Determinants of Capital Structure: Family Businesses versus Non-Family Firms

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Abstract:
The study applies a GMM technique to a panel data sample of 2,093 private Spanish companies, 1,434 of which are family firms to investigate whether or not the capital structure of family business differs from that of non-family firms. The results show that family firms are more indebted than non-family firms. Moreover, the factors that have an influence on capital structure have different impacts on family firms and non-family firms. Furthermore, our findings also reveal that the financial structure (leverage ratio) of family firms changes with the size of the business and the firm's life cycle, and that the variables that explain the financial behaviour of the family firms have different levels of importance, depending on the size of the business and the firm's life cycle.

1. Introduction

Most theoretical and empirical studies of capital structures focus on public corporations (Miguel and Pindado, 2001; Fama and French, 2002; Brav, 2009; Acedo and Ruiz, 2014). Only a limited number of studies on capital structure have been conducted on privately held firms (Brav, 2009) and far fewer studies on private family enterprises (López and Sánchez, 2007; Ampenberger et al., 2013). Thus, this paper focuses on capital structure of private family firms.

Private firms represent a large proportion of total companies in the Spanish economy. In the approximately 3,355,830 companies registered in Spain in 2010 there were only 140 listed companies. In Spain, private companies represent more than 80% of Gross Domestic Product (GDP) and about 82.2% of employment, according to Eurostat (Directorate-General of the European Commission). Family businesses are the main form of private enterprises in most developed market economies, and they have important weight in both national economies and the global economy (Romano et al., 2000). Family firms, given their ability to see both sides of a paradoxical problem, often have the ability to adapt rapidly and are very innovative (Ingram et al., 2016). These arguments have led some authors to define private family enterprises as the backbone of economic development (Vallejo, 2007) and as representing the potential for countries to remain leaders in the global innovation context (Bergfeld and Weber, 2011). It is estimated that in the European Union, there are 17 million private family firms, which generate 100 million jobs (Institute of Family Business, 2015). In other markets, such as the United States, private family firms make up 80% of the businesses and generate 50% of private employment (Chrisman et al., 2004). In Spain, it is estimated that 89% of the total

enterprises are private family firms. They contribute about 60–65% of its GDP and provide more than 80% of private employment (Jaskiewicz et al., 2005).

Surprisingly, and despite the importance of family businesses, the theories regarding capital structure have largely ignored the influence of the quality of the contractual structure of family businesses that combines economic relations and family ones what may cause the use of different financial sources and influence the financial structure of family businesses (Gallo et al., 2004; Croci et al., 2011).

Typical financial behaviour adopted by non-family businesses could not be followed by family businesses (López and Sánchez, 2007). The desire to maintain the control of the company over the course of generations constrains its financial resources and the capacity to obtain resources in general. Family managers usually base their financial decisions more on how these decisions may affect family control of the company than on a comprehensive assessment of complex financial issues (Croci et al., 2011). Furthermore, the literature on whether family firms use more or less debt than non-family businesses and whether or not the factors that could influence capital structure have a different impact on family and non-family firms is inconclusive (Ampenberger et al., 2013).

Most previous studies have recognised that companies act differently depending on their size, and that there are many causes (age, asymmetric information, growth opportunities, debt cost, liquidity, etc.) that lead them to display different financial behaviours (Scherr and Hulburt, 2001; Ramalho and da Silva, 2009). However, we are not aware of any studies that have explored the importance of each of these factors in the particular case of small, medium or large family firms in Spain.

Some papers have also found evidence of changes in the financial structure of family firms during the firm's life cycle (Blanco-Mazagatos et al., 2007; Molly et al., 2010; La Rocca et al., 2011). The decreased willingness of descendants to take risks and the divergence of interests between family members due to the dispersion of equity ownership in older family firms could lead to a change in the pecking order of the financial sources used by the family business along its life cycle (Schulze et al., 2003).

Some studies also show that the different institutional frameworks of countries can affect companies' capital structures (Rajan and Zingales, 1995; Ampenberger et al., 2013). Many studies on financial structure have focused on companies that obtain their revenues in financial systems based on the Anglo-Saxon system (market-oriented system). The characteristic features of the bank-oriented or non-Anglo-Saxon economies (such as Spain) differ considerably from the market-oriented Anglo-Saxon countries. In particular, the majority of Spanish firms use bank financing instead of capital markets when in search for financing. This means that the degree of information asymmetry between the banks and firms is much lower, also taking into account that banking groups are usually among their shareholders. Furthermore, Spanish firms have a more concentrated ownership structure, with less separation between property and control, making it easier for majority shareholders to monitor managerial performance, and thereby reduce agency costs, whereas Anglo-Saxon firms tend to have less concentrated ownership structures.

Taking into account the particular characteristics of the Spanish financial market, the conflicting results regarding the level of debt of family vs. non-family

businesses, and the specific research gap on the financial structure of family businesses, depending on the size of the family firm or the stage in the firm's life cycle, the main objectives of this paper are: a) to explore whether the capital structure (leverage ratio) of family businesses differs from that of non-family firms. According to the previous literature (López and Sánchez, 2007; Ampenberger et al., 2013), we define a family business as one that has three main features: maintenance of management/ownership by a family and the desire for the generational transfer of the company within the family; b) to show that the factors that have an influence on capital structure have a different impact in family firms and non-family firms; and c) to evaluate the influence of the size and life cycle of the family business on its capital structure.

This study seeks to take an important step toward an overall understanding of the financial behaviour of private family firms. More specifically, our work focuses on the study of the major determinants of the financial structure of the private Spanish family businesses. This is relevant *per se*, since, on the one hand, as previous studies have shown (Hall et al., 2004, Acedo and Ruiz, 2014), the importance of different factors in determining the capital structure differs between countries, and on the other hand, because there are very few studies addressing the Spanish case (Mazagatos et al., 2007; López and Sánchez, 2007). Our paper extends the literature in several other dimensions.

First, we find noticeable differences in terms of capital structure levels and its determinants between private non-family companies and family firms. To safeguard family ownership, control and financial independence, family firms have higher debt level than non-family firms and often overlook growth opportunities. Furthermore, family firms have lower transaction costs to adjust the debt level to the optimal level.

Second, to our best knowledge, this paper is the first to analyse the capital structure decisions of family firms in a sample of small, medium and large private family businesses. Most previous studies have focused solely on businesses of a certain size (López and Sánchez, 2007) or do not distinguish between small, medium and large companies (Ampenberger et al, 2013), ignoring the fact that different factors can influence capital structure differently, depending on the size of the business. We find a direct relationship between the size of private family firms and their debt level as a consequence of the higher asymmetric information and agency costs in large family firms. Furthermore, our results show that small family firms adjust their debt level to its optimum level more rapidly than medium and large family firms. We also find that the relationship between a firm's age and its debt level is stronger in the case of small family businesses.

Third, by focusing on the level of indebtedness of young and old family firms and the factors that explain it, we contribute toward extending our understanding of how the capital structure of family businesses changes throughout their life cycle. Our findings show that there is a reduction in the debt level of family firms between young and old family firms and that the variables that explain their financial behaviour have different levels of importance, depending on the life cycle of the family business.

The remainder of the article is structured as follows: section two summarises previous studies on capital structure. Section three describes the database and defines the variables used in the study. Sections four and five present the econometric

specification of the model and the empirical evidence. Sections six and seven present the main conclusions that can be drawn from the analysis and the practical implications, limitations and future lines of research.

2. Determinants of capital structure

Based on the arguments of the trade-off theory (Romano et al., 2000), the agency cost theory (Jensen and Meckling, 1976; Myers, 1977) and the pecking order theory (Myers and Majluf, 1984), we describe the main factors that may influence decisions about the financial structure. In each case, we briefly explain how it could influence the financial structure of the family business.

2.1. Debt level

Various studies have found that family businesses tend to have less debt (Gallo et al., 2004; López and Sánchez, 2007; Ampenberger et al., 2013). They argue that an increase in debt could lead to a loss of family control and personal wealth. Debt increases financial risk of bankruptcy, which is correlated with loss of control.

However, other papers have found that family firms are as likely to use debt as non-family firms (Anderson et al., 2003; Setia-Atmaja et al., 2009). Family firms are reluctant to accept capital from non-family members because this would imply sharing family control; they prefer family and firm internal financing (Romano et al., 2000). Family member´s reluctance to open up the firm's capital will increase debt levels; they tend to borrow more in order to maintain control (Matthews et al., 1994). Therefore, when internal funds have run out, family businesses may find the needed capital investment through debt (Hamilton and Fox, 1998). To this same conclusion, but through a different way, arrives the pecking order theory (Myers and Majluf, 1984). According to this theory the existence of informative asymmetry between the company and the market means that businesses prefer internally-generated funds for financing (with no information costs) to external financing. If internally generated funds are inadequate, debt financing will be used and, as a last resort, equities, which have the highest information costs. For Croci et al. (2011) the combination of the desire to maintain control and information asymmetries helps to explain the strong preference of debt over equity financing in family firms.

2.2. Previous debt level and transaction costs

The existence of target leverage and how quickly companies revert to it is a question that remains unanswered. Firms partially adjust their actual debt level to the target level depending on the significance of the transaction costs.

Owner-manager involvement in a family business should reduce transaction costs due to the overlap of business and family, giving it more opportunities to gain access to resources from the lenders. Furthermore, family firm balance sheets do not provide information regarding the personal collateral provided by the owners to obtain financing. However, due to the institutional characteristics of the Spanish financial system, which is a bank-oriented financial system in which bank loan contracts commonly include collateral requirement, personal guarantees provided by the owners of family businesses are very important. The high personal guarantees provided by the owners of family businesses reduce bank incentives to collect

information about family firms (with decreasing transaction costs). Moreover, in addition to personal guarantees provided by the owners of family businesses, in family firms there is another additional intangible guarantee much appreciated by banks: reputation of the owning family, and the fact that in many cases the company name is associated with the family name (Brick and Palia, 2007). Consequently, family-business interaction should contribute to the reduction of potential transaction costs in family businesses and make it easier to reach the optimal debt ratio (López and Sánchez, 2007).

2.3. Growth opportunities

One of the determinants of capital structure could be the existence of growth opportunities. The trade-off theory predicts that investment opportunities are generally associated with less leverage because they are associated with a lower free cash flow and less need for the disciplinary role of debt over manager behaviour (Jensen, 1986). Furthermore, growth opportunities generate more agency conflicts between stockholders and lenders (risk-shifting substitution) (López and Sánchez, 2007).

However, the pecking order theory predicts that rapidly growing firms are likely to have insufficient earnings to finance all of their growth internally and they will seek external financing. Growth is likely to put a strain on retained earnings and push the firm into borrowing (Michaelas et al., 1999; López and Sánchez, 2007).

In the particular case of family firms, the aim of guaranteeing family control of the company reduces its array of potential financial resources, which is one of the chief causes affecting the growth opportunities of family business (Romano et al., 2000). A family business´s owner-manager may prefer to pass up growth in order to avoid losing control of the business as this would create management difficulties for the next generation (Le Breton-Miller and Miller, 2006).

2.4. Debt cost

According to the pecking order theory managers have a preference for issuing debt when interest rates are low or when interest rates are expected to increase (Poutziouris et al., 2006; Barry et al., 2008). However, according to the trade-off theory, an increase in the interest rate makes the debt more attractive because of its greater potential for tax deduction (Taggart, 1985).

Previous research has suggested that family firms experience a lower cost of debt than non-family firms because lenders perceive lower conflict of interest with family firms due to their long-term orientation and undiversified portfolios (Anderson et al., 2003). These authors conclude that the family owner´s interest in maintaining control of the firm in the long term reduces agency problems with creditors and the cost of debt financing compared with non-family firms.

2.5. Age (life cycle)

The concept that firms evolve through a financial life cycle is well established in the literature. Firms rebalance their capital structure with their life cycle. Younger firms use relatively more debt than older firms (Robb, 2002). Leverage decrease with the age of the firm, as young firms are externally financed while mature ones mainly

use retained earnings. However, older firms not only face less bankruptcy problems but also, they are more established, with a greater reputation, credit history and have a greater tendency to choose safe investment projects (Frank and Goyal, 2009). Thus, they could have higher debt level.

Some papers have found evidence of changes in the financial structure of family firms throughout their life cycle (Molly et al., 2010). Le Breton-Miller and Miller (2006) addressed the importance of long-term relationships between family firms and banks, stating that such relationships could provide firms with the status of reliable debtors, and therefore, better financial conditions compared with younger family firms. However, old firms, which have certainly experienced intergenerational changes, are usually less willing to take risks, compared with young firms. Kaye and Hamilton (2004) argued that descendants have a stronger preference for wealth preservation over wealth creation, and thus, they try to avoid debt. Furthermore, the dispersion of equity ownership in old firms could lead to a divergence of interests between family members, some of whom may prefer to reduce debt because increased risk has a negative effect on the safety of their personal investments (Schulze et al., 2003).

2.6. Cash flow

Family businesses often suffer from problems linked to asymmetric information, which involve information costs when they seek new financing. In this sense, they seem to be affected by the problems typically contemplated in the pecking order theory (Poutziouris, 2001). Furthermore, in the particular case of family businesses, new equity together with new investors would entail the dilution of control, which is not desired. Thus, seeking to maintain control and foster long-term survival, family businesses will prefer, in the first place, the use of internal funds, then debt and finally capital increases (Poutziouris, 2001; Basly, 2007).

Nevertheless, the trade-off theory could also be applied to family businesses (Romano et al., 2000). This theory suggests a direct relationship between debt and cash flow. When firms are profitable, they should prefer debt in order to maintain their optimal capital structure and because they have greater needs to shield this cash flow from corporate tax. In addition, firm´s managers with free cash flow tend to invest in projects with a negative net present value (overinvestment problem). One possible solution to this problem is the issue of debt forcing the payment of interest (López and Sánchez, 2007).

2.7. Business size

The previous literature has shown that information asymmetry and agency problems are different depending on the size of the business. In general, small businesses do not have access to equity and public debt markets, and thus, tend to rely more on funding provided by banks, which are not always willing to lend all of the funds they need (Ramalo and Da Silva, 2009). Furthermore, according to the pecking order theory, large non-family firms present less asymmetric information problems, thus they will have lower debt levels (Frank and Goyal, 2009).

However, in the particular case of large family firms, asymmetric information and agency costs derived from the relationships among different family members

could increase. The family members´ objectives will disperse and the information asymmetries will increase. Moreover, in small family firms, ownership is normally concentrated in the nuclear family, with closed relationships that minimize information asymmetries between family members (Poza, 2007). Furthermore, the founder is usually the manager, concentrating all the power of the organization, which reduces agency problems (Dalton and Daily, 1992).

The previous arguments lead us to propose our three main hypotheses:

H1: To safeguard family ownership, control and financial independence, family firms have different debt levels than non-family firms.

H2: The factors that have an influence on capital structure have different impacts on family firms and non-family firms.

H3: The factors influencing capital structure have different effects, depending on the size and the life cycle of the family firm.

3. Database description and variable definition

Our database, which covered the period 2000-2008, was created using the individualised public information (balance sheets and income statements) that all Spanish companies must make public and submit to the Mercantile Registry. This information was obtained from the SABI (Sistema de Análisis de Balances Ibéricos) database which is managed by Grupo Informa S.A. and Bureau Van Dyck and purports to represent more than 95% of Spanish companies.

The sample under study includes Spanish companies in which the number of workers is equal to or greater than 10 and which have a minimum of 2 million euros in net revenues and total assets (that is, small, medium and large private family firms according to the parameters set by the European Commission's recommendation 2003/361/EC). We have excluded micro firms because they are usually firms composed of one individual, related to self-employment. Such firms often lack a high degree of formality in their organizational structure and management (Molly, Laveren and Deloff, 2010), and are created without an intention that they will be transmitted to future generations, which is one of the characteristics of family firms (Blanco-Mazagatos et al., 2009). In addition, because of their unique characteristics, we eliminated financial services companies as well as publicly traded companies. Therefore, we have constructed an unbalanced data panel comprising 2,395 companies for which information is available for at least six consecutive years between 2000 and 2008.

As the study aims to assess whether there is a differentiated financial behaviour between family firms and non-family firms, we segmented the 2,395 companies according to their nature (family or non-family business). A general agreement defines a family business as one that has three main features: maintenance of management/ownership by the family and the desire to generational transfer of the company in the family (López and Sánchez, 2007). In this study, given the difficulty of determining the intentions of generational transfer, a firm will be catalogued as a family firm if it meets two conditions: a) a substantial portion of the shares are held by the founder or family members, allowing them to exercise control over the firm. Like López and Sánchez (2007) and Steijvers et al., (2010), we established 50% as the minimum percentage of a firm's equity to be in the hands of the founder or

family members in order to consider that the family has control over the firm; b) the family participate actively in monitoring the enterprise. In accordance with the definition of the Expert Group on Family Business/European Commission and the most used in empirical studies, we consider that the participation of at least one family member in management positions (either on the Board of Directors or in management) means active participation in the monitoring of the business. To find compliance with these two conditions, we conducted an exhaustive review of shareholding structures (percentage of common stock) and composition (name and surnames of shareholders)[1] and also examined the composition of the board of directors and the composition of the management of each of the 2,395 selected companies in the database in search of family relationships between shareholders and managers or shareholders and directors. After performing the analysis and discarding all doubtful cases (302), the sample was divided into two subsamples.

The 1434 companies that simultaneously met the two conditions mentioned above were classified as family businesses (Mercadona, Osborne, Freixenet, Codorniu, Mango, González Byass, El Pozo, Catalana Occidente, Barpimo, Conservas Cidacos, Dinastía Vivanco, etc) and the remaining companies (659) were categorized as non-family firms (Puleva, Air Nostrum, Casa Tarradellas, Roig Ceramica, etc.) (Table 1).

Table 1 Structure of the sample depending on the nature of the business

Nature of Business	Number of companies	%
Family business	1,434	68.51%
Non-family business	659	31.49%
Total	2,093	100%

As a result, we obtained an unbalanced panel, whose structure by number of observations per company is shown in Table 2.

Table 2 Structure of the sample

Number of annual observations per company	Number of companies	Number of observations
6	667	4,002
7	514	3,598
8	638	5,104
9	274	2,466
Total	2,093	15,170

The variables used in the model explaining capital structure were:

Dependent variable: Debt ratio (D), measured as the ratio between the book value of debt and the book value of total assets (Molly et al., 2010): D_{it} = Total debt$_{it}$/Total assets$_{it}$

Independent variables:

Growth opportunities (GO), have been measured with different proxies. Wald (1999) use the average of sales growth. Rajan and Zingales (1995) use Tobin´s Q (market-to-book ratio of total assets) and Booth et al. (2001) use the market-to-book ratio of equity. We argue that sales growth rate is the past growth experience, while

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[1] The Spanish surname system, whereby women never take their husband's surnames and children take both surnames (their father's and their mother's) makes second degree relationships (uncles, aunts, first cousins, etc.) easier to identify.

the other two proxies are better measures for growth. But because none of our sample firms are listed on a stock exchange, we use the ratio between intangible assets and total assets (Michaelas et al. 1999). Intangible assets include research and development, trademarks, patents and copyrights, etc. $GO_{it} =$ intangible assets$_{it}/K_{it}$.

Debt cost (IN), is measured by the ratio of financial expenses to the total debts (Barry et al. 2008; Acedo et al. 2013).

Age (AG), is measured as the natural logarithm of the time elapsed between the creation date and the current year (Michaelas et al. 1999; Acedo et al. 2013). When we study the influence of the firm's life cycle we will divide the sample into two different groups (Blanco-Mazagatos et al., 2007), the group of younger firms (< 25 years old) and the group of older firms (> 25 years old).

Cash flow (CF), was the ratio of the addition of earnings before interest and taxes (EBIT) to non-cash deductions (depreciations and provisions) divided by total assets (Miguel and Pindado, 2001; Acedo et al., 2013): $CF_{it} = (EBIT_{it} + Depreciation_{it} + Provisions_{it})/K_{it}$.

Asymmetric information (AI) was measured by the amount of tangible assets and intangible assets. The existence of information asymmetry and agency costs in debt-to-equity ratios influences capital structure. The shareholder-bondholder disputes that have most often been studied in the literature include those related to the problems of so-called asset substitution (Jensen and Meckling, 1976) and underinvestment (Myers, 1977). The tangibles assets (Molly et al., 2010; Frank and Goyal, 2009) and intangibles assets (Michaelas et al. 1999) have been proposed as a means of determining the extent to which these problems explain the debt level. Investors can use a firm's assets as a measure of the level of asymmetric information in the firm (Miguel and Pindado, 2001). The presence of intangible assets reveals greater problems of asymmetric information than tangible assets. We constructed a dummy variable − AI_{it} – which took the value 1 when tangible assets were higher than intangible assets and consequently fewer problems of asymmetric information and 0 otherwise (Miguel and Pindado, 2001; Acedo et al., 2013). This variable was interacted with cash flow in order to determine the sensitivity of indebtedness to cash flow with varying degrees of asymmetric information (Miguel and Pindado, 2001; Acedo et al., 2013).

Size (S), in order to use a measure that facilitates comparison of results with other European Union countries, size was measured using the criteria of the European Union (recommendation of the Commission on 6 May 2003, 2003/361/EC), distinguishing between a medium-sized company (which is one where, with a number of employees not exceeding 250 and not less than 50, the turnover does not exceed EUR 50 million and the total volume of its assets does not exceed EUR 43 million) and a small business (which is one where, with a number of workers under 50 and over 10 employees, the turnover volume and total assets does not exceed EUR 10 million) (Acedo et al., 2013, La Rocca et al., 2011).

Non-debt tax shield (NDTS), measured as the difference between earnings before taxes multiplied by the tax rate and the taxes paid (Miguel and Pindado, 2001). Firms can use non-debt tax shields in order to pay fewer taxes. DeAngelo and Masulis (1980) affirm that companies with larger non-debt tax shields, *ceteris paribus*, are less indebted. These companies have less need to issue debt in order to take advantage of interest tax deductions because they already enjoy tax benefits.

Tangibility of assets (I), measured as the ratio of tangible assets to total assets (Molly et al., 2010; Acedo et al., 2013). Tangible assets have an impact on debt because, if a large fraction of a firm's assets are tangible assets, then the assets should serve as collateral, thus diminishing the lender's risk of suffering the agency costs deriving from debt (Frank and Goyal, 2009).

4. Econometric specification of the model

First, we will use the ANOVA in order to test whether or not the capital structures (debt level) of family businesses are different from those of non-family firms. Later, once the significance of a family business variable in explaining the level of debt had been established, we will segment the whole sample according to the nature of the company (family or non-family business). Therefore, according to the theoretical framework described above, the target debt level of a firm (D^*_{it}) may be explained by growth opportunities (GO_{it}), debt cost (IN_{it}), age (AG_{it}), non-debt tax shields ($NDTS_{it}$), investments (I_{it}) and cash flow (CF_{it}). The model obtained bearing in mind that we are working with panel data is:

$$D^*_{it} = \beta_1 + \beta_2 \times GO_{it} + \beta_3 \times IN_{it} + \beta_4 \times AG_{it} + \beta_5 \times NDTS_{it} + \beta_6 \times I_{it}$$
$$+ (\beta_7 + \beta_8 \times AI_{it}) \times CF_{it} \tag{1}$$

where the variable asymmetric information AI_{it} takes the value 1 for companies with fewer problems of asymmetric information and the value 0 otherwise.

The existence of transaction costs means that companies do not automatically adjust their levels of indebtedness to the target level, therefore:

$$D_{it} - D_{it-1} = \alpha \times \left(D^*_{it} - D_{it-1} \right), \ 0 < \alpha < 1 \tag{2}$$

where D_{it} and D_{it-1} are the actual debt levels in the current and previous period respectively, while α measures the adjustment speed. The transaction costs are inversely related to α and can be referred to as $1-\alpha$. If the adjustment speed is very high ($\alpha = 1$), the companies automatically adjust their indebtedness level to the targeted level of indebtedness: $D_{it} = D^*_{it}$. If, in contrast, the speed of adjustment is null ($\alpha = 0$), companies prefer to do nothing: $D_{it} = D_{it-1}$. When the speed of adjustment is at an intermediate level $0 < \alpha < 1$, companies adjust their level of indebtedness to the target debt level in a direct manner according to adjustment speed.

Equation 3 provides the current level of indebtedness:

$$D_{it} = \alpha \times D^*_{it} + (1-\alpha) \times D_{it-1} \tag{3}$$

By integrating Equations 1 and 3 we obtained:

$$D_{it} = \alpha \times \beta_1 + (1 - \alpha) \times D_{i,t-1} + \alpha \times \beta_2 \times GO_{it}$$
$$+ \alpha \times \beta_3 \times IN_{it} + \alpha \times \beta_4 \times AG_{it} + \alpha \times \beta_5 \times NDTS_{it} \quad (4)$$
$$+ \alpha \times \beta_6 \times I_{it} + \alpha \times (\beta_7 + \beta_8 \times AI_{it}) \times CF_{it} + d_t + \eta_i + \gamma_j + \tau_k + \varepsilon_{it}$$

where d_t is the time-specific or temporal effect (to control for the incidence of macroeconomic variables on capital structure), η_i is the firm-specific effect (to control for unobservable heterogeneity), γ_j is the industry effect, τ_k is the size effect (business size dummy variable created using the EU definition) and ε_{it} is a white noise or random disturbance.

Finally, we will analyse the statistically significant differences observed in the debt level of family businesses based on business size (small, medium and large) and age by firstly separating the sample by company size and age and subsequently through multiplicative models that attempts to capture these differences. These multiplicative models reflect the interaction of the SMALL/YOUNG dummy variable with each explanatory variable. The dummy variable SMALL/YOUNG takes a value of 1 for small/young firms and 0 otherwise, which interacts with the remaining explanatory variables. In this specification, the coefficients of the interaction terms indicate the differences in the respective explanatory variable in small/young firms with respect to the remaining firms (medium and large firms/older firms). On the other hand, the coefficients of the explanatory variables now show the influence they have on firm leverage for those firms that are not small/young.

The dynamic model with predetermined variables was estimated using a two-step *system*-GMM procedure (Arellano and Bond, 1991; Arellano and Bover, 1995; and Blundell and Bond, 1998) to avoid problems of unobservable heterogeneity and endogeneity. Unobservable heterogeneity refers to omitted variables that affect the outcome of interest and are correlated with the covariates. We have taken into account the unobservable heterogeneity through the individual effect of the companies η_i (such as family idiosyncrasy) which is assumed to be different for every company and constant over time[2].

It was also evident from the specification of the model that endogeneity problems could arise in the regressors due to the lack of strict exogeneity of explanatory variables. On the one hand, the dependent variable might also explain some of the right-side variables; that is, the right-hand side variables used could be determined simultaneously with the debt level. The previous literature has shown that several of the corporate financial dimensions, such as investments, could be explained by the debt level; growth opportunities are another clear example (Miguel and Pindado, 2001; Aybar et al., 2012; Acedo-Ramírez et al. 2014). On the other hand, endogeneity is always present, because with regard to capital structure, there is a delay between the taking of the decision to change the capital structure and its execution (Maestro and Pindado, 2005). Thus, we assume that, as far as the influence

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[2] This technique enables us to eliminate the potential biases in the resulting estimates due to the correlation between unobservable heterogeneity η_i and the explanatory variables included in the study.

of the remainder of the explanatory variables is concerned, there are problems of endogeneity (Miguel and Pindado, 2001; Aybar et al., 2012; Acedo-Ramírez et al. 2014).

The *system* GMM accounts for endogeneity by using instruments. More specifically, Arellano and Bover (1995) propose using two types of instruments: instruments in levels for equations in first differences and instruments in first differences for equations in levels. Furthermore, Blundell and Bond (1998) show that the *system* GMM estimates are more efficient by using additional moment conditions derived from the original equations in levels. Blundell and Bond (1998) also document that, once lagged first-differenced and lagged levels instruments are included in the instrument set, one could reduce the finite sample bias substantially by exploiting the additional moment conditions in this approach. As usual in the GMM literature (Miguel and Pindado, 2001; Aybar et al., 2012; Acedo-Ramírez et al. 2014), the paper uses all the right-hand-side variables in the model lagged from t-1 to t-4 as instruments for the equations in differences and one instrument for the equations in level as Blundell and Bond (1998) suggest, when deriving the system estimator used in the paper.

Moreover, a set of tests have been undertaken in our model to verify the degree of consistency and robustness of the results obtained. More specifically, Hansen´s test of over-identifying restrictions, tests of absence of both first and second order autocorrelation of residuals, and Wald´s test of joint significance of the regressors and the dummies have been carried out. The model was estimated using the Stata programme.

5. Empirical evidence and discussion

Table 3 shows the descriptive results of the debt level and the ANOVA results by business nature (family or not-family firms) (Panel A), family business size (small, medium and large family firms) and family firm's life cycle (young and old family firms) (Panel B). Based on their nature (family or non-family business), family firms have a significantly higher level of debt (59.64%) compared with non-family businesses (54.82%). This result is consistent with studies that have found that family businesses are as likely as non-family ones to use debt (Anderson et al., 2003, Setia-Atmaja et al., 2009). It supports the arguments of Romano et al. (2000) and Croci et al. (2011) that when the need for financing exceeds the internally generated funds, family managers prefer debt to new non-family equity for control motivations.

The ANOVA results by family business size support that there is a direct relationship between family firm size and debt level consequence of the higher asymmetric information and agency costs in large family firms. These ANOVA results also support the previous evidence that there is a change in the financial structure of family firms throughout their life cycle (Molly et al., 2010); more specifically, there is a decrease in the debt level between young family firms (63.69%) and old ones (55.77%). These results support the idea that old family firms, which have certainly experienced an intergenerational change, are usually less willing to take risks, compared with younger ones, because the descendants have a strong preference for wealth preservation, instead of wealth creation (Kaye and Hamilton, 2004).

Table 3 Statistic summary of the dependent variable and ANOVA results

	Variable	Mean	Standard deviation	Minimun	Maximun	ANOVA (p-value)
	Panel A: Business nature (family or non-family business)					
D_{it}	Family	59.64%	19.43%	1.57%	93.64%	187.912
	Non-family	54.82%	20.49%	0.99%	93.67%	(0.000)
	Panel B: Family business size and family firm´s life cycle					
D_{it}	Small	58.83%	20.13%	0.99%	92.67%	6.941
	Medium	59.13%	20.39%	1.01%	91.47%	(0.001)
	Large	64.73%	20.02%	6.00%	93.67%	
D_{it}	Young	63.69%	18.57%	0.99%	92.45%	209.967
	Old	55.77%	20.47%	1.94%	93.67%	(0.000)

Notes: This table presents descriptive statistics of the debt level and the ANOVA results by business nature (family or not-family firms), family business size (small, medium and large family firms) and family firm´s life cycle (young and old family firms). D_{it} denotes the ratio of the book value of debt and book value of total assets.

To analyse the degree of association between the variables we presented the Spearman correlation analysis, nonparametric test that does not assume normality of the variables. The results are presented in Table 4.

Table 4 Spearman correlation matrix

	D	NDTS	GO	I	IN	AG	CF
D	1						
NDTS	-0.2510	1					
GO	0.0993	-0.0250	1				
I	-0.2876	0.1528	-0.0185	1			
IN	-0.0674	0.0413	-0.0637	0.0655	1		
AG	-0.1640	0.1001	-0.1156	0.0467	-0.0141	1	
CF	-0.5011	0.2103	0.1527	0.1479	0.0067	-0.0583	1

Once it is established that capital structures (debt level) are different between family business and non-family firms, we investigate the determinants of such difference. Table 5[3] shows the determinants of debt level depending on the nature of the enterprise (family or non-family business). The values of the regression coefficients and their significance show that the factors behind the debt level of family businesses are not the same as those that explain the level of debt of non-

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[3] In the analyses presented, we included non-family firms in the sample regardless of whether they are subsidiaries of other companies and regardless of whether their accounts are consolidated or not. El usage of immediate ownership can lead to biased results (Brav, 2009; Ampenberger et al., 2013). In order to avoid this problem and taking into account that the threshold of ownership participation of family firms could influence the results we repeat the analysis to check the robustness of our results with consolidated accounts of independent companies using the threshold of ownership participation of 25% to separate family from non-family firms. The results (not included in the paper for space problems) remain qualitatively the same.

family firms. That is, the relationships between debt and growth opportunities and the tangibility of assets are not statistically significant for the group of family businesses. The first result supports the idea that family businesses´ owner-managers prefer to pass up growth in order to avoid losing control of the business as this would create management difficulties for the next generation, which is one of the main targets of any family business (Le Breton-Miller and Miller, 2006). Furthermore, the lack of relationship between tangible assets and debt level may be due to the fact that family firms usually have the personal guarantees of family members that are not reflected in official balance sheets.

Moreover, the inverse relationships between debt and business age and non-debt tax shields are statistically significant only for the group of family businesses. The first relationship support the idea that more mature family firms tend to have higher cash flow generated internally over the years because long-term survival is one of the fundamental objectives of the family business, so a lower debt level is expected (Poutziouris, 2003). The second inverse relationship confirming the idea that non-debt tax shields act as debt substitutes to reduce tax burdens in family firms (DeAngelo and Masulis, 1980).

Moreover, we have to highlight the strong signification of the level of debt in the previous year (D_{it-1}) for both groups. As reported by López and Sánchez (2007) our results show the low transaction costs of private family firms (0.383) compared with private non-family businesses (0.865) although, in both cases, higher than those obtained by Miguel and Pindado (2001) for a sample of Spanish listed companies where the coefficient of the transaction cost was 0.21, suggesting that market mechanisms clearly help large public companies approach their target debt level (Brav, 2009). The overlap of business and family and the fact that Spanish bank loan contracts commonly include collateral requirement and personal guarantees provided by the owners of family businesses help to explain these empirical results. Family businesses can adjust their target debt level more easily compared to non-family businesses, confirming the general view that the overlap of business and family reduces transaction costs, increasing the speed of adjustment to its optimum.

The inverse relationship between interest rates and the debt level in non-family firms (-0.926) is increased for family companies (-0.926-0.204=-1.13), perhaps due to the higher level of debt in family firms. These results support the theoretical framework proposed in the pecking order theory (managers have a preference for issuing debt when interest rates are low) and previous empirical results (Poutziouris et al., 2006).

Our results also reveal an inverse relationship between cash flow and debt level both for family (-0.612) and non-family (-0.576) firms in presence of asymmetric information, since $AI_{it} = 0$. This inverse relationship in the non-family business (-0.604) is increased in the case of family firms (-0.604 - 0.039 = -0.643). Family members´ reluctance to open up the firm's capital in order to maintain the control (Matthews et al., 1994) and the existence of informative asymmetry between the family companies and the lenders means that family firms prefer internally-generated funds for financing (with no information costs) to external financing (Poutziouris, 2001; Basly, 2007). In the absence of asymmetric information ($AI_{it} =$

1), the coefficient for the non-family firms facing minor problems of asymmetric information is still negative ($\beta_7 + \beta_8 = -0.576 + 0.281 = -0.295$).

Table 5 Determinants of the debt level according to the nature of the business (family or non-family business)

Variable/Test	Regression coefficient (p-value)		
	Family business	*No-family business*	*Family versus Non-family firms*
Constant	1.222* (0.000)	0.331***(0.090)	0.671** (0.043)
D_{it-1}	0.383* (0.000)	0.865* (0.000)	0.834* (0.000)
GO_{it}	0.134 (0.257)	-0.186* (0.002)	-0.169* (0.005)
IN_{it}	-1.269* (0.000)	-0.965* (0.000)	-0.926* (0.000)
AG_{it}	-0.248* (0.000)	-0.036 (0.482)	-0.047 (0,504)
$NDTS_{it}$	-3.299* (0.000)	-0.320 (0.658)	-0.287 (0.578)
I_{it}	-0.019 (0.848)	-0.263* (0.004)	-0.306** (0.039)
CF_{it}	-0.612* (0.000)	-0.576* (0.002)	-0.604***(0.084)
$CF_{it} \times AI_{it}$	0.081 (0.514)	0.281***(0.090)	0.184***(0.096)
$D_{it-1} \times FAMILY$	--	--	-0.457* (0.000)
$GO_{it} \times FAMILY$	--	--	0.050 (0.762)
$IN_{it} \times FAMILY$	--	--	-0.204***(0.070)
$AG_{it} \times FAMILY$	--	--	-0.204***(0.056)
$NDTS_{it} \times FAMILY$	--	--	-2.854** (0.045)
$I_{it} \times FAMILY$	--	--	0.299 (0.785)
$CF_{it} \times FAMILY$	--	--	-0.039***(0.067)
$CF_{it} \times AI_{it} \times FAMILY$	--	--	0.074 (0.617)
z_1 (joint significance)	26.66* (0.000)	55.56* (0.000)	31.61* (0.000)
z_2 (time *dummies*)	5.33* (0.000)	3.82* (0.000)	5.98* (0.000)
z_3 (industry *dummies*)	1.78 (0.1505)	1.75 (0.1543)	1.34 (0.1476)
z_4 (size *dummies*)	7.36* (0.0007)	2.17 (0.1151)	8.95***(0.074)
m_1	-4.18* (0.000)	-8.17* (0.000)	-7.75* (0.000)
m_2	0.93 (0.354)	0.70 (0.483)	1.63 (0.104)
Hansen	88.84 (0.338)	72.45 (0.812)	152.45 (0.341)
Observations	10,325	4,845	15,170

Notes: D_{it} denotes the ratio of the book value of debt and book value of total assets; GO_{it} denotes the growth opportunities measure as the intangible assets to total assets; IN_{it} denotes the debt cost measure as the ratio of financial expenses between total debts, AG_{it} denotes the firm age, measure as the natural logarithm of the time elapsed between the creation date and the current year; $NDTS_{it}$ denotes the non-debt tax shield measure as the difference between earnings before taxes multiplied by the tax rate and the taxes paid; I_{it} denotes the investment in net fixed assets measure as the ratio of tangible assets and total assets, CF_{it} denotes the cash flow measure as the ratio of the addition of earnings before interest and taxes and non-cash deductions (depreciations and provisions) divided by total assets; $CF_{it} \times AI_{it}$ is the interaction between asymmetric information dummy variable and cash flow; FAMILY is a dummy variable that takes the value of 1 if it is a family firm and 0 otherwise. Other information needed to read this table is: (i) p-values in parentheses, taking into account that heteroskedasticity consistent asymptotic errors are used for the regression coefficients; (ii) *, **, *** indicates significance at the 1%, 5% y 10% level respectively; (iii) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as chi-square under the null of all regression coefficients are zero; z_2 is a Wald test of the joint significance on the time dummies, asymptotically distributed as chi-square under the null of all regression coefficients are zero; z_3 is a Wald test of the joint significance on the industry dummies, asymptotically distributed as chi-square under the null of all regression coefficients are zero; z_4 is a Wald test of the joint significance on the business size dummies, asymptotically distributed as chi-square under the null of all regression coefficients are zero; (iv) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; (v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as chi-square under the null of no relation between the instruments and the error term.

Once it is established that the business size dummy variable z_4 is significant in explaining the level of indebtedness of family businesses (see Table 5), we investigate whether or not the factors influencing capital structure have different effects, depending on the size of the family business. Table 6 shows the variables that are behind the level of indebtedness of family businesses by business size. The results show that regardless of the size of the company, previous debt level, growth opportunities, age and cash flow are variables with a significantly different influence in explaining the level of debt.

The regression coefficients of the previous debt are significant for three sizes of family business. They highlight that small family businesses have transaction costs considerably lower (the coefficient $D_{it-1} \times$ Small, -0.114, is significantly negative) than the other medium and large family business sizes (0.430 - 0.114 = 0.316), costs that determine the speed of adjustment of the debt level to the objective debt of the company. The overlap of business and family reduces transaction costs, improving the speed of adjustment of the debt level to its optimum level, particularly in smaller companies which are companies where the overlap is more important.

The coefficient of growth opportunities ($GO_{it} \times$ Small) is significantly negative for small businesses (-0.547), compared to that of medium and large companies, which is significantly positive (0.319). The direct relationship in medium and large family businesses (0.319) becomes negative in the case of small family firms (0.319 - 0.547 = -0.228). When small family businesses need to grow, they are reluctant to resort to external financing because of the potential loss of company control, rejecting profitable investment projects in order to maintain control of the company (Poutziouris, 2001, López and Sánchez, 2007). However, medium and large growing firms are likely to have insufficient earnings to finance all of their growth internally and they will seek debt financing (López and Sánchez, 2007).

The age coefficient of small family businesses ($AG_{it} \times$ Small) is significantly negative (-0.069) indicating that the inverse relationship between the firm age and debt level is stronger in the case of small family businesses (-0,232-0,069 = -0.301). These results support the theory that long-term survival of the company is one of the fundamental objectives of the small family business (Miguel and Pindado, 2001; Poutziouris, 2003).

Our results also reveal that the negative influence of cash flows on the debt level in the medium and large family firms (-0.923), is reduced in the case of small businesses (-0.923 + 0.395 = -0.528) in presence of asymmetric information. Small family businesses have a weaker inverse relationship between debt and cash flow due to the concentration of ownership in the nuclear family, with closed relationships that minimize information asymmetries between family members (Poza, 2007) and the accumulation of all the power in the hands of the owner-manager (Dalton and Daily, 1992).

Table 6 Determinants of indebtedness of family businesses by business size

Variable/Test	Regression coefficient (p-value)			
	Small (1)	Medium (2)	Large (3)	Small vs. Medium and Large (4)
Constant	0.932* (0.000)	1.180* (0.000)	0.642* (0.009)	0.828* (0.000)
D_{it-1}	0.393* (0.000)	0.430* (0.000)	0.747* (0.000)	0.430* (0.000)
GO_{it}	-0.287* (0.000)	0.298* (0.008)	0.567* (0.001)	0.319** (0.0475)
IN_{it}	-0.965* (0.000)	-0.898* (0.000)	-1.224* (0.000)	-0.985* (0.000)
AG_{it}	-0.309* (0.001)	-0.259* (0.000)	-0.139**(0.022)	-0.232* (0.005)
$NDTS_{it}$	-1.943* (0.000)	-0.725 (0.297)	-0.240 (0.729)	-0.582 (0.575)
I_{it}	-0.583 (0.427)	0.133 (0.163)	0.287 (0.367)	-0.099 (0.134)
CF_{it}	-0.532* (0.000)	-0.820* (0.000)	-1.551***(0.094)	-0.923* (0.000)
$CF_{it} \times AI_{it}$	0.235 (0.475)	0.179 (0.114)	0.595(0.550)	0.339 (0.324)
D_{it-1} × SMALL	--	--	--	-0.114***(0.055)
GO_{it} × SMALL	--	--	--	-0.547* (0.000)
IN_{it} × SMALL	--	--	--	-0.112 (0.511)
AG_{it} × SMALL	--	--	--	-0.069* (0.000)
$NDTS_{it}$ × SMALL	--	--	--	-1.159***(0.061)
I_{it} × SMALL	--	--	--	-0.444 (0.845)
CF_{it} × SMALL	--	--	--	0.395** (0.043)
$CF_{it} \times AI_{it}$× SMALL	--	--	--	-0.1373 (0.268)
z_1 (joint significance)	291.64* (0.000)	20.98* (0.000)	95.42* (0.000)	208.66* (0.000)
z_2 (time *dummies*)	4.62* (0.0002)	4.54* (0.0002)	6.27* (0.0003)	12.28* (0.000)
m_1	-8.45* (0.000)	-4.06* (0.000)	-2.84* (0.005)	-4.04* (0.000)
m_2	-0.09 (0.929)	0.29 (0.774)	0.16 (0.873)	0.18 (0.858)
Hansen	98.34(0.136)	77.27(0.685)	18.13 (0.750)	182.45 (0.315)
Observations	3,414	5,937	883	10,234

Notes: D_{it} denotes the ratio of the book value of debt and book value of total assets; GO_{it} denotes the growth opportunities measure as the intangible assets to total assets; IN_{it} denotes the debt cost measure as the ratio of financial expenses between total debts, AG_{it} denotes the firm age, measure as the natural logarithm of the time elapsed between the creation date and the current year; $NDTS_{it}$ denotes the non-debt tax shield measure as the difference between earnings before taxes multiplied by the tax rate and the taxes paid; I_{it} denotes the investment in net fixed assets measure as the ratio of tangible assets and total assets, CF_{it} denotes the cash flow measure as the ratio of the addition of earnings before interest and taxes and non-cash deductions (depreciations and provisions) divided by total assets; $CF_{it} \times IA_{it}$ is the interaction between asymmetric information dummy variable and cash flow; SMALL is a dummy variable that takes the value of 1 if it is a small firm according to EU criteria and 0 otherwise. Other information needed to read this table is: (i) p-values in parentheses, taking into account that heteroskedasticity consistent asymptotic errors are used for the regression coefficients; (ii) *, **, *** indicates significance at the 1%, 5% y 10% level respectively; (iii) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as chi-square under the null of all regression coefficients are zero; z_2 is a Wald test of the joint significance on the time dummies, asymptotically distributed as chi-square under the null of all regression coefficients are zero; (iv) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; (v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as chi-square under the null of no relation between the instruments and the error term.

Table 7 shows the variables that are behind the level of indebtedness of family businesses during the firm's life cycle. The results show that previous debt level, growth opportunities, interest and cash flow are the variables that have a significant and different influence in explaining the level of debt of a company throughout its life cycle.

Table 7 Determinants of indebtedness according to the family firm's life cycle

Variable/Test	Regression coefficient (p-value)		
	Younger (<25 years old)	*Older (>25 years old)*	*Younger vs. Older*
Constant	0.175* (0.000)	0.580* (0.000)	0.462* (0.000)
D_{it-1}	0.815* (0.000)	0.217* (0.000)	0.293* (0.000)
GO_{it}	-0.165* (0.000)	0.054* (0.009)	0.090* (0.000)
IN_{it}	-0.359* (0.000)	-1.164* (0.000)	-0.716* (0.000)
$NDTS_{it}$	-0.620* (0.007)	-1.987* (0.000)	-1.839* (0.000)
I_{it}	-0.015 (0.372)	-0.130***(0.076)	-0.029 (0.143)
CF_{it}	-0.900* (0.000)	-0.573** (0.029)	-0.542**(0.048)
$CF_{it} \times AI_{it}$	0.003 (0.934)	-0.010 (0.914)	-0.208* (0.004)
$D_{it-1} \times$ YOUNG	--	--	0.530* (0.000)
$GO_{it} \times$ YOUNG	--	--	-0.252***(0.072)
$IN_{it} \times$ YOUNG	--	--	-0.218* (0.003)
$NDTS_{it} \times$ YOUNG	--	--	-0.550* (0.000)
$I_{it} \times$ YOUNG	--	--	-0.068* (0.004)
$CF_{it} \times$ YOUNG	--	--	-0.406* (0.000)
$CF_{it} \times AI_{it} \times$ YOUNG			0.136* (0.000)
z_1 (joint significance)	1251.44*(0.000)	30.54*(0.000)	1095.50*(0.000)
z_2 (time *dummies*)	16.04*(0.000)	13.23*(0.000)	153.38*(0.000)
m_1	-3.65*(0.000)	-2.63*(0.009)	-4.59*(0.000)
m_2	1.11 (0.266)	0.49 (0.624)	0.95 (0.344)
Hansen	150.26(0.301)	84.33 (0.216)	392.69(0.221)
Observations	5,015	5,219	10,234

Notes: D_{it} denotes the ratio of the book value of debt and book value of total assets; GO_{it} denotes the growth opportunities measure as the intangible assets to total assets; IN_{it} denotes the debt cost measure as the ratio of financial expenses between total debts, $NDTS_{it}$ denotes the non-debt tax shield measure as the difference between earnings before taxes multiplied by the tax rate and the taxes paid; I_{it} denotes the investment in net fixed assets measure as the ratio of tangible assets and total assets, CF_{it} denotes the cash flow measure as the ratio of the addition of earnings before interest and taxes and non-cash deductions (depreciations and provisions) divided by total assets; $FC_{it} \times IA_{it}$ is the interaction between asymmetric information dummy variable and cash flow; YOUNG is a dummy variable that takes the value of 1 if it is a young firm (<25 years old) and 0 if it is a old firm (>25 years old). Other information needed to read this table is: (i) p-values in parentheses, taking into account that heteroskedasticity consistent asymptotic errors are used for the regression coefficients; (ii) *, **, *** indicates significance at the 1%, 5% y 10% level respectively; (iii) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as chi-square under the null of all regression coefficients are zero; z_2 is a Wald test of the joint significance on the time dummies, asymptotically distributed as chi-square under the null of all regression coefficients are zero; (iv) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null of no serial correlation; (v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as chi-square under the null of no relation between the instruments and the error term.

The higher transaction costs of young family businesses reflect that this kind of business has more difficulty in achieving its target debt level. Spanish banks have stronger incentives to collect information about family firms when they are younger. Moreover, bank loan contracts commonly include extensive information rights, debt covenants and collateral requirements at this stage in a family business. With older family businesses, the banks have learned from their repeated interactions with the same family business over time, which means that transaction costs will be lower.

The positive influence of growth opportunities on the debt level in old family firms (0.090) becomes negative in the case of young family businesses (0.090 - 0.252= -0.162). Often, the growth opportunities are associated with a higher proportion of intangible assets, which are unattractive to debt providers due to the presence of significant information asymmetries. Therefore, young firms finance their growth opportunities with internally generated funds (La Rocca et al., 2011). Moreover, when young firms need to grow, they are reluctant to resort to debt due to the subsequent loss of control, rejecting profitable investment projects in order to maintain control of the company.

In the presence of asymmetric information, the negative influence of cash flows on the debt level in old family firms (-0.542), increases in the case of young family businesses (-0.542-0.406 = -0.948). Therefore, in order to maintain control and foster long-term survival, young family companies will place a stronger emphasis on the use of internal funds.

6. Conclusions

Our results provide empirical evidence that the leverage ratio of family firms differs from that of non-family firms (H1). More particularly, family firms are more indebted than non-family firms. The interaction between information asymmetries and control considerations help to explain the strong preference of debt over equity financing in family firms. Moreover, we find that the factors that have an influence on capital structure have different impacts on family firms and non-family firms (H2). In particular, family businesses have lower transaction costs compared to non-family firms. Other factors that affect differently the debt level of the family and non-family firms are growth opportunities, age, NDTS and investment.

Our results also show that the financial structure (leverage ratio) of family firms changes with the size of the business and the firm's life cycle, and that the variables that explain the financial behaviour of family firms have different levels of importance, depending on the size of the business and the firm's life cycle (H3). While small family businesses showed an inverse relationship between growth opportunities and debt, rapidly growing medium and large family firms are likely to have insufficient earnings to finance all of their growth internally and they will seek debt. Furthermore, medium and large family businesses have a stronger negative relationship between cash flow and leverage. Moreover, the debt level of younger family firms is higher than that of older family businesses. The previous debt level, growth opportunities, interest and cash flow variables have different levels of importance in the explanation of the financial structure of family firms, depending on the firm's life cycle.

7. Policy implications, limitations and futures lines of research

The results obtained about the financial behaviour of family firms in Spain could be generalizable to other bank-oriented countries but with caution given that within the bank-oriented countries (Italy, France, Germany) there are particular characteristics that could influence the results. The findings we observe in Spain suggest that in countries were firms use bank financing instead of capital markets and with a more concentrated ownership structures, the degree of asymmetric information

and agency problems will be lower and as a result it will be easier for banks and majority shareholder to monitor financial management.

This paper generates some recommendations for the economic policy, which should consider the dynamic interplay among business characteristics, the behavioural aspects of family members and financial factors (debt level) when working with family enterprises. Furthermore, in view of our results, policy-makers should promote policies to influence the financial behaviour of family businesses. For example, different tax advantages (NDTS) depending on the size of the company could be established; alternative financing mechanisms could be implemented for small businesses to reduce their dependence on bank financing or to establish the means to access capital markets without compromising the control of the company.

Moreover, it seems that the life cycle can cause a slowdown in growth due to the lower debt levels of older family firms. Given the importance that the size of a company may play in its access to sources of financing, its internationalisation and its competitiveness (Business Council for Competitiveness, 2014), it would be desirable to encourage the business leaders of the new generations to engage in entrepreneurship in order to grow their businesses, so that they are willing to work not so much toward the preservation of wealth, but toward wealth creation.

Of course, our work is not without limitations. The first is the importance of the personal guarantees provided by the owners of family businesses. In the particular case of family firms, their balance sheets do not provide the necessary information regarding the personal collateral provided by the owners to obtain financing. This personal collateral could affect the financial structure of family firms. A future research line could quantify the importance of personal collateral for family firms and how it could affect their debt level.

Second, our sample does not include microenterprises. A substantial portion of them are companies composed of one individual, with simple management and production structures. Moreover, over 80% of microenterprises use alternative channels to finance their activities (for instance, loans from friends and relatives), so their debt ratio tends to be nil (Ramalho and Da Silva, 2009). However, it would be interesting, in future research, to see whether, controlling for unlevered firms, microenterprises borrow more or less than other companies, and whether the factors explaining financial structure have a different impact in microenterprises than in small, medium and large companies.

The third limitation is that not all family businesses are alike. There is a high degree of heterogeneity among them which can lead to different financial behaviours. A natural extension of this work could be to analyze the decisions on the financial structure of private family businesses, depending, for example, on the degree of professionalization (Dekker et al, 2012).

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