revealing that those firms with alternative internal and external mechanisms of control benefit less from the presence of large shareholders. An increase of one standard deviation in the fraction of shares of the largest shareholder is associated with an increase of 40.72 basis points for public versus private firms. These results are found to be robust to alternative measures in the definition of large controlling shareholders. As for the effect of the types of shareholders, banks and non-financial firms as controlling shareholders increase the cost of debt and reduce loan maturity, respectively. This effect reflects that banks obtain private benefits as large controlling shareholders. Additionally, pressure-sensitive investors are related to a higher increase in the cost of bank loans than other investors suggesting that their potential business with firms compromise their monitoring activity. The effect of the presence of large controlling shareholders on loan spread in public firms is positive and significant when the largest shareholder has high relative power compared to other blockholders, revealing that a less evenly balanced distribution of ownership among large shareholders increases the negative effect of the presence of large shareholders on the agency costs of debt in public firms. Thus, our results suggest that large controlling shareholders expropriate wealth from other investors in public firms.

The remainder of the paper proceeds as follows. Section 2 presents the hypotheses tested in the paper. Section 3 reports the data, variables, and methodology used. Sections 4 and 5 describe and discuss the results. Finally, Section 6 presents the conclusions of the paper.

2. Hypotheses development

Agency costs of debt arise in the relationship between shareholders and debtholders because the latter can be harmed by excessive payouts to the former, the problems of asset substitution involving a shift toward high-risk projects (Jensen & Meckling, 1976), underinvestment if the positive value of the projects mainly benefits the debtholders (Myers, 1977), and by acquisitions that increase leverage affecting debt seniority (Warga & Welch, 1993). Being aware of these problems, debtholders use covenants that restrict these types of behaviour.

Large controlling shareholders have incentives to collect information and monitor management, thereby reducing the manager/shareholders agency problem, as they have an interest in value maximization. However, under the expropriation hypothesis, large shareholders may also represent their own interests, using their control rights to maximize their own benefits, extracting rents from minority shareholders (Young et al., 2008). They may seek to expropriate other investors by diverting firm resources for their own use, taking assets and profits out of the company, investing in unprofitable projects that provide private benefits, or expropriating corporate investment opportunities (Johnson et al., 2000). Their incentives to engage in "tunnelling" activities will not only affect minority shareholders, but also debtholders, as this behaviour could result in higher expected costs of financial distress and in lower values of collateral (Johnson et al., 2000; and Jiang et al., 2010). As creditors take these potential expropriating activities into account in their lending decisions, they could lead to worse conditions in financing.

These supervisory/expropriatory behaviours on the part of large controlling shareholders could depend on their typology. Bhojraj & Sengupta (2003) and Roberts & Yuan (2010) respectively find that greater institutional ownership reduces interest costs on public bonds and bank loans. Both findings are in keeping with institutional ownership reducing the agency costs of debt. Ferreira & Matos (2012) show that bank-firm governance links are associated with higher bank loan spreads during the period of credit boom, but with lower spreads during the 2007-2008 financial crisis. Álvarez-Botas et al. (2022) find that large bank shareholders are associated with lower bank loan spreads and longer maturities during the financial crisis when they are not lenders, although firms with banks as large shareholders present higher interest rates and shorter maturity when the banks are not only shareholders, but also lenders. These last two papers suggest the existence of costs and benefits resulting from bank involvement in firm governance. Government ownership can facilitate access to financial resources (Faccio, 2006; Khwaja & Mian, 2005). Borisova et al. (2015) find that government ownership is generally associated with a higher cost of debt, in keeping with state-induced investment distortions. However, it is associated with a lower cost of debt during the financial crisis and for firms more likely to be distressed, with implicit government guarantees being the predominant effect in such cases. Along these same lines, Beuselinck et al. (2017) show that firms with government ownership experienced a smaller reduction in firm value during the financial crisis than firms without government ownership. As for the role of family ownership, Anderson et al. (2003) offer evidence consistent with the idea that founding family firms have incentive structures that result in fewer agency conflicts between equity and debt claimants, thus reducing the yield spread of bonds. Our first hypothesis is hence as follows:

> ***H1***. "*The presence of large controlling shareholders will increase the cost of debt and reduce its maturity if they act by expropriating other investors*".

The monitoring role of large shareholders may vary according to their nature. Cornett et al. (2007) find a positive relation between a firm's performance and the proportion of institutional stock ownership only for those institutional investors less likely to maintain a business relationship with the firm. Bhattacharya & Graham (2009) show the existence of significant differences in the relationship between equity ownership and firm performance according to the nature of institutional investors, with a more equal distribution of voting power enhancing firm performance when pressure-resistant investors are considered. Similarly, Mangena et al. (2020) find that financial distress due to bank power is lower for firms where pressure-resistant investors have greater ownership.

These papers suggest that institutional shareholders can have different interests affecting their monitoring behaviour. The existence of other business relationships between the large blockholders and the firms in which they hold an equity stake might have a negative impact on their monitoring effectiveness. Consequently, we may expect that the effect of the presence of large blockholders could affect the terms of bank loans depending on the existence of other business with firms. Our second hypothesis is thus as follows:

H2. "*Pressure sensitive large shareholders will worsen bank loan terms due to their lower monitoring effectiveness*".

Private firms have limited access to the capital markets, which imposes restrictions on external financing. Because of this limited access to capital, private firms are more likely to forego positive net present value investments and are more likely to default. Such restrictions on external financing are also likely to affect their cost of debt. Therefore, debt markets may require a higher premium for private firms to compensate for higher credit risk. In this context, Badertscher et al. (2019) find that, after controlling for financial fundamentals, bond characteristics, and information environment effects, the cost of public debt issued by privately-owned US companies is significantly higher than that issued by publicly-owned companies.

In their analysis of UK firms, Saunders & Steffen (2011) test alternative explanations for the higher spreads imposed on privately held firms, showing the importance of the higher costs of information production, lower bargaining power, differences in ownership structure, and differences in secondary market trading. Predictions about the role of ownership structure on the agency costs of debt in private firms are based on the higher concentration of ownership in firms of this kind compared to public firms. Specifically, the lower separation of ownership and control, which is usual in private firms, can reduce the probability of default, increase the creditors' payoffs conditional on default (Aslan & Kumar, 2012), and mitigate "tunnelling" behaviour (Johnson et al., 2000), thereby resulting in less severe agency problems for these firms. However, more concentrated ownership and control may lead to more severe conflicts between shareholders and creditors. The net effect of these two forces is ambiguous. Saunders & Steffen (2011) show that concentrated (insider) ownership can partly explain higher spreads of private firm loans.

Additionally, listed companies in Spain are subject to the recommendations of the successive Spanish Codes of Good Governance (Olivencia Code, 1998; Aldama Code, 2003; and Conthe or Unified Code, 2006, updated in 2013). The provisions of these codes prescribe for listed companies the creation of a bundle of internal control mechanisms and the issuance of transparent and accurate corporate governance information. There is ample evidence of substitution among different control mechanisms (Bozec & Bozec, 2007; Fernández-Méndez & Arrondo, 2005; Rediker & Seth, 1995). Therefore, the functioning of this bundle of internal mechanisms, in conjunction with the improved information transparency for listed companies, might reduce the relevance of the monitoring role by external control mechanisms such as large shareholders, while the expropriatory aspects of large shareholders might persist. We address how the presence of large controlling shareholders affects the agency costs of debt differently in private and public firms. Based on these arguments, we test the following hypothesis.

H3. "*The effect of the presence of large controlling shareholders will have more negative effects for public than for private borrowers*".

Laeven & Levine (2008) show that one-third of publicly listed firms in Europe have multiple large shareholders. Theoretical papers have investigated the relationship between firm valuation and the distribution of rights across large shareholders. On the one hand, Bennedsen & Wolfenzon (2000) posit that large shareholders compete to form controlling coalitions to obtain private benefits from firm control, predicting a negative relationship between the dispersion of rights across large shareholders and market value. These authors stress the fact that, when one controlling shareholder has the power to impose expropriation activities without the consent of a coalition of other large shareholders, private control benefits reach their peak. On the other hand, Pagano & Röell (1998) specify the conditions under which the stakes of large shareholders will be sufficiently dispersed to ensure the optimal degree of monitoring.

The most common finding from empirical analysis has consisted of a positive impact of the presence of multiple large shareholders on firm value. Maury & Pajuste (2005) examine the role of multiple large shareholders on firm performance using a panel of 136 nonfinancial Finnish firms over the period 1993-2000, finding that a more evenly balanced distribution of voting rights across multiple large shareholders enhances firm value, in line with the theoretical argument that the joint presence of several large shareholders can reduce private benefits of control. Faccio et al. (2001) likewise report that European firms with multiple large shareholders present higher dividend rates, which they attribute to the capability of other large shareholders to prevent expropriation by the controlling shareholder. Along these same lines, using data corresponding to 1,165 companies from thirteen Western European and eight East Asian countries, Attig et al. (2008) show that the implied cost of equity decreases with the presence, number, and voting size of large shareholders beyond the controlling owner, as investors value the monitoring role of large noncontrolling shareholders in limiting the diversion of a firm's resources for private benefits. Similarly, Mangena et al. (2020) show that firms in which banks have power are more likely than their counterparts to enter financial distress, with this effect being moderated when there are other blockholders. Basu et al. (2016) also provide evidence related to the ability of controlling shareholders to extract rents when other blockholders are not able to monitor and contest the power of the former. Based on these arguments relating the positive effect of the existence of other blockholders contesting the power of the largest shareholder, our fourth hypothesis is as follows:

H4. "*A less evenly balanced distribution of ownership among large shareholders worsens the terms of bank loans*".

3. Data

3.1. Sources of data, sample and variables

Data on bank loans are drawn from the Loan Pricing Corporation's DealScan database. DealScan includes information on several loan contract terms for public and private firms, such as signing date, all-in drawn spread, maturity, the identity of lenders and borrowers, purpose, and type. Our initial sample covers all loans initiated from January 2001 through to March 2017. Borrowers occasionally enter into more than one loan tranche on the same date. In line with

previous papers (Qian & Strahan, 2007; Bae & Goyal, 2009), our unit of analysis in this case is each loan tranche. We exclude loans in which the borrower is a financial firm (SIC 6000-6999) and those loans without information on all-in drawn spread or maturity. Data on ownership structure and firm level data were obtained from SABI (Bureau Van Dijk). The final sample was made up of 984 loan tranches to 261 public and private firms over the period 2001-2017.

We test our hypotheses regarding the influence of large shareholders on the agency costs of debt using the following regression model:

$$\begin{aligned} DV_i =& \alpha_0 + \beta_1 LARGE_{i,t-1} + \beta_2 DPUBLIC_i \\ &+ \beta_3 DPUBLIC_i * LARGE_{i,t-1} + \sum_k FirmControls^k_{i,t-1} \\ &+ \sum_L LoanControls^L_{i,t} + \sum_t Y_t + \sum_j I_j + \varepsilon_i \end{aligned} \quad (1)$$

We consider two dependent variables (DV) for the loan *i*: (1) the interest rate spread of the loan, measured as the natural logarithm of the basis points spread of the loan interest over the London Interbank Offered Rate (LIBOR) or LIBOR equivalent (LN_SPREAD) (Qian and Strahan, 2007; Graham et al., 2008; Chava et al., 2009; Lin et al., 2011; Álvarez-Botas et al., 2022); and (2) the maturity of the loan, measured as the logarithm of loan maturity expressed in months (LN_MAT). The models for the two dependent variables are estimated with ordinary least squares. The standard errors are clustered by firm, as Petersen (2009) shows that standard errors clustered by firm are unbiased and produce correctly sized confidence intervals regardless of whether the firm effect is permanent or temporary.

We control for loan characteristics and borrower characteristics in the estimations. Loan-level controls consist of loan size, loan type, loan purpose, and whether the loan is senior or not. Firm-level controls are firm size, profitability, leverage, interest coverage ratio, and tangibility. The spread regressions also include the natural logarithm of maturity as an explanatory variable, while the maturity regressions include the natural logarithm of the spread. All the regressions include annual year (Y_t) and industry dummies (I_j) to control for differences in spreads and maturities that reflect changing market conditions or unobservable industry heterogeneity. We discuss all these variables in depth in the following paragraphs.

3.1.1. Measuring the presence of large shareholders

We consider several proxies to measure the presence of large shareholders (LARGE). First, we define LARGE1 as the fraction of shares of the largest shareholder. The percentage of ownership is measured at the end of the year prior to the granting of the bank loan. Since this proxy can fail to identify a relationship between the presence of large shareholders and the terms of bank loans when the relationship is nonlinear for any value of ownership, we define the presence of large shareholders using dummy variables, considering that a large shareholder is one that directly or indirectly controls at least 10% of the firm's shares (La Porta et al., 2002). We accordingly define a dummy variable that takes the value of 1 if the percentage of shares held by the largest shareholder is higher than 10% and zero otherwise (D_LARGE1_OVER10). Additionally, we also define D_LARGE1_OVER20 and D_LARGE1_OVER50, considering a large shareholder as one that directly or indirectly controls at least 20% and 50%, respectively, of the firm's shares. Furthermore, LARGE1 is divided into several piecewise variables: LARGE1_0_10 is equal to the fraction of shares of the largest shareholder if the fraction is less than 10%, and 10% otherwise; LARGE1_10_20 is equal to 0 if the fraction of shares of the largest shareholder is less than 10%, is equal to the fraction of shares minus 10% if the fraction of shares is between 10 and 20%, and 10% otherwise; LARGE1_20_50 is equal to 0 if the fraction of shares of the largest shareholder is less than 20%, is equal to the fraction of shares minus 20% if the fraction of shares is between 20 and 50%, and 30% otherwise; and LARGE1_over50 is equal to the fraction of shares of the largest shareholder minus 50% if the fraction of shares is greater than 50%, and 0 otherwise. The sum of the piecewise variables equals the original variable, LARGE1.

We also create the interaction terms between LARGE1, D_LARGE1_OVER10, D_LARGE1_OVER20, D_LARGE1_OVER50, and the piecewise segments of LARGE1 with the variable that identifies the borrower as a public or a private firm (DPUBLIC). DPUBLIC is a dummy variable that takes the value of one if the borrower is a quoted firm and zero otherwise. The interaction terms measure the difference in the effect of the presence of large controlling shareholders between listed and unlisted borrowers.

To assess the influence of the type of shareholder, we start by identifying the largest shareholder. First, we define five groups of different shareholders: (1) institutional investors, including mutual and pension funds, insurance companies, private equity firms, venture capital firms, and financial companies that are not banks; (2) banks; (3) public authorities, States, and Governments; (4) non-financial companies; and (5) family groups. For each of these groups, we define a dummy variable that takes the value of 1 if the percentage of shares held by each type of largest shareholder is higher than 10% and zero otherwise, obtaining the following variables: D_LARGE1_II_OVER10, D_LARGE1_BANK_OVER10, D_LARGE1_AUTH_OVER10, D_LARGE1_COMP_OVER10 and D_LARGE1__FAM_OVER10 for institutional investors, banks, authorities, non-financial companies, and families, respectively. Second, we classify large shareholders into 'pressure-sensitive' financial blockholders (banks, insurance companies), 'pressure-resistant' financial blockholders (pension funds, mutual funds) and non-financial blockholders, with 'pressure-sensitive' blockholders having either existing or potential business relationships with companies that might compromise their monitoring activity. We define D_LARGE1_OVER10_RESIST, D_LARGE1_OVER10_SENSIT, D_LARGE_OVER10_NONFIN, LARGE1_RESIST, LARGE1_SENSIT, and LARGE1_NONFIN using the variables D_LARGE1_OVER10 and LARGE1 according to the classification of the largest shareholder as a 'pressure-resistant', 'pressure-sensitive', or non-financial blockholder.

To test our fourth hypothesis, we consider inequality in the ownership distribution between the controlling shareholder and the rest of the shareholders (INEQUALITY) and test the following model:

$$\begin{aligned} DV_i =& \alpha_0 + \beta_1 INEQUALITY_{i,t-1} + \beta_2 DPUBLIC_i \\ &+ \beta_3 DPUBLIC_i * INEQUALITY_{i,t-1} \\ &+ \sum_k FirmControls^k_{i,t-1} + \sum_L LoanControls^L_{i,t} \\ &+ \sum_t Y_t + \sum_j I_j + \varepsilon_i \end{aligned} \quad (2)$$

We proxy inequality in the distribution of shares in several ways. First, we define three variables that measure the difference in the percentage of shares between the first shareholder and the second (DIF_LARGE1_2), between the first shareholder and the sum of the second and the third shareholders (DIF_LARGE1_3), and between the first shareholder and the sum of the second, third, and fourth shareholders (DIF_LARGE1_4). Second, we measure the ratio of the stake of the second largest shareholder to the interest of the controlling owner (LARGE2/LARGE1), the ratio of the sum of the stakes of the second and third largest shareholders to the interest of the controlling owner (LARGE2_3/LARGE1), and the ratio of the sum of the stakes of the second, third, and fourth largest shareholders to the interest of the controlling owner (LARGE2_3_4/LARGE1). These three ratios measure the relative power of other large blockholders compared to the first largest shareholder, with higher values implying comparable sizes between the stakes of the other large shareholders compared to the largest shareholder (Attig et al., 2008). Third, we consider a dummy variable that takes the value of 1 if there is at least one other large blockholder and the largest shareholder owns less than 50 per cent of the shares, and 0 otherwise (D_BLOCKS). Additionally, following the paper by Tribo et al. (2007) we also consider the number of blocks (NBLOCKS) to reach an ownership stake of 50% of the shares minus one. When the largest shareholder owns more than 50 per cent of the shares, we assume that there is no other blockholder. When the largest shareholder owns less than 50%, we compute the number of additional blocks to reach an ownership stake of 50 %. The existence of a large number of blockholders weakens the degree of monitoring of the largest shareholder. Finally, we measure the Herfindahl index (HI_DIFF), defined as the sum of squares of the differences between the first and the second largest stakes, the second and the third largest stakes, and the third and the fourth largest stakes, i.e. $(\text{LARGE1-LARGE2})^2 + (\text{LARGE2-LARGE3})^2 + (\text{LARGE3} - \text{LARGE4})^2$. This proxy has been considered by Attig et al. (2008) and Maury and Pajuste (2005), among others. Given that higher values of HI_DIFF imply lower contestability of the power of the controlling owner, we expect higher values of this proxy to worsen the terms of bank loans.

These variables measuring inequality in the distribution of shares are multiplied by the dummy variable that identifies the borrower as a public or private firm (DPUBLIC). These interaction effects measure the differential effect of inequality in the distribution of shares for public firms.

3.1.2. Loan and firm-level explanatory variables

We control for loan characteristics and borrower characteristics in the estimations. As regards loan characteristics, we consider: the size of the bank loan (LOAN_SIZE), measured as the natural logarithm of the amount of the loan in US dollars; the type of the loan (DCREDIT_LINE, DTERM_LOAN, DBRIDGE_LOAN), identifying term loans, credit lines and bridge loans; the purpose of the loan (PURP_ACQUIS, PURP_CORP, PURP_DEBTREPAY, PURP_LBO, PURP_PF), considering loans whose purpose is acquisitions or capital expenditures, general corporate purposes, debt repayment, leveraged buyouts, or project finance; and whether the loan is senior or not (DSENIOR), which is a dummy variable that takes the value of 1 if the loan is senior and zero otherwise (subordinated, senior subordinated, junior, or mezzanine).

To ascertain whether heterogeneity in borrower risk might affect the terms of bank loans, we include several variables in the estimations to control for firm risk. We control for: firm size (FIRM_SIZE), measured as the natural logarithm of total assets; profitability (PROFIT), proxied by net income divided by total assets; leverage (LEV), considering the difference between total assets and equity divided by total assets; the interest coverage ratio (ICR), defined as the ratio between earnings before interest and taxes divided by interest expenses; and tangibility (TANG), measured as the amount of property, plant, and equipment divided by total assets. All these borrower explanatory variables are lagged by one year to control for potential problems of endogeneity.[1]

3.2. Descriptive statistics

Panel A in Table 1 provides descriptive statistics of the variables used in this paper. The mean (median) of the SPREAD variable is 241.47 (225.00) basis points, while the mean (median) of maturity is 73.41 (60.00) months. The mean ownership stake of the largest shareholder is 56.92%, and ninety per cent of the loans were given to firms with large shareholders with a percentage of shares higher than 10%. This percentage drops to fifty-nine per cent when we consider large shareholders to be those with a percentage of shares higher than 50%. Sixty-four per cent of the loans are term loans, while twenty-five per cent are credit lines.[2] General corporate purposes constitute the most usual purpose in the loans in our sample (43%). Ninety-eight per cent of the loans are senior. Panel B shows the descriptive statistics separately for public and private firms. Our paper offers evidence in line with public firms obtaining debt at lower cost. In fact, private firms borrow at higher interest rates spread and longer maturities, being these differences statistically significant. Ninety-five per cent of the loans were given to private firms with large shareholders with a percentage of shares higher than 10%, while this percentage is 81.67% for public firms. All the proxies of the presence of large shareholders reveal that this is more common in private firms. Similarly, variables measuring the inequality in the distribution of shares among large shareholders reveal that this distribution is less balanced in private firms, where the difference in ownership between the largest shareholder and other large shareholders is higher.

Table 2 presents the correlation matrix. LN_SPREAD shows a positive correlation with LN_MAT, revealing that borrowers who pay higher interest rates are also more likely to be offered longer maturities. The interest rate spread of bank loans has a positive correlation with the different proxies of the presence of large shareholders, showing that controlling shareholders are associated with higher interest rates for non-financial Spanish firms. The proxies for inequality in the distribution of shares between the largest shareholder and other

[1] The results do not change when we consider two lags for the firm-control variables. Additionally, to consider the potential effect of endogeneity of the presence of large shareholders we estimate instrumental variables regressions. We consider the initial industry average ownership as a potential instrument for LARGE1. Laeven & Levine (2009) and Lin et al. (2011) suggest that the initial average ownership structure in a firm's industry is a suitable instrument for the firm's ownership structure because an individual firm's ownership structure is correlated with its industry average, but it is unlikely that firm's debt terms are directly driven by the historical industry average ownership structure other than through its effect on the firm's own ownership structure. The instrument enters the first stage regression significantly at the 1% level. The Durbin-Wu-Hausman (DWH) test of overidentifying restrictions verifies the null hypothesis that the introduction of instrumental variables has no influence on the coefficients of the estimations. The results of the DWH F test reveal that the null hypothesis is not rejected and consequently the estimations with the observed values of LARGE1 are provided in the paper.

[2] The descriptive statistics and the correlations of loan type and loan purpose are not shown in order to save space.

Table 1. Descriptive statistics

Panel A	Number of observations	Mean	Median	Standard deviation	First quartile	Third quartile
SPREAD	984	241.47	225.00	168.35	110.00	350.00
LN_SPREAD	984	5.20	5.42	0.86	4.70	5.86
MAT	984	73.41	60.00	52.54	48.00	84.00
LN_MAT	984	4.07	4.09	0.73	3.87	4.43
D_LARGE1_OVER10	984	0.90	1.00	0.30	1.00	1.00
D_LARGE1_OVER20	984	0.80	1.00	0.40	1.00	1.00
D_LARGE1_OVER50	984	0.59	1.00	0.49	0.00	1.00
LARGE1	984	56.92	52.48	33.88	25.28	99.77
LARGE1_0_10	984	9.70	10.00	1.26	10.00	10.00
LARGE1_10_20	984	8.31	10.00	3.56	10.00	10.00
LARGE1_20_50	984	20.80	30.00	12.72	5.28	30.00
LARGE1_OVER50	984	18.12	2.48	21.87	0.00	49.77
DIF_LARGE1_2	984	47.00	42.84	40.17	5.03	99.77
DIF_LARGE1_3	984	42.64	37.16	43.86	0.00	99.77
DIF_LARGE1_4	984	40.44	35.51	45.88	0.00	99.77
LARGE2/LARGE1	984	0.34	0.14	0.38	0.00	0.68
LARGE2_3/LARGE1	984	0.52	0.22	0.61	0.00	1.00
LARGE2_4/LARGE1	984	0.64	0.26	0.79	0.00	1.00
D_BLOCKS	984	0.38	0.00	0.48	0.00	1.00
N_BLOCKS	984	1.85	0.00	5.82	0.00	1.00
HI_DIFF	984	4011.67	2294.50	4079.69	298.00	9954.06
D_PUBLIC	984	0.37	0.00	0.48	0.00	1.00
FIRM_SIZE	984	13.25	13.21	2.10	11.81	14.45
PROFIT	984	0.01	0.01	0.09	-0.01	0.04
LEV	984	0.68	0.69	0.26	0.54	0.86
ICR	984	2.55	0.93	34.18	-0.02	2.70
TANG	984	0.18	0.07	0.25	0.01	0.26
LOAN_SIZE	984	18.61	18.67	1.91	17.34	19.97
DSENIOR	984	0.98	1.00	0.12	1.00	1.00

	Private firms (N=624)			Public firms (N=360)			Diff
Panel B	Mean	Median	Standard deviation	Mean	Median	Standard deviation	
SPREAD	266.34	250.00	158.73	198.35	160.00	175.89	67.99***
LN_SPREAD	5.37	5.52	0.73	4.89	5.08	0.97	0.48***
MAT	81.28	72.00	59.11	59.78	60.00	34.65	21.50***
LN_MAT	4.16	4.28	0.75	3.92	4.09	0.66	0.25***
D_LARGE1_OVER10	0.95	1.00	0.21	0.82	1.00	0.39	0.14***
D_LARGE1_OVER20	0.91	1.00	0.28	0.61	1.00	0.49	0.31***
D_LARGE1_OVER50	0.72	1.00	0.45	0.35	0.00	0.48	0.37***
LARGE1	68.00	71.53	31.29	37.73	27.98	29.35	30.27***
LARGE1_0_10	9.83	10.00	0.98	9.48	10.00	1.61	0.36***
LARGE1_10_20	9.17	10.00	2.70	6.80	10.00	4.29	2.37***
LARGE1_20_50	24.71	30.00	10.16	14.02	7.98	13.82	10.69***
LARGE1_OVER50	24.28	21.53	22.58	7.43	0.00	15.61	16.85***
DIF_LARGE1_2	58.19	61.60	39.75	27.59	7.5	32.88	30.60***
DIF_LARGE1_3	54.46	59.10	43.84	22.15	1.89	35.62	32.31***
DIF_LARGE1_4	53.13	57.33	45.41	18.46	1.03	37.69	34.67***
LARGE2/LARGE1	0.25	0.00	0.35	0.48	0.51	0.38	-0.23***
LARGE2_3/LARGE1	0.36	0.00	0.52	0.80	0.85	0.65	-0.44***
LARGE2_4/LARGE1	0.41	0.00	0.62	1.03	0.89	0.89	-0.62***
D_BLOCKS	0.23	0.00	0.42	0.63	1.00	0.48	-0.40***
N_BLOCKS	0.58	0.00	2.07	4.03	1.00	8.82	-3.45***
HI_DIFF	5190.34	3849.77	4149.02	1968.64	364.38	3016.59	3221.70***
FIRM_SIZE	12.38	12.32	1.68	14.78	14.54	1.89	-2.40***
PROFIT	-0.01	0.01	0.10	0.03	0.03	0.07	-0.04***
LEV	0.71	0.74	0.24	0.63	0.65	0.27	0.08***
ICR	1.35	0.98	25.54	4.63	0.82	45.39	-3.28
TANG	0.24	0.13	0.27	0.08	0.01	0.16	0.16***
LOAN_SIZE	17.96	18.03	1.61	19.72	19.93	1.86	-1.76***
DSENIOR	0.99	1.00	0.12	0.98	1.00	0.13	0.00

Table 2. Correlation matrix

	LN_SPREAD	LN_MAT	D_LARGE1_OVER10	D_LARGE1_OVER20	D_LARGE1_OVER50	LARGE1	DIF_LARGE1_2	DIF_LARGE1_3	DIF_LARGE1_4	LARGE2/LARGE1	LARGE2_3/LARGE1
LN_MAT	0.07**										
D_LARGE1_OVER10	0.25***	0.03									
D_LARGE1_OVER20	0.23***	0.05	0.66***								
D_LARGE1_OVER50	0.20***	0.02	0.39***	0.59***							
LARGE1	0.24***	0.02	0.49***	0.69***	0.84***						
DIF_LARGE1_2	0.21***	0.00	0.37***	0.54***	0.81***	0.96***					
DIF_LARGE1_3	0.20***	0.00	0.33***	0.50***	0.80***	0.94***	0.99***				
DIF_LARGE1_4	0.20***	0.01	0.32***	0.49***	0.80***	0.93***	0.99***	1.00***			
LARGE2/LARGE1	-0.19***	-0.01	-0.27***	-0.40***	0.70***	-0.72***	-0.84***	-0.85***	-0.85***		
LARGE2_3/LARGE1	-0.22***	-0.03	-0.34***	-0.48***	-0.72***	-0.74***	-0.81***	-0.84***	-0.85***	0.95***	
LARGE2_4/LARGE1	-0.22***-	-0.05	-0.37***	-0.53***	-0.71***	-0.74***	-0.77***	-0.80***	-0.82***	0.90***	0.98***
D_BLOCKS	-0.19***	-0.03	-0.30***	-0.50***	-0.92***	-0.76***	-0.76***	-0.76***	-0.77***	0.78***	0.79***
N_BLOCKS	-0.20***	-0.05*	-0.55***	-0.51***	-0.38***	-0.42***	-0.35***	-0.33***	-0.33***	0.38***	0.46***
HI_DIFF	0.19***	0.00	0.32***	0.48***	0.74***	0.95***	0.96***	0.96***	0.95***	-0.71***	-0.71***
D_PUBLIC	-0.27***	-0.16***	-0.22***	-0.37***	-0.37***	-0.43***	-0.37***	-0.36***	-0.36***	0.29***	0.35***
FIRM_SIZE	-0.31***	-0.23***	-0.37***	-0.35***	-0.27***	-0.29***	-0.21***	-0.20***	-0.21***	0.18***	0.24***
PROFIT	-0.17***	-0.03	-0.10***	-0.10***	-0.10***	-0.10***	-0.07**	-0.08**	-0.08***	0.07**	0.10***
LEV	0.13***	0.10***	0.03	0.11***	0.13***	0.19***	0.19***	0.18***	0.19***	-0.15***	-0.15***
ICR	-0.02	-0.02	-0.00	0.01	-0.02	-0.01	-0.00	-0.00	-0.00	-0.00	0.00
TANG	-0.09***	0.27***	0.06**	0.12***	0.00	0.02	-0.01	0.00	0.01	-0.00	-0.05
LOAN_SIZE	-0.38***	-0.05*	-0.27***	-0.26***	-0.18***	-0.22***	-0.15***	-0.14***	-0.14***	0.11***	0.16***
DSENIOR	-0.18***	-0.09***	0.07**	0.08***	0.03	0.04	0.03	0.02	0.02	-0.04	-0.04

	LARGE2_4/LARGE1	D_BLOCKS	N_BLOCKS	HI_DIFF	D_PUBLIC	FIRM_SIZE	PROFI	LEV	ICR	TANG	LOAN_SIZE
LN_MAT											
D_LARGE1_OVER10											
D_LARGE1_OVER20											
D_LARGE1_OVER50											
LARGE1											
DIF_LARGE1_2											
DIF_LARGE1_3											
DIF_LARGE1_4											
LARGE2/LARGE1											
LARGE2_3/LARGE1											
LARGE2_4/LARGE1											
D_BLOCKS	0.78***										
N_BLOCKS	0.49***	0.41***									
HI_DIFF	-0.68***	-0.68***	-0.30***								
D_PUBLIC	0.38***	0.40***	0.29***	-0.38***							
FIRM_SIZE	0.28***	0.28***	0.36***	-0.21***	0.55***						
PROFIT	0.11***	0.10***	0.08**	-0.07**	0.19***	0.16***					
LEV	-0.15****	-0.15***	-0.06*	0.21***	-0.15***	-0.11***	-0.45***				
ICR	0.01	0.02	0.03	0.00	0.05	0.03	0.21***	-0.14***			
TANG	-0.08**	-0.02	-0.12***	0.00	-0.32***	-0.33***	-0.11***	0.16***	-0.09***		
LOAN_SIZE	0.20***	0.19***	0.26***	-0.16***	0.44***	0.71***	0.14***	-0.06*	0.02	-0.16***	
DSENIOR	-0.04	-0.02	-0.05	0.02	-0.01	0.01	0.14***	-0.10***	-0.00	0.02	-0.02

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

blockholders are positively correlated with the interest rate loan spread, in line with a higher relative power of the largest shareholder increasing debt cost. Public companies, senior loans, and larger loans pay lower interest.

4. Results

4.1. Interest rate spread, maturity, and large controlling shareholders

Table 3 presents the results of OLS estimation when the dependent variable is the interest rate spread of the loan (LN_SPREAD), the standard errors being clustered at the borrower firm level. Columns (1), (2), and (3) show the results when large shareholders own percentages of shares higher

Table 3. Interest rate spread and large controlling shareholders

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	6.3920***	6.7136***	6.8865***	6.0793***	5.8117***	6.7588***	6.9469***	6.9524***	6.0971***	5.7701***
	(12.48)	(13.05)	(13.12)	(11.41)	(10.77)	(12.77)	(12.82)	(13.27)	(10.87)	(10.36)
D_LARGE1_OVER10	0.4000***					-0.0502				
	(3.76)					(-0.38)				
D_LARGE1_OVER20		0.1798*					-0.0809			
		(1.65)					(-0.84)			
D_LARGE1_OVER50			0.0344					-0.0985		
			(0.52)					(-1.30)		
LARGE1				0.0011					-0.0008	
				(1.01)					(-0.80)	
LARGE1_0_10					-0.0011					0.0381
					(-0.03)					(1.15)
LARGE1_10_20					0.0410**					-0.0125
					(2.11)					(-0.81)
LARGE1_20_50					-0.0042					0.0011
					(-0.95)					(0.21)
LARGE1_OVER50					-0.0005					-0.0014
					(-0.24)					(-0.62)
DPUBLIC*D_LARGE1_OVER10						0.6764***				
						(3.97)				
DPUBLIC*D_LARGE1_OVER20							0.4157**			
							(2.46)			
DPUBLIC*D_LARGE1_OVER50								0.3502**		
								(2.40)		
DPUBLIC*LARGE1									0.0060**	
									(2.59)	
DPUBLIC*LARGE1_0_10										-0.0594
										(-1.10)
DPUBLIC*LARGE1_10_20										0.0897***
										(3.08)
DPUBLIC*LARGE1_20_50										-0.0113
										(-1.28)
DPUBLIC*LARGE1_OVER50										0.0057
										(1.17)
DPUBLIC	-0.1572	-0.1302	-0.1506	-0.1338	-0.1691	-0.7805***	-0.4606***	-0.3097**	-0.4236***	-0.1825
	(-1.63)	(-1.30)	(-1.48)	(-1.32)	(-1.63)	(-4.24)	(-2.90)	(-2.45)	(-2.89)	(-0.43)
FIRM_SIZE	-0.0161	-0.0258	-0.0323	-0.0313	-0.0209	-0.0127	-0.0236	-0.0308	-0.0262	-0.0157
	(-0.59)	(-0.97)	(-1.18)	(-1.13)	(-0.81)	(-0.46)	(-0.91)	(-1.16)	(-1.00)	(-0.61)
PROFIT	-0.3162	-0.3281	-0.3459	-0.3658	-0.2959	-0.4077	-0.3565	-0.3678	-0.3323	-0.2805
	(-1.05)	(-1.06)	(-1.06)	(-1.15)	(-0.98)	(-1.34)	(-1.10)	(-1.12)	(-1.02)	(-0.89)
LEV	0.1598	0.1317	0.1351	0.1173	0.1645	0.1611	0.1261	0.1003	0.1197	0.1809
	(0.82)	(0.63)	(0.64)	(0.55)	(0.78)	(0.88)	(0.63)	(0.49)	(0.58)	(0.90)
ICR	-0.0013***	-0.0013***	-0.0012***	-0.0012***	-0.0014***	-0.0013***	-0.0014***	-0.0011***	-0.0012***	-0.0016***
	(-3.12)	(-3.30)	(-3.21)	(-3.22)	(-3.14)	(-3.27)	(-3.58)	(-3.10)	(-3.31)	(-3.44)
TANG	-0.3101**	-0.3307**	-0.3253**	-0.3172**	-0.3316**	-0.3348**	-0.3607**	-0.3143**	-0.3277**	-0.3569***
	(-2.14)	(-2.21)	(-2.09)	(-2.05)	(-2.35)	(-2.46)	(-2.53)	(-2.05)	(-2.25)	(-2.65)
LN_MAT	0.1984***	0.1962***	0.1943***	0.1952***	0.1930***	0.1987***	0.1938***	0.1899***	0.1879***	0.1851***
	(4.64)	(4.59)	(4.49)	(4.50)	(4.59)	(4.64)	(4.59)	(4.48)	(4.44)	(4.53)
LOAN_SIZE	-0.0492**	-0.0520**	-0.0537**	-0.0539**	-0.0473**	-0.0508**	-0.0550**	-0.0529**	-0.0525**	-0.0476**
	(-2.41)	(-2.43)	(-2.54)	(-2.54)	(-2.29)	(-2.57)	(-2.55)	(-2.54)	(-2.47)	(-2.39)
DBRIDGE_LOAN	0.2206	0.1967	0.1755	0.1759	0.2130	0.1798	0.1778	0.1236	0.1425	0.1768
	(1.02)	(0.89)	(0.78)	(0.79)	(0.97)	(0.76)	(0.75)	(0.51)	(0.60)	(0.73)
DCREDIT_LINE	-0.1204*	-0.1228*	-0.1406*	-0.1352*	-0.1056	-0.1103	-0.1106	-0.1429*	-0.1257*	-0.0816
	(-1.70)	(-1.79)	(-1.92)	(-1.87)	(-1.57)	(-1.55)	(-1.64)	(-1.93)	(-1.76)	(-1.20)
DTERM_LOAN	0.0316	0.0366	0.0242	0.0276	0.0461	0.0317	0.0468	0.0216	0.0283	0.0578
	(0.47)	(0.55)	(0.35)	(0.41)	(0.71)	(0.46)	(0.71)	(0.31)	(0.41)	(0.88)
PURP_ACQUIS	-0.0589	-0.0774	-0.0506	-0.0482	-0.0852	-0.0397	-0.0713	-0.0960	-0.0670	-0.0321
	(-0.47)	(-0.60)	(-0.39)	(-0.38)	(-0.66)	(-0.32)	(-0.55)	(-0.73)	(-0.53)	(-0.25)
PURP_CORP	-0.2689***	-0.2835***	-0.2758***	-0.2717***	-0.2865***	-0.2581***	-0.2830***	-0.2878***	-0.2794***	-0.2792***
	(-3.54)	(-3.78)	(-3.67)	(-3.65)	(-3.82)	(-3.63)	(-3.82)	(-3.88)	(-3.89)	(-3.95)
PURP_DEBTREPAY	-0.4266***	-0.4268***	-0.4166***	-0.4111***	-0.4375***	-0.4191***	-0.4339***	-0.4474***	-0.4254***	-0.4357***
	(-3.88)	(-3.62)	(-3.57)	(-3.50)	(-3.82)	(-3.86)	(-3.74)	(-3.86)	(-3.75)	(-4.02)
PURP_LBO	0.3714***	0.3231***	0.3042***	0.3096***	0.3484***	0.3366***	0.3210***	0.2971***	0.3055***	0.3502***
	(3.52)	(3.12)	(3.01)	(3.02)	(3.32)	(3.34)	(3.11)	(2.93)	(3.00)	(3.39)
PURP_PF	-0.5190***	-0.5184***	-0.5011***	-0.4961***	-0.5457***	-0.4889***	-0.4856***	-0.5078***	-0.5001***	-0.5116***
	(-3.69)	(-3.61)	(-3.44)	(-3.39)	(-3.79)	(-3.50)	(-3.38)	(-3.56)	(-3.51)	(-3.55)
DSENIOR	-1.0583***	-1.0275***	-0.9932***	-1.0045***	-1.0542***	-0.9895***	-1.0008***	-0.9916***	-1.0153***	-1.0246***
	(-4.02)	(-3.72)	(-3.54)	(-3.62)	(-3.86)	(-3.81)	(-3.48)	(-3.47)	(-3.54)	(-3.50)
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# observations	984	984	984	984	984	984	984	984	984	984
R squared (%)	65.86	64.95	64.50	64.60	65.63	66.84	65.61	65.19	65.48	67.07
F test	43.14***	42.65***	41.09***	44.82***	35.13***	37.32***	28.55***	31.87***	30.09***	37.08***

Regressions are estimated using OLS with standard errors clustered by borrower firm level. The dependent variable is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan (LN_SPREAD). Industry and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

than 10%, 20%, and 50%, respectively. Columns (4) and (5) show the results for the continuous variable reflecting the ownership stake held by the largest shareholder (LARGE1) and for the piecewise regression. We include firm-specific variables and loan specific control variables in all the models.

We find that the coefficient for D_LARGE1_OVER10 is positive and statistically significant at the 1% level, suggesting that the presence of large controlling shareholders increases the cost of debt, a result that is keeping with large controlling shareholders expropriating wealth from other investors. The coefficients for DLARGE1_OVER20 and DLARGE1_OVER50 are both positive, although the latter is not statistically significant. The coefficient for LARGE1 is positive but is not statistically significant. When we consider the piecewise variables of LARGE1, we find that the coefficient for LARGE1_10_20 is positive and significant, while the coefficients for the remaining segments are not significant. Listed firms (DPUBLIC) tend to have lower spreads, although this effect is not statistically significant at standard levels.

Columns (6) to (10) in Table 3 show the results when we include the interaction terms between the measures of the presence of large controlling shareholders and the DPUBLIC dummy variable. The interaction term between D_LARGE1_OVER10 and DPUBLIC measures the difference in the effect of the presence of large controlling shareholders between listed and unlisted borrowers. We find that the coefficients for D_LARGE1_OVER10, D_LARGE1_OVER20, D_LARGE1_OVER50, LARGE1, and LARGE1_10_20 are negative although not statistically significant. We also obtain negative and statistically significant coefficients for DPUBLIC, while the coefficients for the interaction term of the large shareholders proxies with DPUBLIC are positive and the sum of the coefficients of the presence of large shareholders and the interaction term are positive and significant. Altogether, our results indicate that listed firms pay lower spreads for bank loans than unlisted firms when listed borrowers do not have large controlling shareholders, but that they are subject to higher interest rate spreads due to the presence of large controlling shareholders.[3]

In terms of economic significance, the coefficient DPUBLIC*LARGE1 reported in column (9) suggests that an increase in one standard deviation of LARGE1 (33.88%) is associated with an extra 40.72 basis points for public firms. Moreover, the coefficient of -0.4236 for DPUBLIC in column (9) reveals that listed firms pay 62.38 basis points less than unlisted firms.

The signs of the coefficients obtained for borrower-level variables are as expected. The relationship between the interest coverage ratio (ICR) and loan spread is negative and significant for all estimations, suggesting that firms that can generate sufficient resources to face their debt commitments are more solvent, which leads to a lower cost of debt. The negative and significant coefficients of asset tangibility (TANG) in all the estimations are consistent with the use of tangible assets as collateral, lowering insolvency risk and hence the cost of debt. Firm size (FIRM_SIZE) and profitability (PROF) are found to have a negative influence on the cost of debt, while the effect of leverage (LEV) is positive, although its effects are not statistically significant.

Along with firm-specific variables, we include several loan-specific characteristics in our estimations. Loans with longer maturity also have higher loan spreads, revealing that banks charge higher interest rates on long-term loans. The coefficient of LOAN_SIZE is negative, in keeping with larger loans being made to better borrowers. If the loan is a credit line, the spread tends to be lower. As to the purpose of the loan, if the bank loan is for general corporate purposes, debt repayment, or project finance, the spread is lower. However, bank loans used to leverage buyouts have higher spreads. Senior loans have lower spreads compared to the remaining categories (subordinated, senior subordinated, junior, or mezzanine).

4.2. Maturity and large controlling shareholders

Table 4 reports the results for loan maturity. Columns (1) to (3) show that the presence of large shareholders has a negative relationship with debt maturity regardless of whether large shareholders hold stakes above 10%, 20%, or 50%. However, the coefficients for LARGE1 and the piecewise segments of LARGE1 are not significant. When we distinguish between the effect of large controlling shareholders for listed and unlisted firms, the results reveal that there are no differential effects of the presence of large controlling shareholders between these two types of firms. In terms of economic significance, the coefficient reported in column (1) for D_LARGE1_OVER10 suggests that the presence of a large shareholder is associated with a reduction of 8.78 months in the maturity of the loan.

As for the firm-level variables, the effect of firm size (FIRM_SIZE) on debt maturity is negative, indicating that larger firms borrow at shorter terms. Profitability (PROF), leverage (LEV), interest coverage ratio (ICR) and tangibility (TANG) are found to have a positive influence on maturity, while DPUBLIC is found to have a negative influence on maturity, although its effects are not statistically significant.

There is a positive relationship between the bank loan interest rate and maturity, revealing that loans with higher spreads are also loans with long-term maturities. Larger loans have longer maturities. If the loan is a bridge loan, its maturity is shorter; however, if it is a credit line or a term loan, its maturity is longer. As to the purpose of the loan, if the bank loan is for debt repayment, leveraged buyouts, or project financing, then its maturity is longer. Senior loans do not have significantly different maturities to non-senior loans (subordinated, senior subordinated, junior, or mezzanine).

4.3. Interest rate spread, maturity, and the type of large controlling shareholders

Table 5 presents the effects of the different types of large controlling shareholders on interest rate spread (columns (1) to (5)) and maturity (columns (6) to (10)). The results show that only the coefficients of LARGE1_BANK_OVER10 and LARGE1_COMP_OVER_10 are positive and statistically significant, suggesting that the positive effect of the presence of large shareholders on loan spread is mainly due to banks and non-financial companies.[4] In an untabulated analysis, we obtain evidence suggesting that these positive effects of banks and non-financial companies as large shareholders affect public and private firms equally. Moreover, private borrowers in which a family group controls at least 10% of the firm's capital borrow at lower spreads and longer maturities. As regards the effect of the nature of the largest shareholder on maturity, none of the specific categories of large controlling shareholders accounts for the decrease in debt

[3] This result is robust to the consideration of more lags to measure the fraction of shares of the largest shareholder.

[4] The results hold when we also consider a percentage of shares equal to 20% to define these dummy variables.

Table 4. Maturity and large controlling shareholders

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	0.4304	0.3810	0.3160	1.7731**	1.8287***	0.6543	0.3507	0.3236	1.7922**	1.7965**
	(0.55)	(0.49)	(0.40)	(2.55)	(2.60)	(0.87)	(0.45)	(0.41)	(2.56)	(2.55)
D_LARGE1_OVER10	-0.1620*					-0.0508				
	(-1.92)					(-0.53)				
D_LARGE1_OVER20		-0.0940*					-0.0722			
		(-1.71)					(-0.84)			
D_LARGE1_OVER50			-0.0856*					-0.0906		
			(-1.81)					(-1.44)		
LARGE1				-0.0011					-0.0013	
				(-1.49)					(-1.45)	
LARGE1_0_10					-0.0139					-0.0120
					(-0.90)					(-0.48)
LARGE1_10_20					-0.0061					-0.0017
					(-0.58)					(-0.11)
LARGE1_20_50					0.0010					0.0020
					(0.34)					(0.44)
LARGE1_OVER50					-0.0014					-0.0024
					(-0.91)					(-1.35)
DPUBLIC*D_LARGE1_OVER10						-0.1710				
						(-1.12)				
DPUBLIC*D_LARGE1_OVER20							-0.0351			
							(-0.29)			
DPUBLIC*D_LARGE1_OVER50								0.0133		
								(0.13)		
DPUBLIC*LARGE1									0.0007	
									(0.45)	
DPUBLIC*LARGE1_0_10										-0.0019
										(-0.07)
DPUBLIC*LARGE1_10_20										-0.0063
										(-0.29)
DPUBLIC*LARGE1_20_50										-0.0032
										(-0.50)
DPUBLIC*LARGE1_OVER50										0.0044
										(1.37)
DPUBLIC	-0.0529	-0.0691	-0.0812	-0.0818	-0.0733	0.1060	-0.0410	-0.0873	-0.1157	0.0060
	(-0.72)	(-0.94)	(-1.10)	(-1.11)	(-0.99)	(0.69)	(-0.36)	(-0.98)	(-1.11)	(0.03)
FIRM_SIZE	-0.0540**	-0.0514**	-0.0498**	-0.0496**	-0.0502**	-0.0547***	-0.0515**	-0.0498**	-0.0491**	-0.0505**
	(-2.56)	(-2.47)	(-2.43)	(-2.42)	(-2.46)	(-2.60)	(-2.48)	(-2.43)	(-2.40)	(-2.47)
PROFIT	0.3168	0.3166	0.3134	0.3424	0.3462	0.3418	0.3195	0.3123	0.3452	0.3882
	(1.06)	(1.09)	(1.08)	(1.16)	(1.14)	(1.16)	(1.09)	(1.08)	(1.17)	(1.23)
LEV	0.1200	0.1339	0.1429	0.1534	0.1460	0.1183	0.1341	0.1417	0.1540	0.1561
	(0.98)	(1.09)	(1.17)	(1.22)	(1.10)	(0.98)	(1.10)	(1.16)	(1.22)	(1.20)
ICR	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
	(0.78)	(0.79)	(0.79)	(0.76)	(0.82)	(0.83)	(0.80)	(0.79)	(0.76)	(0.83)
TANG	0.1378	0.1433	0.1251	0.1276	0.1225	0.1460	0.1464	0.1252	0.1254	0.1367
	(1.07)	(1.12)	(0.98)	(1.00)	(0.95)	(1.12)	(1.12)	(0.98)	(0.99)	(1.03)
LN_SPREAD	0.2371***	0.2288***	0.2235***	0.2254***	0.2292***	0.2440***	0.2303***	0.2228***	0.2225***	0.2287***
	(5.04)	(4.89)	(4.73)	(4.78)	(4.89)	(5.15)	(4.93)	(4.65)	(4.63)	(4.77)
LOAN_SIZE	0.0657***	0.0664***	0.0685***	0.0678***	0.0668***	0.0663***	0.0668***	0.0685***	0.0677***	0.0685***
	(3.37)	(3.43)	(3.52)	(3.47)	(3.40)	(3.40)	(3.43)	(3.52)	(3.47)	(3.45)
DBRIDGE_LOAN	-1.8584***	-1.8542***	-1.8455***	-1.8440***	-1.8504***	-1.8469***	-1.8527***	-1.8473***	-1.8469***	-1.8449***
	(-4.76)	(-4.75)	(-4.75)	(-4.77)	(-4.79)	(-4.64)	(-4.72)	(-4.73)	(-4.80)	(-4.76)
DCREDIT_LINE	0.4020***	0.4006***	0.4091***	0.4039***	0.3981***	0.3997***	0.3997***	0.4089***	0.4045***	0.3981***
	(3.72)	(3.71)	(3.75)	(3.72)	(3.67)	(3.70)	(3.69)	(3.75)	(3.72)	(3.66)
DTERM_LOAN	0.4997***	0.4976***	0.5043***	0.5007***	0.4957***	0.4987***	0.4966***	0.5042***	0.5008***	0.4917***
	(4.75)	(4.73)	(4.78)	(4.75)	(4.70)	(4.76)	(4.71)	(4.77)	(4.74)	(4.61)
PURP_ACQUIS	0.0958	0.1065	0.0965	0.0910	0.0883	0.0913	0.1061	0.0947	0.0887	0.1030
	(0.89)	(1.00)	(0.90)	(0.84)	(0.82)	(0.85)	(1.00)	(0.86)	(0.82)	(0.90)
PURP_CORP	0.1065	0.1112	0.1072	0.1025	0.1009	0.1056	0.1116	0.1065	0.1008	0.1028
	(1.36)	(1.43)	(1.36)	(1.30)	(1.29)	(1.35)	(1.43)	(1.35)	(1.28)	(1.31)
PURP_DEBTREPAY	0.2010**	0.1990**	0.1904**	0.1864**	0.1822**	0.2019**	0.2002**	0.1889**	0.1835**	0.1957**
	(2.35)	(2.36)	(2.28)	(2.23)	(2.05)	(2.35)	(2.37)	(2.22)	(2.18)	(2.14)
PURP_LBO	0.2681***	0.2896***	0.3129***	0.2981***	0.2842***	0.2738***	0.2892***	0.3128***	0.2984***	0.2863***
	(2.74)	(2.99)	(3.25)	(3.10)	(2.87)	(2.80)	(2.98)	(3.25)	(3.12)	(2.89)
PURP_PF	0.8318***	0.8316***	0.8278***	0.8179***	0.8256***	0.8267***	0.8296***	0.8271***	0.8158***	0.8089***
	(6.48)	(6.56)	(6.49)	(6.38)	(6.37)	(6.44)	(6.51)	(6.45)	(6.36)	(6.16)
DSENIOR	-0.1360	-0.1422	-0.1545	-0.1492	-0.1417	-0.1391	-0.1428	-0.1552	-0.1532	-0.1530
	(-0.88)	(-0.93)	(-0.99)	(-0.97)	(-0.93)	(-0.91)	(-0.93)	(-0.99)	(-0.99)	(-1.00)
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# observations	984	984	984	984	984	984	984	984	984	984
R squared (%)	43.85	43.73	43.79	43.73	43.81	43.93	43.73	43.79	43.75	0.4398
F test	30.99***	25.92***	22.70***	21.69***	18.87***	16.60***	32.10***	21.65***	19.19***	25.4795

Regressions are estimated using OLS with standard errors clustered by borrower firm level. The dependent variable is the natural logarithm of maturity in months (LN_MAT). Industry and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

Table 5. Interest rate spread, maturity, and type of large controlling shareholders

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	6.8944***	6.7910***	6.8802***	6.8100***	6.8853***	0.3326	0.3436	0.3389	0.3353	0.3370
	(13.10)	(13.24)	(13.12)	(12.94)	(13.08)	(0.43)	(0.45)	(0.44)	(0.43)	(0.44)
LARGE1_II_OVER10	-0.0299					0.0189				
	(-0.51)					(0.25)				
LARGE1_BANK_OVER10		0.3591***					0.0116			
		(3.80)					(0.15)			
LARGE1_AUTH_OVER10			-0.0997					-0.3123		
			(-0.20)					(-0.40)		
LARGE1_COMP_OVER10				0.1292**					-0.0652	
				(2.14)					(-1.54)	
LARGE1_FAM_OVER10					-0.1258					0.0187
					(-1.14)					(0.27)
DPUBLIC	-0.1612	-0.2031*	-0.1608	-0.1459	-0.1657*	-0.0542	-0.0553	-0.0506	-0.0608	-0.0531
	(-1.61)	(-1.97)	(-1.62)	(-1.45)	(-1.67)	(-0.73)	(-0.72)	(-0.68)	(-0.82)	(-0.71)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# observations	984	984	984	984	984	984	984	984	984	984
R squared (%)	64.49	65.17	64.48	64.91	64.64	43.56	43.55	43.62	43.62	43.55
F test	40.85***	40.67***	39.75***	41.43***	38.33***	26.77***	27.46***	26.88***	27.24***	27.64***

Regressions are estimated using OLS with standard errors clustered by borrower firm level. The dependent variable in columns (1) to (5) is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan (LN_SPREAD). The dependent variable in columns (6) to (10) is the natural logarithm of maturity in months (LN_MAT). Industry and time effects and firm- and loan-control variables are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

Table 6. Interest rate spread, maturity, and pressure-resistance of large shareholders

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	5.7945***	5.9905***	6.0744***	6.0755***	1.8216***	1.6993**	1.7605**	1.7464**
	(11.31)	(9.90)	(11.49)	(11.13)	(2.64)	(2.45)	(2.53)	(2.49)
D_LARGE1_OVER10_RESIST	0.3300***	-0.0725			-0.1347	0.0449		
	(3.00)	(-0.52)			(-1.14)	(0.37)		
D_LARGE1_OVER10_SENSIT	0.6492***	0.1410			-0.1248	-0.0844		
	(4.95)	(0.78)			(-1.33)	(-0.59)		
D_LARGE1_OVER10_NONFIN	0.3726***	-0.0611			-0.1732**	-0.0638		
	(3.34)	(-0.46)			(-2.05)	(-0.66)		
LARGE1_RESIST			0.0013	-0.0007			0.0000	0.0005
			(1.05)	(-0.55)			(0.04)	(0.44)
LARGE1_SENSIT			0.0051	-0.0006			-0.0012	-0.0019
			(1.55)	(-0.23)			(-0.62)	(-0.71)
LARGE1_NONFIN			0.0011	-0.0009			-0.0012	-0.0015
			(0.97)	(-0.85)			(-1.56)	(-1.63)
DPUBLIC*D_LARGE1_OVER10_RESIST		0.5652***				-0.3297		
		(2.70)				(-1.56)		
DPUBLIC*D_LARGE1_OVER10_SENSIT		0.7255***				-0.0555		
		(3.21)				(-0.28)		
DPUBLIC*D_LARGE1_OVER10_NONFIN		0.6699***				-0.1481		
		(3.83)				(-0.98)		
DPUBLIC*LARGE1_RESIST				0.0068***				-0.0033
				(2.66)				(-0.97)
DPUBLIC*LARGE1_SENSIT				0.0163***				0.0010
				(3.07)				(0.27)
DPUBLIC*LARGE1_NONFIN				0.0060**				0.0010
				(2.52)				(0.65)
DPUBLIC	-0.1884*	-0.7834***	-0.1502	-0.4701***	-0.0595	0.1100	-0.0807	-0.0945
	(-1.87)	(-4.22)	(-1.46)	(-3.10)	(-0.79)	(0.73)	(-1.06)	(-0.87)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# observations	984	984	984	984	984	984	984	984
R squared (%)	66.32	67.28	64.75	65.88	43.89	44.18	43.85	44.10
F test	43.43***	39.87***	47.25***	29.58***	28.31***	14.48***	19.98***	18.35***

Regressions are estimated using OLS with standard errors clustered by borrower firm level. The dependent variable in columns (1) to (5) is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan (LN_SPREAD). The dependent variable in columns (6) to (10) is the natural logarithm of maturity in months (LN_MAT). Industry and time effects and firm- and loan-control variables are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

maturity partly reported in Table 4. The signs of the coefficients obtained for borrower-level variables and loan-level variables are the same as in Tables 3 and 4.

To test the second hypothesis, we classify large shareholders into 'pressure-sensitive' financial blockholders, 'pressure-resistant' financial blockholders and non-financial blockholders, with 'pressure-sensitive' blockholders having either existing or potential business relationships with companies that might compromise their monitoring activity. The results for the loan spread shown in columns 1 to 4 in Table 6 reveal that the interaction terms for the three types of blockholders are positive and significant, the effect being higher for 'pressure-sensitive' blockholders when we distinguish between the role of these large shareholders for listed and unlisted borrowers. These results reveal that the benefits related to monitoring activity are lower for pressure-sensitive blockholders. When we consider loan maturity as the dependent variable (columns 5 to 8), we obtain a negative and statistically significant coefficient for D_LARGE_OVER10_NONFIN. However, when we add the interaction terms with DPUBLIC, we obtain no evidence indicating that the type of controlling shareholder has any effect on loan maturity regardless of whether the borrower is a public or a private company.

4.4. Interest rate spread, maturity, and large noncontrolling shareholders.

Table 7 considers the effect of inequality in the distribution of shares between the largest shareholder and the rest of the blockholders on the interest rate spread when we distinguish between listed and unlisted borrowers. The coefficients for the different proxies of inequality in the distribution of shares are not significant for private firms. However, the interaction terms between our proxies for inequality in the distribution of shares and DPUBLIC are all significant. The coefficients of DPUBLIC*DIF_LARGE1_2, DPUBLIC*DIF_LARGE1_3, DPUBLIC*DIF_LARGE1_4, and DPUBLIC*HI_DIFF are positive, suggesting a differential increase in interest rate spread for listed firms when the difference between the stake of the largest shareholder and the rest of the blockholders is higher. Similarly, we obtain negative and statistically significant coefficients for DPUBLIC*LARGE2/LARGE1, DPUBLIC*LARGE2_3/LARGE1, and DPUBLIC*LARGE2_4/LARGE1. These negative coefficients are consistent with comparable sizes between the stakes of other large shareholders compared to the largest shareholder reducing the interest rate of bank loans in public firms. Finally, the negative coefficient for DPUBLIC*D_BLOCKS shows that the existence of other large blockholders reduces loan spread. The number of blocks (N_BLOCKS) is not statistically significant. The sum of the coefficients of inequality in the distribution of shares and the interaction terms with DPUBLIC is found to be statistically significant. These results strongly support our third hypothesis, indicating that a more evenly balanced distribution of ownership among large shareholders contributes to lower interest rates.

To aid the interpretation of these results, we calculate the economic effect considering the coefficients reported in column (1). These coefficients suggest that a one standard deviation increase in DIF_LARGE1_2 is associated with an increase in loan spread for public firms of 43.76 basis points with respect to private firms.

Table 8 considers the effect of inequality in the distribution of shares between the controlling shareholders and the rest of the shareholders on loan maturity. The results reveal that the coefficients of DIF_LARGE1_2, DIF_LARGE1_4, and HI_DIFF are negative and statistically significant, in a way that is consistent with decreases in maturity when there is less contestability as regards the power of the largest shareholder. The interaction terms between the proxies of inequality in the distribution of shares and DPUBLIC are not significant, suggesting no differences in behaviour between listed and unlisted firms. Specific controls for loan and firm characteristics in Tables 6 and 7 behave as in Tables 3 and 4.

5. Discussion

The results shown in the previous section reveal that the presence of large controlling shareholders mainly increases the cost of debt, although this effect is only significant for listed firms. We also find that the presence of large shareholders reduces loan maturity for the total sample.[5] First, this result for loan maturity is in line with our first hypothesis, although we need to be cautious when interpreting this result, as only some of the proxies have significant coefficients. Second, the negative view of lenders regarding the role of the largest shareholder in listed firms is consistent with our second hypothesis. This result suggests that large controlling shareholders in public firms expropriate wealth from other investors and their presence increases the agency costs of debt in listed firms. Public firms are subject to the recommendations of codes of good governance, resulting in higher requirements as regards corporate governance information and internal control mechanisms. In this context, public firms benefit less from the monitoring role via external control by large shareholders, while their potential expropriation behaviours persist. This result is consistent with the evidence of substitution among different control mechanisms, as reported in Bozec & Bozec (2007), Fernández-Méndez & Arrondo (2005), and Rediker & Seth (1995).

This fact also highlights the different role played by large controlling shareholders in public and private firms. Saunders and Steffen (2011) show that concentrated ownership can explain the higher spreads for private firms. Our results reveal that the presence of large shareholders significantly increases loan spreads for public firms.

Our results suggest that banks as large controlling shareholders are associated with increases in loan spreads. Tribo et al. (2007) also show the important role of banks as large shareholders having a negative impact on a firm's R&D investment. This expropriatory behaviour on the part of banks when they are large shareholders is also in line with the evidence provided by Álvarez-Botas et al. (2022). In a study for a sample of 12,045 loans to 3,290 borrowers from 45 countries over the period 2004-2013, the aforementioned authors show that borrowers paid higher spreads and were offered shorter maturities when they borrowed from banks that were also shareholders.

We also show that 'pressure sensitive' blockholders have the strongest influence on bank loan spread for listed firms as the effectiveness in monitoring activity is damaged when investors may have other business relations with firms. This result evidences the existence of agency problems linked to 'pressure sensitive' firm's large shareholders as reported by Cornett et al. (2007), Bhattacharya & Graham (2009), and Mangena et al. (2020). As for the role of the presence of multiple large shareholders, in line with our third hypothesis our results show that higher differences in the ownership of the largest shareholder and other blockholders (i.e. a

[5] These results are maintained when we consider a time dummy for the period of crisis 2008-2013, instead of time effects.

Table 7. Interest rate spread and large noncontrolling shareholders

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	6.1120***	6.0907***	6.0821***	5.8934***	5.8042***	5.7986***	5.8734***	5.6885***	6.1064***
	(11.20)	(11.25)	(11.30)	(11.98)	(11.81)	(11.89)	(11.58)	(11.06)	(11.13)
DIF_LARGE1_2	-0.0006								
	(-0.76)								
DIF_LARGE1_3		-0.0006							
		(-0.78)							
DIF_LARGE1_4			-0.0006						
			(-0.83)						
LARGE2/LARGE1				0.0657					
				(0.81)					
LARGE2_3/LARGE1					0.0509				
					(0.95)				
LARGE2_4/LARGE1						0.0445			
						(1.01)			
D_BLOCKS							0.1280	0.1148	
							(1.47)	(1.12)	
N_BLOCKS								0.0061	
								(0.43)	
HI_DIFF									-0.0000
									(-0.75)
DPUBLIC*DIF_LARGE1_2	0.0054***								
	(2.75)								
DPUBLIC*DIF_LARGE1_3		0.0047**							
		(2.54)							
DPUBLIC*DIF_LARGE1_4			0.0042**						
			(2.41)						
DPUBLIC*LARGE2/LARGE1				-0.5501***					
				(-3.00)					
DPUBLIC*LARGE2_3/LARGE1					-0.3486***				
					(-3.06)				
DPUBLIC*LARGE2_4/LARGE1						-0.2596***			
						(-2.91)			
DPUBLIC*D_BLOCKS							-0.3728**	-0.2861*	
							(-2.43)	(-1.73)	
DPUBLIC*N_BLOCKS								-0.0193	
								(-1.25)	
DPUBLIC*HI_DIFF									0.0000**
									(2.10)
DPUBLIC	-0.3321***	-0.2838**	-0.2600**	0.0794	0.0798	0.0621	0.0269	0.0095	-0.2703**
	(-2.71)	(-2.47)	(-2.32)	(0.75)	(0.74)	(0.57)	(0.25)	(0.09)	(-2.36)
FIRM_SIZE	-0.0284	-0.0291	-0.0296	-0.0280	-0.0256	-0.0260	-0.0315	-0.0227	-0.0303
	(-1.07)	(-1.09)	(-1.11)	(-1.07)	(-0.98)	(-0.99)	(-1.19)	(-0.84)	(-1.12)
PROFIT	-0.3083	-0.3119	-0.3152	-0.3000	-0.3054	-0.3180	-0.3582	-0.3836	-0.3217
	(-0.95)	(-0.96)	(-0.96)	(-0.91)	(-0.92)	(-0.96)	(-1.09)	(-1.17)	(-0.99)
LEV	0.1084	0.1151	0.1186	0.0965	0.1111	0.1140	0.1082	0.1181	0.1280
	(0.53)	(0.56)	(0.57)	(0.49)	(0.57)	(0.59)	(0.53)	(0.58)	(0.60)
ICR	-0.0012***	-0.0012***	-0.0012***	-0.0014***	-0.0014***	-0.0013***	-0.0011***	-0.0012***	-0.0012***
	(-3.38)	(-3.35)	(-3.33)	(-3.64)	(-3.70)	(-3.70)	(-3.07)	(-3.20)	(-3.21)
TANG	-0.3211**	-0.3232**	-0.3274**	-0.3448**	-0.3488**	-0.3533**	-0.3236**	-0.3415**	-0.3216**
	(-2.22)	(-2.22)	(-2.25)	(-2.45)	(-2.52)	(-2.55)	(-2.10)	(-2.26)	(-2.14)
LN_MAT	0.1859***	0.1852***	0.1851***	0.1862***	0.1856***	0.1870***	0.1897***	0.1896***	0.1854***
	(4.40)	(4.37)	(4.38)	(4.42)	(4.42)	(4.47)	(4.48)	(4.53)	(4.39)
LOAN_SIZE	-0.0523**	-0.0524**	-0.0523**	-0.0516**	-0.0517**	-0.0509**	-0.0509**	-0.0514**	-0.0513**
	(-2.50)	(-2.49)	(-2.47)	(-2.51)	(-2.45)	(-2.39)	(-2.42)	(-2.47)	(-2.41)
DBRIDGE_LOAN	0.1261	0.1252	0.1275	0.1180	0.1230	0.1361	0.1163	0.1202	0.1454
	(0.53)	(0.53)	(0.54)	(0.50)	(0.51)	(0.57)	(0.48)	(0.48)	(0.62)
DCREDIT_LINE	-0.1366*	-0.1383*	-0.1380*	-0.1503**	-0.1402*	-0.1336*	-0.1430*	-0.1321*	-0.1324*
	(-1.86)	(-1.88)	(-1.88)	(-2.00)	(-1.93)	(-1.88)	(-1.94)	(-1.80)	(-1.83)
DTERM_LOAN	0.0217	0.0211	0.0215	0.0146	0.0207	0.0242	0.0197	0.0287	0.0240
	(0.31)	(0.30)	(0.30)	(0.20)	(0.29)	(0.35)	(0.28)	(0.42)	(0.34)
PURP_ACQUIS	-0.0829	-0.0805	-0.0779	-0.1177	-0.1060	-0.0957	-0.0890	-0.0863	-0.0480
	(-0.66)	(-0.64)	(-0.62)	(-0.94)	(-0.84)	(-0.76)	(-0.67)	(-0.66)	(-0.38)
PURP_CORP	-0.2857***	-0.2839***	-0.2828***	-0.3027***	-0.2981***	-0.2947***	-0.2884***	-0.2809***	-0.2754***
	(-3.96)	(-3.92)	(-3.89)	(-4.06)	(-4.06)	(-4.03)	(-3.90)	(-3.87)	(-3.83)
PURP_DEBTREPAY	-0.4209***	-0.4193***	-0.4188***	-0.4452***	-0.4400***	-0.4368***	-0.4469***	-0.4490***	-0.4075***
	(-3.71)	(-3.68)	(-3.67)	(-3.92)	(-3.85)	(-3.78)	(-3.83)	(-3.85)	(-3.57)
PURP_LBO	0.2947***	0.2979***	0.2991***	0.2702***	0.2887***	0.2931***	0.3008***	0.3186***	0.3142***
	(2.90)	(2.94)	(2.96)	(2.68)	(2.89)	(2.94)	(2.96)	(3.09)	(3.12)
PURP_PF	-0.5086***	-0.5071***	-0.5052***	-0.5182***	-0.5126***	-0.5068***	-0.5184***	-0.5070***	-0.4996***
	(-3.55)	(-3.53)	(-3.51)	(-3.60)	(-3.62)	(-3.59)	(-3.61)	(-3.59)	(-3.47)
DSENIOR	-1.0146***	-1.0066***	-1.0020***	-0.9985***	-0.9861***	-0.9848***	-0.9725***	-0.9572***	-1.0085***
	(-3.56)	(-3.54)	(-3.54)	(-3.60)	(-3.59)	(-3.61)	(-3.44)	(-3.27)	(-3.55)
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# observations	984	984	984	984	984	984	984	984	984
R squared (%)	65.56	65.41	65.32	65.93	66.07	66.01	65.25	65.78	65.08
F test	32.75***	34.73***	35.71***	204.76***	207.97***	189.99***	114.98***	195.46***	33.80***

Regressions are estimated using OLS with standard errors clustered by borrower firm level. The dependent variable is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan (LN_SPREAD). Industry and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

Table 8. Maturity and large noncontrolling shareholders

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	1.7703**	1.7667**	1.7726**	1.7092**	1.7095**	1.7261**	1.7591**	1.7811**	1.7981**
	(2.52)	(2.51)	(2.52)	(2.47)	(2.45)	(2.49)	(2.53)	(2.55)	(2.55)
DIF_PA1_2	-0.0013*								
	(-1.66)								
DIF_PA1_3		-0.0011							
		(-1.65)							
DIF_PA1_4			-0.0011*						
			(-1.66)						
PA2_PA1				0.1195					
				(1.31)					
PA2_3_PA1					0.0725				
					(1.27)				
PA2_4_PA1						0.0588			
						(1.29)			
D_BLOCKS							0.0802	0.0631	
							(1.14)	(0.76)	
N_BLOCKS								0.0065	
								(0.61)	
HI_DIFF									-0.0000*
									(-1.82)
DPUBLIC*DIF_PA1_2	0.0010								
	(0.74)								
DPUBLIC*DIF_PA1_3		0.0011							
		(0.92)							
DPUBLIC*DIF_PA1_4			0.0012						
			(1.02)						
DPUBLIC*PA2_PA1				-0.0732					
				(-0.53)					
DPUBLIC*PA2_3_PA1					-0.0450				
					(-0.53)				
DPUBLIC*PA2_4_PA1						-0.0314			
						(-0.49)			
DPUBLIC*D_BLOCKS							-0.0018	-0.0013	
							(-0.02)	(-0.01)	
DPUBLIC*N_BLOCKS								-0.0034	
								(-0.30)	
DPUBLIC*HI_DIFF									0.0000
									(1.33)
DPUBLIC	-0.1195	-0.1155	-0.1130	-0.0497	-0.0515	-0.0585	-0.0834	-0.0796	-0.1280
	(-1.29)	(-1.33)	(-1.36)	(-0.62)	(-0.65)	(-0.74)	(-1.00)	(-0.96)	(-1.52)
FIRM_SIZE	-0.0479**	-0.0478**	-0.0479**	-0.0479**	-0.0486**	-0.0491**	-0.0499**	-0.0520**	-0.0476**
	(-2.39)	(-2.38)	(-2.38)	(-2.38)	(-2.39)	(-2.41)	(-2.42)	(-2.47)	(-2.38)
PROFIT	0.3573	0.3532	0.3524	0.3430	0.3325	0.3303	0.3237	0.3250	0.3672
	(1.19)	(1.18)	(1.18)	(1.15)	(1.13)	(1.13)	(1.12)	(1.10)	(1.23)
LEV	0.1585	0.1546	0.1540	0.1509	0.1454	0.1455	0.1483	0.1465	0.1617
	(1.25)	(1.22)	(1.21)	(1.21)	(1.16)	(1.17)	(1.20)	(1.18)	(1.26)
ICR	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
	(0.76)	(0.75)	(0.75)	(0.71)	(0.72)	(0.72)	(0.78)	(0.79)	(0.78)
TANG	0.1231	0.1274	0.1279	0.1299	0.1349	0.1369	0.1290	0.1341	0.1259
	(0.98)	(1.01)	(1.02)	(1.03)	(1.06)	(1.07)	(1.02)	(1.04)	(1.00)
LN_SPREAD	0.2203***	0.2186***	0.2179***	0.2232***	0.2236***	0.2249***	0.2230***	0.2262***	0.2165***
	(4.58)	(4.55)	(4.54)	(4.61)	(4.64)	(4.71)	(4.62)	(4.66)	(4.53)
LOAN_SIZE	0.0686***	0.0687***	0.0687***	0.0691***	0.0688***	0.0685***	0.0689***	0.0689***	0.0685***
	(3.49)	(3.50)	(3.50)	(3.49)	(3.51)	(3.50)	(3.52)	(3.51)	(3.50)
DBRIDGE_LOAN	-1.8468***	-1.8512***	-1.8513***	-1.8514***	-1.8559***	-1.8550***	-1.8491***	-1.8600***	-1.8477***
	(-4.82)	(-4.84)	(-4.85)	(-4.79)	(-4.80)	(-4.80)	(-4.71)	(-4.69)	(-4.87)
DCREDIT_LINE	0.4053***	0.4048***	0.4052***	0.4081***	0.4065***	0.4065***	0.4092***	0.4067***	0.4043***
	(3.70)	(3.70)	(3.70)	(3.71)	(3.72)	(3.73)	(3.74)	(3.72)	(3.70)
DTERM_LOAN	0.5011***	0.5004***	0.5009***	0.5043***	0.5030***	0.5034***	0.5043***	0.5015***	0.4986***
	(4.73)	(4.72)	(4.73)	(4.75)	(4.75)	(4.77)	(4.77)	(4.75)	(4.71)
PURP_ACQUIS	0.0859	0.0840	0.0840	0.0963	0.0959	0.0978	0.1013	0.1022	0.0844
	(0.79)	(0.77)	(0.77)	(0.87)	(0.87)	(0.90)	(0.93)	(0.93)	(0.78)
PURP_CORP	0.0968	0.0956	0.0957	0.1010	0.1012	0.1028	0.1078	0.1048	0.0958
	(1.23)	(1.21)	(1.21)	(1.29)	(1.29)	(1.32)	(1.37)	(1.32)	(1.21)
PURP_DEBTREPAY	0.1790**	0.1783**	0.1786**	0.1856**	0.1865**	0.1888**	0.1951**	0.1964**	0.1793**
	(2.14)	(2.15)	(2.15)	(2.20)	(2.24)	(2.28)	(2.31)	(2.33)	(2.16)
PURP_LBO	0.2986***	0.2983***	0.2987***	0.3007***	0.2976***	0.2965***	0.3151***	0.3005***	0.3018***
	(3.15)	(3.15)	(3.15)	(3.18)	(3.13)	(3.12)	(3.23)	(2.98)	(3.17)
PURP_PF	0.8091***	0.8050***	0.8042***	0.8082***	0.8054***	0.8063***	0.8207***	0.8178***	0.8059***
	(6.28)	(6.24)	(6.24)	(6.13)	(6.13)	(6.16)	(6.30)	(6.26)	(6.31)
DSENIOR	-0.1564	-0.1587	-0.1596	-0.1481	-0.1463	-0.1437	-0.1583	-0.1441	-0.1653
	(-1.01)	(-1.03)	(-1.03)	(-0.96)	(-0.95)	(-0.93)	(-1.03)	(-0.92)	(-1.07)
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# observations	984	984	984	984	984	984	984	984	984
R squared (%)	43.82	43.80	43.80	43.75	43.72	43.72	43.74	43.80	43.87
F test	18.45***	18.37***	18.43***	25.38***	24.91***	24.06***	21.50***	21.76***	17.82***

Regressions are estimated using OLS with standard errors clustered by borrower firm level. The dependent is the natural logarithm of maturity in months (LN_MAT). Industry and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

less balanced distribution of ownership) increases the cost of bank loans for public firms. We also obtain some evidence that it decreases the maturity of bank loans for public and private firms. This evidence is consistent with most of the previous literature suggesting the benefits of the existence of multiple large shareholders. For instance, Maury & Pajuste (2005) show that a more evenly balanced distribution of voting rights across multiple large shareholders has a positive influence on firm value, as the joint presence of several large shareholders can reduce private benefits of control. Similarly, Attig et al. (2008) show that the implied cost of equity decreases with the presence, number, and voting size of large shareholders beyond the controlling owner, while Mangena et al. (2020) reveal that the existence of other blockholders eliminates the negative effects of bank power on the likelihood of financial distress.

6. Conclusions

Dominant shareholders constitute a major source of agency risk for investors. This paper analyses the effect of the presence of large shareholders on the terms of bank loans for a sample of 984 loans contracted by non-financial Spanish firms over the period 2001-2017. We consider not only the existence of controlling shareholders and their typology, but also the presence of other larger noncontrolling shareholders, as well as whether the effects differ between public and private firms. Our paper contributes to the literature about the role of large shareholders on corporate behaviour, specifically analysing the influence of large shareholders on the terms of bank loans. The presence of large shareholders is a common feature in most European countries and hence our results may be extrapolated.

In keeping with the predictions of the theoretical framework, we provide evidence that the presence of large controlling shareholders leads to increases in the agency costs of debt, specifically leading to higher interest rate spreads. When we distinguish between the role played by large controlling shareholders in public and private firms, we observe that the expropriation effect exists only in the case of listed firms. This result suggests that the existence of other alternative mechanisms of control for listed firms reduces the relevance of the monitoring role on the part of large shareholders, while the expropriatory aspects of large shareholders persist. Banks and non-financial companies as large controlling shareholders are associated with increases in loan spreads, while non-financial companies as large controlling shareholders are related to reductions in loan maturity. Additionally, 'pressure sentitive' blockholders are related to the highest increases in loan spreads suggesting that their business relationship with firms affects their monitoring activity. Furthermore, a more unevenly balanced distribution of ownership among large shareholders increases the agency costs of debt, as it is associated with increases in interest rate spreads, this effect once again affects public borrowers only.

Our findings have implications for policymakers, as they suggest that institutional reforms generating strong protection of minority shareholders and debtholders and limiting the power of large shareholders are crucial, resulting in firms accessing funds on better terms and stimulating corporate investment. These results highlight that a regulatory environment that provides strong protection to lenders is a necessary condition to maintain the maximization of share prices as a valid objective to guide the management of firms. If lenders perceive that this financial objective of the firm might be achieved at their cost, they will react by hampering access to debt financing and increasing its cost, which eventually decreases value creation in the economy.

We have to acknowledge that our analysis of the effect of large shareholders on the conditions to contract new debt has a number of limitations. First, we have focused our attention on the effect of large shareholders on the cost and maturity of loans. However, creditors may possibly protect their interests by imposing covenants against expropriatory behaviour on the part of shareholders rather than acting exclusively through the cost and maturity of debts. However, information on these terms is not available. Second, with respect to the monitoring potential of second tier large shareholders, there might be private agreements among shareholder groups that affect the incentives of large shareholders to exert an effective monitoring role. Once again, this information is not publicly available.

A potential extension of our paper could analyse the role of large shareholders on corporate investment behaviour. Furthermore, the information asymmetry between large shareholders and external creditors might be more severe in the case of multiple small bondholders than in the case of a bank. Therefore, it would be of the utmost interest to analyse whether the risk of expropriation and the monitoring behaviour on the part of large controlling shareholders perceived by banks is also present in the case of bondholders. Spain is a bank-dominated market; therefore, a multi country analysis including Anglo-Saxon economies might allow us to gauge the effect of large shareholders on the conditions of bond issues.

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Conflict of interests

The authors declare no conflict of interests.

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