

DEBT MATURITY STRUCTURE IN PRIVATE FIRMS: DOES THE FAMILY CONTROL MATTER?

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Abstract

This research studies the effect of family control on the debt maturity structure of private firms. It uses a sample of unlisted Spanish firms for the period 2004-2013. Our results indicate that family firms get better access to long term debt, even when exercising control by pyramid structures. However, the presence of a second largest family shareholder has a negative effect on debt maturity. Moreover, in line with previous studies, we find that firms use more long term debt when they have fewer growth opportunities, higher asset maturity and are more leveraged.

Key words:

Debt maturity structure, family firms, controlling shareholders.

JEL Classification:

G3, G32

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DEBT MATURITY STRUCTURE IN PRIVATE FIRMS: DOES THE FAMILY CONTROL MATTER?

1. Introduction

Traditionally financial literature has established the importance of debt maturity in mitigating agency conflicts (Myers, 1977; Barnea et al., 1980; Childs et al., 2005). Indeed, empirical evidence supports the role of short term debt in reducing conflicts between shareholders and creditors (Barclays and Smith, 1995; Guedes and Opler, 1996; Stohs and Mauer, 1996; Ozkan, 2000), and between managers, shareholders, and different groups of shareholders (Datta et al., 2005; Arslan and Karan, 2006; García-Teruel and Martínez-Solano, 2010). When focusing on ownership structure, the characteristics of the controlling shareholder may affect debt maturity, depending on incentive structures. Thus, family firms are distinguished by higher risk aversion, long-term investment horizons, and concern for reputation, which helps to reduce agency conflicts between shareholders and creditors (Ang, 1992; Anderson et al., 2003, Faccio et al., 2011). In addition, these companies have a major conflict between larger and minority shareholders (Villalonga and Amit, 2006; Croci et al., 2011). Hence, the research question that arises is how family ownership affects access to long-term debt.

In their research, Datta et al. (2005) show that debt maturity is linked to corporate governance factors such as managerial ownership. However, although most firms around the world are controlled by families (Burkart et al., 2003; Croci et al., 2011), there is little financial literature exploring the relationship between debt maturity and family firms with just one paper focusing on listed family controlled firms. Specifically, Croci et al. (2011), studying the effect of family control on financial decisions, show that credit markets are prone to providing long-term debt to family firms. However, there is no empirical evidence for privately owned family firms, even though these firms rely almost exclusively on debt financing, especially in countries with a bank-based financial system. This question is of special interest since private firms suffer the effects of information asymmetries more deeply and, consequently, have more difficulties in accessing long-term debt, given that lenders may prefer short-term debt in order to be able to monitor loan conditions more frequently. In this situation, family firms characteristics may play an important role in facilitating access to long-term debt, so improving firm financial conditions. The aim of

this paper is to provide empirical evidence of the effects of family control on debt maturity for a sample of non-financial private Spanish firms for the period 2004-2013.

We focus on a sample of unlisted Spanish firms because they provide an excellent setting for this study. Spain has a different legal and institutional setting and underdeveloped stock markets than Anglo-Saxon countries (La Porta et al., 1999). Spain belongs to continental European countries that are characterised by highly concentrated ownership in the hands of families (Faccio and Lang, 2002; La Porta et al., 1998; La Porta et al., 1999). Actually, there is a predominance of family groups in the control of Spanish firms even among listed companies (Sacristán-Navarro and Gómez-Ansón, 2006). Moreover, Spain has a bank-based financial system (Demirgüç-Kunt and Levine, 1999; De Andrés Alonso et al., 2005), with limited options for long-term debt outside banks. This different legal and institutional environment makes family control more value efficient (Caprio et al., 2011).

This study contributes to the existing literature in several ways. This research issue remains unexplored for private firms, even though private firms are vital to the economy of a country (Cole, 2013), and have more complex problems of agency and asymmetric information than public trading firms (Ang, 1992; Berger and Udell, 1998). We also contribute to the scarce literature on financing decisions of family firms, and to the understanding of the role played by family firms in reducing information asymmetries and obtaining better debt contract terms (Anderson et al., 2003; Croci et al., 2011). This is especially important since family firms in most countries around the world represent between 60% and 90% of non-governmental GDP (Family Business Statistics, 2012)¹. Furthermore, with the aim of considering the final control of the firm, we focus on the case when the ultimate controller shareholder is a family. The data on the identity of ultimate family owner allow us to determine if this type of controlling shareholder is perceived by creditors as a potential risk of expropriation (Boubakri and Ghouma, 2010). Finally, we also consider indirect ownership through the existence of pyramid structures, and the presence of another second largest family shareholder, since these are also associated with the risk of expropriation in financial decisions (Paligorova and Xu, 2012).

Our results indicate that controlled family firms present higher debt maturity. These findings are consistent with the fact that family control mitigates agency conflict between shareholders and creditors because of their concerns with managerial risk taking, long-term firm survival, and

¹ European Family Business, *Family Business Statistics*, June 2012 (www.europeanfamilybusinesses.eu).

reputation, as have been reported in the literature (Anderson et al., 2003; Croci et al., 2011). Our findings are also consistent with the conflict between large and minority shareholders, which can be especially intense in family firms (Villalonga and Amit, 2006). Family controlling shareholders (majority) may prefer long-term debt since they are concerned with reducing their personal risk exposure and to avoiding loss of control (Schmid, 2013). Family firms tend to adopt conservative management policies and to pursue risk reduction strategies (Andres, 2008; Caprio et al., 2011). On the other hand, the results also support the argument that firms controlled by shareholders with divergence between voting right and cash-flow rights (pyramid structures) negatively affect access to long term debt, except for the case of family as ultimate controlling shareholder, where there is better access. This finding supports the idea that the family's interest in the long-term survival of their businesses, as well as its concern for maintaining the reputation of the firm and the family, lead this type of ultimate controlling shareholder to avoid acting opportunistically. Finally, our results reveal that the existence of a second family shareholder in a family controlled firm decreases the debt maturity structure. Specifically, if both the largest shareholder and the second reference shareholder are families, a higher inclination of family groups to find a consensus regarding private benefits can be considered, and the market perceives greater risk of expropriation (Attig et al., 2008).

These results may be of interest not only for private Spanish firms but also for private firms established in continental European countries characterised by weak investor protection, high ownership concentration, and with capital markets dominated by banks and where there are limited options for accessing long-term debt outside banks.

The rest of the paper is organized as follows. Section 2 reviews the related literature and presents the main hypothesis. Section 3 describes the institutional setting of our sample. Section 4 describes the data and estimation method. Section 5 presents the empirical results. Section 6 concludes.

2. Theoretical foundations and hypotheses

Financial literature in recent years has established the influence of agency conflicts on firms' debt maturity (Barnea et al., 1980; Barclay and Smith, 1995; Datta et al., 2005; Arslan and Karan, 2006; García-Teruel and Martínez-Solano, 2010). Focusing on private family firms, in this section we study the effects of agency conflicts between shareholders and creditors, and between larger and minority shareholders on debt maturity structure.

2.1. Agency conflicts of debt and debt maturity in private family firms

Focusing on the agency conflicts of leveraged firms, equity holders can expropriate wealth from their debt holders in several ways. Shareholders may underinvest since they do not have incentives to initiate profitable projects when most of the cash flows generated by the project are for paying debt (Myers, 1977). Shareholders may also undertake riskier investment projects because they may obtain larger profits with limited liabilities (Jensen and Meckling, 1976). Moreover, equity holders in leverage firms have the short-sighted investment problem, since they may focus on short-term profits, ignoring long term investment projects of higher net present value. In order to deal with these agency conflicts of debt, creditors may act by granting shorter debt maturity to borrowers with the aim of facilitating the renegotiation of the loan contract terms. Thus, shortening debt maturity mitigates incentives to both underinvest and overinvest (Myers, 1977; Childs et al., 2005). These problems are higher in small and medium-sized firms, non-listed firms, which have less access to long term debt because they are informationally opaque and riskier than large firms (Petit and Singer, 1985; Berger and Udell, 1998). The underinvestment problem is more frequent in SMEs with concentrated ownership while overinvestment problems increase with less concentrated ownership (Ang, 1991; Danielson and Scott, 2007).

Private family firms can be considered a special case of concentrated ownership and owner management (Wu et al., 2007). However, when family firms have incentive structures, these lead to fewer agency conflicts with creditors (Anderson et al., 2003). Specifically, family firms are characterized by non diversified investment and concentrated equity position; they are interested in the long-term survival of the firm (Ang, 1992; Andres, 2008). Moreover, family members are concerned about the firm's reputation and its effect on third parties because of their sustained presence in the firm and in their locations (Bopaiah, 1998). In particular, this interest in maintaining a reputation makes firms reluctant to invest in risky projects (Diamond, 1989). Actually, family members in firms bearing the family name are especially interested in improving their firm's reputation (Deephouse and Jaskiewicz, 2013).

In this context, according to agency costs, the presence of large undiversified ownership reduces the incentives to expropriate creditor's wealth, and the risk of asset substitution is expected to be lower in this case (Jensen and Meckling, 1976). Actually, firms controlled by undiversified large shareholders invest more conservatively than those controlled by diversified owners (Faccio et al., 2011). Long-term contracts between shareholders and bondholders are necessary in order to promote firm-specific investments. In this case, family ownership increases a firm's credibility to commit to implicit contracts. Firms may have a strong incentive to renegotiate these implicit

agreements and might, therefore, lack credibility when making promises to other bondholders. However, families, with their characteristics, might have an advantage in committing credibly to these agreements (Andres, 2008). Moreover, since family owners are concerned with firm survival, this reduces the short-sighted investment problem. Actually, credit to family firms was reduced less during the crisis in 2008 (D'Aurizio et al., 2015). All the above suggests that family firms reduce the risk for creditors, resulting in lower agency debt costs. Consequently, we would expect private family firms to have higher debt maturity, so our first hypothesis is:

Hypothesis 1. Private family controlled firms have a longer debt maturity structure than non-family firms.

2.2. Agency conflicts between large and minority shareholders and debt maturity in private family firms

The effect of separation of ownership and control motivates managers to take decisions in line with their personal objectives, which do not necessarily benefit the shareholders (Jensen and Meckling, 1976). When facing the debt maturity structure choice, managers will prefer long-term debt in order to avoid frequent monitoring by debtors (Datta et al., 2005). On the other hand, using short-term debt allows the reduction of the agency cost of managerial discretion, given that management is more frequently monitored because of periodic credit renewals (Rajan and Winston, 1995). The agency costs arising from the separation of ownership and control are lower for small firms in which owners and managers are the same, and for firms with more concentrated ownership (Pettit and Singer, 1985; Shleifer and Vishny, 1997; Ang et al., 2000). This is the case of private family firms characterized by reduced dimension and concentration of ownership and control. Moreover, the presence of family members actively involved in firm's management reduces agency conflicts (Maury, 2006; Villalonga and Amit, 2006). However, conflicts between owner/managers and other stakeholders could be higher (Ang, 1991). Specifically, family firms have more severe conflicts between controlling shareholders and minority shareholders (Burkart et al., 2003; Villalonga and Amit, 2006; Croci, et al., 2011). Thus, large shareholders may also use their controlling position to conduct their financing decisions according to their private interests, and they may prefer to use long term debt by expropriating wealth from minorities. Furthermore, in the case of private firms which are not submitted to the disciplinary pressure of the financial markets, controlling owners may not need to signal their intention to mitigate potential agency

cost by using short-term debt (García-Teruel and Martínez-Solano, 2010). Therefore, when focusing on the agency conflict between large and minority shareholders, we also expect, as established in Hypothesis 1, that private family controlled firms will increase debt maturity structure.

On the other hand, a large shareholder may exercise control of a firm through a chain of intermediate firms (pyramid structures). In this situation, control rights are greater than cash flow rights, providing an opportunity for the controlling shareholders to expropriate wealth from minority shareholders (Shyu and Lee, 2009; Lin et al., 2011). Moreover, in this situation, the disciplinary role of insolvency cost is weak because controlling shareholders assume low insolvency costs due to their lower cash flow rights. Large shareholders may seek to expropriate other shareholders (e.g., by transferring assets and profits out of firms or committing funds to unprofitable projects that provide private benefits). Their incentives to engage in “tunneling” activities are strong when their control rights are different from their cash-flow rights. Moreover, these activities could damage the value of firm’s collateral, which in turn reduces recovery rates in the event of a default (Lin et al., 2011). Thus, bondholders can anticipate this situation by granting shorter debt maturity in order to reduce agency cost by more frequent monitoring. Therefore, we would expect a negative relation between pyramid structures and long-term debt. In contrast, as indicated above, family shareholders have lower incentives to expropriate private benefits, since they are interested in the long term (Anderson et al., 2003) and, what is more, family firms have non-pecuniary benefits from control (Burkart et al. 2003). Any private benefit of the family, like high social reputation, might be lost in the event of the firm’s financial distress. Consequently, this negative relation for the existence of pyramid structures would be lower for family firms. Following these arguments we propose our second hypothesis:

Hypothesis 2. There is a negative relationship between pyramid structures and long term debt, but this negative relationship is lower for private family firms.

2.3. Debt maturity, family control and the second controlling shareholder

The presence of other large shareholders may also affect agency conflict between large and minority owners. They can alleviate agency conflict by monitoring managerial decisions (Shleifer and Vishny, 1997), but they can also increase it, because reference shareholders may form coalitions to share private benefits (Burkart et al., 1997). Moreover, the incentives to collude with

or to monitor the controlling shareholders are significantly affected by the type of blockholders. Maury and Pajuste (2005) found that family firms tend to collude with family controlling shareholders, since a second family owner is negatively related to firm value, but in the case of a non family second owner (corporation, financial institution, state, and other) this is positively related to firm value. Similarly, Jara-Bertin et al. (2008) found for the Spanish market that the presence of an individual or a family as the second largest reference shareholder has a negative effect on firms where the largest shareholder is also a family. Moreover, Attig et al. (2008) found that when the two largest shareholders are families, the market perceives greater risk of expropriation. Consequently, the presence of other large shareholders may also affect debt maturity because of their capacity and incentives to monitor controlling family shareholders. Specifically, if both the largest shareholder and the second reference shareholder are families, we would expect a higher inclination of family groups to find a consensus regarding private benefit facilities. In this situation a negative relation between second family shareholder and debt maturity is expected. However, when the second reference shareholder is a non family (institutional, investors, corporation, banks, etc.) the connivance of interest becomes more difficult. In this case, we would expect a positive relation between second family shareholder and debt maturity. Then, the third hypothesis is:

Hypothesis 3. The presence of a second reference family shareholder reduces debt maturity structure in private family firms.

2.4. Other determinants of debt maturity

Previous literature on debt maturity structure has also established other factors that can have systematic effects on the choice of debt maturity. We will use these factors as control variables. Specifically, previous research has explained the debt maturity structure through a variety of imperfections in capital markets, such as agency conflicts, information asymmetry, and taxes.

The existence of agency conflicts can be mitigated by using short-term debt. Indeed, as noted by Myers (1977), debt maturity previous to the time in which investment opportunities are exercised can reduce the underinvestment problem. The literature has shown that firms with greater growth opportunities use more short-term debt (Barclay and Smith, 1995; Guedes and Opler, 1996; Stohs and Mauer, 1996; Ozkan, 2000, among others). Myers (1977) also notes that companies can reduce

agency costs by matching assets and liabilities maturities, which is consistent with adapting asset liquidity to the maturity of liabilities.

The level of asymmetric information may also affect the debt maturity structure, since creditors face adverse selection and moral hazard problems and may prefer short-term debt in order to monitor borrowers. Consequently, larger and older firms that have lower levels of asymmetric information, and have established reputation would present a higher debt maturity.

Regarding the presence of asymmetric information, firms can use debt maturity structure to transmit signals to the market about their quality. Thus, Flannery (1986) and Kale and Noe (1990) show that companies with high quality investment projects use short-term debt to transmit their good market prospects. Diamond (1991) extends signaling models by introducing liquidity risk. In this context, high quality firms will take advantage of short-term debt, facing the risk of refinancing the project, while low quality firms may not access long-term debt, due to high adverse selection.

Debt maturity choice can also be affected by taxes. Brick and Ravid (1985) show that when the term structure of interest rates is not flat, the expected value of tax deductions depends on the maturity of the debt. Specifically, issuing long-term debt permits tax reductions when the yield curve is increasing. Thus, the present value of tax deductions will be higher for long-term debt during the early years. In addition, Brick and Ravid (1991) indicate that this preference for long-term loans can also be found for flat or even negative term structures when uncertainty about interest rates is introduced. In this vein, other studies also support the positive effect that long-term debt can have on firm value (Mauer and Lewellen, 1987; Emery et al., 1988).

Finally, financial leverage can also affect debt maturity structure, since highly indebted firms would prefer longer-term debt in order to control their higher financial risk (Diamond, 1993), as is confirmed by the financial literature (e.g. Stohs and Mauer, 1996).

3. Institutional setting

Corporate financing choices are affected by institutional characteristics of the country to which the firm belongs, as has been demonstrated by the extended literature focusing on the influence of the law on finance (La Porta et al., 1997 and 1998, among others); consequently, a firm's debt maturity structure also depends on its institutional setting (González, 2015), which may be examined by studying the quality of investor protection, the enforcement of laws, and the degree of financial development. In this section we briefly describe the main features of the financial and

legal Spanish system, their implications in debt maturity choices, and the similarities with other Western European countries.

Traditionally, Spain is classified as a French-origin civil law country, with similar characteristics to most continental countries, as indicated La Porta et al. (1997). Specifically, Spain is characterized by weak investor protection, a less developed capital market, high ownership concentration, and low enforcement of laws (La Porta et al., 1998; Faccio and Lang, 2002). These features are similar to most continental European countries and especially the Mediterranean countries (France, Greece, Italy, and Portugal).

Regarding shareholder's rights, La Porta et al. (1998) established the anti-director rights index, while more recently Djankov et al. (2008) proposed the anti-self-dealing index to measure the legal protection of minority shareholders against expropriation by insiders. In relation to the anti-self-dealing index, Spain presents a relatively low value, 0.37, compared to the other countries with a strong protection for minority shareholders (0.65 for US and 0.95 for UK). Since the capacity of controlling shareholders to obtain benefits of control depend on the investor protection in the country where the firm is established (Claessens et al., 2002; Lin et al., 2013), widely held firms are more usual in countries where minority shareholders are more protected by law, while poor protection countries should present more concentrated ownership because having minority stakes and without control may be costly due to the risk of expropriation by controlling shareholders (La Porta et al., 1997, 1998). Dispersed ownership is not usual in continental European countries, where ownership is often concentrated and families are the predominant controlling shareholders (Faccio and Lang, 2002; La Porta et al., 1998). In the case of Spain, controlling shareholders that have concentrated ownership together with a low level of shareholder protection provide incentives to abuse their control position and to expropriate minority shareholders. In this situation, the conflict emerges between controlling shareholders and minority shareholders (Burkart et al., 2003; Villalonga and Amit, 2006; Boubakri and Ghouma, 2010; Croci, et al., 2011).

Moreover, the controlling shareholder can use pyramid ownership structures, dual- class shares, and cross-holdings to exercise effective control over a firm with a relatively small direct stake in the cash-flow rights. In such firms, the primary agency conflict is between large controlling shareholders and other investors, and the divergence between control rights and cash-flow rights creates a separation of ownership and control that aggravates these conflicts (Shleifer and Vishny, 1997; Lin et al., 2011). Thus, previous papers have found that listed Spanish firms consider the pyramid structure as a control-enhancing mechanism. In contrast, dual-class shares, voting right restrictions and cross-shareholding are used by few listed Spanish firms (Faccio and Lang,

2002; Sacristán-Navarro and Gomez-Ansón, 2007). For non-listed firms, this proportion should be even lower given that the lack of liquidity for shares facilitates the control of the largest shareholders without using these types of shares. While some papers analyze the relationship between governance mechanisms in family firms and their financial decisions, the evidence is mainly drawn from the US listed firms, and thus cannot be generalized to other countries with less favorable legal environments.

Focusing on creditor rights, La Porta et al. (1997, 1998) and Djankov et al. (2007) establish that the creditor rights index for Spain is 2 in a scale ranging for 0 (poor creditor rights) to 4 (strong creditors rights). This places Spain in an intermediate situation, but Spanish Bankruptcy legislation from 2003 gives less protection to debtors than in previous law emphasizing creditor's protection (Aguilar-Díaz and Ruiz-Mallorquí, 2015), in fact Blazy et al. (2008) classify Spain as a model that protects secured creditors against debtors. As important as laws protecting investors is the enforcement of their rules (La Porta et al., 1998). In this sense, the International Country Risk Guide assesses the law and order tradition in Spain with a value of 4.65 (on a scale ranging from 0 to 6), and the index of private property rights published by the Heritage Foundation presents a value of 70 (values ranging between 0 and 100) with higher scores signifying greater protection. According to La Porta et al. (1998) Spain presents a weak level of legal enforcement since it is classified in French-civil law countries where investors are poorly protected by both the laws and their enforcement. Also Demirgüç-Kunt and Maksimovic (1998) point out that the Spanish legal system presents lower levels of legal efficiency than Anglo-Saxon countries. This relatively low level of creditor rights and legal enforcement in Spain hinder access to long-term debt (Giannetti, 2003). In this context, private family firm characteristics play an important role in facilitating access to long-term debt.

In addition, in contrast to the well developed capital markets in the US or UK, continental European countries, such as Germany, France, Italy, and particularly Spain, have a bank-based financial system where banks have an important role in financing: most of financial resources are channeled to firms through financial institutions which obtain information and monitor firms and their managers, so reducing adverse selection and moral hazard problems (Levine 2002; D'Aurizio et al., 2015). This information acquisition process is especially relevant in the case of private firms because of their higher levels of asymmetric information, so bank loans constitute one of the most important sources of financing for private Spanish firms. Thus Spanish firms are highly dependent on bank financing compared to other European countries. Also, the financial crisis has affected the Spanish financial system and so increasing financial problems of a firm in accessing bank debt,

and especially long term debt. However, private Spanish family firms have suffered less financial constraints (Crespí, and Martín-Oliver, 2015).

4. Data and methodology

4.1. Sample selection

The population of the study made up of the unlisted Spanish firms of small, medium and large size by European Commission Standards in the SABI database (Iberian Balance Sheets Analysis System) over the period 2004-2013. This database is compiled by Bureau van Dijk, which provides financial information on Spanish firms, obtained mainly from their annual accounts. Spanish corporations must report their basic financial statements annually to the Mercantile Register, which makes the information available to the public. We take ownership (a significant equity stake) as the main criterion in selecting the sample. Therefore, from this initial sample, we excluded firms that did not contain complete ownership structure information. Because this study focuses on private firms, we restrict the sample to unlisted firms and listed firms are eliminated. The other exclusion criteria were firms with fewer than 10 employees and a turnover of less than 2 million euro (considered micro firms by EU definition) due to low quality of their financial information. We also discard firms belonging to the financial sector and also those that had undergone bankruptcy proceedings during the sample period because they are subject to different regulatory capital requirements and accounting considerations. Firms whose data were missing or inconsistent were likewise excluded. Thus, in order to avoid anomalies in accounting data, we required firms to have information on numbers of employees, sales and assets, equities, depreciation, current assets, current liabilities, tangible fixed assets, and investments, and that all of these variables had positive values. Moreover, firms showing extreme values were excluded. Specifically, we excluded observations that were below the 1% and above the 99% percentile. The observations from 2004 are lost during the construction of some variables. After exclusions, we had a panel of 4,365 firms with 35,032 observations.

Information on interest rates comes from publications by the Public Debt Book- Entry Market maintained by the Bank of Spain.

4.2. Model specification

We analyze the effects of family control on firm debt maturity by estimating the following regression model:

$$Debt\ Maturity_{it} = Intercept + \beta_1 Family\ Dummy + \beta_2 Growth_{it} + \beta_3 Asset\ Maturity_{it} + \beta_4 Size_{it} + \beta_5 Age_{it} + \beta_6 Z-Score_{it} + \beta_7 Term_{it} + \beta_8 Tax\ Rate_{it} + \beta_9 Leverage_{it} + \lambda_t + I_s + \eta_i + v_{it} \quad (1)$$

Where *Debt maturity* measures the percentage of long term debt over total debt, *Family dummy* represents the owner family characteristics; *Growth* measures growth opportunities; *Asset maturity* measures asset liquidity; *Size* proxy the firm size; *Age* is the age of the firm; *Z-Score* measures the insolvency risk; *Term* is the interest rate differential; *Tax rate* measures the corporate tax rate; *Leverage* is firm debt level. The parameter λ_t and I_s are time and industry dummy variables respectively; η_i is the unobservable heterogeneity and v_{it} random disturbances.

We estimate the model by applying a two-stage estimation procedure that involves replacing the variable *Leverage* with its predicted values from the reduced-form regressions on the exogenous variables to control for potential endogeneity problems between maturity decision and leverage. Following previous literature, e.g. Data et al. (2005) and Brockman et al. (2010), *Leverage* is instrumented by *Family Variables*, *Size*, *Profitability*, *Fixed Asset* ratio, *Volatility* and *Non-Debt Tax Shields*. Specifically, *Size* is measured by the natural logarithm of total assets, *Profitability* is calculated as earnings before interest, taxes, depreciation, and amortization (EBITDA) to total assets, *Fixed Assets* ratio as net property, plant, and equipment divided by total assets, *Volatility* is defined as the standard deviation of the EBITDA scaled by total assets, and *Non-Debt Tax Shields* is calculated as the ratio of depreciation to fixed assets. In this case, we also control for unobservable heterogeneity.

4.3. Variables

The dependent variable is *Debt Maturity*, measured by the ratio of long-term debt to total debt. We consider long-term debt as debt that matures after more than one year.

Regarding *Family dummy* variables, this study focuses on the identification of the controlling owner since the non-specification of part of the control chain may lead to a double error. On the one hand, the analysis may attribute a level of control to a shareholder that does not correspond to the true level and, on the other, it may identify control of a particular firm as being in the hands of

a shareholder who is not really the controlling shareholder. We identified the controlling (ultimate) owner of each firm following the standard methodology employed by La Porta et al. (1999), Claessens et al. (2000), Claessens, et al. (2002), Faccio and Lang (2002) and Lin et al. (2013). According to La Porta et al. (1999), a firm has an ultimate owner when the main shareholder directly or indirectly owns a stake in the voting rights that is equal or superior to an established control threshold, which for those authors is 10% or 20%. Thus, it is necessary to draw the ownership chain. This indirect ownership chain was traced backward through numerous firms to identify the ultimate vote holders. Using this methodology, and since we are analyzing private firms, we classified a firm as family when the ultimate owner of this firm is a family or an individual that holds more than 25% of the shares (Franks et al., 2012; Minichilli et al., 2015). Therefore, the *Family* is a dummy variable that adopts the value 1 if a family or an individual is the controlling shareholder of the firm. With the same methodology, we have also created different dummy variables that take the value of 1 if the firm is controlling for a non-family shareholder (*State*, *Financial institution* and *Miscellaneous*) and 0 otherwise. We also define another dummy variable, called *Widely held*, to control for firms that do not have any controlling shareholder at the 25% cut-off voting rights level (Mauri, 2006; Isakov and Weisskopf, 2014, 2015).

We have also employed other dummy variables to test other characteristics of family control that may affect private benefits extraction or agency costs. In this sense, previous studies have shown that family firm characteristics, especially the active involvement of a family member in the management or the reputation of the family may have an important impact on firm performance and its financial decisions (Mauri, 2006; Schmid, 2013; Deephouse and Jaskiewicz, 2013; Isakov and Weisskopf, 2015). Consequently we first create a dummy to measure the reputation of the family controlling shareholder (*Family reputation*) with a dummy which takes the value of 1 when the family controlling shareholder's name is included in the firm's name (Anderson et al., 2003; Deephouse and Jaskiewicz, 2013). Second, we consider the relevance of the active family control (*Family management*) which takes the value of 1 if the family controlling shareholder is active as a manager (Mauri, 2006; Schmid, 2013; Isakov and Weisskopf, 2014; Deephouse and Jaskiewicz, 2013). Third, we distinguish the size of the family stake by creating dummy variables: *Family [25-50]*, *Family [50-80]* and *Family [80-100]* takes value 1 if the largest controlling shareholder have a proportion of voting right between 25% and 50%, between 50% and 80% or more than 80% respectively, 0 otherwise (Mauri, 2006; Isakov and Weisskopf, 2014, 2015). Finally, we also examine the impact of a lone family member (*Lone family*) through a dummy that take the value

of 1 if there is only one controlling shareholder and it is a family (Miller et al., 2007; Isakov and Weisskopf, 2014).

On the other hand, we consider that pyramid structures exist when there is an ultimate owner who indirectly controls a firm via the control of an intermediary firm. The ultimate owners are located at the apex of the pyramid structure with successive layers of firms below the ultimate owner. With this, we also include a dummy variable, *Pyramid structure*, which takes the value 1 if a pyramid structure exists, and 0 otherwise. Moreover, we consider another variable that reflects the control exercised by an ultimate shareholder through a pyramid structure in which no true distortion of voting rights exists (e.g., a family holds 100% of a firm that holds the stake in the firm due to tax reasons). This variable (*Tax pyramid*) takes the value of 1 if the controller shareholder's voting right and cash flow right are equal along the layers in the chain, and zero otherwise. We also count the number of layers between the firm and its ultimate controlling shareholder. Then, we define a dummy variable (*High pyramid*) that takes a value of 1 if the number of layers is higher than the mean for firms' sample with a pyramid structure, and zero otherwise. This variable measures a higher divergence between control and cash flow rights (Franks and Mayer, 2001). 41% of firms present a pyramid structure, where the mean number of layers through which the pyramids are held is 2.

Finally, regarding the second controlling shareholder, we define the dummy variable *Second family*, which adopts the value of 1 if there is other family or an individual as the second large shareholder and own more than 25% of the voting rights of the firm. We also consider the difference in size between the two largest shareholders (*Distance first-second*). Additionally we have created two dummy variables that equal 1 if a firm have a non-family second largest shareholder (*Second state* and *Second financial institution*) and 0 otherwise. We define another variable that takes the value of 1 if a firm does not have any second largest shareholder holding 25% or more voting rights (*Second widely*).

In addition, we control for several other influences that are known from the literature to have an impact on the debt maturity. Specifically, we use the following variables: *Growth*, defined as the growth rate in total sales during the previous year, to proxy for a firm's growth opportunities and hence the severity of underinvestment problems; *Asset maturity*, calculated as the weighted average of the maturities of current and long-term assets, following the expression used by Jun and Jen (2003). *Size*, measured by the natural logarithm of total assets, and *Age*, defined as the logarithm of one plus the firm's age in years, both to proxy the asymmetric information since larger and older firms have lower levels of asymmetric information and present better reputation; *Z-*

Score, measured with Altman and Hotchkiss's (2006) private firm model, to measure the financial capacity and degree of solvency of a firm; *Term* is computed as the yield on the 10-year maturity Spanish Treasury bond minus the yield on maturity twelve-month Spanish T-bill, to measure the term structure of interest rates; *Tax rate*, measured as the income tax expense to pretax profit, to consider tax effects; and *Leverage*, measured as the ratio of total debt to total assets, to account for financial risk. Moreover, using the Standard Industrial Classification of Economic Activities, we consider dummies variables which divide the sample into four groups (Industry; Trade; Construction and Service). Finally we also introduce year dummies in all regressions.

4.4. Descriptive statistics

Table 1 presents the basic descriptive statistics for the variables of the study. The firms in our sample present an average of 16.7 per cent long-term debt over total debt. This relatively low importance of long-term debt in comparison to US firms (71.8% in Barclay and Smith, 1995; 78,54% in Datta et al., 2005) may be explained, as pointed out by Fan et al. (2012), by the fact that debt maturity of firms in countries with large banking sectors tends to be shorter because of banks' preference for short-term lending in order to counter asymmetric information. This is the case of Spain, with its banking oriented system. Actually, long term debt in our sample is consistent with other studies for Spanish firms, which present mean values ranging between 29.14% for Spanish listed firms (García-Teruel and Martínez Solano, 2010), and 19.52%, for SMEs Spanish SMEs (López-Gracia and Mestre-Barberá, 2015).

INSERT TABLE 1 HERE

According to the family firms' variables, the controlling shareholder (ultimate owner) is an individual or a family in 80.5% of private firms. These data are consistent with other studies for Spanish firms (Sacristán-Navarro and Gómez-Ansón, 2006), although our sample of private firms presents higher levels of ownership concentration than listed firms. Moreover, 11.5% of firms are widely held firms, while 8% are owned by non-family controlling shareholder (state, financial institution and miscellaneous). Following the above-mentioned definition, and as can be seen in Table 1, 70% of private firms have a family controlling shareholder who is active as a manager (67.9% if we consider a stake of 50%). When the relevance of the reputation of the family is

considered, 22.2% of private firms are named after the family controlling shareholder (22% if we consider a stake of 50%).

Moreover, the second largest shareholder is other family in 12.9% percent of firms. These values reflect the importance of family firms in Spanish private firms. On the other hand, 41% of private firms are controlled by pyramid structures. That is, the control of the main shareholder is exercised through intermediate firms. These data are consistent with those observed for the Spanish context of listed firms by Sacristán-Navarro and Gómez-Ansón (2007). Finally, regarding control variables, our sample has a mean value of total assets of 27,077,170 euro and an age of 24.607 years. The average growth rate in total sales is 2.8%, and the mean value of leverage is 55.5%.

Table 2 presents the Pearson correlation matrix among the measures of debt maturity and main independent variables. All VIF, including mean VIF, are well below a commonly used rule of thumb of 5 (available upon request), suggesting that multicollinearity is not likely to be a problem in our study. Moreover, correlations between independent variables confirm this finding, as most variables show low levels of correlation. Consistent with our hypotheses, there is a significant positive correlation between debt maturity and family firm, which indicates preliminary evidence of the positive effect of family control on access to long-term debt. In contrast, pyramid control presents negative correlations. With regard to control variables, *Size*, *Assets maturity*, *Term* and *Leverage* are positively related to *Debt maturity*, while *Growth* and *Tax rate* are negatively correlated with debt maturity.

INSERT TABLE 2 HERE

5. Results

In this section we present the results of the study. First, we present a univariate analysis in order to determine whether mean values of debt maturity structure in family firms are higher than in non family firms. Second, we conduct a multivariable analysis, controlling for other variables that can affect maturity debt.

5.1. Univariate analysis

In Table 3 we present the mean values of long term debt over total debt for the main variables used in this study. Thus, private family firms present a mean debt maturity structure of 17% for the studied period, while non family firms have only 15.1%. This result also holds when the

controlling shareholder is a family that is active as a manager, since the mean value for the whole period is 17.6% for family controlled firms and 14.5% for the other cases. These preliminary results are consistent with our hypothesis that family firms present longer debt maturities. Coherent with Croci et al. (2011), the long term debt is higher in family controlling firms than in non-family ones due to the creditors perceiving the former to be less risky. On the other hand, debt maturity is lower when control is maintained through the use of a pyramid, 14,9% versus 17.9%. However, when pyramid control is exercised by a family, the mean value of debt maturity increases to 15.5%. Finally, when the controlling shareholder is a family, if the second largest shareholder is other family, debt maturity decreases to 16.7% compared to the 17.1% for the non family second owner (but with $t=1,503$).

INSERT TABLE 3 HERE

The difference in debt maturity between family and non family firms presented in Table 3 also holds if we divide the sample considering, instead of year, firms characteristics such as size, age or growth opportunities. This preliminary information reveals the role of family firms in access to long-term debt. However, it is not sufficient to describe this relation, so we conduct a multivariate analysis to control for other determinants of debt maturity.

5.2. Multivariate analysis

This section presents the results of the estimation models to analyze the relationship between family control and debt maturity in private firms. We present multivariate results for (i) family versus non-family private firms. This is followed by an investigation of (ii) impact of the existence of a pyramid structure on debt maturity considering the family character of the firms. Next, we analyze (iii) the effect of the second largest family shareholder on debt maturity in private firms. Finally, we also address (iv) other robustness issues.

5.2.1. Family firms and debt maturity

According to our hypothesis, family firms have an incentive structure that results in fewer agency conflicts of debt, which should lead to a longer debt maturity structure. Also, these firms are characterized by the agency conflict between large and minority shareholders, where large

shareholders may prefer using long-term debt. Consequently, a positive relation between family ownership and debt maturity is expected.

In Table 4 we report the results obtained for the estimation of the effect of family control on debt maturity. Columns 1 to 4 present results using two stage least square (2SLS) to estimate the model and considering additional measurements of family firms. La Porta et al. (1999) show the importance of identifying the ultimate owner in ascertaining the existing ownership relation in the control of firms. Thus, it is important to identify the controlling owner when the shares in a firm are owned by another company, especially in the Spanish context, where individuals and families are the predominant ultimate shareholders (Sacristán-Navarro and Gómez-Ansón, 2007). Therefore, the results, in column 1, show that the variable *Family* is positive and significant at the 1% level. Thus, our results confirm better access to long-term debt for private firms with a family controlling shareholder. This is consistent with the lower agency conflict of debt for family firms found by Anderson et al. (2003) for a sample of US family firms, and for Croci et al. (2011) for European listed firms. Specifically, Anderson et al. (2003) found a lower cost of debt for family firms, while Croci et al. (2011) showed that listed family-controlled firms are more likely to issue long-term debt.

Most studies require a minimum of equity stake to define a controlling shareholder, but the empirical literature does not provide a clear threshold to identify family firms. Although the majority of previous papers consider a cut-off at 20% or 25%, others require stakes of at least 50 percent (Ang et al., 2000; Steijvers et al., 2010). Thus, we have re-estimated Model 1 considering the dummy variable *Family [50]* which is equal to 1 if a family or an individual is the controlling shareholder and holds at least 50% of voting rights in the firm. In the second column of Table 4, the variable *Family [50]* is positive and significant at the 1% level. The results confirm previous findings: controlling family firms present a higher debt maturity structure and show that results are not sensitive to a narrower definition of family as controlling shareholder.

The concern of family firms about the firm's reputation suggests that family shareholders are more likely than other controlling shareholders to try to reduce the agency conflict between shareholders and debtholders, and so family firms should present a longer debt maturity structure. In Columns 3 and 4 of Table 4, we include the two dummy variables, *Family reputation* and *Family reputation [50]*, which take the value of one if the controlling shareholder is family and the firm bears the same name as the family controlling shareholder with a threshold of voting right of 25% or 50%, respectively. The results show that the coefficients of both variables are positive and significant. These results are consistent with the fact that family's reputation is link to the prestige and the

economic success of the family firm. Thus, the family's reputation can be damaged if financial distress or restructuring occurs and so a family controlling shareholder might be characterized by risk avoidance, which could affect capital structure decisions (Schmid, 2013). For example, Anderson et al. (2003) find that the reputation of a family firm is associated with a lower cost of debt. The results imply that family reputation is an important issue in understanding agency conflicts with debtholders. Therefore, long-term debt may be used by family controlling shareholders to try to reduce their personal risk exposure (Schmid, 2013).

INSERT TABLE 4 HERE

Previous studies on family firms indicate that it would be wrong to judge family firms as such without further differentiation (Mauri, 2006). More specifically, the performance of family firms might depend on a variety of family characteristics like the involvement of family members in the firm's management. For example, Villalonga and Amit (2006) find that family firms with a founder-CEO perform better. Thus, in columns 1 and 2 of Table 5, we consider dummy variables that take the value of one if the controlling shareholder is an active family manager with a threshold of voting right of 25% (*Family management*) or 50% (*Family management [50]*), respectively. The results show the coefficients for these variables (*Family management and Family management [50]*) are also positive and significant at 1%. This suggests that family members possessing the ability to influence management and a direct way to influence firm financial decisions is essential. According to Isakov and Weisskopf (2014), these results reflect that active family members could generate a firm dynamic that goes beyond what a non-family shareholder can achieve. In fact, family firms tend to adopt conservative management policies (Andres, 2008; Caprio et al. 2011). In this sense, Andres (2008) argues that family owners promote trust, because they increase the credibility of the firm's commitment to implicit contracts.

Column 3 in Table 5 complements the evidence on the effect of family firms on debt maturity structure for different levels of family firm stake. The family variable is changed into three dummies that represent different levels of stake. The results show that family firms controlling a high proportion of voting rights (more than 80%) or a moderate stake (between 50% and 80%) have a significantly higher level of long term debt (see Table 5). Finally, family firm performance may be affected by other factors. One is linked to the power an individual has in his/her firm. If an individual is alone, he/she might be able to manage the firm in a way he/she believes is

appropriate without the interference of other family members or even other large shareholders. Results in column 4 (Table 5) show that firms with a lone family member also present longer debt maturities than non-family firms. Therefore, across all the columns in Table 4 and 5, the family control is significantly related to a high level of debt maturity. The results of all the models in Tables 4 and 5 support hypothesis H₁.

INSERT TABLE 5 HERE

In Table 6, we also consider another type of controlling shareholder, different from families that potentially may affect the firm's debt maturity to assess the robustness of our results. We use dummy variables to analyze the nature of the controlling shareholder (*State*, *Financial institution*, *Miscellaneous*). Consistent with results in the previous models, the family control coefficient estimate remains positive and significant (at the 1% level) after controlling for other types of largest shareholder (column 1 in Table 6). Moreover, the results of model in column 2 of Table 6 shows that firms controlled by other types of shareholder (*Financial institution*, *Miscellaneous*) present lower levels of debt maturity than family firms. These results are consistent with Isakov and Weisskopf (2014).

INSERT TABLE 6 HERE

5.2.2. Pyramid structures and debt maturity

We are also interested in testing whether the use of pyramid structures can negatively affect access to long term debt, as well as the role played by family control. The controlling shareholders assume low insolvency costs since they present lower cash flow rights than control rights, and bondholders may shorten debt maturity to reduce agency cost. However, in the case of family shareholders, these have lower incentives to expropriate private benefits since they are interested in the long term. Our results indicate that firms controlled by pyramid structures show a lower debt maturity, given that the coefficient for *Pyramid structure* variable is negative and significant for all regressions in Table 7 (columns 1 to 4). However, this effect is lower for family firms, since the coefficient for the interaction between *Pyramid structure* and *Family* variables (*Pyramid structure* × *Family*) is positive and significant in columns 2, 3 and 4 of Table 7. Thus, the results reveal that

the divergence in the controlling shareholder's voting and cash-flow rights using pyramid structures represents a relevant corporate governance risk to firms' creditors because the ultimate controlling shareholder can expropriate the creditors. In this case, the short-term debts reduce this opportunistic behavior. However, consistent with hypothesis H₂, the results also confirm the importance of the controlling shareholder identity due to different types of shareholders having different incentives and motivations that will affect their behavior with the creditors (Isakov and Weisskopf, 2014).

Additionally, the controlling shareholder could expropriate the debtholder using a large ownership chain. So, in column 3 of Table 7, we include a dummy variable (*High pyramid*) that takes the value of 1 if the number of layers is higher than the mean. The results indicate that firms controlled by a family shareholder through a large pyramid structure show a lower debt maturity. On the other hand, the controlling shareholder could exercise the control using intermediate firms for tax reasons. In column 4 of Table 7, we include a dummy variable (*Tax pyramid*) that takes the value one if the controlling shareholder uses a pyramid structure in which no true distortion of voting rights exists. The results show a non significant effect of this type of mechanism in controlling the firm's debt maturity.

INSERT TABLE 7 HERE

5.2.3. *Second largest family shareholder and debt maturity*

According to Cai, Hillier, and Wang (2015), large non-controlling shareholders could be important guardians of minority shareholder interests and can enhance firm value, but these shareholders also may, instead, choose to collude with the controlling shareholder if it is in their mutual interests. Next we examine the effect of the presence of other family as the second largest reference shareholder on debt maturity. According to the literature, reference shareholders may form coalitions to share private benefits (Burkart et al. 1997), especially in the case of family firms (Maury and Pajuste, 2005). The presence of a second family shareholder may, then, affect debt maturity negatively. The results are reported in Table 8, where the coefficient for the variable *Second Family* is negative and significant which indicates that the existence of a second family shareholder in a family-controlled firm reduces access to long-term debt. We also consider the relative difference in voting rights between the controlling family and second family largest shareholder using the variable *Distance first-second*. A second shareholder who has a stake similar

to that of the controlling owner will have more power and incentives to monitor. The results in column 2 of Table 8 show that a second family shareholder reduces access to long-term debt, but the distance between the controlling family and the second family shareholder is not significant. In Table 8, we also consider another type of large shareholder that potentially affects the firm's debt maturity in order to assess the robustness of our results. We use dummy variables to analyze the nature of the second largest shareholder (*Second state* and *Second financial institution*). Columns 3 and 4 in Table 8 provide further evidence in support of Hypothesis H₃.

This is consistent with studies for Spanish firms where the presence of a family as the second largest reference shareholder has negative effects on value (Jara-Bertin et al., 2008). In this line, Croci et al. (2011) find a negative effect of the voting rights held by the second largest shareholder on the long-term debt. Similarly, Attig et al. (2008) find that when the controlling and the second largest shareholders are families, the information risk and the cost of equity capital are high. These results support the idea that the probability of sharing private benefits of control is higher between family shareholders (Attig et al., 2008). In this case, the short-term debt can reduce the risk of expropriation by creditors.

INSERT TABLE 8 HERE

With regard to the control variables, the significance and sign of estimated coefficients are similar in the estimations carried out in Tables 4 to 8. Moreover, the coefficients of the determinants of debt maturity are largely consistent with prior research. Thus, our results indicate that companies that have higher growth opportunities tend to use more short-term debt. However higher assets maturity and higher leverage is related positively with greater use of long term debt.

5.2.4. Robustness

Size should be an important variable in determining the level of financial constraints and this dimension should play an important role in determining the debt maturity structure, especially for private firms which have no access to capital markets. We re-estimate the main models for small, medium and large firms according to the EU definition, in an attempt to find the effect of family control on debt maturity. We rank our sample in three groups considering the sales and the number of employees. The results are not different from those previously obtained in the models shown in

Tables 4 to 8. Thus, the results are qualitatively similar in the sense that family firms present a higher level of long term debt than non-family controlling firms. Additionally, we examine other specifications to verify that our results are not affected by some biases. We re-estimate the models using different econometric techniques. We use three different methods of estimation. First, we estimate using robust ordinary least square with year and industry dummies. Second, we estimate the model with clusters at firm and year level (Petersen, 2009). Next, we use the fix effects estimator. The results of all models are qualitatively similar. We further explore the sensitivity of the results to consider all observations of the sample. Thus, we re-estimate the models with the outliers, and after winsorising them at the 1–99% level. The results remain qualitatively similar.

6. Conclusions

The financial literature has established the role of short-term debt in reducing agency conflicts between shareholders and bondholders and conflicts between different groups of shareholders. Additionally, the family identity of the controlling shareholder may reduce agency debt conflict, since family firms present higher risk aversion, long term investment horizons, and concern for reputation. This paper provides new evidence of the influence of private family firms on financial decisions in a civil-law country. It focuses on debt maturity structure and analyzes this for family firms versus firms that either have a non-family controller shareholder or are widely held. More specifically, we wish to ascertain whether family firms have any particular characteristic that allows them to mitigate agency conflicts of debt and facilitates access to long-term debt. We investigate this with a sample of 4,365 private Spanish firms with panel data over the period 2004-2013.

First, we find that firms controlled by a family do get better access to long term debt than non-family firms because they present longer debt maturity structures. This paper supports the hypothesis that private family firms in a Western Europe country present high levels of long-term debt (compared to non-family). These results hold when we examine different specificities of family firms such as reputation or involvement in firm management. Therefore, family reputation is an important issue in understanding agency conflicts with debtholders and long-term debt may be used by family controlling shareholders to try to reduce their personal risk exposure. Moreover, if the controller shareholder is an active family member, he/she can increase the credibility of the firms to commit to implicit contracts and mitigate conflicts with debtholders. This deeper analysis gives important robustness to the findings, since individuals and families are the predominant controlling shareholders in Spanish firms.

Second, we find that debt maturity structure is lower when control is maintained through the use of pyramids, but the percentage of long-term debt over total debt increases in the case of pyramid control exercised by an individual or a family. This aspect reveals that the divergence in the controlling shareholder's voting and cash-flow rights using pyramid structures represents a corporate governance risk to firms' creditors due to the controlling shareholder's being able to expropriate them. In this case, the short-term debts reduce this opportunistic behavior. However, the results also confirm the importance of the controlling shareholder's identity, because families have different incentives and motivations that reduce the expropriation risk for the creditors.

Third, the results reveal that the presence of another family as the second largest reference shareholder affects debt maturity negatively because the controlling and the reference shareholder may form coalitions to share private benefits. In this case, the creditors could prefer to reduce the long-term debt as a way of mitigating the risk of expropriation by coalitions of largest shareholders. Finally, in line with previous research on debt maturity structure literature, firms use more long-term debt when they are more leveraged, have less growth opportunities and higher asset maturity.

The empirical literature on family firms' financial decisions mainly refers to US listed firms, although some recent findings refer to European listed ones. Our study has been performed on the basis of Spanish private firms that operate in a bank-based financial system, similar to that in Japan, Germany, and other European countries. Spain offers an appropriate setting for exploring family private firms' debt policies, as it is a developed country with small capital markets, there are many private firms and an ownership structure characterized by high levels of concentration as well as the predominance of families as controlling shareholders. As such, the results can be helpful for private firms and debtholders in countries with similar characteristics, like most continental European countries and more specifically the Mediterranean ones, and it may also serve as a baseline for comparison with firms operating in other institutional settings.

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Appendix

Descriptions of variables used in the analysis

Variable	Description
<i>Debt maturity</i>	Long-term debt / Total Debt
<i>Family</i>	Dummy = 1 if a family or an individual is the controller shareholder, holding more than 25% of voting rights, zero otherwise.
<i>Family [50]</i>	Dummy = 1 if a family or an individual is the controller shareholder, holding at least 50% of voting rights, zero otherwise.
<i>Family reputation</i>	Dummy = 1 if the family controller shareholder's name is included in the firm's name, holding more than 25% of voting rights, zero otherwise.
<i>Family reputation [50]</i>	Dummy = 1 if the family controller shareholder's name is included in the firm's name, holding at least 50% of voting rights, zero otherwise.
<i>Family management</i>	Dummy = 1 if the family controller shareholder holding more than 25% of voting rights is active as manager, zero otherwise.
<i>Family management [50]</i>	Dummy = 1 if the family controller shareholder holding at least 50% of voting rights is active as manager, zero otherwise.
<i>Family [20-50], Family [50-80], Family [80-100]</i>	Dummies = 1 if a family member is the controller shareholder and has a proportion of voting right between 25% and 50%, between 50% and 80% or more than 80% respectively, zero otherwise.
<i>Lone family</i>	Dummy = 1 if there is only one ultimate largest shareholder, holding more than 25% of the voting rights and it is a family, zero otherwise.
<i>Widely held</i>	Dummy = 1 for firms that do not have any controller shareholder with voting rights higher than 25%, zero otherwise.
<i>State, Financial institution and Miscellaneous</i>	Dummies = 1 when the controller shareholder is the State, a financial institution or others, respectively, zero otherwise.
<i>Pyramid structure</i>	Dummy = 1 if exists a pyramid structure, zero otherwise.
<i>High pyramid</i>	Dummy = 1 if a firm is controlled through a pyramid structure with a number of layers higher than the mean, zero otherwise.
<i>Tax pyramid</i>	Dummy = 1 if in the pyramid structure voting right and cash flow right are equal, zero otherwise.
<i>Second family</i>	Dummy = 1 if other family or an individual is the second largest shareholder of the firm, zero otherwise.
<i>Distance first-second</i>	Dummy = 1 if the difference in voting rights between the controlling and the second largest shareholder is higher than 25%, zero otherwise.
<i>Second State; Second financial institution</i>	Dummies = 1 if the second largest shareholders own more than 25% of the shares and it is the State or a financial institution, respectively, zero otherwise.
<i>Second widely</i>	Dummy = 1 if there is no second largest shareholder holding 25% or more of the shares, zero otherwise.
<i>Growth</i>	$(Sales_1 - Sales_0)/Sales_0$

<i>Asset maturity</i>	The average of the maturities of current and long-term assets; following Jun and Jen (2003).
<i>Size</i>	Log of total assets.
<i>Age</i>	Log of one plus the firm's age in years.
<i>Z-Score</i>	Altman and Hotchkiss's (2006) Model for private firms used to predict firm insolvency.
<i>Term</i>	The yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill.
<i>Tax rate</i>	Income tax expense to pre-tax profit.
<i>Leverage</i>	Total debt / Total assets.

References

- Aguiar-Díaz, I., Ruiz-Mallorquí, M.V., 2015. Causes and resolution of bankruptcy: The efficiency of the law, Spanish Rev. Financ. Econ. 13, 71-80.
- Altman, E., Hotchkiss, E., 2006. Corporate financial distress and bankruptcy, 3rd edn. John Wiley and Sons, New York.
- Anderson, R.C., Mansi, S.A., Reeb, D.M., 2003. Founding family ownership and the agency cost of debt. J. Financ. Econ. 68(2), 263-285.
- Andres, A., 2008. Large shareholders and firm performance-An empirical examination of founding-family ownership. J. Corp. Financ. 14 (4), 431-445.
- Ang, J.S., 1991. Small business uniqueness and the theory of financial management. J. Small Bus. Financ. 1 (1), 1-13.
- Ang, J.S., 1992. On the theory of finance for privately held firms. J. Small Bus. Financ. 2 (3), 185-203.
- Ang, J.S., Cole, R. A., Lin, J.W., 2000. Agency cost and ownership structure. J. Financ. 55 (1), 81-106.
- Arslan, O., Karan, M.B., 2006. Ownership and control structure as determinants of corporate debt maturity: A panel study of an emerging market. Corp. Gov. Int. Rev. 14, 312-324.
- Attig, N., Guedhami, O., Mishra, D., 2008. Multiple large shareholders, control contest, and implied cost of equity. J. Corp. Financ. 14, 721-737.
- Barclay, M.J., Smith, C.W., 1995. The maturity structure of corporate debt. J. Financ., 50, 609-631.

- Barnea, A., Haugen, R.A., Senbet, L.M., 1980. A rationale for debt maturity structure and call provisions in the agency theoretic framework. *J. Financ.* 35, 1223-1234.
- Berger, A. N., Udell, G.F., 1998. The economics of small business: the roles of private equity and debt markets in the financial growth cycle. *J. Bank. Financ.* 22, 613-673.
- Blazy, R., Chopard, B., Fimayer, A., 2008. Bankruptcy law: a mechanism of governance for financially distressed firms. *Eur. J. Law Econ.* 25, 253-267.
- Bopaiah, C., 1998. Availability of credit to family businesses. *Small Bus. Econ.* 11, 75-86.
- Boubakri, N., Ghouma, H., 2010. Control/ownership structure, creditor rights protection, and the cost of debt financing: International evidence. *J. Bank. Financ.* 34, 2481-2499.
- Brick, I., Ravid, A., 1985. On the relevance of debt maturity structure. *J. Financ.* 40, 1423-1437.
- Brick, I., Ravid, A., 1991. Interest rate uncertainty and the optimal debt maturity structure. *J. Financ. Quant. Anal.* 26, 63-81.
- Brockman, P., Martin, X., Unlu, E., 2010. Executive compensation and the maturity structure of corporate debt. *J. Financ.* 65, 1123-1161.
- Burkart, M., Gromb, D., Panunzi, F., 1997. Large shareholders, monitoring, and the value of the firm. *Q. J. Econ.* 112, 693-728.
- Burkart, M., Panunzi, F., Shleifer, A., 2003. Family firms. *J. Financ.* 58, 2167-2202.
- Cai, C.X., Hillier, D., Wang, J., 2015. The cost of multiple large shareholders. *Financ. Manag.* Forthcoming, <http://dx.doi.org/10.1111/fima.12090>
- Caprio, L., Croci, E., Del Giudice, A., 2011. Ownership structure, family control, and acquisition decisions. *J. Corp. Financ.* 17, 1636-1657.
- Childs, P.D., Mauer, D.C., Ott, S.H., 2005. Interactions of corporate financing and investment decisions: The effects of agency conflicts. *J. Financ. Econ.* 76, 667-690.
- Claessens, S., Djankov, S., Lang, L.H.P., 2000. The separation of ownership and control in East Asian corporations. *J. Financ. Econ.* 58, 81-112.
- Claessens, S., Djankov, S., Fan, J.P.H., Lang, L.H.P., 2002. Disentangling the incentive and entrenchment effects of large shareholdings. *J. Financ.* 57, 2379-2408.
- Croci, E., Doukas, J.A., Gonenc, H., 2011. Family control and financing decisions. *Eur. Financ. Manag.* 17, 860-897.

- Cole, R.A., 2013. What do we know about the capital structure of privately held US firms? Evidence from the surveys of small business finance. *Financ. Manag.* 42, 777-813.
- Crespí, R., Martín-Oliver, A., 2015. Do family firms have better access to external finance during crises? *Corp. Gov. Int. Rev.* 23, 249-265.
- Danielson, M. G., Scott, A., 2007. A note on agency conflicts and the small firm investment decision. *J. Small Bus. Manag.* 45, 157-175.
- Datta, S., Iskandar-Datta, M., Ramna, K., 2005. Managerial stock ownership and the maturity structure of corporate governance. *J. Financ.* 60, 2333-2350.
- D'Aurizio, L., Oliviero, T., Romano, L., 2015. Family firms, soft information and bank lending in a financial crisis. *J. Corp. Financ.* 33, 279-292.
- De Andrés Alonso, P., López Iturriaga, F., Rodríguez Sanz, J.A., Vallelado González, E., 2005. Determinants of bank debt in a continental financial system: Evidence from Spanish companies. *Financ. Rev.* 40, 305-333.
- Deephouse, D.L., Jaskiewicz, P., 2013. Do family firms have better reputation than non-family firms? An integration of socioemotional wealth and social identity theories. *J. Manag. Stud.* 50, 337-360.
- Demirgüç-Kunt, A., Levine, R., 1999. Bank-based and market-based financial systems: Cross-country Comparisons. *World Bank Policy Research Working Paper* N° 2143.
- Demirgüç-Kunt, A., Maksimovic, V., 1998. Law, finance, and firm growth. *J. Financ.* 53, 2107-2137.
- Diamond, D.W., 1989. Reputation acquisition in debt markets. *J. Polit. Econ.* 97, 828-862.
- Diamond, D.W., 1991. Debt maturity structure and liquidity risk. *Q. J. Econ.* 106, 709-737.
- Diamond, D.W., 1993. Seniority and Maturity of Debt Contracts. *J. Financ. Econ.* 33, 341-368.
- Djankov, S., McLiesh, C., Shleifer, A., 2007. Private credit in 129 countries. *J. Financ. Econ.* 88, 430-465.
- Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2008. The law and economics of self-dealing. *J. Financ. Econ.* 88, 430-465.
- Emery, D. R., Lewellen, W. G., Mauer, D. C., 1988. Tax-timing options, leverage, and the choice of corporate form. *J. Financ. Res.* 11, 99-110.

- Faccio, M., Lang, L.H.P., 2002. The ultimate ownership of Western European corporations. *J. Financ. Econ.* 65, 365-395.
- Faccio, M., Marchica, M. T., Mura, R., 2011. Large shareholders diversification and corporate risk-taking. *Rev. Financ. Stud.* 24, 3601-3641.
- Fan, J.P.H., Titman, S., Twite, G., 2012. An international comparison of capital structure and debt maturity choices. *J. Financ. Quant. Anal.* 47, 23-56.
- Flannery, M. J., 1986. Asymmetric information and risky debt maturity choice. *J. Financ.* 41, 19-37.
- Franks, J., Mayer, C., 2001. Ownership and control of German corporations. *Rev. Financ. Stud.* 14, 943-977.
- Franks, J., Mayer, C., Volpin, P., Wagner, H.F., 2012. The life cycle of family ownership: International evidence. *Rev. Financ. Stud.* 25, 1675-1712.
- García-Teruel, P. J., Martínez-Solano, P., 2010), Ownership structure and debt maturity: new evidence from Spain. *Rev. Quant. Financ. Account.* 35, 473-491.
- Giannetti, M., 2003. Do better institutions mitigate agency problems? Evidence from corporate finance choices. *J. Financ. Quant. Anal.* 38, 185-212.
- González, V.M., 2015. The financial crisis and corporate debt maturity: The role of banking structure. *J. Corp. Financ.* 35, 310-328.
- Guedes, J., Opler, T., 1996. The determinants of the maturity of corporate debt issues. *J. Financ.* 51, 1809-1833.
- Isakov, D., Weisskopf, J.P., 2014. Are founding families special blockholders? An investigation of controlling shareholder influence on firm performance. *J. Bank. Financ.* 41, 1-16.
- Isakov, D., Weisskopf, J.P., 2015. Pay-out policies in founding family firms. *J. Corp. Financ.* 33, 330-344.
- Jara-Bertin, M., López-Iturriaga, F. J., López de Foronda, O., 2008. The contest to the control in European family firms: How other shareholders affect firm value. *Corp. Gov. Int. Rev.* 16, 146-159.
- Jensen, M.C., Meckling, W., 1976. Theory of the firm: managerial behaviour, agency cost and ownership structure. *J. Financ. Econ.* 3, 305-360.
- Jun, S. G., Jen, F. C., 2003. Trade-Off model on debt maturity structure. *Rev. Quant. Financ.*

Account. 20, 5-34.

Kale, J. R., Noe, T. H., 1990. Risky debt maturity choice in a sequential game equilibrium. *J. Financ. Res.* 13, 155-165.

La Porta, R., López de Silanes, F. Shleifer, A., Vishny, R., 1997. Legal determinants of external finance. *J. Financ.* 52, 1131-1150.

La Porta, R., López de Silanes, F. Shleifer, A., Vishny, R., 1998. Law and finance. *J. Polit. Econ.* 106, 1113-1155.

La Porta, R., López de Silanes, F., Schleifer, A., 1999. Corporate ownership around the world. *J. Financ.* 54, 471-516.

Levine, R., 2002. Bank-based or market-based financial systems: which is better? *J. Financ. Intermediation*, 11, 398-428.

Lin, C., Ma, Y., Malatesta, P., Xuan, Y., 2011. Ownership structure and the cost of corporate borrowing. *J. Financ. Econ.* 100, 1-23.

Lin, C., Ma, Y., Malatesta, P., Xuan, Y., 2013. Corporate ownership structure and the choice between bank debt and public debt. *J. Financ. Econ.* 109, 517-534.

López-Gracia, J., Mestre-Barberá, R., 2015. On the relevance of agency conflicts in SME Debt Maturity Structure. *J. Small Bus. Manag.* 53, 714-734.

Mauer, C. M., Lewellen, W. G., 1987. Debt management under corporate and personal taxation. *J. Financ.* 42, 1275-1291.

Maury, B., 2006. Family ownership and firm performance: Empirical evidence from Western European corporations. *J. Corp. Financ.* 12, 321-341.

Maury, B., Pajuste, A., 2005. Multiple large shareholders and firm value. *J. Bank. Financ.* 29, 1813-1834.

Miller, D., Le Breton-Miller, I., Lester, R.H., Cannella, A.A., 2007. Are family firms really superior performers? *J. Corp. Financ.* 13, 829-858.

Minichilli, A., Brogi, M., Calabrò, A., 2015. Weathering the Storm: Family ownership, governance, and performance through the financial and economic crisis. *Corp. Gov. Int. Rev.* forthcoming. DOI, 10.1111/corg.12125.

Myers, S.C., 1977. Determinants of corporate borrowing. *J. Financ. Econ.* 5, 147-175.

- Ozkan, A., 2000. An empirical analysis of corporate debt maturity structure. *Eur. Financ. Manag.* 6, 197-212.
- Paligorova, T., Xu, Z., 2012. Complex ownership and capital structure. *J. Corp. Financ.* 18, 701-716.
- Petersen, M., 2009. Estimating standard errors in finance panel data sets: comparing approaches. *Rev. Financ. Stud.* 20, 435-480.
- Pettit, R., Singer, R., 1985. Small business finance: a research agenda. *Financ. Manag.* 14, 47-60.
- Rajan, R., Winton, A., 1995. Covenants and collateral as incentives to monitor. *J. Financ.* 50, 1113-1146.
- Sacristán-Navarro, M., Gómez-Ansón, S., 2006. Family ownership, corporate governance and firm value: Evidence from Spanish market. in P. Z. Poutziouris, Smyrniotis, K. X., Klein (Eds), *Family Business Research Handbook*, pp. 593-613, Cheltenham, England: Edward Elgar.
- Sacristán-Navarro, M., Gómez-Ansón, S., 2007. Family ownership and pyramids in the Spanish Market. *Family Bus. Rev.* 20, 247-265.
- Schmid, T., 2013. Control considerations, creditor monitoring, and the capital structure of family firms. *J. Bank. Financ.* 37, 257-272.
- Shleifer, A., Vishny, R.W., 1997. A survey of corporate governance. *J. Financ. Econ.* 52, 737-782.
- Shyu, Y.W., Lee, C.I., 2009. Excess control rights and debt maturity structure in family controlled firms. *Corp. Gov. Int. Rev.* 17, 611-628.
- Steijvers, T., Voordeckers, W., Vanhoof, K., 2010. Collateral, relationship lending and family firms. *Small Bus. Econ.* 34, 243-259.
- Stohs, M. H., Mauer, D. C., 1996. The determinants of corporate debt maturity structure. *J. Bus.* 69, 279-312.
- Villalonga, B., Amit, R., 2006. How do family ownership, control and management affect firm value? *J. Financ. Econ.* 80, 385-417.
- Wu, Z., Hedges, P. L., Zhang, S., 2007. Effects of concentrated ownership and owner management on small business debt financing. *J. Small Bus. Manag.* 45, 422-437.

Table 1

Descriptive statistics.

Debt Maturity is the long-term debt over total debt ratio; *Family (Family [50])* takes value 1 if the controller shareholder holding more than 25% (at least 50%) of the voting rights is a family or an individual, zero otherwise; *Family reputation (Family reputation [50])* takes value 1 if the family controller shareholder's name is included in the firm's name holding more than 25% (at least 50%) of the voting rights, zero otherwise; *Family management (Family management [50])* takes value 1 if the family controller shareholder holding more than 25% (at least 50%) is active as a manager, zero otherwise; *Family [25-50]*, *Family [50-80]* and *Family [80-100]* takes value 1 if a family is the controller shareholder have a proportion of voting right between 25% and 50%, between 50% and 80% or more than 80% respectively, zero otherwise; *Lone family* takes value 1 if there is only one ultimate largest shareholder holding more than 25% of the voting rights and it is a family member, zero otherwise; *Widely held* takes value 1 for firms that do not have any controller shareholder with voting rights higher than 25%; *State, Financial institution* and *Miscellaneous* take value 1 when the controller shareholder is the State, a financial institution or others, respectively, zero otherwise; *Pyramid structure* takes value 1 if there is a pyramid structure, zero otherwise; *High pyramid* takes value 1 if a firm is controlled thought a pyramid structure with a number of layers higher than the mean, zero otherwise; *Tax pyramid* takes value 1 if in the pyramid structure voting right and cash flow right are equal, zero otherwise; *Second family* takes value 1 if other family or an individual is the second largest shareholder of the firm and own more than 25% of the shares, zero otherwise; *Distance first-second* takes value 1 if the difference in voting rights between the controlling and the second largest shareholder is higher than 25%, zero otherwise; *Second State (Second Financial institution)* takes value 1 if the second largest shareholders own more than 25% of the shares and it is the State (a financial institution), zero otherwise; *Second widely* takes value 1 if there is not any second largest shareholder holding 25% or more of the shares, zero otherwise; *Growth* is the ratio $(Sales_1 - Sales_0)/Sales_0$; *Asset Maturity* is the average of the maturities of current and long-term assets; *Size* is the total assets in thousands of euro; *Age* is calculated as the difference between the sample year and the year the firm was established age of the firm; *Z-Score* is calculated following the Altman and Hotchkiss's (2006) Model for private firms; *Term* is measured as the yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill; *Tax rate* is the income tax expense to pre-tax profit ratio; *Leverage* is the total debt to total assets ratio.

	Mean	St. Dev.	Min.	p25	p50	p75	Max.
<i>Debt maturity</i>	0.167	0.195	0.000	0.002	0.090	0.277	0.810
<i>Family</i>	0.805	0.396	0.000	1.000	1.000	1.000	1.000
<i>Family [50]</i>	0.769	0.421	0.000	1.000	1.000	1.000	1.000
<i>Family reputation</i>	0.222	0.416	0.000	0.000	0.000	0.000	1.000
<i>Family reputation [50]</i>	0.220	0.414	0.000	0.000	0.000	0.000	1.000
<i>Family management</i>	0.700	0.458	0.000	0.000	1.000	1.000	1.000
<i>Family management [50]</i>	0.679	0.467	0.000	0.000	1.000	1.000	1.000
<i>Family [20-50]</i>	0.035	0.185	0.000	0.000	0.000	0.000	1.000
<i>Family [50-80]</i>	0.195	0.396	0.000	0.000	0.000	0.000	1.000
<i>Family [80-100]</i>	0.574	0.495	0.000	0.000	1.000	1.000	1.000
<i>Lone Family</i>	0.186	0.389	0.000	0.000	0.000	0.000	1.000
<i>Widely help</i>	0.115	0.319	0.000	0.000	0.000	0.000	1.000
<i>State</i>	0.036	0.186	0.000	0.000	0.000	0.000	1.000
<i>Financial institution</i>	0.032	0.176	0.000	0.000	0.000	0.000	1.000
<i>Miscellaneous</i>	0.013	0.111	0.000	0.000	0.000	0.000	1.000
<i>Pyramid structure</i>	0.410	0.492	0.000	0.000	0.000	1.000	1.000
<i>High Pyramid</i>	0.097	0.296	0.000	0.000	0.000	0.000	1.000
<i>Tax Pyramid</i>	0.103	0.305	0.000	0.000	0.000	0.000	1.000
<i>Second Family</i>	0.129	0.335	0.000	0.000	0.000	0.000	1.000
<i>Distance first-second</i>	0.781	0.413	0.000	1.000	1.000	1.000	1.000
<i>Second State</i>	0.002	0.050	0.000	0.000	0.000	0.000	1.000
<i>Second Financial institution</i>	0.004	0.060	0.000	0.000	0.000	0.000	1.000
<i>Second Widely</i>	0.865	0.341	0.000	1.000	1.000	1.000	1.000

<i>Growth</i>	0.028	0.197	-0.513	-0.082	0.021	0.122	0.996
<i>Asset maturity</i>	3.403	4.001	0.243	0.892	1.949	4.180	27.192
<i>Size (thousands €)</i>	27,077	93,202	560	4,855	8,837	19,835	3,222,753
<i>Age (years)</i>	24.607	12.959	2.010	16.020	22.470	30.040	127.360
<i>Z-Score</i>	2.728	1.275	0.299	1.802	2.539	3.474	7.437
<i>Term</i>	1.813	1.129	0.070	0.740	2.060	2.920	3.250
<i>Tax rate</i>	0.246	0.193	-1.126	0.205	0.294	0.316	1.366
<i>Leverage</i>	0.555	0.218	0.048	0.388	0.572	0.730	0.998

Table 2**Correlation Matrix.**

Debt Maturity is the long-term debt over total debt ratio; *Family* takes value 1 if the controller shareholder holding more than 25% of the voting rights is family or an individual, zero otherwise; *Family reputation* takes value 1 if the family controller shareholder's name is included in the firm's name and holds more than 25% of the voting rights, zero otherwise; *Family management* takes value 1 if the family controller shareholder holding more than 25% is active as a manager, zero otherwise; *Pyramid structure* takes value 1 if there is a pyramid structure, zero otherwise; *Second family* takes value 1 if other family or an individual is the second largest shareholder of the firm and own more than 25% of the shares, zero otherwise; *Growth* is the ratio $(Sales_1 - Sales_0)/Sales_0$; *Asset Maturity* is the average of the maturities of current and long-term assets; *Size* is the log of total assets; *Age* is calculated as the log of one plus the firm's age in years; *Z-Score* is calculated following the Altman and Hotchkiss's (2006) Model for private firms; *Term* is measured as the yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill; *Tax rate* is the income tax expense to pre-tax profit ratio; *Leverage* is the total debt to total assets ratio.

*, **, *** Significant at 10, 5, 1%, respectively.

	Debt Maturity	Family	Family Reputation	Family Management	Pyramid Structure	Second Family	Growth	Asset Maturity	Size	Age	Z-Score	Term	Tax Rate
<i>Debt maturity</i>													
<i>Family</i>	0.0393***												
<i>Family reputation</i>	0.0045	0.2635***											
<i>Family management</i>	0.0725***	0.7525***	0.3136***										
<i>Pyramid structure</i>	-0.0756***	-0.1970***	-0.2400***	-0.4248***									
<i>Second Family</i>	0.0001	0.1842***	-0.1004***	0.2061***	-0.1808***								
<i>Growth</i>	-0.0194***	-0.0187***	-0.0135***	-0.0222***	0.0132***	-0.0012							
<i>Asset maturity</i>	0.4019***	-0.0086*	-0.0041	0.0107**	-0.0787***	-0.0082	-0.0120**						
<i>Size</i>	0.1471***	-0.2732***	-0.1136***	-0.3344***	0.3265***	-0.1449***	0.0412***	0.1370***					
<i>Age</i>	-0.0049	0.0464***	0.0642***	0.0329***	-0.0445***	-0.0328***	-0.1203***	-0.0201***	0.1075***				
<i>Z-Score</i>	-0.4024	0.0448***	0.0335***	0.0395***	-0.0307***	0.0157***	0.0186***	-0.2458***	-0.2803***	0.0113**			
<i>Term</i>	0.0590***	0.0000	0.0000	0.0000	0.0000	0.0000	-0.3001***	0.0069***	0.0328***	0.2273***	-0.0042		
<i>Tax rate</i>	-0.0949***	0.0865***	0.0341***	0.0659***	0.0033	0.0262***	0.0487***	-0.0556***	-0.0483***	-0.0438***	0.1179***	-0.0947***	
<i>Leverage</i>	0.1552***	-0.0505***	-0.0566***	-0.0501***	0.0415***	0.023***	0.1496***	0.0000	0.0552***	-0.1776***	-0.519***	-0.1474***	0.0043

Table 3

Family firms and debt maturity structure.

This table presents the mean values of the variable *Debt Maturity* for family and non family firms, by year. *Debt Maturity* is calculated as long-term debt over total debt; *Family* takes value 1 if the controller shareholder holding more than 25% of the voting rights is family or an individual, zero otherwise; *Family reputation* takes value 1 if the family controller shareholder's name is included in the firm's name holding more than 25% of the voting rights, zero otherwise; *Family management* takes the value 1 if the family controller shareholder holding more than 25% is active as a manager, zero otherwise; *Pyramid structure* takes value 1 if there is a pyramid structure, zero otherwise; *Second family* takes value 1 if other family or an individual is the second largest shareholder of the firm and owns more than 25% of the shares, zero otherwise.

*, **, *** Significant at 10, 5, 1%, respectively.

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2005- 2013
		Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
<i>Family</i>											
Debt Maturity	Family	0.149	0.152	0.157	0.167	0.187	0.182	0.182	0.182	0.177	0.170
	Non Family	0.142	0.137	0.141	0.143	0.162	0.159	0.159	0.159	0.157	0.151
	<i>t test</i>										-7.830***
<i>Family reputation</i>											
Debt Maturity	Family	0.141	0.145	0.155	0.160	0.183	0.184	0.186	0.178	0.150	0.168
	Non Family	0.149	0.150	0.153	0.163	0.181	0.175	0.175	0.175	0.172	0.166
	<i>t test</i>										-0.889
<i>Family management</i>											
Debt Maturity	Family	0.151	0.1525	0.163	0.174	0.194	0.187	0.187	0.188	0.183	0.176
	Non Family	0.139	0.134	0.133	0.135	0.153	0.153	0.154	0.153	0.151	0.145
	<i>t test</i>										-14.478***
<i>Pyramid structure</i>											
Debt Maturity	Chain	0.139	0.136	0.138	0.141	0.160	0.158	0.157	0.155	0.154	0.149
	No Chain	0.154	0.158	0.165	0.177	0.197	0.190	0.190	0.191	0.192	0.179
	<i>t test</i>										15.0875***
<i>Pyramid structure and Family</i>											
Debt Maturity	Family	0.140	0.138	0.141	0.148	0.168	0.165	0.165	0.164	0.162	0.155
	Non Family	0.134	0.130	0.131	0.123	0.140	0.139	0.140	0.139	0.140	0.135
	<i>t test</i>										-5.597***
<i>Family and other Second Family</i>											
Debt Maturity	<i>Family</i>	0.151	0.152	0.156	0.165	0.181	0.178	0.176	0.171	0.170	0.167
	<i>Non Family</i>	0.149	0.152	0.157	0.168	0.188	0.182	0.183	0.184	0.179	0.171
	<i>t-test</i>										1.504

Table 4

Debt maturity and family control (I).

Debt Maturity (dependent variable) is calculated as long-term debt over total debt; *Family* (*Family [50]*) takes value 1 if the controller shareholder holding more than 25% (at least 50%) of the shares is family or an individual, zero otherwise; *Family reputation* (*Family reputation [50]*) takes value 1 if the family controller shareholder's name is included in the firm's name and holds more than 25% (at least 50%) of the voting rights, zero otherwise; *Growth* is the ratio $(Sales_1 - Sales_0)/Sales_0$; *Asset Maturity* is the average of the maturities of current and long-term assets; *Size* is the log of total assets; *Age* is calculated as the log of one plus the firm's age in years; *Z-Score* is calculated following the Altman and Hotchkiss's (2006) Model for private firms; *Term* is measured as the yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill; *Tax rate* is the income tax expense to pre-tax profit ratio; *Leverage* is the total debt to total assets ratio. Estimations using Two-Stage Least Squares. *Time* and *industry* dummies are included in all regressions, although coefficients are not presented. t statistic in brackets.

*, **, *** Significant at 10, 5, 1%, respectively.

	(1)	(2)	(3)	(4)
<i>Family</i>	0.0034*** (4.83)			
<i>Family [50]</i>		0.0033*** (5.07)		
<i>Family reputation</i>			0.0014*** (2.74)	
<i>Family reputation [50]</i>				0.0014*** (2.8)
<i>Growth</i>	-0.0594*** (-8.02)	-0.0585*** (-7.95)	-0.0544*** (-7.53)	-0.0544*** (-7.54)
<i>Asset maturity</i>	0.0095*** (31.84)	0.0095*** (31.86)	0.0095*** (31.87)	0.0095*** (31.87)
<i>Size</i>	0.0097*** (3.17)	0.0100*** (3.28)	0.0114*** (3.8)	0.0114*** (3.79)
<i>Age</i>	-0.0462*** (-4.59)	-0.0464*** (-4.61)	-0.0507*** (-5.14)	-0.0507*** (-5.14)
<i>Z-score</i>	0.0044 (0.74)	0.0035 (0.6)	-0.0003 (-0.05)	-0.0002 (-0.04)
<i>Term</i>	0.0194*** (7.98)	0.0199*** (8.52)	0.0270*** (13.36)	0.0270*** (13.38)
<i>Tax rate</i>	-0.0058* (-1.71)	-0.0058* (-1.73)	-0.0059* (-1.76)	-0.0059* (-1.76)
<i>Leverage</i>	0.4696*** (7.12)	0.4604*** (7.04)	0.4172*** (6.56)	0.4175*** (6.57)
<i>Intercept</i>	-0.1448*** (-2.26)	-0.1387*** (-2.17)	-0.1027*** (-1.65)	-0.1028 (-1.65)
<i>Time dummies</i>	Yes	Yes	Yes	Yes
<i>Industry dummies</i>	Yes	Yes	Yes	Yes
<i>R-squared</i>	0.0695	0.0719	0.0799	0.799
<i>N. Firms</i>	4365	4365	4365	4365
<i>Observations</i>	35032	35032	35032	35032

Table 5

Debt maturity and family control (II).

Debt Maturity (dependent variable) is calculated as long-term debt over total debt; *Family management* (*Family management [50]*) takes value 1 if the family controller shareholder holding more than 25% (at least 50%) is active as a manager, zero otherwise; *Family [25-50]*, *Family [50-80]* and *Family [80-100]* takes value 1 if the controller shareholder has a proportion of voting right between 25% and 50%, between 50% and 80% or more than 80%, respectively, zero otherwise; *Lone family* takes value 1 if there is only one ultimate largest shareholder holds more than 25% of the voting rights and is family, zero otherwise; *Growth* is the ratio $(Sales_1 - Sales_0)/Sales_0$; *Asset Maturity* is the average of the maturities of current and long-term assets; *Size* is the log of total assets; *Age* is calculated as the log of one plus the firm's age in years; *Z-Score* is calculated following the Altman and Hotchkiss's (2006) Model for private firms; *Term* is measured as the yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill; *Tax rate* is the income tax expense to pre-tax profit ratio; *Leverage* is the total debt to total assets ratio. Estimations using Two-Stage Least Squares. *Time* and *industry* dummies are included in all regressions, although coefficients are not presented. t statistic in brackets.

*, **, *** Significant at 10, 5, 1%, respectively.

	(1)	(2)	(3)	(4)
<i>Family management</i>	0.0019*** (4.04)			
<i>Family management [50]</i>		0.0017*** (3.56)		
<i>Family [25-50]</i>			0.0010 (0.76)	
<i>Family [50-80]</i>			0.0024*** (2.91)	
<i>Family [80-100]</i>			0.0039*** (5.36)	
<i>Lone Family</i>				0.0030*** (5.15)
<i>Growth</i>	-0.0591*** (-8.05)	-0.0587*** (-8.03)	-0.0589*** (-7.97)	-0.0564*** (-7.75)
<i>Asset maturity</i>	0.0095*** (31.87)	0.0095*** (31.88)	0.0095*** (31.86)	0.0095*** (31.88)
<i>Size</i>	0.0098*** (3.18)	0.0100*** (3.25)	0.0097*** (3.16)	0.0104*** (3.42)
<i>Age</i>	-0.0475*** (-4.75)	-0.0479*** (-4.80)	-0.0454*** (-4.50)	-0.0526*** (-5.38)
<i>Z-score</i>	0.0041 (0.70)	0.0037 (0.64)	0.0038 (0.65)	0.0018 (0.32)
<i>Term</i>	0.0241*** (11.66)	0.0248*** (12.09)	0.0192*** (7.86)	0.0271*** (13.63)
<i>Tax rate</i>	-0.0058* (-1.72)	-0.0059* (-1.74)	-0.0059* (-1.76)	-0.0060* (-1.77)
<i>Leverage</i>	0.4667*** (7.15)	0.4624*** (7.12)	0.4641*** (7.06)	0.4410*** (6.84)
<i>Intercept</i>	-0.1392** (-2.20)	-0.1361** (-2.16)	-0.1414** (-2.21)	-0.1085* (-1.75)
<i>Time dummies</i>	Yes	Yes	Yes	Yes
<i>Industry dummies</i>	Yes	Yes	Yes	Yes
<i>R-squared</i>	0.0697	0.0702	0.0721	0.0740
<i>N. Firms</i>	4365	4365	4365	4365
<i>Observations</i>	35032	35032	35032	35032

Table 6

Debt maturity and family control (III).

Debt Maturity (dependent variable) is calculated as long-term debt over total debt; *Family* takes value 1 if the controller shareholder holding more than 25% of the voting rights is family or an individual, zero otherwise; *Widely held* takes value 1 for firms that do not have any controlling shareholder with voting rights higher than 25%; *State*, *Financial institution* and *Miscellaneous* take value 1 when the controller shareholder is the State, a financial institution or others respectively, zero otherwise; *Growth* is the ratio $(Sales_1 - Sales_0)/Sales_0$; *Asset Maturity* is the average of the maturities of current and long-term assets; *Size* is the log of total assets; *Age* is calculated as the log of one plus the firm's age in years; *Z-Score* is calculated following the Altman and Hotchkiss's (2006) Model for private firms; *Term* is measured as the yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill; *Tax rate* is the income tax expense to pre-tax profit ratio; *Leverage* is the total debt to total assets ratio. Estimations using Two-Stage Least Squares. *Time* and *industry* dummies are included in all regressions, although coefficients are not presented. t statistic in brackets.

*, **, *** Significant at 10, 5, 1%, respectively.

	(1)	(2)
<i>Family</i>	0.0040*** (4.82)	
<i>Widely held</i>		-0.0040*** (-4.82)
<i>State</i>	0.0079*** (4.99)	0.0039*** (2.71)
<i>Financial institution</i>	-0.0020 (-1.45)	-0.0060*** (-4.42)
<i>Miscellaneous</i>	0.0004 (0.19)	-0.0036* (-1.89)
<i>Growth</i>	-0.0574*** (-7.83)	-0.0574*** (-7.83)
<i>Asset maturity</i>	0.0095*** (31.83)	0.0095*** (31.83)
<i>Size</i>	0.0099*** (3.23)	0.0099*** (3.23)
<i>Age</i>	-0.0467*** (-4.64)	-0.0467*** (-4.64)
<i>Z-score</i>	0.0025 (0.42)	0.0025 (0.42)
<i>Term</i>	0.0178*** (6.51)	0.0305*** (14.34)
<i>Tax rate</i>	-0.0058* (-1.72)	-0.0058* (-1.72)
<i>Leverage</i>	0.4530*** (6.94)	0.4530*** (6.94)
<i>Intercept</i>	-0.1292* (-2.04)	-0.1307* (-2.05)
<i>Time dummies</i>	Yes	Yes
<i>Industry dummies</i>	Yes	Yes
<i>R-squared</i>	0.0732	0.0732
<i>N. Firms</i>	4365	4365
<i>Observations</i>	35032	35032

Table 7

Debt maturity, pyramid structure and family control.

Debt Maturity (dependent variable) is calculated as long-term debt over total debt; *Family* takes value 1 if the controller shareholder holding more than 25% of the voting rights is family or an individual, zero otherwise; *Pyramid structure* takes value 1 if exists a pyramid structure, zero otherwise *High pyramid* takes value 1 if a firm is controlled through a pyramid structure with a number of layers higher than the mean, zero otherwise; *Tax pyramid* takes value 1 if in the pyramid structure voting right and cash flow right are equal, zero otherwise; *Growth* is the ratio $(Sales_1 - Sales_0)/Sales_0$; *Asset Maturity* is the average of the maturities of current and long-term assets; *Size* is the log of total assets; *Age* is calculated as the log of one plus the firm's age in years; *Z-Score* is calculated following the Altman and Hotchkiss's (2006) Model for private firms; *Term* is measured as the yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill; *Tax rate* is the income tax expense to pre-tax profit ratio; *Leverage* is the total debt to total assets ratio. Estimations using Two-Stage Least Squares. *Time* and *industry* dummies are included in all regressions, although coefficients are not presented. t statistic in brackets.

*, **, *** Significant at 10, 5, 1%, respectively.

	(1)	(2)	(3)	(4)
<i>Family</i>	0.0029*** (4.41)	0.0014 (1.35)	0.0015 (1.51)	0.0014 (1.33)
<i>Pyramid structure</i>	-0.0030*** (-5.00)	-0.0052*** (-4.91)	-0.0048*** (-4.24)	-0.0052*** (-4.79)
<i>Family × Pyramid structure</i>		0.0027** (2.29)	0.0031** (2.45)	0.0020* (1.62)
<i>High pyramid</i>			-0.0012 (-0.85)	
<i>Family × High pyramid</i>			-0.0036** (-2.09)	
<i>Tax pyramid</i>				-0.0001 (-0.06)
<i>Family × Tax pyramid</i>				0.0024 (1.03)
<i>Growth</i>	-0.0625*** (-8.55)	-0.0626*** (-8.54)	-0.0638*** (-8.67)	-0.0624*** (-8.53)
<i>Asset maturity</i>	0.0096*** (31.92)	0.0096*** (31.91)	0.0096*** (31.91)	0.0096*** (31.92)
<i>Size</i>	0.0076** (2.39)	0.0078** (2.45)	0.0071** (2.19)	0.0081** (2.53)
<i>Age</i>	-0.0384*** (-3.68)	-0.0388*** (-3.70)	-0.0376*** (-3.58)	-0.0396*** (-3.78)
<i>Z-score</i>	0.0074 (1.25)	0.0074 (1.24)	0.0086 (1.43)	0.0072 (1.22)
<i>Term</i>	0.0248*** (9.60)	0.0294*** (9.16)	0.0290*** (9.02)	0.0294*** (9.19)
<i>Tax rate</i>	-0.0056* (-1.66)	-0.0056* (-1.66)	-0.0057* (-1.69)	-0.0056* (-1.65)
<i>Leverage</i>	0.5064*** (7.72)	0.5064*** (7.68)	0.5205*** (7.85)	0.5045*** (7.66)
<i>Intercept</i>	-0.1784*** (-2.78)	-0.1800*** (-2.80)	-0.1883*** (-2.92)	-0.1784*** (-2.78)
<i>Time dummies</i>	Yes	Yes	Yes	Yes
<i>Industry dummies</i>	Yes	Yes	Yes	Yes
<i>R-squared</i>	0.0654	0.0654	0.0634	0.0659

<i>N. Firms</i>	4365	4365	4365	4365
<i>Observations</i>	35032	35032	35032	35032

Table 8

Debt maturity, family control and the second controlling shareholder.

Debt Maturity (dependent variable) is calculated as long-term debt over total debt; *Family* takes value 1 if the controller shareholder holding more than 25% of the voting rights is family or an individual, zero otherwise; *Pyramid structure* takes value 1 if exists a pyramid structure, zero otherwise; *Second family* takes value 1 if other family or an individual is the second largest shareholder of the firm and own more than 25% of the shares, zero otherwise; *Distance first-second* takes value 1 if the difference in voting rights between the controlling and the second largest shareholder is higher than 25%, zero otherwise; *Second State (Second Financial institution)* takes value 1 if the second largest shareholders own more than 25% of the shares and it is the State (a financial institution), zero otherwise; *Second widely* takes value 1 if there is no second largest shareholder holding 25% or more of the shares, zero otherwise; *Growth* is the ratio $(Sales_1 - Sales_0)/Sales_0$; *Asset Maturity* is the average of the maturities of current and long-term assets; *Size* is the log of total assets; *Age* is calculated as the log of one plus the firm's age in years; *Z-Score* is calculated following the Altman and Hotchkiss's (2006) Model for private firms; *Term* is measured as the yield on 10-year Spanish Treasury bond minus the yield on twelve-month Spanish Treasury bill; *Tax rate* is the income tax expense to pre-tax profit ratio; *Leverage* is the total debt to total assets ratio. Estimations using Two-Stage Least Squares. *Time* and *industry* dummies are included in all regressions, although coefficients are not presented. t statistic in brackets.

*, **, *** Significant at 10, 5, 1%, respectively.

	(1)	(2)	(3)	(4)
<i>Family</i>	0.0031*** (4.71)	0.0013 (1.38)	0.0030*** (4.55)	0.0030*** (4.55)
<i>Pyramid structure</i>	-0.0031*** (-5.28)	-0.0042*** (-5.83)	-0.0031*** (-5.23)	-0.0031*** (-5.23)
<i>Second Family</i>	-0.0015** (-2.22)	-0.0023* (-1.83)	-0.0015** (-2.23)	
<i>Distance first-second</i>		-0.0118 (-2.08)		
<i>Second State</i>			-0.0127*** (-2.83)	-0.0113*** (-2.47)
<i>Second Financial institution</i>			-0.0046 (-1.17)	-0.0032 (-0.78)
<i>Second Widely</i>				0.0015** (2.23)
<i>Growth</i>	-0.0623*** (-8.49)	-0.0707*** (-8.38)	-0.0624*** (-8.50)	-0.0624*** (-8.50)
<i>Asset maturity</i>	0.0096*** (31.94)	0.0102*** (29.87)	0.0096*** (31.92)	0.0096*** (31.92)
<i>Size</i>	0.0076** (2.41)	0.0013 (0.35)	0.0076** (2.40)	0.0076** (2.40)
<i>Age</i>	-0.0378*** (-3.63)	-0.0365*** (-2.86)	-0.0365*** (-3.49)	-0.0365*** (-3.49)
<i>Z-score</i>	0.0071 (1.20)	0.0141** (2.05)	0.0073 (1.22)	0.0073 (1.22)
<i>Term</i>	0.0249*** (9.65)	0.0731*** (4.20)	0.0251*** (9.69)	0.0204*** (6.07)
<i>Tax rate</i>	-0.0057* (-1.70)	-0.0047 (-1.21)	-0.0058* (-1.70)	-0.0058* (-1.70)
<i>Leverage</i>	0.5035*** (7.63)	0.6089*** (7.98)	0.5048*** (7.65)	0.5048*** (7.65)
<i>Intercept</i>	-0.1783***	-0.2146***	-0.1831***	-0.1826***

	(-2.78)	(-2.86)	(-2.84)	(-2.83)
<i>Time dummies</i>	Yes	Yes	Yes	Yes
<i>Industry dummies</i>	Yes	Yes	Yes	Yes
<i>R-squared</i>	0.0665	0.0607	0.0662	0.0662
<i>N. Firms</i>	4365	4365	4365	4365
<i>Observations</i>	35032	35032	35032	35032
