

# Private family firms, generations and bank debt

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## Abstract

This paper focuses on the use of bank debt by private family firms and whether it is higher for the first generations of family businesses than for their descendants and subsequent generations. We use a unique hand-collected data set of 4,041 private Spanish firms for the years 2004 to 2013. We find statistical evidence that family-controlled firms make greater use of bank credit. Moreover, we show that first-generation family firms acquire more bank debt than those of second and subsequent generations. Furthermore, during financial crises, family-controlled firms were subjected to less rationing, with increased bank financing for first generations.

## KEYWORDS

bank debt, family firms, founder, generation

## JEL CLASSIFICATION

G3, G32

## 1 | INTRODUCTION

The importance of bank financing for private firms has been recognised by the literature, especially in the case of smaller firms, which suffer from greater information asymmetries (Berger & Udell, 1998). In these situations, banks cope with adverse selection and moral hazard problems, sometimes causing firms to have difficulties gaining access to bank credit (Stiglitz & Weiss, 1981). Thus, firms presenting lower agency costs of debt will be in a better position to obtain bank financing. Family firms could fall into this category since they have characteristics

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and incentive structures that lead banks to expect less moral hazard, reducing agency conflicts between owners and debtholders. Previous studies have pointed out that family firms are more averse to risk, have greater interest in firm survival, and are more concerned about firm reputation (Anderson et al., 2003; Burkart et al., 2003; Faccio et al., 2011). However, private family firms may also be exposed to agency costs of debt since non-monetary objectives may reduce their business efficiency (Bertrand & Schoar, 2006). Controlling owners could exacerbate agency costs through acts of parental altruism or other problems. Self-control is one of these problems, especially in subsequent generations, when non-founder family members take over firm management and control (Lubatkin et al., 2005; Schulze et al., 2001). In this research, we study the role played by family firms and subsequent generations in accessing bank debt.

Previous empirical literature has studied family-controlled firms compared to non-family-controlled firms in terms of capital structure, obtaining mixed results. Some studies show greater leverage for family-controlled firms (Baek et al., 2016; Blanco-Mazagatos et al., 2007; Croci et al., 2011; Keasey et al., 2015; King & Santor, 2008; López-Delgado & Diéguez-Soto, 2020; Setia-Atmaja et al., 2009). However, others show evidence of less leverage (e.g., Ampenberger et al., 2013; Gallo et al., 2004; González et al., 2013; Mishra & McConaughy, 1999; Schmid, 2013) or no differences at all (e.g., Anderson & Reeb, 2003). The choice between equity financing (equity issuance) and debt financing for family-controlled firms is conditioned by the risk of losing firm control and the risk of bankruptcy (Mishra & McConaughy, 1999). The rights of shareholders and creditors also come into play (Hansen & Block, 2021; Schmid, 2013). Empirical evidence shows that private firms rely mainly on debt financing because of the higher cost of equity (Brav, 2009).

Regarding debt financing, Anderson et al. (2003) found that bond issues have lower costs for listed family firms in the United States. However, in other countries, family control is associated with a higher bond-yield spread (e.g., Boubakri & Ghouma, 2010; Ellul et al., 2007; Gao et al., 2020; Lee et al., 2021; Tanaka, 2014; Yen et al., 2015), although these results are also affected by the protection of debtholders' rights (Ellul et al., 2007). In any case, banks are the leading providers of external financing in most countries (Demirgüç-Kunt & Levine, 2001; Qian & Strahan, 2007), especially for private firms. Some studies have found that private family firms have greater credit availability (Bopaiiah, 1998), higher bank debt levels (Gottardo & Moisello, 2014; Thiele & Wendt, 2017) and lower debt costs (Stacchini & Degasperi, 2015; Yen et al., 2015), not only during non-crisis periods but also following the Lehman Brothers crisis (Crespí & Martín-Oliver, 2015; D'Aurizio et al., 2015; Stacchini & Degasperi, 2015; Yen et al., 2015). Other studies have reported high costs of debt for family firms with a greater divergence between control rights and cash flow rights (Lin et al., 2011), although the latter is of less concern for unlisted companies. Contradictory results have also been obtained by the studies focusing on the use of collateral in family firm borrowing (Pan & Tian, 2016; Steijvers & Voordeckers, 2009). Family firms are required to pledge more personal collateral than other firms, resulting in higher agency costs of debt.

These studies presenting mixed results do not consider how the family generation that controls and manages a firm can affect access to bank debt. The literature studying this issue is scarce and focuses on the impact of succession on the capital structure of family firms (e.g., Amore et al., 2011; Blanco-Mazagatos et al., 2007; McConaughy & Phillips, 1999; Molly et al., 2010, 2012) and the role of generations during the global financial crisis (Arrondo-García et al., 2016). In this study, we explore the role played by family-controlled firms in accessing bank credit across different generations compared to non-family firms. Founders of family firms are more concerned with their firms' long-term survival and reputation than second and subsequent generations (Anderson et al., 2003; Yen et al., 2015). However, descendants may exacerbate agency costs of debt since the dark side of altruism appears more intensively with the dispersion of family ownership across successive generations (Lubatkin et al., 2005; Schulze et al., 2001). Some behavioural characteristics of first generations, as opposed to subsequent

generations, may also affect access to bank debt. According to the socioemotional wealth theory, family firms pursue not only financial goals but also non-financial goals, such as control and family influence over corporate decision-making, social status, social capital and long-term survival by passing the firm on to future generations (Berrone et al., 2012; Gómez-Mejía et al., 2007). Socioemotional wealth is particularly important for founders, but its importance decreases as ownership is dispersed in family firms controlled by later generations (Gómez-Mejía et al., 2007). Interest in preserving socioemotional wealth may also affect bank debt availability since it can be considered a risk-reducing characteristic by capital suppliers (Michiels & Molly, 2017; Stacchini & Degasperi, 2015).

Our study attempts to fill this gap by looking into the effects of family control on the use of bank debt with a generational perspective. We study whether first generations of family businesses can gain access to more bank debt due to their incentive structure (risk aversion, long-term horizon and reputation) than their descendants and subsequent generations. We address this issue by focusing on the character of the controlling shareholders in family firms and the generation to which they belong. To do this, we directly measure generations with hand-collected data about the ownership structures, board composition and managerial teams of each family firm, and we distinguish between first, second, third or later family generations (Michiels & Molly, 2017). We also examine family firm heterogeneity by analysing several types of family firms based on their control over different thresholds, involvement in management and firm identification with the family name. Finally, we provide new empirical evidence about the relationship between family control and the use of bank debt.

We use a unique data set of private Spanish firms for the period 2004–2013. The sample includes information about the generation of the family members running the business, for which there is often no detailed data available. We have also obtained information about whether the controlling shareholder is a family member.

Private Spanish firms provide an ideal context for the aim of this study. First, the Spanish institutional setting is characterised by less developed capital markets than Anglo-Saxon countries (La Porta et al., 1999; World Bank, 2020) and ownership concentrated in families (De Andrés Alonso et al., 2005; Faccio & Lang, 2002; La Porta et al., 1998, 1999). Spanish firms are mainly controlled by family groups in private companies and quoted enterprises (Sacristán-Navarro & Gómez-Ansón, 2006). Second, bank lending is the most important source of debt financing for private firms in Spain (De Andrés Alonso et al., 2005), as these companies have few alternatives when seeking credit. In 2019, domestic credit provided by banks to the private sector represented 93.66 percent of the Spanish gross domestic product (GDP), compared to 51.97 percent in the United States (World Bank, 2020). Banks are, therefore, the primary source of financing for many Spanish companies, and studying the use of bank debt is essential. Finally, family firms in Spain represent 89 percent of the country's companies, generate 67 percent of private-sector employment and account for 57 percent of Spanish GDP (Instituto de la Empresa Familiar, 2015).

Our results indicate that family firms have higher levels of bank debt. We find that these results do not change when we control for the reputation of the firm and family involvement in management, and they are robust to several definitions and estimation procedures. These results support the hypothesis that family firms have fewer reasons to engage in bank default because they have longer-term investment horizons and greater reputational concerns (Anderson et al., 2003; Croci et al., 2011, among others). Moreover, our study corroborates the thesis that family controlling shareholders are more prone to use bank debt before diluting their stake in the control of the firm (Schmid, 2013). Focusing on the role of generations in family firms, the empirical analyses show that first-generation family firms have more bank debt than those of second and subsequent generations. However, from the second generation onwards, agency costs of debt seem to increase, which supports the idea that self-control problems and the dark side of altruism increase when non-founder family members take over the management

and control of the firm (Lubatkin et al., 2005; Schulze et al., 2001). Finally, a reduction in credit supply brought about by the financial crisis resulted in less severe financial constraints for family-controlled firms. Among these, companies managed by first generations appear to have had greater access to bank financing.

This research contributes to the current literature on this topic in various ways. First, the effect of family generations on access to bank debt has scarcely been studied empirically. According to Molly et al. (2012), although the financial decisions of family firms have drawn attention, there is still a need to investigate how generational differences influence family firms. As pointed out by Michiels and Molly (2017), some studies only indirectly measure the generational effect through age, or by comparing founders and descendants (e.g., Blanco-Mazagatos et al., 2007). We directly measure whether the family firm is controlled by the first, second, third or later generations. In this way, our results contribute to better understanding the role of descendants in family-controlled firms. Second, even though a few studies have presented evidence supporting fewer credit constraints for family firms than for non-family firms during the financial crisis, we present new evidence about the impacts the 2008 financial crisis and the subsequent reduction in credit supply have had on access to bank credit, conditioned by the family generation controlling and managing the company. Finally, we contribute to the debate regarding the role of family-controlled firms in reducing agency costs of debt and accessing better bank debt terms. These contributions provide valuable insights for family firms as one of the most important challenges to firm survival is succession. Indeed, only 7.4 percent of Spanish family firms survive to the third generation and only 2.6 percent to the fourth (Instituto de la Empresa Familiar, 2015). The effects of the 2008 global financial crisis on family firm financing may also help to understand the effects of other economic shocks on family firms, such as the recent outbreak of COVID-19, which has dramatically affected all the world's economies (Çolak & Öztekin, 2021).

The rest of the paper is organised as follows. The next section reviews the related literature and presents the main hypotheses. Section 3 describes the data set and estimation method. Section 4 presents the empirical results. In Section 5, we address the effect of a shock in credit supplies on access to bank debt and, in Section 6, we present and discuss several robustness tests. Section 7 concludes.

## 2 | THEORETICAL FOUNDATIONS

In this section, we present the theoretical framework regarding the role of family control in access to bank debt, as well as that of the family generation controlling the firm.

### 2.1 | Bank debt in private family firms

The relationship between firms and lenders could be affected by adverse selection and moral hazard, which cause conflicts of interest because firms could have incentives to benefit themselves at the expense of lenders in several ways. Borrowers may take actions that harm lenders, and they may also have incentives to finance riskier projects than those preferred by lenders (Jensen & Meckling, 1976). This asset substitution problem comes from an asymmetry of gains for shareholders. Moreover, conflicts between shareholders and lenders could lead to underinvestment (Myers, 1977). In all of these cases, banks can often monitor their borrowers more closely than other lenders (Denis & Mihov, 2003), and adverse selection and moral hazard problems may lead to bank credit restrictions on firms.

From the supply side, firms that have lower risks will have better access to bank financing. This could be the case for family firms, which have characteristics and incentive structures

that lead banks to expect fewer moral hazard problems (Bopaiah, 1998), resulting in lower agency costs of debt. Firms controlled by undiversified shareholders, such as families, have fewer incentives to expropriate debtholders' wealth by investing in risky projects (Jensen & Meckling, 1976). Debt costs are lower because this type of shareholder may have different incentive structures (Anderson et al., 2003). These controlling shareholders, who are typically long-term investors with substantial wealth at risk, have great interest in mitigating agency conflicts with debtholders. Family controlling shareholders can build long-term relationships with their banks, thereby increasing trust between firm and bank and reducing any adverse behaviour that would negatively affect repayment (Stacchini & Degasperri, 2015; Steijvers & Voordeckers, 2009).

However, family firms can also exacerbate agency conflicts between shareholders and lenders, increasing the agency cost of debt. Major shareholders have incentives to act in their own interests, expropriating other investors. This is especially significant when there is a great divergence between control rights and voting rights, facilitating tunnelling and activities creating moral hazards. Banks then monitor credit risk more closely, increasing costs. In this situation, family firms may face higher loan spreads (Lin et al., 2011; Yen et al., 2015). This conflict is mainly observed in listed companies and is of lesser concern for private firms that have not gone public (D'Aurizio et al., 2015). Private family firms could face agency costs of debt due to non-economic objectives that negatively affect their efficiency (Bertrand & Schoar, 2006). Family controlling shareholders, who are outside corporate market control, can operate more freely and may be more affected by problems of self-control, doing what they want to instead of what they should (Lubatkin et al., 2005; Schulze et al., 2001). These problems are especially significant when non-founder family members take over the management and control of a firm, but much less so in the case of founding family firms whose concerns about long-term survival and reputation align them with their bank's position (Yen et al., 2015).

Family firms also receive non-economic benefits from maintaining control that can influence their financial decisions. Socioemotional wealth (SEW) refers to the non-economic connections a family has with its firm, including control, influence, social capital, intergenerational succession, family identification and family values (Gómez-Mejía et al., 2011). Socioemotional goals include the personal status gained by identifying the family name with the firm or the desire to pass the firm on to heirs. A family's social reputation can be damaged by financial distress or restructuring because reputation is often tied to the prestige and economic success of their firm (Schmid, 2013). Banks consider that family firms represent lower repayment problems. This could be due to their long-term investment horizon, which ensures firm stability and prosperity, interest in preserving the family's reputation and the intention to transfer the firm's wealth to subsequent generations (Stacchini & Degasperri, 2015). Thus, family firms face the loss of non-monetary benefits, reducing their incentive to default. The alignment of family shareholders' interests with banks may be greater than with other major shareholders, resulting in lower monitoring costs for banks. Stacchini and Degasperri (2015) find that lenders perceive fewer agency conflicts and greater creditworthiness in family firms due to the personal relationships and incentives that characterise these companies. Thus, from the supply side, family firms may have better access to bank debt than non-family firms.

However, from the demand side, the preservation of socioemotional wealth could make family firms reluctant to make risky investments. They might prefer lower levels of debt to guarantee their firm's survival (Gómez-Mejía et al., 2010). These firms are characterised by having a significant proportion of family wealth concentrated in the firm, which may make them more conservative than more diversified owners of non-family firms (Bianco et al., 2013). Thus, family firms may be less willing to borrow. In this way, they avoid taking on too many risks or losing control due to increased leverage (Schmid, 2013). However, the need to finance growth without losing control may cause family firms to be willing to use higher debt levels (González et al., 2013). As Molly et al. (2019) point out, this depends on the firm's goal orientation: family-centred or

family-business goals. The former has a non-economic focus on family, resulting in decisions that ensure the continuity of family control, firm survival, the succession of new generations, family employment, etc. Family-centred firms may be reluctant to take excessive risks and are less in debt. Business-centred firms are focused on firm growth and have higher leverage (Romano et al., 2001). Family firms concerned about their reputation could use more bank debt than non-family firms because this represents a credible sign of the firm's quality (Weill, 2008). We also have to take into account that private firms established in countries with bank-based systems will request more bank debt since they depend almost exclusively on financial institutions, compared to listed companies with many other financing options (Brav, 2009).

Previous empirical studies have shown that private family firms benefit from greater credit availability (Bopaiah, 1998), higher bank debt limits (Gottardo & Moissello, 2014; Thiele & Wendt, 2017) and lower costs of debt (D'Aurizio et al., 2015, Stacchini & Degasperis, 2015, Yen et al., 2015). In contrast, other studies have found that family-owned firms experience more credit restrictions, which may be mitigated by having a closer banking relationship (Murro & Peruzzi, 2019). These firms have higher debt costs when there is a great divergence between control rights and cash flow (Lin et al., 2011), although the excess of control rights is less problematic for private firms. The literature also finds increased guarantee requirements for family firms (Pan & Tian, 2016; Steijvers & Voordeckers, 2009). The role of private family-controlled firms in accessing bank credit has scarcely been studied, with inconclusive results. To address this debate, we first contrast the impact of family-controlled firms on access to bank debt. According to a review based on the agency theory and SEW, private family-controlled firms may benefit from better access to bank debt. Therefore, we pose the following hypothesis:

**H1** *Bank debt levels are significantly higher in private family-controlled firms than in non-family firms.*

## 2.2 | Bank debt and family generations

The role of family control on access to bank debt may differ across generations as this affects the agency cost of debt and the preservation of socioemotional wealth. The characteristics of family firms mentioned in the previous section (undiversified portfolio, long-term investment horizon, reputational concerns, etc.) may reduce agency costs, improving access to bank debt. However, second and subsequent generations may exacerbate the agency costs of debt as agency problems brought on by the dark side of parental altruism appear more intensely when family ownership is dispersed across successive generations (Lubatkin et al., 2005; Schulze et al., 2001). When a founder transfers ownership or management to the next generation, conflicts between family shareholders and banks can arise. This agency problem between shareholders and lending banks could result in less favourable credit conditions (Niskanen et al., 2010; Steijvers & Voordeckers, 2009). Access to bank debt may also be affected by the need to preserve socioemotional wealth across family firm generations. According to Gómez-Mejía et al. (2007), socioemotional wealth is especially important for founders, who are more concerned about family reputation, social status and transferring the firm to descendants. These concerns decrease during subsequent generations as family ties are weakened and new family branches emerge (Le Breton-Miller & Miller, 2013; Sciascia et al., 2014). Thus, the family firm characteristics and incentive structures that lead banks to expect reduced credit risks decrease throughout generations as firm ownership and control are diluted.

Anderson et al. (2003) argue that debtholders might consider that a founder's non-monetary wealth could be affected when transferring the firm to the next generation, giving rise to agency costs of debt. Steijvers and Niskanen (2013) point out that if descendants join the family firm,

divergent opinions may generate conflicts related to the firm's future projects. If this happens, family members lose cohesion as different personal goals, values and degrees of commitment overlap. For instance, Schulze et al. (2003) argue that agency conflicts during the second generation of family firms, characterised by a sibling partnership, become more problematic (Eddleston et al., 2013). In this generation, the controlling shareholder is neither the firm's founder nor the biological head of the family, and this person lacks authority and influence over his/her siblings. Moreover, descendants are likely to be more concerned about their nuclear family than about other relatives. Third and later generations – often a consortium of cousins – increase the possibility of managers feeling pressured by short-term performance and dividend payments, reducing long-term strategic investments (Eddleston et al., 2013; Schulze et al., 2003).

Anderson et al. (2003) show that family firms owned by descendants face higher debt costs than those controlled by founders. One reason for this is that founders often have superior entrepreneurial or technological skills and consider their firms their lifetime achievement (Schmid et al., 2015; Steijvers & Niskanen, 2013). They have innovative ideas that initially enabled them to set up their businesses. They establish close relationships with their bank lenders to reduce information asymmetries, thereby building the trust that facilitates access to credit (Blanco-Mazagatos et al., 2007). When a family firm is passed down to future generations, firm performance is likely to decrease as control of the firm is a result of family ties, not business skills.

In addition, firms that experience succession may focus more on non-economic goals, like ensuring family control, succession, family employment, etc. These firms may be less prone to take excessive risks, avoiding high leverage capital structure. Similarly, according to Schulze et al. (2003), ownership dispersion throughout generations can lead to more risk-averse behaviour among the family members of the board who prefer to reduce firm leverage (Molly et al., 2012). Molly et al. (2010) and Molly et al. (2012) show evidence that family generations negatively affect capital structure. However, Blanco-Mazagatos et al. (2007) and González et al. (2013) found that founders have lower leverage than their descendants. Firms managed by founders may have a greater business orientation, focusing on firm growth. Therefore, they require more debt. Arrondo-García et al. (2016) found that first-generation family firms invested and borrowed more during the 2008 financial crisis.

Keasey et al. (2015) highlighted that the likelihood of diluting control depends on the generation of the family firm since succession implies a change in control. Thus, founders are often more reluctant to dilute their control throughout the firm (Gedajlovic et al., 2004). In second and third generations, a firm's control may be dispersed among different family members, and this can lead to control struggles within the family (Schulze et al., 2003). Therefore, family-firm owners in second and subsequent generations are more willing to dilute control than those of first-generation firms. When descendants join a firm, potential conflicts of interest and information asymmetries could increase among different branches of the family, resulting in higher agency costs of debt.

From these arguments, we derive the following hypothesis:

**H2** *Bank debt levels are significantly higher in the first generation of private family firms than in subsequent generations.*

### 3 | DATA AND METHODOLOGY

#### 3.1 | Sample and data

For the empirical study, we construct a unique data set of private family firms. We have manually determined the identity of the ultimate shareholders who control more than 4,000

private firms, tracing their control chains. To analyse the impact of family ownership on bank debt, the initial sample includes all non-listed firms in Spain with information available in the SABI database (Iberian Balance Sheets Analysis System) for 2004–2013. This database is managed by Bureau van Dijk and contains financial information based on the annual financial reports submitted by Spanish firms to the Mercantile Register. We classify private firms by their controlling shareholders. To do this, we consider the SABI information about ownership structure to be the central restricting aspect of the sample. For this reason, firms whose ownership structure information was incomplete in this database were discarded. We then eliminated enterprises categorised as micro firms (fewer than 10 employees and less than €2 million in sales, according to the European Commission standards). We also excluded firms whose corporate decisions could reflect special factors that make them incomparable: financial firms and firms involved in bankruptcy proceedings. We retained the firms with no missing data for all the main variables of this study. Finally, we removed firms presenting extreme values. To lessen the influence of outliers, we dropped observations that were below 1 percent and above 99 percent. The observations from 2004 were used to calculate some variables. After the exclusions, the final sample contained 4,041 firms with 36,373 observations.

### 3.2 | Empirical model

The baseline specification for the study is:

$$\begin{aligned} BankDebt_{it} = & \text{Intercept} + \beta_1 Family\ dummy_i + \beta_2 Leverage_{it} + \beta_3 Growth_{it} + \beta_4 Size_{it} \\ & + \beta_5 Collateral_{it} + \beta_6 ROA_{it} + \beta_7 Z - Altman_{it} + \beta_8 Age_{it} + I_s + \lambda_t + \eta_i + \nu_{it} \end{aligned} \quad (1)$$

In this model, *BankDebt* represents the bank financing received by firms; *Family dummy* represents the family controlling shareholders and their characteristics; *Leverage* is indebtedness; *Growth* represents growth opportunities; *Size* measures firm size; *Collateral* is a proxy for collateral; *ROA* is the return on assets; *Z-Altman* measures a firm's financial distress; and *Age* is the age of the enterprise. The parameters  $I_s$  and  $\lambda_t$  are industry dummy variables and time variables, respectively; and  $\eta_i$  is the unobservable heterogeneity. Finally,  $\nu_{it}$  represents random disturbances.

To control for time-invariant, establishment-specific characteristics that may be correlated with omitted explanatory variables, we exploited the panel dimension of our sample and employed fixed-effect specifications including firm fixed effects, time effects and industry effects. The model was estimated using a panel data model with a fixed-effect estimator in two-stage least squares (2SLS). To control for potential endogeneity problems between bank debt and leverage, following Datta et al. (2005) and Brockman et al. (2010), we instrumented leverage using the following variables: family dummies; profitability, measured as earnings before interest, taxes, depreciation, and amortisation (EBITDA) to total assets; the natural logarithm of total assets; the fixed-assets ratio as net fixed assets to total assets; non-debt tax shields, measured as depreciation to fixed assets; and volatility, as a standard deviation of EBITDA over total assets.

### 3.3 | Variables

Our dependent variable (*BankDebt*) is calculated as the ratio of bank debt to total assets (De Andrés Alonso et al., 2005; Ghosh, 2007).

Concerning the *Family* variable, this research requires the controlling shareholder to be identified. For each firm in our sample, we determined the identity of the ultimate shareholder



to control the firm, following Claessens et al. (2000), Claessens et al. (2002), Faccio and Lang (2002), La Porta et al. (1999) and Lin et al. (2013). We mapped out the complete ownership chain for each sample firm, and a shareholder was defined as ‘controlling’ if he/she directly or indirectly held a percentage of voting rights equal to or above 25 percent, as Franks et al. (2012) and Minichilli et al. (2016) established for private firms. Using this threshold, we traced the ownership chain to determine the identity of the ultimate controlling shareholder. Based on the database, we classify a firm as ‘family’ if a family or an individual holds more than 25 percent of the voting rights. In contrast, a firm that is ultimately controlled at the 25 percent threshold by another type of shareholder is classified as ‘non-family’. Therefore, *Family* is a dummy variable equal to 1 when the controlling owner is a family or an individual. Moreover, different dummy variables were defined, which take the value of 1 if the firm is controlled by *State*, *Financial Institution*, or others (*Miscellaneous*), respectively, and 0 otherwise (Isakov & Weisskopf, 2014; Maury, 2006).

Previous studies have proposed that family reputation and family members' active involvement in management are relevant to corporate decision-making (Deephouse & Jaskiewicz, 2013; Isakov & Weisskopf, 2014; Maury, 2006). Therefore, we included those characteristics that may affect information asymmetry between the shareholder and bank lenders. We proxied *Family reputation* through a dummy variable equal to 1 if the firm's name is the name of the family that controls it (Anderson et al., 2003; Deephouse & Jaskiewicz, 2013). Furthermore, we subdivided family firms into those with controlling shareholder family members who are active as managers (*Family management*) and those whose owners are not active as managers (Deephouse & Jaskiewicz, 2013; Isakov & Weisskopf, 2014; Maury, 2006).

We also designed a data set collection process to classify family firms according to their generation. We made manual, in-depth reviews of ownership structures, board composition and the managerial teams of each family firm, drawing on various sources. First, we examined the information provided by the SABI database. Second, we compiled information from corporate websites and web searches about firm histories and family relationships to clarify different generational stages (Villagonga & Amit, 2006). The family firm's generational stage is defined by the generation controlling the firm. We used four dummy variables that take the value of 1 if the family firm is controlled by the first, second, third or later family generations, respectively. That is, the variable labelled *First-generation* is equal to 1 when the controlling shareholder is the founder. The other variables take a value of 1 if the ultimate controlling shareholder belongs to the second, third or later generations.

Finally, we controlled for several other factors that are known from the literature to have an influence on the intensity of firms' bank debt (e.g., D'Aurizio et al., 2015; De Andrés Alonso et al., 2005; Ghosh, 2007). We included the following variables: *Leverage*, defined as total debt over total assets; *Growth*, which proxies a firm's growth opportunities calculated as the annual rate of change in sales; *Size*, measured by the natural logarithm of total assets; *Collateral*, defined as tangible assets over total assets; return on asset (*ROA*), to proxy a firm's investment quality; the bankruptcy risk of a firm (*Z-Altman*), calculated using the Altman Z-score; and *Age*, measured by the logarithm of one plus the age of the firm in years. Moreover, we controlled for the firm's industry using dummy variables according to the Standard Industrial Classification of Economic Activities.

Detailed definitions of the variables are provided in the [Appendix 1](#).

### 3.4 | Descriptive statistics

[Table 1](#) provides the descriptive statistics of our data set, reporting means, standard deviations, and the 25th, 50th and 75th percentiles for the main variables used in the study. On

average, the bank debt over total asset ratio of the private Spanish firms included in the sample is 20.1 percent. This is consistent with previous studies of Spanish firms, which range from 20 percent for quoted companies (De Andrés Alonso et al., 2005) to 28.91 percent for small and medium-sized enterprises (SMEs) (García-Teruel et al., 2014).

In terms of firm ownership structure, 80.5 percent of private firms are classified as ‘family’. This is based on a 25 percent ownership threshold of an individual or family controlling shareholder. The rest of the companies, 8.1 percent, belong to non-family controlling owners (*State*, *Financial Institution* and *Miscellaneous*), and 11.4 percent are widely held. When we consider a threshold of 50 percent voting rights, the percentage of firms whose ultimate controlling shareholder is a family member decreases to 76.9 percent. When we focus on family firm classification and the relevance of family reputation is considered, the data show that the firms have the same name as the family controlling shareholder in about 22.2 percent of the cases (22 percent for a 50 percent stake), whereas the other 58.2 percent of family firms do not bear the name of the family controlling shareholder. According to our basic ownership categories of family firms, 70 percent of family owners are involved in the management of their companies (67.9 percent if we consider a threshold of 50 percent), and only about 10.3 percent of family firms do not have family members involved in the firm as managers. Regarding the generational stage of family firms, the data indicate that firms run by their founders (*First-generation*) represent about 35.5 percent of the sample firms, 33.7 percent are second-generation firms, and the remaining are controlled by third and subsequent family generations.

The data shown in [Table 1](#) also reveal that, on average, the firms in our sample have a size of €27.077 million and are 24.607 years old. The mean leverage of these firms is 55.5 percent, their mean value of collateral is 23.2 percent, and their Altman Z-score is 2.728. On average, the rate of sales growth is positive (2.8 percent), and the firms are profitable (ROA = 9.4 percent).

The correlation matrix in [Table 2](#) shows low levels of correlation among the variables used in this study. An analysis of the variance inflation factor (VIF) was conducted to test for multicollinearity. The VIF values are less than five in all the cases, indicating that our regression model specification is unlikely to suffer from the problem of collinearity. As expected, the correlation between family firm variables and bank debt is positive and significant.

## 4 | RESULTS

Here, we examine the role played by family control in accessing bank credit, considering not only characteristics inherent to family firms but also the effect of family generations on bank debt.

### 4.1 | Family firms and bank debt

As stated in the literature review, family firm characteristics may help to reduce agency conflicts with creditors, facilitating the former's access to bank credit. Thus, we would expect higher levels of bank debt in family businesses. [Table 3](#) shows the initial results for the impact of family control on bank debt levels. Column (1) shows a positive and significant coefficient at 1 percent for the variable *Family*, which reveals that private firms with a family as the ultimate controlling shareholder make more use of bank debt than their non-family counterparts. This is consistent with lower asymmetric information problems and agency costs of debt in family firms.

Next, in column (2), we separated the non-family controlling shareholder variable into three dummy variables representing the following groups: *State*, *Financial Institution* and

TABLE 1 Descriptive statistics

	Mean	SD	Min	p25	p50	p75	Max
<i>BankDebt</i>	0.201	0.191	0.000	0.024	0.157	0.331	0.952
<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 non-reputation</i>	0.582	0.493	0.000	0.000	1.000	1.000	1.000
<i>Family reputation [50]</i>	0.220	0.414	0.000	0.000	0.000	0.000	1.000
<i>Family non-reputation [50]</i>	0.549	0.498	0.000	0.000	1.000	1.000	1.000
<i>Family management</i>	0.700	0.458	0.000	0.000	1.000	1.000	1.000
<i>Family non-management</i>	0.105	0.306	0.000	0.000	0.000	0.000	1.000
<i>Family management [50]</i>	0.679	0.467	0.000	0.000	1.000	1.000	1.000
<i>Family non-management [50]</i>	0.103	0.303	0.000	0.000	0.000	0.000	1.000
<i>First-generation</i>	0.355	0.478	0.000	0.000	0.000	1.000	1.000
<i>Second-generation</i>	0.337	0.473	0.000	0.000	0.000	1.000	1.000
<i>Third-generation</i>	0.057	0.231	0.000	0.000	0.000	0.000	1.000
<i>Later-generation</i>	0.026	0.160	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>Widely held</i>	0.115	0.319	0.000	0.000	0.000	0.000	1.000
<i>Leverage</i>	0.555	0.218	0.048	0.388	0.572	0.730	0.998
<i>Growth</i>	0.028	0.197	-0.513	-0.082	0.021	0.122	0.996
<i>Size (€000)</i>	27,077	93,202	559	4,855	8,836	19,834	3,222,753
<i>Collateral</i>	0.232	0.192	0.001	0.072	0.187	0.350	0.855
<i>ROA</i>	0.094	0.104	-2.673	0.041	0.079	0.132	2.082
<i>Z-Altman</i>	2.728	1.275	0.299	1.802	2.539	3.474	7.437
<i>Age</i>	24.607	12.959	2.010	16.020	22.470	30.040	127.360

*Note:* This table provides the descriptive statistics of the study variables. *BankDebt* is the ratio of bank debt over total assets; *Family* (*Family [50]*) takes the value of 1 if a firm is ultimately controlled by a family or an individual at the 25% (at least 50%) threshold of the voting rights, zero otherwise; *Family reputation* (*Family reputation [50]*) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights and the controlling shareholder's name is included in the firm's name, zero otherwise; *Family non-reputation* (*Family non-reputation [50]*) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights but the controlling shareholder's name is not included in the firm's name and zero otherwise; *Family management* (*Family management [50]*) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights and the controlling shareholder is active as a manager and zero otherwise; *Family non-management* (*Family non-management [50]*) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights but the controlling shareholder is not active as a manager and zero otherwise; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation*, *Third-generation* and *Later-generation* take value of 1 if the second, third or later family generations are the ultimate shareholders of the family firm, respectively; *Widely held* takes the value of 1 for firms that do not have any controlling shareholder with voting rights exceeding 25%; *State*, *Financial Institution* and *Miscellaneous* take the value of 1 when the controlling shareholder is the State, a financial institution or others, respectively, and zero otherwise; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_1 - Sales_0)/Sales_0$ ; *Size* is the firm's total assets in millions of euros; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

*Miscellaneous.* The results show that firms controlled by families maintain higher levels of bank debt over assets than firms without a controlling shareholder (widely held firms are the benchmark variable in column (2)). The findings are the same as those in column (1). Moreover,

TABLE 2 Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. <i>Bank Debt</i>	1.000													
2. <i>Family</i>	0.118***	1.000												
3. <i>Family reputation</i>	0.019***	0.264***	1.000											
4. <i>Family management</i>	0.157***	0.753***	0.314***	1.000										
5. <i>First-generation</i>	0.046**	0.400**	0.025***	0.382***	1.000									
6. <i>Second-generation</i>	0.054***	0.384***	0.177***	0.282***	-0.528***	1.000								
7. <i>Third-generation</i>	0.032***	0.132***	0.082***	0.117***	-0.182***	-0.175***	1.000							
8. <i>Later-generation</i>	-0.011**	0.089***	0.053***	-0.027***	-0.122***	-0.118***	-0.040***	1.000						
9. <i>Leverage</i>	0.526***	-0.051***	-0.057***	-0.050***	0.010*	-0.045***	-0.003	-0.031***	1.000					
10. <i>Growth</i>	-0.007	-0.019***	-0.014***	-0.022***	-0.002	-0.006	-0.009*	-0.005	0.150***	1.000				
11. <i>Size</i>	0.110***	-0.273***	-0.114***	-0.334***	-0.235***	-0.056***	0.047***	0.070***	0.055***	0.041***	1.000			
12. <i>Collateral</i>	0.280***	0.032***	0.011**	0.034***	-0.017***	0.030***	0.029***	0.032***	-0.028***	-0.016***	0.068***	1.000		
13. <i>ROA</i>	-0.135***	-0.014***	-0.035***	-0.027***	0.015***	-0.024***	-0.016***	0.014***	-0.149***	0.212***	-0.029***	0.074***	1.000	
14. <i>Z-Altman</i>	-0.508***	0.045***	0.034***	0.040***	0.047***	0.023***	-0.042***	-0.021***	-0.519***	0.019***	-0.280***	-0.242***	0.348***	1.000
15. <i>Age</i>	-0.023***	0.046***	0.064***	0.033***	-0.067***	0.067***	0.061***	0.059***	-0.178***	-0.120***	0.108***	0.004	-0.130***	0.011**

Note: This table presents the correlations among the study variables. *BankDebt* is the ratio of bank debt over total assets; *Family* takes the value of 1 if a firm is ultimately controlled by a family or an individual at the 25% threshold of the voting rights, zero otherwise; *Family reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder's name is included in the firm's name, zero otherwise; *Family management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder is active as a manager and zero otherwise; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation*, *Third-generation* and *Later-generation* take the value of 1 if the second, third or later family generations are the ultimate shareholders of the family firm, respectively; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio (Sales<sub>1</sub> - Sales<sub>0</sub>)/Sales<sub>0</sub>; *Size* is the log of a firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

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

TABLE 3 Bank debt and family firms

	(1)	(2)	(3)
<i>Family</i>	0.0083*** (13.55)	0.0102*** (14.33)	
<i>Family [50]</i>			0.0074*** (13.11)
<i>State</i>		0.0126*** (9.48)	
<i>Financial Institution</i>		-0.0002 (-0.15)	
<i>Miscellaneous</i>		0.0051*** (2.97)	
<i>Leverage</i>	1.1327*** (19.11)	1.1231*** (19.10)	1.1238*** (19.11)
<i>Growth</i>	-0.1097*** (-18.27)	-0.1082*** (-18.20)	-0.1088*** (-18.26)
<i>Size</i>	0.0403*** (16.50)	0.0401*** (16.50)	0.0406*** (16.69)
<i>Collateral</i>	0.1548*** (21.47)	0.1536*** (21.44)	0.1550*** (21.56)
<i>ROA</i>	-0.1708*** (-10.28)	-0.1709*** (-10.33)	-0.1698*** (-10.27)
<i>Z-Altman</i>	0.0589*** (9.77)	0.0574*** (9.62)	0.0580*** (9.70)
<i>Age</i>	0.0367*** (4.20)	0.0373*** (4.29)	0.0364*** (4.18)
Intercept	-1.1473*** (-18.45)	-1.1412*** (-18.47)	-1.1397*** (-18.44)
Firm fixed effects	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
<i>R-squared</i>	0.2512	0.2519	0.2519
Observations	36,373	36,373	36,373

Note: This table presents the panel fixed-effects models estimated to analyse the influence of family firms on bank debt. *Bank Debt* is the ratio of bank debt over total assets; *Family (Family [50])* takes the value of 1 if a firm is ultimately controlled by a family or an individual at the 25% (at least 50%) threshold of the voting rights, zero otherwise; *State*, *Financial Institution* and *Miscellaneous* take value of 1 when the controlling shareholder is the State, a financial institution or others, respectively, and zero otherwise; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_1 - Sales_0)/Sales_0$ ; *Size* is the log of a firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

*t*-Statistics in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

the results of the model in Table 3, column (2) show that only firms with the State as the ultimate controlling shareholder have slightly higher levels of bank debt than family firms.

Following previous studies, we have established a stake of 25 percent to define controlling shareholders in private firms. However, some studies also trace the ownership chain using a threshold of at least 50 percent (Ang et al., 2000; Souder et al., 2017; Steijvers et al., 2010). Thus,

in column (3), the dummy variable *Family [50]* restricts the definition of family firm to those companies in which the ultimate controlling shareholder has a stake of at least 50 percent. The results are consistent with the previous findings; banks provide more credit to firms controlled by family shareholders. These estimations show that the results do not depend on the definition of family firm used.

The results for the control variables in Table 3 are consistent with the prior literature (De Andrés Alonso et al., 2005; García-Teruel et al., 2014). Thus, firm size is significant and positively related to levels of bank debt, which implies that larger firms receive more financing from banks. We also find that the coefficients for leverage, collateral, and the Altman Z-score are positive and significant in all the regressions. These outcomes indicate that firms with high levels of debt, fewer information asymmetries and more collateral and solvency use more bank credit. In contrast, growth opportunities and firm profitability have a negative and significant impact on bank debt, indicating that firms that generate internal financing resort less to bank debt.

## 4.2 | Types of family firms and bank debt

In this section, we define the measures of family firms depending on whether the family controlling shareholder is actively involved in the firm's management or the firm bears the family name. Family firms concerned about their reputation could be worried about endangering their socioemotional goals. Therefore, we expect this type of family firm to use more bank debt than other firms without these concerns.

In Table 4, column (1), we included a dummy variable that represents firms with the same name as the family controlling shareholder (*Family reputation*) and another variable that represents firms controlled by a family but not bearing the family name (*Family non-reputation*). Two aspects are worth emphasising. First, the estimated coefficients are positive and highly significant, meaning that all family firms (with and without reputation) have higher levels of bank debt than non-family firms. Second, we can see that the coefficient of *Family reputation* is higher than *Family non-reputation* ( $\beta = 0.0094$  versus  $\beta = 0.0077$ ). Thus, concerns about reputation seem to align family firms with their bank's position, reducing agency costs of debt (Anderson et al., 2003; Yen et al., 2015).

Similar to Table 3 (column (2)), in Table 4, we controlled for other types of majority shareholders (*State*, *Financial Institution* and *Miscellaneous*) that may impact a firm's capacity to obtain bank debt. As in Table 3, column (2), the coefficients of the variables *Family reputation* and *Family non-reputation* remain positive and statistically significant at the 1 percent level. We also wanted to know if the results are affected by the definition of family reputation. Thus, we re-estimated the model considering firms with the same name as the family controlling shareholder (*Family reputation [50]*) at a threshold of 50 percent voting rights. The results obtained with a narrower definition of family firms are the same as those previously discussed (columns (1) and (2) in Table 4). Family firms use more bank debt than non-family firms, and family firms concerned with their reputation have better access to bank debt.

The presence of family members managing firms may also help to reduce asymmetric information problems. Hence, we built a dummy variable equal to 1 if the family controlling owner holds at least 25 percent of the voting rights and is active as manager (*Family management*). We also included another dummy variable (*Family non-management*) representing the family firms whose owners are not active as managers. The results also show a positive and significant coefficient for the variable *Family management* (Table 4, column (4)) and support the importance of family member involvement in firm management when accessing bank debt. Thus, family firms demonstrate more conservative behaviour due to their greater aversion to risk and longer investment horizon (Andres, 2008; Caprio et al., 2011). These factors could reduce asymmetric

**TABLE 4** Family type and bank debt

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Family reputation</i>	0.0094*** (13.53)	0.0112*** (14.36)				
<i>Family non-reputation</i>	0.0077*** (12.47)	0.0095*** (13.36)				
<i>Family reputation [50]</i>			0.0085*** (13.03)			
<i>Family non-reputation [50]</i>			0.0068*** (11.89)			
<i>Family management</i>				0.0059*** (12.41)	0.0061*** (12.18)	
<i>Family non-management</i>				0.0004	0.0007	
<i>Family management [50]</i>				(0.71)	(1.15)	0.0052*** (11.54)
<i>Family non-management [50]</i>						-0.0001 (-0.22)
<i>State</i>		0.0124*** (9.34)			0.0084*** (6.68)	
<i>Financial Institution</i>		-0.0003 (-0.29)			-0.0044*** (-3.76)	
<i>Miscellaneous</i>		0.0050*** (2.89)			0.0009 (0.55)	
<i>Leverage</i>	1.1252*** (19.08)	1.1152*** (19.06)	1.1171*** (19.08)	1.1322*** (19.18)	1.1215*** (19.17)	1.1272*** (19.19)
<i>Growth</i>	-0.1091***	-0.1076***	-0.1083***	-0.1095***	-0.1081***	-0.1090***

(Continues)

TABLE 4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Size</i>	(-18.25) 0.0403*** (16.54)	(-18.17) 0.0401*** (16.56)	(-18.24) 0.0405*** (16.72)	(-18.31) 0.0398*** (16.27)	(-18.25) 0.0398*** (16.35)	(-18.30) 0.0400*** (16.37)
<i>Collateral</i>	0.1547*** (21.53)	0.1535*** (21.50)	0.1550*** (21.61)	0.1552*** (21.53)	0.1542*** (21.53)	0.1555*** (21.59)
<i>ROA</i>	-0.1690*** (-10.21)	-0.1691*** (-10.26)	-0.1681*** (-10.2)	-0.1713*** (-10.33)	-0.1704*** (-10.34)	-0.1710*** (-10.34)
<i>Z-Altman</i>	0.0581*** (9.68)	0.0566*** (9.53)	0.0573*** (9.62)	0.0588*** (9.80)	0.0574*** (9.66)	0.0583*** (9.77)
<i>Age</i>	0.0385*** (4.41)	0.0392*** (4.50)	0.0381*** (4.37)	0.0347*** (4.00)	0.0345*** (4.00)	0.0341*** (3.94)
Intercept	-1.1458*** (-18.48)	-1.1396*** (-18.50)	-1.1383*** (-18.46)	-1.1320*** (-18.42)	-1.1212*** (-18.41)	-1.1263*** (-18.41)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
<i>R</i> -squared	0.2524	0.2532	0.2531	0.2514	0.2521	0.2507
Observations	36,373	36,373	36,373	36,373	36,373	36,373

Note: This table shows the panel fixed-effects models estimated for the influence of different types of family firms on bank debt. *Bank Debt* is the ratio of bank debt over total assets; *Family reputation* (*Family reputation* / 50) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights and the controlling shareholder's name is included in the firm's name, zero otherwise; *Family non-reputation* (*Family non-reputation* / 50) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights but the controlling shareholder's name is not included in the firm's name and zero otherwise; *Family management* (*Family management* / 50) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights and the controlling shareholder is active as a manager and zero otherwise; *Family non-management* (*Family non-management* / 50) takes the value of 1 if a firm is ultimately controlled by a family at the 25% (at least 50%) threshold of the voting rights but the controlling shareholder is not active as a manager and zero otherwise; *State*, *Financial Institution* and *Miscellaneous* take the value of 1 when the controlling shareholder is the State, a financial institution or others, respectively, and zero otherwise; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio ( $\text{Sales}_t - \text{Sales}_{t-1} / \text{Sales}_{t-1}$ ) of sales growth; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established. *t*-Statistics in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.



information problems between firms and their bank lenders. As in previous models, Table 4, columns (5) and (6) complement the evidence on the relevance of family involvement when obtaining bank debt. First, in column (5), we controlled using another type of ultimate shareholder (*State*, *Financial Institution* and *Miscellaneous*). Second, in column (6), we re-estimated the model considering the involvement of family members in management for a stake of at least 50 percent of the voting rights. The results are the same as those previously discussed (column (4)). Family firms use more bank debt than non-family firms, particularly when members of the family controlling shareholder are involved in the firm.

### 4.3 | Family generations and bank debt

We now provide further insight into our main research question by examining the relationship between family generational stages and the level of bank debt received by firms influenced by changes over generations. Thus, Table 5, column (1) presents the results of the model estimation, including the dummy variables of different family generations. As we can see, the coefficients for the first, second and third generations are positive and statistically significant at 1 percent, which indicates that family firms use more bank credit than non-family firms, regardless of which generation is in control of the business. However, the coefficients of these variables also reveal that firms controlled by their founder acquire more bank debt than family firms in their second or third generations. As in previous analyses, we considered controlling shareholders in non-family firms, particularly *State*, *Financial Institution* and *Miscellaneous*. Table 5, column (2) shows that the estimated coefficients for family firm generation remain positive and significant. Evidence suggests that, regardless of the generation, family firms maintain higher levels of bank debt over assets than firms without a controlling shareholder (widely held firms are the benchmark variable in column (2)). Furthermore, the coefficients of these variables reveal that firms owned by their founder obtain more bank debt than family firms in second or third generations and firms without a controlling shareholder.

## 5 | THE EFFECT OF A CREDIT SUPPLY SHOCK ON THE ACCESS TO BANK DEBT

As the use of bank credit is determined by supply issues, it is especially interesting to study the context of the 2008 financial crisis. According to D'Aurizio et al. (2015) and Fernández et al. (2018), the financial crisis of 2008 and the subsequent economic downturn shocked the financial system and led to a sharp decrease in bank credit supply. Higher levels of asymmetric information and risk in private firms meant that credit rationing was more intense during the crisis. Furthermore, private Spanish firms rely almost exclusively on bank credit, meaning that they experienced significant constraints on their access to credit during the crisis (Bentolilla et al., 2014).

In this context, the characteristics of family firms cited above (undiversified investments in their firm, long-term investment horizon and family reputation) could reduce their incentives to engage in bank default by diverting resources or shifting risk, especially in periods of financial crisis. In fact, previous studies suggest that family firm incentive structures are related to lower agency conflict between borrowers and lenders. D'Aurizio et al. (2015) showed that the reduction in bank credit experienced by firms following the financial crisis of 2008 was less severe for Italian family firms. Similarly, Crespí and Martín-Oliver (2015) found that the reduced credit supply during the economic crisis in Spain affected the capital structure of family firms less harshly. Stacchini and Degasperri (2015) and Yen et al., (2015) also found that Italian and Taiwanese family firms faced lower debt costs during the financial crisis.

TABLE 5 Family generations and bank debt

	(1)	(2)
<i>First-generation</i>	0.0111*** (14.20)	0.0129*** (14.91)
<i>Second-generation</i>	0.0079*** (11.50)	0.0097*** (12.56)
<i>Third-generation</i>	0.0053*** (5.41)	0.0072*** (6.89)
<i>Later-generation</i>	0.0036*** (2.68)	0.0055*** (3.94)
<i>State</i>		0.0127*** (9.40)
<i>Financial Institution</i>		-0.0002 (-0.17)
<i>Miscellaneous</i>		0.0052*** (2.98)
<i>Leverage</i>	1.1698*** (18.50)	1.1595*** (18.50)
<i>Growth</i>	-0.1122*** (-18.03)	-0.1106*** (-17.97)
<i>Size</i>	0.0353*** (12.57)	0.0352*** (12.58)
<i>Collateral</i>	0.1559*** (20.45)	0.1546*** (20.42)
<i>ROA</i>	-0.1697*** (-9.75)	-0.1704*** (-9.83)
<i>Z-Altman</i>	0.0619*** (9.78)	0.0603*** (9.63)
<i>Age</i>	0.0312*** (3.23)	0.0318*** (3.31)
Intercept	-1.1213*** (-17.56)	-1.1142*** (-17.57)
Firm fixed effects	Yes	Yes
Time dummies	Yes	Yes
Industry dummies	Yes	Yes
R-squared	0.2365	0.2374
Observations	31,460	31,460

Note: This table presents the panel fixed-effects models estimated to consider the influence of family generations on bank debt. *BankDebt* is the ratio of bank debt over total assets; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation*, *Third-generation* and *Later-generation* take the value of 1 if the second, third or later family generations are the ultimate shareholders of the family firm, respectively; *State*, *Financial Institution* and *Miscellaneous* take the value of 1 when the controlling shareholder is the State, a financial institution or others, respectively, and zero otherwise; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_1 - Sales_0)/Sales_0$ ; *Size* is the log of a firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

t-Statistics in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Hence, family-controlled firms may face fewer credit restrictions than other types of firms during financial crises. Moreover, founders of family firms are more concerned with long-term survival and firm reputation than second and subsequent generations (Anderson et al., 2003; Yen et al., 2015), so credit restrictions may become tighter over the succession of generations managing the firm. This could increase the agency costs of debt due to the dark side of altruism (Lubatkin et al., 2005; Schulze et al., 2001).

In Table 6, we analysed whether the bank debt ratios of family firms remained higher than those of non-family firms during the financial crisis. To do that, we considered a dummy variable (*Crisis*) denoting the crisis period, which takes the value of 1 for the crisis years 2009–2013, and we re-estimated the baseline models, including the *Crisis* dummy and its interaction with the family variables. We expect more conservative family firms to have higher levels of bank debt than their non-family counterparts. In column (1), we analysed the role of family firms, while in columns (2) and (3), we considered the relevance of family characteristics (reputation and implication in management, respectively). Finally, in column (4), we re-estimated the model to study the effect of family generational stages. The results show a negative and significant coefficient for the *Crisis* variable in all the columns, indicating that the access to bank credit was reduced for all firms during the crisis period. However, access to bank debt is still higher for family firms than for non-family firms. Access is also higher for first-generation firms than for second and subsequent generations. For instance, in column (1) in Table 6, the coefficient for family firms during the financial crisis ( $Family + Crisis + Family \times Crisis$ ), is 0.0035 (0.0201 – 0.0072 – 0.0094) with a significant *F*-test under the following null hypothesis:  $Family\ variable + Crisis + Family\ variable \times Crisis = 0$ . While in the case of non-family firms, the coefficient during the crisis ( $Family + Crisis + Family \times Crisis$ ) is –0.0072 (0 – 0.0072 – 0). These figures mean that the crisis reduced bank debt levels but that levels were still higher for family firms than for non-family firms. Therefore, family firms seem to face fewer credit restrictions during periods of crisis than non-family firms. The results also show the relevance of family reputation (column (2)) and the involvement of family members in the firm (column (3)), even during a crisis period as these types of family firms obtain more bank debt than other family firms. Column (4), focused on family firm generations, shows that firms at the founder and close descendant stage have higher levels of bank debt. The evidence suggests that firms owned by their founder obtain more bank debt than those in their second or third generations.

## 6 | ROBUSTNESS TESTS

### 6.1 | Alternative measures of variables and methodologies

We conducted several additional robustness tests of the main specification to corroborate that the results were consistent for different variable definitions and estimation methods. Table 7 shows that the positive effect of family ownership on bank debt is robust to using alternative definitions for the bank debt ratio, such as total bank debt over total debt (Bedendo & Siming, 2018). In column (1), the results show that private firms with a family as the ultimate controlling shareholder use more bank debt than their non-family counterparts. This means that family firms bearing the family name (column (2)) or with family members involved in management (column (3)) have greater bank leverage than non-family firms. The results of these models also show that family firms concerned with their reputation have higher levels of bank debt than family firms not named after the controlling family (column (2)). Similarly, families whose members are involved in the control of their firms acquire more bank debt than other family firms (column (3)). Finally,

**TABLE 6** Crisis in the relationship between family firms and bank debt

	(1)	(2)	(3)	(4)
<i>Family</i>	0.0201*** (8.60)			
<i>Family reputation</i>		0.0237*** (8.59)		
<i>Family non-reputation</i>		0.0172*** (7.29)		
<i>Family management</i>			0.0023** (2.21)	
<i>Family non-management</i>			-0.0008 (-0.53)	
<i>First-generation</i>				0.0156*** (9.24)
<i>Second-generation</i>				0.0087*** (5.19)
<i>Third-generation</i>				0.0061** (2.17)
<i>Later-generation</i>				0.0098** (2.43)
<i>Crisis</i>	-0.0072*** (-4.11)	-0.0073*** (-4.16)	-0.0029** (-1.73)	-0.0046*** (-3.92)
<i>Family*Crisis</i>	-0.0094*** (-2.89)			
<i>Family reputation*Crisis</i>		-0.0108*** (-2.82)		
<i>Family non-reputation*Crisis</i>		-0.0069** (-2.08)		
<i>Family management*Crisis</i>			0.0166*** (8.15)	
<i>Family non-management*Crisis</i>			0.0033 (1.19)	
<i>First-generation*Crisis</i>				-0.0068*** (-2.93)
<i>Second-generation*Crisis</i>				-0.0012 (-0.53)
<i>Third-generation*Crisis</i>				-0.0012 (-0.30)
<i>Later-generation*Crisis</i>				-0.0092 (-1.63)
<i>Leverage</i>	1.2786*** (13.43)	1.2607*** (13.32)	1.3139*** (13.59)	1.1663*** (18.43)

TABLE 6 (Continued)

	(1)	(2)	(3)	(4)
<i>Growth</i>	-0.1612*** (-16.72)	-0.1598*** (-16.67)	-0.1646*** (-16.85)	-0.1117*** (-17.94)
<i>Size</i>	0.0479*** (12.23)	0.0479*** (12.28)	0.0454*** (11.37)	0.0353*** (12.57)
<i>Collateral</i>	0.2522*** (21.78)	0.2520*** (21.86)	0.2526*** (21.75)	0.1553*** (20.37)
<i>ROA</i>	-0.1745*** (-6.55)	-0.1702*** (-6.42)	-0.1804*** (-6.70)	-0.1694*** (-9.74)
<i>Z-Altman</i>	0.0620*** (6.40)	0.0601*** (6.25)	0.0652*** (6.65)	0.0616*** (9.72)
<i>Age</i>	0.0636*** (4.54)	0.0679*** (4.86)	0.0652*** (4.61)	0.0310*** (3.21)
Intercept	-1.3198*** (-13.24)	-1.3147*** (-13.26)	-1.3008*** (-13.05)	-1.1214*** (-17.59)
Firm fixed effects	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
$F_1$ -test	3.51*	7.52***	104.26***	
$F_2$ -test				9.71***
$F_3$ -test				4.91**
$F_4$ -test				0.04
$F_5$ -test				2.64*
<i>R-squared</i>	0.0813	0.0833	0.0760	0.2378
Observations	36,373	36,373	36,373	31,460

Note: This table presents the panel fixed-effects models estimated to study the influence of the crisis on the relationship between family firms and bank debt. *BankDebt* is the ratio of bank debt over total assets; *Family* takes the value of 1 if a firm is ultimately controlled by a family or an individual at the 25% threshold of the voting rights, zero otherwise; *Family reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder's name is included in the firm's name, zero otherwise; *Family non-reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights but the controlling shareholder's name is not included in the firm's name and zero otherwise; *Family management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder is active as a manager and zero otherwise; *Family non-management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights but the controlling shareholder is not active as a manager and zero otherwise; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation*, *Third-generation* and *Later-generation* take the value of 1 if the second, third or later family generations are the ultimate shareholders of the family firm, respectively; *Crisis* takes the value of 1 if the year is 2009–2013; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_1 - Sales_0)/Sales_0$ ; *Size* is the log of a firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

$F_1$  is an *F*-test under the following null hypothesis: (Family variable + Crisis + Family variable × Crisis) = 0.

$F_2$  is an *F*-test under the following null hypothesis: (First generation variable + Crisis + First generation variable × Crisis) = 0.

$F_3$  is an *F*-test under the following null hypothesis: (Second generation variable + Crisis + Second generation variable × Crisis) = 0.

$F_4$  is an *F*-test under the following null hypothesis: (Third generation variable + Crisis + Third generation variable × Crisis) = 0.

$F_5$  is an *F*-test under the following null hypothesis: (Later generation variable + Crisis + Later generation variable × Crisis) = 0.

*t*-Statistics in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

the results presented in column (4) indicate that when the controlling shareholder is the founder or a member of the second or third generation, these firms use more financing from banks than non-family firms.

TABLE 7 Robustness 1. Change the dependent variable

	(1)	(2)	(3)	(4)
<i>Family</i>	0.0139*** (14.13)			
<i>Family reputation</i>		0.0166*** (14.82)		
<i>Family non-reputation</i>		0.0127*** (12.83)		
<i>Family management</i>			0.0096*** (12.61)	
<i>Family non-management</i>			0.0006 (0.60)	
<i>First-generation</i>				0.0164*** (14.15)
<i>Second-generation</i>				0.0124*** (12.07)
<i>Third-generation</i>				0.0078*** (5.18)
<i>Later-generation</i>				0.0072*** (3.46)
<i>Leverage</i>	1.2852*** (13.50)	1.2697*** (13.41)	1.2898*** (13.58)	1.1051*** (12.29)
<i>Growth</i>	-0.1621*** (-16.81)	-0.1609*** (-16.77)	-0.1622*** (-16.87)	-0.1445*** (-15.92)
<i>Size</i>	0.0478*** (12.19)	0.0477*** (12.21)	0.0470*** (11.94)	0.0453*** (10.78)
<i>Collateral</i>	0.2530*** (21.85)	0.2528*** (21.91)	0.2542*** (21.91)	0.2417*** (21.03)
<i>ROA</i>	-0.1752*** (-6.57)	-0.1713*** (-6.45)	-0.1777*** (-6.66)	-0.1249*** (-4.92)
<i>Z-Altman</i>	0.0626*** (6.47)	0.0610*** (6.33)	0.0631*** (6.54)	0.0447*** (4.93)
<i>Age</i>	0.0636*** (4.53)	0.0676*** (4.82)	0.0603*** (4.32)	0.0391*** (2.68)
Intercept	-1.3141*** (-13.15)	-1.3111*** (-13.17)	-1.2929*** (-13.08)	-1.0694*** (-11.47)
Firm fixed effects	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
R-squared	0.0731	0.0801	0.0770	0.0838
Observations	36,373	36,373	36,373	31,460

Note: This table presents the panel fixed-effects models estimated to analyse the effect of family firms on bank debt, where the dependent variable (*BankDebtII*) is defined by the ratio of bank debt over total debt. *Family* takes the value of 1 if a firm is ultimately controlled by a family or an individual at the 25% threshold of the voting rights, zero otherwise; *Family reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder's name is included in the firm's name, zero otherwise; *Family non-reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights but the controlling shareholder's name is not included in the firm's name and zero otherwise; *Family management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder is active as a manager and zero otherwise; *Family non-management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights but the controlling shareholder is not active as a manager and zero otherwise; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation*, *Third-generation* and *Later-generation* take the value of 1 if the second, third or later family generations are the ultimate shareholders of the family firm, respectively; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_t - Sales_0)/Sales_0$ ; *Size* is the log of firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

t-Statistics in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Additionally, to evaluate the sensitivity of our main results, we re-estimated Models 1–3 of Table 3 using alternative control variables. For example, in line with De Andrés Alonso et al. (2005), we measured the firm's size with the natural logarithm of sales. We found, in unreported regressions, that our main predictions relating to family firms remain unaffected. We also re-estimated the model using different *t*-methods of estimation. Our results (not reported) remain the same when we estimate using *t*-statistics robust to heteroskedasticity and within-firm serial correlation, following Petersen (2009). Following Lin et al. (2013), we also estimated the model with a Tobit regression because the dependent variable is a proportion and is thus constrained. The results of all the models are qualitatively similar.

Finally, although the incidence of age on the level of bank debt is considered in all the models as it is an explanatory variable, it is interesting to re-estimate the models for homogeneous age groups, especially when generations are considered. To address this, Table 8 shows the results obtained by dividing the sample of companies into two groups according to the mean: young and older. The results are also robust with previous findings when family generations are considered only for the young or older firms. Thus, the findings (columns (1) and (2)) show that firms at the founder and descendant stages have higher levels of bank debt than non-family firms. The evidence suggests that firms owned by their founder obtain more bank debt than those in their second or third generations, regardless of firm age.

## 6.2 | Inside family firms

Another concern is the sample used to analyse the use of bank debt among different types of family firms. The models were estimated for a sample composed of different types of private firms. Although the regression results presented in Tables 4–8 comparing bank debt ratios for different types of family firms are robust, we wanted to be sure that our results were not determined by the sample. In Table 9, we restricted the sample to family firms to provide more evidence about bank leverage inside family firms. The findings again show that firms bearing the name of the family controlling shareholder use more bank debt than other family firms (column (1)), demonstrating the importance of family reputation. The results in column (2) reveal that family firms where family members are also actively involved in the firm as managers have higher levels of bank debt than other family firms. Finally, the model in column (3) was estimated to compare family firms in their first and second generations with those in third and subsequent ones. The results of this model are consistent with previous findings; family firms controlled by their founders have higher levels of bank debt than those in their second, third and later generations.

## 6.3 | Propensity score matching and matched sample analysis

The findings discussed in the previous sections remained robust for a large sample of private firms and also for a more limited one. Thus, their implications can be extrapolated to other contexts. However, family firms might differ from non-family firms in several respects, and these variations might affect the differences in the use of bank debt. To address this concern, we compared a subsample of family firms with another subsample of non-family firms with similar characteristics. We examined the robustness of the positive relationship between family firms and bank leverage by analysing two equal subsamples, with the main difference being the identity of the controlling shareholder.

First, to mitigate this concern, we applied a propensity score matching analysis to compare the bank debt ratios of family firms to those of similar non-family firms. We created a matched sample by matching family and non-family firms using the propensity score methodology. To

**TABLE 8** Robustness 2. Family generations and bank debt in young and older firms

	Young	Older
<i>First-generation</i>	0.0067*** (7.10)	0.0077*** (8.49)
<i>Second-generation</i>	0.0036*** (4.11)	0.0048*** (6.29)
<i>Third-generation</i>	0.0042** (2.49)	0.0026** (2.27)
<i>Leverage</i>	1.1021*** (13.32)	1.1169*** (12.20)
<i>Growth</i>	-0.1087*** (-13.22)	-0.0987*** (-11.35)
<i>Size</i>	0.0474*** (13.62)	0.0282*** (7.36)
<i>Collateral</i>	0.1611*** (15.48)	0.1312*** (13.01)
<i>ROA</i>	-0.1615*** (-7.05)	-0.1667*** (-6.54)
<i>Z-Altman</i>	0.0569*** (6.77)	0.0582*** (6.25)
<i>Age</i>	-0.0041 (-0.31)	0.1534*** (3.45)
Intercept	-1.0893*** (-13.28)	-1.3963*** (-7.51)
Firm fixed effects	Yes	Yes
Time dummies	Yes	Yes
Industry dummies	Yes	Yes
R-squared	0.2103	0.2730
Observations	17,809	18,564

*Note:* This table presents the panel fixed-effects models to analyse the effect of family generation on bank debt when young and older firms are considered. *Bank Debt* is the ratio of bank debt over total assets; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation* and *Third-generation* take the value of 1 if the second or third family generations are the ultimate shareholders of the family firm, respectively; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_t - Sales_0)/Sales_0$ ; *Size* is the log of a firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

*t*-Statistics in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

make the match, we estimated propensity scores using all the variables included in our baseline model as control characteristics. We then applied six matching estimators to obtain the matched firms as selecting these firms requires decisions about closeness-of-match and the total sample size of the control firms selected (Chang & Shim, 2015; Focke et al., 2017; Lins et al., 2013; Subrahmanyam et al., 2017). Lower tolerance for the maximum propensity score distance (calliper) lessens the risk of bad matches. The estimators used were: (1) the standard one-to-one nearest-neighbour estimator based on the propensity score; (2) the nearest neighbour without resampling or distance restrictions; (3) the four-to-one nearest neighbour; (4) replacement using all matching firms within the predefined propensity score distance (calliper)  $\delta = 0.0001$ ; (5) replacement using all matching firms within the calliper  $\delta = 0.001$ ; and (6) considering all potential



**TABLE 9** Robustness 3. Inside the family firms and bank debt

	(1)	(2)	(3)
<i>Family reputation</i>	0.0017*** (3.95)		
<i>Family management</i>		0.0050*** (9.65)	
<i>First-generation</i>			0.0054*** (7.00)
<i>Second-generation</i>			0.0028*** (3.81)
<i>Leverage</i>	1.0257*** (18.17)	1.0394*** (18.38)	1.0488*** (17.74)
<i>Growth</i>	-0.0988*** (-16.85)	-0.0995*** (-16.98)	-0.1002*** (-16.79)
<i>Size</i>	0.0379*** (13.50)	0.0366*** (12.88)	0.0315*** (9.27)
<i>Collateral</i>	0.1566*** (21.16)	0.1549*** (21.00)	0.1570*** (20.21)
<i>ROA</i>	-0.1466*** (-8.91)	-0.1492*** (-9.07)	-0.1433*** (-8.39)
<i>Z-Altman</i>	0.0415*** (7.41)	0.0427*** (7.62)	0.0417*** (7.31)
<i>Age</i>	0.0480*** (5.04)	0.0482*** (5.04)	0.0422*** (3.92)
Intercept	-1.0266*** (-17.59)	-1.0341*** (-17.68)	-0.9755*** (-16.62)
Firm fixed effects	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
R-squared	0.3238	0.3287	0.3172
Observations	29,662	29,662	24,749

*Note:* This table presents the panel fixed-effects models estimated to compare different types of family firms. The models are estimated restricting the sample only to family firms. *BankDebt* is the ratio of bank debt over total assets; *Family reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder's name is included in the firm's name, zero otherwise; *Family management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder is active as a manager and zero otherwise; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation* takes the value of 1 if the second family generations are the ultimate shareholders of the family firm; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_1 - Sales_0)/Sales_0$ ; *Size* is the log of a firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established.

*t*-Statistics in parentheses. \*, \*\*, \*\*\*Indicate statistical significance at the 10%, 5% and 1% levels, respectively.

matches but using Kernel weighting. It is important to assess how well the propensity score matching procedure creates comparable samples between family and non-family firms. We performed balancing tests to ensure that the firms in both groups were not statistically different. The sample mean of the characteristic variables used for matched family and non-family businesses does not present statistically significant differences (results are available upon request).

TABLE 10 Robustness 4. Propensity score matching

Matching method	Control group	Treatment group	Difference	SE	<i>t</i>
Closest neighbour restricted					
<i>Family</i>	0.1473	0.2144	0.06703	0.0032	20.84
<i>Family reputation</i>	0.1374	0.2204	0.10829	0.0040	20.96
<i>Family management</i>	0.1449	0.2292	0.0844	0.0032	25.69
<i>First-generation</i>	0.1413	0.2162	0.0750	0.0037	20.35
Closest neighbour unrestricted					
<i>Family</i>	0.1361	0.2126	0.0764	0.0039	19.76
<i>Family reputation</i>	0.1307	0.2086	0.0778	0.0049	15.94
<i>Family management</i>	0.1363	0.2209	0.0846	0.0041	20.75
<i>First-generation</i>	0.1324	0.2140	0.0816	0.0045	18.07
Neighbour 1:4					
<i>Family</i>	0.1347	0.2126	0.0779	0.0033	23.36
<i>Family reputation</i>	0.1324	0.2086	0.0762	0.0043	17.79
<i>Family management</i>	0.1348	0.2209	0.0860	0.0035	24.24
<i>First-generation</i>	0.1354	0.2140	0.0786	0.0040	19.85
Calliper, $d = 0.001$					
<i>Family</i>	0.1347	0.2126	0.0779	0.0032	24.46
<i>Family reputation</i>	0.1329	0.2085	0.0757	0.0042	18.04
<i>Family management</i>	0.1344	0.2209	0.0864	0.0034	25.39
<i>First-generation</i>	0.1346	0.2139	0.0794	0.0038	20.65
Calliper, $d = 0.0001$					
<i>Family</i>	0.1352	0.2149	0.0798	0.0034	23.57
<i>Family reputation</i>	0.1324	0.2133	0.0809	0.0044	18.27
<i>Family management</i>	0.1345	0.2232	0.0887	0.0035	25.00
<i>First-generation</i>	0.1341	0.2191	0.0850	0.0040	21.03
Kernel					
<i>Family</i>	0.1445	0.2125	0.0679	0.0024	27.59
<i>Family reputation</i>	0.1413	0.2082	0.0669	0.0031	21.65
<i>Family management</i>	0.1422	0.2208	0.0786	0.0025	30.93
<i>First-generation</i>	0.1409	0.2134	0.0724	0.0028	25.22

*Note:* This table presents the propensity score matching analysis to compare the bank debt ratios of family and non-family firms. The covariables used to match the sample are all included in the baseline model. *Bank Debt* is the ratio of bank debt over total assets; *Family* are those firms where the ultimate controlling shareholder is a family or an individual at the 25% threshold of the voting rights; *Family reputation* are firms where the ultimate controlling shareholder is a family and the controlling shareholder's name is included in the firm's name; *Family management* are firms where the ultimate controlling shareholder is a family and the controlling shareholder is active as a manager; *First-generation* are family firms controlled by their founder.

Table 10 shows the bank debt ratio for family and non-family firm groups based on six matching estimators. Once the matched firms had been selected, we compared the bank debt ratio for family and non-family firms with each matched sample. The results in Table 10 reflect that, regardless of how the matched firms are chosen, family firms present significantly higher bank debt. Therefore, even when we matched family-controlled firms with equivalent non-family firms, family-controlled firms have a higher level of bank debt. These findings confirm

TABLE 11 Robustness 5. Family firms and bank debt. Matched firms

	(1)	(2)	(3)	(4)
<i>Family</i>	0.0050*** (5.19)			
<i>Family reputation</i>		0.0069*** (5.10)		
<i>Family non-reputation</i>		0.0042*** (4.28)		
<i>Family management</i>			0.0045*** (5.49)	
<i>Family non-management</i>			-0.0002 (-0.15)	
<i>First-generation</i>				0.0078*** (5.90)
<i>Second-generation</i>				0.0044*** (4.06)
<i>Third-generation</i>				-0.0015 (-0.74)
<i>Later-generation</i>				0.0040 (1.60)
<i>Leverage</i>	1.1526*** (10.28)	1.1544*** (10.31)	1.1494*** (10.31)	1.1234*** (10.20)
<i>Growth</i>	-0.1055*** (-9.71)	-0.1057*** (-9.72)	-0.1048*** (-9.72)	-0.1023*** (-9.58)
<i>Size</i>	0.0419*** (10.04)	0.0422*** (10.12)	0.0411*** (9.83)	0.0416*** (9.71)
<i>Collateral</i>	0.1238*** (9.20)	0.1244*** (9.23)	0.1233*** (9.17)	0.1185*** (8.67)
<i>ROA</i>	-0.1977*** (-6.59)	-0.1989*** (-6.62)	-0.1963*** (-6.58)	-0.1785*** (-6.29)
<i>Z-Altman</i>	0.0720*** (6.10)	0.0721*** (6.12)	0.0716*** (6.10)	0.0709*** (6.10)
<i>Age</i>	0.0212 (1.49)	0.0236* (1.65)	0.0215 (1.51)	-0.0010 (-0.06)
Intercept	-1.1611*** (-10.03)	-1.1726*** (-10.08)	-1.1503*** (-10.04)	-1.0797*** (-9.20)
Firm fixed effects	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
R-squared	0.1457	0.1458	0.1462	0.1373
Observations	11,195	11,195	11,195	10,136
Family/non-family firms	673/673	673/673	673/673	549/549

Note: This table presents the panel fixed-effects models estimated to study the effect of family firms on bank debt when a matched sample is considered. The matched sample is selected using all the variables included in the baseline models as control characteristics in the first year of the study. The propensity score-matching estimator applied was the standard one-to-one nearest-neighbour. *BankDebt* is the ratio of bank debt over total assets; *Family* takes the value of 1 if a firm is ultimately controlled by a family or an individual at the 25% threshold of the voting rights, zero otherwise; *Family reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder's name is included in the firm's name, zero otherwise; *Family non-reputation* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights but the controlling shareholder's name is not included in the firm's name and zero otherwise; *Family management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights and the controlling shareholder is active as a manager and zero otherwise; *Family non-management* takes the value of 1 if a firm is ultimately controlled by a family at the 25% threshold of the voting rights but the controlling shareholder is not active as a manager and zero otherwise; *First-generation* takes the value of 1 if a firm is controlled by its founder and zero otherwise; *Second-generation*, *Third-generation* and *Later-generation* take the value of 1 if the second, third or later family generations are the ultimate shareholders of the family firm, respectively; *Leverage* is the ratio of total debt over total assets; *Growth* is the ratio  $(Sales_t - Sales_0)/Sales_0$ ; *Size* is the log of a firm's total assets; *Collateral* is the ratio of tangible assets over total assets; *ROA* is the return on assets; *Z-Altman* is calculated using the Altman Z-score; *Age* is calculated as the difference between the sample year and the year the firm was established age. *t*-Statistics in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

the evidence presented in the previous tables and indicate that differences in firm characteristics are not the cause of increased access to bank debt by family firms.

We also re-estimated the effect of family firms on bank debt for the matched sample using the baseline specification that includes the full set of control variables. Our matched sample comprises 1,346 firms equally divided into family and non-family firms. We selected the matched sample using all the variables included in our baseline model as control characteristics in the first year of our study. The propensity score-matching estimator applied is the standard one-to-one nearest-neighbour. In [Table 11](#), columns (1)–(4) continue to show a significant decline in bank debt ratios for non-family firms compared to their family counterparts. The results presented in [Table 11](#) show that the positive effect of family ownership on bank debt is robust to a matched sample. Thus, the variations between family and non-family firms do not explain the observed differences in the use of bank debt. The results show that private firms with a family member as the ultimate controlling shareholder use more bank debt than firms with other types of controlling shareholders (column (1)). The results also show that family firms bearing the family name (column (2)) or with family members managing the firm (column (3)) have greater bank debt ratios. This evidence confirms that reputation concerns and involvement in firm management also play important roles in reducing agency costs of debt. Finally, family firms controlled by the founder obtain more bank debt than family firms where a member of the second or third generation is the controlling shareholder (column (4)).

## 7 | CONCLUSIONS

Information asymmetry and agency costs are key factors in determining the funds provided by banks to borrowers. A firm's ownership structure can mitigate or exacerbate these problems. Particularly, families as controlling shareholders have incentive structures that result in less asymmetric information and better reputation, which might explain why the main interests between shareholders and debt providers can be congruent. The founders of family firms are more concerned about long-term survival and firm reputation than second and subsequent generations, so credit availability can become scarce over firm generations. In this paper, we examine the effect of family control on the use of bank debt and whether this debt is higher for the first generation of family business owners than for their descendants. We test these effects using a panel of 4,041 private Spanish firms from 2004 to 2013.

Our findings show that bank debt levels are higher among private family-controlled firms than non-family firms. We find that these results remain the same even when we control for firm reputation and when family members are involved in management. These results support the idea that the incentive structures of family firms help to alleviate agency conflicts between shareholders and creditors. Moreover, our results support the idea that family firms in their first generation acquire higher levels of bank debt than those in second and subsequent generations. These results indicate that second and subsequent generations exacerbate agency costs of debt due to family dispersion throughout successive generations. We also find evidence that family firms had greater access to bank credit during the financial crisis.

As this research studies private Spanish firms established in a bank-based financial system, the results can be helpful for private firms and debtholders in countries with similar characteristics, such as most continental European countries.

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## DATA AVAILABILITY STATEMENT

Data subject to third party restrictions.

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## APPENDIX 1

Variable	Description
<i>BankDebt</i>	Ratio of bank debt over total assets.
<i>BankDebtII</i>	Ratio of bank debt over total debt.
<i>Family</i>	This variable takes a value of 1 if the controlling shareholder holding more than a 25% threshold of the voting rights is a family or an individual and zero otherwise.
<i>Family [50]</i>	This variable takes a value of 1 if the controlling shareholder holding at least a 50% threshold of the voting rights is a family or an individual and zero otherwise.



Variable	Description
<i>Family reputation</i>	This variable takes a value of 1 if the name of the family controlling shareholder, who holds more than 25% (at least 50% of the voting rights), is included in the firm's name and zero otherwise.
<i>Family non-reputation</i>	This variable takes a value of 1 if the controlling shareholder holds more than a 25% threshold of the voting rights is a family or an individual but the controlling shareholder's name is not included in the firm's name and zero otherwise.
<i>Family reputation [50]</i>	This variable takes a value of 1 if the name of the family controlling shareholder, who holds at least 50% of the voting rights, is included in the firm's name and zero otherwise.
<i>Family non-reputation [50]</i>	This variable takes a value of 1 if the controlling shareholder holding at least a 50% threshold of the voting rights is a family or an individual but the controlling shareholder's name is not included in the firm's name and zero otherwise.
<i>Family management</i>	This variable takes a value of 1 if the family controlling shareholder holding more than 25% is active as manager and zero otherwise.
<i>Family non-management</i>	This variable takes a value of 1 if the controlling shareholder holding more than a 25% threshold of the voting rights is a family or an individual but is not active as manager and zero otherwise.
<i>Family management [50]</i>	This variable takes a value of 1 if the family controlling shareholder holding at least 50% of the voting rights is active as manager and zero otherwise.
<i>Family non-management [50]</i>	This variable takes a value of 1 if the controlling shareholder holding at least a 50% threshold of the voting rights is a family or an individual but is not active as manager and zero otherwise.
<i>First-generation</i>	This variable takes a value of 1 if a firm is controlled by its founder and zero otherwise.
<i>Second-generation</i>	This variable takes a value of 1 if the ultimate controlling shareholder belongs to the second family firm generation and zero otherwise.
<i>Third-generation</i>	This variable takes a value of 1 if the ultimate controlling shareholder belongs to the third family firm generation and zero otherwise.
<i>Later-generation</i>	This variable takes a value of 1 if the ultimate controlling shareholder belongs to the fourth or later family firm generations and zero otherwise.
<i>CrisisDummy</i>	This variable takes a value of 1 for years 2009 to 2013 and zero otherwise.
<i>Widely held</i>	This variable takes a value of 1 for firms that do not have any controlling shareholder holding more than 25% of the voting rights and zero otherwise.
<i>State, Financial Institution and Miscellaneous</i>	These variables take a value of 1 if the firm is controlled by the State, a financial institution or others, respectively and 0 otherwise.
<i>Leverage</i>	Ratio of total debt over total assets.
<i>Growth</i>	$(Sales_1 - Sales_0)/Sales_0$
<i>Size</i>	Log of total assets.
<i>Collateral</i>	Tangible assets over total assets.
<i>ROA</i>	Return on assets.
<i>Z-Altman</i>	Altman & Hotchkiss (2006) Model for private firms.
<i>Age</i>	Log of one plus number or years since firm's establishment.
<i>Industry</i>	Eight dummies: agriculture; supply differentiated goods; standardised products; service activities; construction; retail; and wholesale.