

articles

Ownership Concentration, Control, and Capital Structure in Family and Non-Family Firms

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The objective of this paper is to empirically examine the relationship between the firm's ownership and control structure and its leverage. Capital structure is not only the result of various financial characteristics of the firm but also depends on who is in control. Thus, it is fundamental to understand the influence that certain features of the shareholding structure or the composition of the board, including the potential differences between family and non-family firms, exert on capital structure decisions. The paper uses a sample of wine firms in Portugal, because it helps to capture a business sector where family firms make up a significant portion of the industry. It is used an unbalanced panel data set of 460 firms for the period 2010 to 2018 and applied a random-effects model specification. Our results do not evidence significant differences between family and non-family firms. Still, they indicate that firms with fewer shareholders, smaller boards, and where the main director or member of the board is also a shareholder tend to present higher debt levels. There is no evidence of a non-monotonic relation between the ownership structure and debt, nor the presence of moderating effects on that relation. This paper fills a gap in the literature as the impact that specific characteristics of firms and their leaders have on capital structure decisions is still a topic less studied in the literature, particularly in bank-based economies.

INTRODUCTION

The objective of this paper is to empirically examine the relationship between the firm's ownership and control structure and its leverage. The main idea is that capital structure is not only the result of the firm's financial characteristics but also depends on who is in control. Different types of shareholders could influence financing decisions, thus impacting firm exposure to risk and performance. As argued by Pindado and De la Torre (2011), both managers and owners significantly influence decision-making in the firm and, consequently, its financing decisions.

Corporate governance issues affect agency costs, that is, costs due to conflicts of interest arising between shareholders and creditors on the one hand, and between shareholders and managers, on the other hand (Jensen & Meckling, 1976). In addition, there is another significant agency conflict stemming from the competing interests between controlling and minority shareholders (Shleifer & Vishny, 1997). Given that agency costs play a decisive role in determining the capital structure, corporate governance becomes key to establishing the financial policy of the firm.

In the past decades, many studies researched how to mitigate agency costs between shareholders and managers,

with a fraction of them focused on the distinction between family firms (FF) and non-family firms (NFF). FF are the predominant organizational structure around the world (Ampenberger et al., 2013), representing a distinctive subset of firms where family members' ownership, presence, and involvement in managerial decisions produce an interesting research topic. In Portugal, according to the Portuguese Family Businesses Association (2020), 70% to 80% of the Portuguese firms, and probably more than 60% of GDP and 50% of employment are ensured by firms "whose property is, total or partially, in the hands of one or more families, with the family having the control over the firm's management."

Theories regarding capital structure have largely ignored the influence of the quality of the contractual structure of family businesses, combining economic and family relations, which may lead to the use of different financial resources and influence their capital structure (Acedo-Ramirez et al., 2017; Croci et al., 2011; Poletti-Hughes & Martínez Garcia, 2020). Several recent studies have found a significant relationship between FF and firm leverage across countries (e.g., Granado-Peiró & López-Gracia, 2017). Still, most of them focused on large and listed firms. Since the results are mixed, it is essential to contribute to the defi-

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inition of stylized facts on FF from different countries because country-specific characteristics, such as the legal system, affect FF differently (Bertrand & Schoar, 2006).

One limitation of existing international studies of ownership and capital structure is that most studies feature countries with very different legal, regulatory and market institutions making it difficult to disentangle firm-level effects from country-level effects (De Jong et al., 2008). With the exceptions of papers by Santos et al. (2014) and Ramalho et al. (2018), the first of which focused on large and listed firms, this paper is one of the first to empirically examine the relationship between ownership structure and firm leverage, differentiating between Portuguese FF and NFF.

This paper is focused on wine firms due to their increasing relevance in the Portuguese economy. Portugal is the eleventh world producer, and the wine sector is characterized by a coexistence between small and predominantly FF with larger and strongly market-oriented firms. Most firms in the sector are familiar and mature firms, where tradition, emotional values, the commitment to preserve family assets and succession are relevant issues. Additionally, the sector faces a limited domestic market, decreased available land and the need to find new customers abroad. All these factors highlight the importance of understanding the determinants of firms' leverage and justify the choice of this sector. These challenges are also faced by other firms outside the wine business, so the perspective adopted in this paper, combined with the focus on family firms, turn our conclusions potentially generalizable to other industries and countries.

Using an unbalanced panel data of 460 Portuguese wine SMEs from 2011 to 2018, we conclude that firms with fewer shareholders, smaller boards and where the main director or member of the board is also a shareholder tend to present higher debt levels. Notice that, depending on the legal form under which the firm operates, there is a board of directors (in a "public limited liability company") or a more straightforward management board (in a "private limited liability company"), albeit for simplicity the term "board" is going to be used interchangeably.

The rest of the paper is structured as follows. The following section reviews the literature about the relation between FF leverage and ownership structure and management control. The section also presents a set of traditional determinants of leverage and the hypotheses to be tested. Section three offers the variables, the data and the econometric method used. The following section offers and discusses the empirical results, with the final section presenting some concluding remarks.

LITERATURE REVIEW

Leverage, ownership structure and management control

The composition and characteristics of the board of directors have been central to the debate that revolves around effective corporate governance mechanisms to reduce agency problems. Previous literature has found that boards of directors are significant in explaining differences in the

way firms function and how they perform (see Adams et al., 2010, for a survey).

The literature on ownership and capital structure predicts either higher or lower levels of financial leverage depending on the manager's risk aversion, the costs of monitoring and bankruptcy, the threat of takeovers, and the growth opportunities of the firm (King & Santor, 2008). For instance, when the monitoring effect dominates, higher ownership levels reduce the scope of managerial opportunism and, consequently, result in higher debt (Shleifer & Vishny, 1986). Stulz (1988) argued that firms with a controlling shareholder should exhibit higher financial leverage since the risks of a hostile takeover are reduced. On the other hand, debt could curb the private benefits of control as creditors can monitor the controlling shareholder imposing constraints via covenants. Earlier papers such as Holderness and Sheehan (1988) found a negative relation between managerial ownership and financial leverage. In contrast, Kim and Sorensen (1986) and Anderson and Reeb (2003) found the opposite result, with leverage increasing with insider ownership and manager entrenchment. Studying ownership concentration, King and Santor (2008) found that more concentrated ownership positively correlates with financial leverage. Despite these earlier studies, the sign of the relationship between ownership and financial leverage remains an empirical question.

In the context of the agency theory (Jensen & Meckling, 1976), the proximity between ownership and management in small family businesses aligns interests and reduces agency costs in comparison with the marked separation between them in corporations. As long as management shareholdings are not significant enough to gain control of the firm, we would expect to see an increase in leverage. This is consistent with an increase in overall value and thus the value of the manager's stakes. However, managerial ownership (as a consequence of convergence-of-interest and entrenchment effects) could have a non-linear influence on the scope of the firm's agency costs and be nonlinearly related to firm value. So, a marked rise in managerial ownership could result in entrenchment. That is, managers will find private incentives to deviate from the maximization objective (Jensen, 1986; Morck et al., 1988). When managers are entrenched, they reduce the level of debt to avoid its disciplinary role over the firm's free cash flow and avoid taking excessive risks (Granado-Peiró & López-Gracia, 2017; Pindado & De La Torre, 2011).

The literature has revealed an extensive group of differences between FF and NFF (e.g., Acedo-Ramirez et al., 2017; Ampenberger et al., 2013; Miller et al., 2008). Nevertheless, there is still no consensus regarding the distinction between FF and NFF (Astrachan et al., 2002; Kontinen & Ojala, 2010). The vast majority of FF's definitions are grounded on issues such as the influence over property and control, family participation in the business activity and management, the contribution of the firm to the owners' wealth, and the succession and transmission between generations. Thus, according to Ramírez et al. (2011), Soler et al. (2017), and others, the fundamental difference lies in the three keystones of a FF: i) the control of capital by the family; ii) the active participation of the family in the manage-

ment of the firm, and; iii) the transmission of the firm to the next generation.

As argued by Granado-Peiró and López-Gracia (2017), family-owned firms do not only pursue financial goals. Controlling families are typically risk-averse and are concerned with the survival and reputation of the firm, valuing those aspects above profits (Sageder et al., 2018). Several papers indicate that family ownership can facilitate access to credit and lower its cost (e.g., Gao et al., 2020). Typical agency costs derived from the possibility of using free cash flow by the managers are significantly reduced in FF due to the control exerted by the involvement of family members in the firm.

Research on family business financing decisions has recently increased, but the literature presents conflicting results regarding the impact of family ownership on firm leverage. As argued by Ramalho et al. (2018), these contradictory findings could be due to various reasons, such as the use of different definitions for FF, and different institutional, economic, and cultural contexts. Some studies found that FF tend to have less debt than NFF (e.g., Ampenberger et al., 2013; López-Gracia & Sánchez-Andújar, 2007). Schmid (2013) evidenced that the maintenance of control is very relevant to founders and their families, directly influencing the use of debt. Ampenberger et al. (2013), focusing on three potential channels for how families could affect capital structure decisions – ownership, management, and supervisory board activities – found that family management is the primary determinant of the lower leverage ratios observed in FF. Furthermore, those authors observed a robust founder-CEO effect on leverage. However, other authors found that FF are as likely to use debt as NFF (e.g., Anderson et al., 2003; Crespi & Martín-Oliver, 2015). The reasoning is that FF are reluctant to accept capital from non-family members because that ownership dilution would imply sharing family control (Croce & Martí, 2016; López-Gracia & Sánchez-Andújar, 2007). Accordingly, in the context of the pecking order theory applied to FF, it is expected that firms prefer to use first retained earnings and personal funds, thus minimizing interference and avoiding the discipline inherent to the use of external funds (Blanco-Mazagatos et al., 2007). After the exhaustion of internal funds, firms will increase their debt levels. Trade-off theory, initially developed by Modigliani and Miller (1958) and Kraus and Litzenberger (1973), suggests that firms may have a different optimal capital structure. Still, it remains an empirical issue if that leads them to use more or less debt, particularly in the case of FF. 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 FF. Recently, Poletti-Hughes and Martínez Garcia (2020) showed that, to retain control FF firms use more leverage at lower levels of family ownership, but once their socioemotional wealth is fulfilled at higher levels of ownership, they decrease leverage by adopting more conservative financing policies. So, our first hypothesis is:

H1: *Capital structure differs between FF and NFF*

Regarding the impact of the board of directors on leverage, we test if the size of the board significantly exerts con-

trol over the actions of managers and, therefore, over financial policies. In this regard, it could be argued that a large number of board members hampers the coordination and efficiency of the board and that a smaller board would thus be more effective than a large one (Ghosh et al., 2011). So, our hypothesis is:

H2: *The number of directors has a significant negative impact on leverage*

Shareholder dispersion creates free-riding problems and makes manager monitoring difficult so a concentrated ownership is considered to reduce the scope of managerial opportunism (Shleifer & Vishny, 1986). Accordingly, when there is monitoring by large shareholders, managers will not be able to adjust leverage to their interests, and the debt ratio will be higher than when ownership is dispersed. Managerial equity ownership and monitoring by major shareholders may help mitigate the agency conflicts between managers and shareholders (Chakraborty, 2018). However, very concentrated ownership creates a conflict between controlling owners and minority shareholders, in that the former can confiscate the wealth of the latter. To avoid the disciplinary role of leverage and facilitate expropriation, large shareholders are expected to promote lower debt levels than would otherwise be the case (Miguel et al., 2004). Nevertheless, we test the following hypotheses:

H3a: *The number of shareholders has a significant negative impact on leverage*

H3b: *The equity stake of the main shareholder has a significant positive impact on leverage*

H4: *The fact that the main director is also a shareholder has a significant positive impact on leverage*

Finally, following some previous authors (e.g., Friend & Lang, 1988; Granado-Peiró & López-Gracia, 2017), we analyze the potential existence of a non-linear relation and moderating effects of some firm characteristics. Thus, we test the additional hypothesis:

H5: *There are non-monotonic effects on leverage associated with ownership structure and board size*

Notice that many studies on financial structure have focused on firms that operate in Anglo-Saxon market-oriented systems. As highlighted by Acedo-Martínez et al. (2017), the characteristic features of those financial systems could significantly affect the financial structure decisions taken by firms, due to the lower degree of information asymmetry between banks and firms. Thus, the analysis of ownership and capital structure in Portugal provides a good and interesting testing ground for this kind of analysis since Portugal has a bank-based economy and is a civil-law country. Thus, represents a particular type of EU country where ownership is highly concentrated, with less separation between property and control, and where investor protection is weak (implying a higher risk of expropriation of minority shareholders) and where managers' self-interested conduct is a significant issue. These characteristics reinforce the potential generalization of our results to other EU countries.

Table 1. Description of variables

	ACRONYM	DESCRIPTION	
Dependent variables			
	TD	Total debt (total liabilities/total assets)	
	STD	Short term debt (current liabilities/total assets)	
	LTD	Long term debt (non-current liabilities/total assets)	
Independent variables			Expected sign
	NDM	Number of Directors/Managers	-
	DS	Director/Manager also a shareholder (dummy variable)	+
	NS	Number of shareholders	-
	%MS	Equity stake of the main shareholder	+
	FAM	Family firm (dummy variable)	...
	AGE	Firm age (log of the number of years since the firm's inception)	-
	SIZ	Size (log of total assets)	+
	PRO	Profitability (EBITDA/total assets)	-
	LIQ	Liquidity (cash and marketable securities/total assets)	-
	TAN	Asset tangibility (fixed assets plus inventory/total assets)	+

Additional determinants of leverage

The paper includes a set of control variables to rule out alternative determinants of the sampled firms' indebtedness. Those variables are traditionally used in studies about capital structure and leverage determinants: firm age, size, profitability, liquidity, and tangibility (e.g., Frank & Goyal, 2009; López-Gracia & Sánchez-Andújar, 2007; Pacheco, 2016; Rajan & Zingales, 1995).

Additionally, the regressions always include as an independent variable the lagged value for the debt level (López-Gracia & Sánchez-Andújar, 2007). The coefficient associated with the lagged value of debt can be interpreted as one minus that speed of adjustment. A higher value for this coefficient would indicate the presence of very high adjustment costs, potentially due to higher agency costs between owners and managers and, therefore, that firms relatively slowly approach their target levels of debt.

MATERIALS AND METHODS

Definition of variables

Regarding the empirical study, this paper considers the set of dependent, independent, and control variables presented in [Table 1](#).

Total debt (total liabilities/total assets) is the dependent variable, subdivided in short-term and long-term debt (respectively, current liabilities/total assets and non-current liabilities/total assets). Notice that total assets include the land value of the vineyards. The independent variables represent the firm's determinant factors of its capital structure. They are used to test the previously stated hypotheses: i) variables NDM, DS, and NS are used to test the ownership/entrenchment hypothesis; and ii) variable %MS is related to the expropriation hypothesis. It is expected that firms with a lower number of directors/managers (NDM) (more concentrated board or top management team) or a lower

number of shareholders (NS) (more concentrated ownership) present higher levels of leverage. Also, it is expected that firms where the main director/manager is also a shareholder present higher levels of leverage due to insider and entrenchment effects. Notice that, regarding ownership data and given that the literature on corporate governance indicates that the usage of direct ownership can lead to biased results (e.g., Ducassy & Guyot, 2017), we collect data on the ultimate owners of the firms in our sample.

In terms of control variables, the present paper uses the variables age, size, profitability, liquidity, and asset tangibility. Regarding profitability, to check robustness, we also proxy profitability using earnings before interest and taxes (EBIT) and the return on assets (ROA) instead of earnings before interest, taxes, depreciation, and amortization (EBITDA).

To differentiate between FF and NFF, we apply the criterion put forward by Ramírez et al. (2011). As argued by those authors, to identify FF in the SABI (*Sistema de Análisis de Balances Ibéricos*) database, it is necessary to depart from an adequate concept of a firm that subsequently allows the comparison of both typologies and ensure that the identified differences are real and not the result of other factors not related to the research object. The automatic application of different filters to that sample of firms (namely, the percentage of capital in the hands of one or more entities, the identification of the ultimate owner, or the firms' degree of independence) does not allow a clear distinction between both types of firms. So, it is necessary a manual inspection of each firm, being mandatory an analysis of the surnames and other characteristics of the owners and members of the management bodies. This criterion, which was used in other studies (e.g., Soler et al., 2017), considers a firm as a FF 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 previous authors, that portion for the firm's equity in the hands of the family was

established as 50%) and, b) the family participates actively in monitoring the firm. Under the definition of the Expert Group on Family Business/European Commission and the most used in empirical studies, it is considered that the participation of at least one family member in management positions (either on the board of directors or in top management teams) means active involvement in the monitoring of the business. To comply with these two conditions, it was conducted an exhaustive review of shareholding structures (percentage of common stock) and composition (name and surnames of shareholders). Also, it was examined the composition of the board of directors and the composition of the management of each of the selected firms in the database in search of family relationships between shareholders and managers or shareholders and directors. Based on this classification, the dummy variable FAM equals one if the firm is classified as FF and zero otherwise.

Data and methods

This paper uses a sample of SMEs from the wine sector (CAE 1102 of the Portuguese Classification of Economic Activities), obtained from SABI (*Sistema de Análise de Balanços Ibéricos*), a financial database powered by Bureau van Dijk and with firms' dimension classified according to the Commission Recommendation 2003/361/EC (EC, 2003). The database includes data for 817 active wine sector firms with a turnover of over 1,400 M€, total assets of around 3,500 M€, a mean ROA of 2.75%, an average debt to assets ratio of 47%, and more than 7,500 employees (data for 2018). The sector is mainly comprised of small and medium firms.

Applying the criteria for SMEs definition, considering only firms created before 2011 to prevent survivorship bias, and with five years of complete data from 2011 to 2018, excluding firms with non-positive equity, assets or sales, we obtained an unbalanced panel data of 460 SMEs distributed by all Portuguese wine-producing regions. The sample is representative of the sector, accounting for a turnover near 620 M€, total assets of 1,455 M€ and 4,245 employees in 2018. Applying the above criteria, 231 firms can be considered FF. The sample's average values in 2018 for total debt, age, and profitability are, respectively, 52.4%, 22 years, and 2.4%, with FF presenting similar values in terms of debt and age, albeit being more profitable. The two types of firms are also identical in size and asset tangibility (with FF presenting slightly lower figures). Regarding our main independent variables, the firms' average number of managers/directors

is 3.5, and the manager is also a shareholder in 338 firms (73.5%). The average number of shareholders is 2.6 (3.4 in FF), and the equity stake of the main shareholder is 67% (88.5% when considering the two main shareholders).

The mean values for the different variables differentiating between FF and NFF, are presented in Table 2. The results of a test for differences in mean values between the two sub-samples evidence that FF significantly differ from NFF for the majority of the independent variables. Compared to NFF, FF tend to present similar debt levels but present significantly more dispersed structures of ownership, with higher numbers of shareholders, directors, and managers, and with the director being usually also a shareholder. Table 2 also presents the correlation matrix of the variables. According to Gujarati and Porter (2008), when the correlation coefficients are above 50%, the problem of collinearity becomes significant. Observing the correlation coefficients between the independent variables and since some of the variables are not jointly used, the issue of collinearity between explanatory variables will not be relevant. Additionally, VIF tests for the different independent variables present very low values, so the existence of multi-collinearity problems in our model is unlikely.

To attain our research objective, we apply a panel data methodology. Panel data methodology offers two advantages over the standard ordinary least squares (OLS) method. First, since each firm has its debt policy, this analysis controls for firm heterogeneity and reduces collinearity among the variables considered by increasing the number of observations. Second, it eliminates potential bias in the resulting estimates due to the correlation between unobservable individual effects and the explanatory variables included in the study. The Breusch-Pagan and Hausman tests indicate that it is preferable a random-effects model (Breusch & Pagan, 1979; Hausman, 1978). A random-effects model explains inter-firm performance variation over time, and as stated by King and Santor (2008), it is a well-suited specification since a number of our variables are either time-invariant or exhibit few changes over time. As a robustness test, and similarly to Ampenberger et al. (2013), the estimations were repeated, lagging all the independent variables and controls. This procedure implies that current firm characteristics determine future borrowing capacity. However, our results remained qualitatively the same, so in the next section, we report the results with no lags.

Table 2. Descriptive statistics and correlation

	FF (n = 231)	NFF (n = 229)	Mean differ. (t-test)	NDM	DS	NS	%MS	AGE	SIZ	PRO	LIQ	TAN
TD	56.5%	57.3%	0.83	-0.198 (***)	0.113 (***)	-0.068 (***)	0.193	-0.179 (***)	0.025	0.136 (***)	-0.226 (***)	0.006
STD	33.4%	32.6%	-0.86	-0.008 (***)	0.041 (**)	-0.004	-0.049 (***)	-0.115 (***)	-0.050 (***)	-0.233	-0.061 (***)	-0.247 (***)
LTD	23.2%	24.7%	1.72 (*)	-0.124 (***)	0.075 (***)	-0.066 (***)	0.069 (***)	-0.068 (***)	0.076 (***)	-0.116 (***)	-0.172 (***)	0.250 (***)
NDM	3.74	3.17	-6.73 (***)	1	-0.356 (***)	0.578 (***)	-0.252 (***)	0.413 (***)	0.424 (***)	-0.081 (***)	-0.134 (***)	0.027
DS	0.91	0.56	-26.2 (***)		1	0.186 (***)	-0.253 (***)	-0.257 (***)	-0.433 (***)	0.130 (***)	0.176 (***)	-0.108 (***)
NS	3.42	1.72	-29.67 (***)			1	-0.698 (***)	0.190 (***)	0.084 (***)	-0.031 (*)	-0.004	-0.112 (***)
%MS	52.5%	81.6%	38.89 (***)				1	-0.048 (***)	0.068 (***)	-0.015	-0.071 (***)	0.111 (***)
AGE	2.6	2.5	-2.45 (***)					1	0.549 (***)	-0.031 (*)	-0.240 (***)	0.011
SIZ	13.6	13.9	4.14 (***)						1	-0.065 (***)	-0.440 (***)	0.228 (***)
PRO	7.5%	5.6%	-5.04 (***)							1	0.070 (***)	-0.170 (***)
LIQ	9.24	6.09	-6.43 (***)								1	-0.307 (***)
TAN	41.6	40.8	0.79									1

Source: own study

Notes: TD = Total debt; STD = Short term debt; LTD = Long term debt; NDM = Number of Directors/Managers; DS = Director/Manager also a shareholder (dummy variable); NS = Number of shareholders; %MS = Equity stake of the main shareholder; AGE = Firm age (log number of years); SIZ = Size (log of total assets); PRO = Profitability; LIQ = Liquidity; TAN = Asset tangibility. * p < 0.10; ** p < 0.05; *** p < 0.01

Table 3. Random-effects model results

	Complete sample (n = 460)					Family firms (n=231)	Non family firms (n = 229)		
	TD	TD	TD	LTD	LTD	TD	TD	LTD	LTD
C	0.287 (***)	0.077	0.263 (***)	-0.179 (**)	-0.167 (**)	0.315 (***)	0.242 (**)	-0.286 (***)	-0.270 (***)
Lagged debt	0.477 (***)		0.478 (***)	0.511 (***)	0.511 (***)	0.470 (***)	0.483 (***)	0.518 (***)	0.519 (***)
NDM	-0.016 (***)	-0.018 (***)			-0.014 (***)	-0.006			-0.022 (***)
DS	0.072 (***)	0.091 (***)	0.111 (***)	0.108 (**)	0.072 (***)	0.053	0.132 (***)	0.152 (**)	0.092 (***)
NS			-0.011 (**)	-0.012 (**)			-0.028 (**)	-0.019	
FAM	0.003								
Controls									
AGE	-0.104 (***)	-0.117 (***)	-0.107 (***)	-0.036 (***)	-0.034 (***)	-0.115 (***)	-0.101 (***)	-0.027 (**)	-0.021 (*)
SIZ	0.045 (***)	0.061 (***)	0.043 (***)	0.032 (***)	0.033 (***)	0.043 (***)	0.046 (***)	0.039 (***)	0.041 (***)
PRO	-0.297 (***)	-0.176 (***)	-0.295 (***)	-0.239 (***)	-0.240 (***)	-0.354 (***)	-0.244 (***)	-0.148 (***)	-0.147 (***)
LIQ	-0.149 (***)	-0.279 (***)	-0.149 (***)	-0.034	-0.033	-0.145 (***)	-0.135 (***)	-0.089	-0.087
TAN	-0.062 (***)		-0.062 (***)	0.137 (***)	0.139 (***)	-0.021	-0.111 (***)	0.085 (**)	0.091 (***)
Overall R ²	0.18	0.14	0.16	0.22	0.23	0.17	0.16	0.21	0.23

Source: own study

Notes: Robust standard errors (HAC).* p< 0.10; ** p< 0.05; *** p< 0.01.

RESULTS AND DISCUSSION

[Table 3](#) presents the most relevant results for the random-effects regressions. The strong significance of the lagged debt level indicates the presence of very high adjustment costs, without significant differences between FF and NFF. Therefore, all firms seem to approach their target level of debt relatively slowly, especially in the case of LTD. As argued by López-Gracia and Sánchez-Andújar (2007), FF should approach their target or optimal debt level with fewer difficulties than NFF, confirming the general opinion that family involvement in firm management reduces agency costs, making it easier to obtain the necessary resources (Poza, 2013). Nevertheless, our results do not seem to confirm that.

The first column in [Table 3](#) does not evidence a positive effect of family ownership on leverage since the dummy variable FAM is not significant. So, the results do not support hypothesis H1 and the claim that FF have a capacity for higher leverage due to the greater continuity and stability of their organizational structure.

There is evidence of a significant negative effect of the number of directors and managers (NDM) on leverage. This indicates that firms with larger boards of directors or top management structures tend to display lower debt levels. Also, there is evidence of a significant negative effect of the

variable NS (number of shareholders) on leverage. The dispersion of capital among several owners leads to the fear of using debt. These results support hypotheses H2 and H3a and confirm the findings from Kim and Sorensen (1986), Stulz (1988), and Ramalho et al. (2018), among others. So, there is no evidence that firms with a greater concentration of equity ownership or with small boards became entrenched and avoided debt. The inclusion of the variable %MS (equity stake of the main shareholder) does not show significant results, so those regressions are not presented, and hypothesis H3b is not supported. [Table 3](#) also evidences a significant positive relation between the variable DS and total debt (except for the specific case of FF, where the main manager is also usually the main shareholder). Supporting H4 and the results of previous authors (e.g., Anderson & Reeb, 2003), this indicates that in firms where the main manager is also a shareholder, there are incentives to use debt, potentially due to the desire to avoid the dilution of control.

Testing our hypothesis H5, the results presented in [Table 4](#) do not evidence the presence of non-linearities associated with the dependent variables, thus not confirming some previous authors' results (e.g., Chakraborty, 2018; Lo et al., 2016; Poletti-Hughes & Martínez Garcia, 2020). We also test the presence of a non-monotonic effect associated with the control variables. The results are not significant, and

Table 4. Random-effects model (testing the presence of non-linearities).

		Complete sample (n = 460)				Family firms (n=231)	Non family firms (n = 229)		
	TD	TD	LTD	LTD	TD	TD	TD	LTD	LTD
C	0.281 (***)	0.248 (***)	0.177 (**)	-0.158 (**)	0.267 (***)	0.268 (**)	0.249 (**)	-0.294 (***)	-0.257 (**)
Lagged debt	0.478 (***)	0.478 (***)	0.511 (***)	0.511 (***)	0.479 (***)	0.471 (***)	0.483 (***)	0.518 (***)	0.519 (***)
NDM	-0.012			-0.022 (**)		0.021			-0.035 (*)
NDM ²	-0.000			0.001		-0.002 (*)			0.001
NS		0.003	-0.014		-0.011 (***)		-0.038	-0.010	
NS ²		-0.001	0.000				0.002	-0.002	
DS	0.075 (***)	0.105 (***)	0.108 (***)	0.070 (***)	0.115 (***)	0.058	0.133 (***)	0.151 (***)	0.088 (**)
Controls									
AGE	-0.104 (***)	-0.107 (***)	-0.036 (***)	-0.034 (***)	-0.105 (***)	-0.113 (***)	-0.101 (***)	-0.027 (**)	-0.022 (*)
SIZ	0.045 (***)	0.043 (***)	0.032 (***)	0.034 (***)	0.043 (***)	0.041 (***)	0.046 (***)	0.039 (***)	0.042 (***)
PRO	-0.297 (***)	-0.295 (***)	0.240 (***)	0.241 (***)	-0.293 (***)	-0.353 (***)	-0.245 (***)	-0.147 (***)	-0.148 (***)
LIQ	-0.149 (***)	-0.149 (***)	-0.034	-0.032	-0.379 (***)	-0.145 (***)	-0.135 (***)	-0.088	-0.088
TAN	-0.063 (***)	-0.062 (***)	0.137 (***)	0.140 (***)	-0.065 (*)	-0.021	-0.111 (***)	0.086 (**)	0.092 (***)
LIQ ²					0.441 (***)				
Overall R ²	0.18	0.16	0.22	0.23	0.16	0.19	0.16	0.21	0.23

Source: own study

Notes: Robust standard errors (HAC). * p< 0.10; ** p< 0.05; *** p< 0.01.

except for liquidity (column 5), they are not presented. The interesting U-shaped result for liquidity evidences the validity of the pecking order theory until an intermediate level of liquidity. After a threshold, the firm increases its leverage to discipline the potentially opportunistic behavior by managers (Fosberg, 2004).

Interaction variables are included in Table 5 in order to test moderating effects, that is, whether the effects of the control variables are additive or not to the ownership-debt relationship.

The results broadly indicate the absence of moderating effects on the ownership-leverage relationship, and Table 5 presents only the most relevant specifications. For instance, in column (2), it is evidenced that the variable NDM

is significantly negative and, when multiplied by profitability, maintains its negative sign with the interaction variable also significantly negative. Regarding the control variables, there are other significant results. For instance, in column (10), the results for the interaction variables between size and liquidity indicate that the negative influence of liquidity on the debt level is reduced in the case of small firms, a result probably explained by the concentration of ownership, where closed relationships minimize information asymmetries and power is in the hands of the owner-manager (Poza, 2013).

Table 5. Random-effects model (moderating effects). Complete sample and TD as dependent variable.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
C	0.304 (**)	0.271 (**)	0.212	0.287 (**)	0.257 (*)	0.247 (*)	0.147	0.265 (**)	0.176	0.237 (**)
Lagged debt	0.477 (***)	0.478 (***)	0.477 (***)	0.478 (***)	0.478 (***)	0.478 (***)	0.478 (***)	0.479 (***)	0.479 (***)	0.481 (***)
NDM	-0.245	-0.013 (***)	0.011	-0.016 (***)						-0.017 (***)
NDMxAGE	0.003									
NDMxPRO		-0.046 (*)								
NDMxSIZ			-0.002							
NDMxLIQ				0.005						
NS					-0.008	-0.007	0.040	-0.012 (**)	-0.011 (***)	
NSxAGE					-0.001					
NSxPRO						-0.054 (*)				
NSxSIZ							-0.004			
NSxLIQ								0.019		
DS	0.074 (***)	0.075 (***)	0.071 (**)	0.075 (***)	0.110 (***)	0.110 (***)	0.112 (***)	0.111 (***)	0.117 (***)	0.074 (***)
Controls										
AGE	-0.112 (***)	-0.105 (***)	-0.105 (***)	-0.104 (***)	-0.105 (***)	-0.108 (***)	-0.107 (***)	-0.107 (***)	-0.105 (***)	-0.104 (***)
SIZ	0.046 (***)	0.046 (*)	0.051 (***)	0.045 (***)	0.043 (***)	0.044 (***)	0.051 (***)	0.043 (***)	0.050 (***)	0.047 (***)
PRO	-0.297 (***)	-0.175 (*)	0.296 (***)	0.297 (***)	-0.295 (***)	-0.170 (*)	-0.293 (***)	-0.294 (***)	0.845 (***)	-0.184 (***)
LIQ	-0.148 (***)	-0.151 (*)	-0.148 (***)	-0.162 (*)	-0.149 (***)	-0.149 (***)	-0.150 (***)	-0.196 (**)	-0.153 (***)	-0.561 (***)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TAN	-0.061 (*)	-0.065 (*)	-0.063 (*)	-0.062 (*)	-0.063 (*)	-0.063 (*)	-0.063 (*)	-0.062 (*)	-0.069 (*)	
PROxSIZ									-0.093 (**)	
SIZxLIQ										0.033 (**)
Overall R^2	0.18	0.17	0.22	0.18	0.16	0.16	0.16	0.16	0.17	0.18

Source: own study

Notes: Robust standard errors (HAC). * p< 0.10; ** p< 0.05; *** p< 0.01.

Regarding the control variables, the inverse relationship between debt and firm age is significant for both types of firms but presents a higher coefficient for the group of FF. This relationship supports the idea that more mature FF 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 is expected a lower debt level. Old FF, 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 & Hamilton, 2004). Conversely, younger firms prefer to retain control and finance their investments with debt (Poletti-Hughes & Martínez García, 2020; Robb, 2002). Regarding firm size, the results suggest a significant positive relation with debt, a result consistent with the trade-off theory. This result is also confirmed in many other papers on small firms' capital structure (e.g., López-Gracia & Sánchez-Andújar, 2007), supporting the idea that there is a change in the financial structure of FF throughout their life cycle (Molly et al., 2010). Our results also evidence a significant inverse relationship between profitability and debt. The presence of this result in both types of firms is consistent with pecking order theory. It supports the idea that firms' management (including family members) display some reluctance to open up the firms' capital to maintain control and foster long-term survival. Particularly in the case of FF, the existence of information asymmetry between FF and the lenders means that FF prefer internally generated funds for financing (with no information costs) to external funding (López-Gracia & Sánchez-Andújar, 2007; Myers & Majluf, 1984). The results for the variable liquidity are not always significant. Still, they tend to present a negative impact on leverage, thus supporting the pecking order and agency theories and not confirming the free cash flow hypothesis (Jensen, 1986). Finally, regarding the variable tangibility, our results are also mixed. There is some evidence of a negative effect on total debt but a significant positive impact on long-term debt, possibly because firms with more tangible assets can use them as collateral to increase their borrowing capacity (Harris & Raviv, 1991). These findings for the control variables broadly evidence that firms mainly base their financial policies on internally generated resources, passing up growth if necessary, as their first financing objective is to avoid risk and not lose control of the business.

CONCLUSIONS

The results obtained in this paper allow us to establish the following conclusion: firms with a controlling shareholder exhibit higher debt levels since the risk of a hostile takeover is reduced. Additionally, firms with concentrated ownership structures and small boards present higher debt levels, possibly due to a lower risk aversion and fewer conflicts of interest between shareholders and between shareholders and managers. In the context of the agency theory, our results evidence that shareholder concentration, management ownership, and smaller boards align interests and reduces agency costs within firms, leading to higher debt levels. Regarding the other determinants of leverage, the

results presented above broadly support the pecking order and agency theories. Nevertheless, contrary to the expected, no significant differences were found between FF and NFF.

The results of this paper suggest that in countries where firms use mainly bank financing instead of capital markets and with 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 the majority shareholders to monitor financial management. So, albeit this paper is focused on the wine sector, the problems here described are much more general and could be extended to other industries characterized by a relatively high share of family firms operating in other countries with bank-based financial systems. Specifically, regarding the importance of these results for small businesses and entrepreneurs, where the above-stated conditions are usually met (controlling shareholders, concentrated ownership and small boards), there seems to be a risk for those firms to incur in higher levels of debt. Higher indebtedness levels increase risk exposure and the probability of default, so that, aware of those risks, firms' decision-makers should impose themselves limits to indebtedness.

This paper presents some limitations: i) we admit that the causality goes from ownership and control structure to debt, disregarding the potential endogeneity. Future papers, employing a more extensive data set should perform GMM regressions as a robustness check to that issue. Alternatively, using a panel quantile on quantile (QQ) approach could yield different results when estimating separate QQ regressions for groups of firms; ii) FF balance sheets do not provide information regarding the personal collateral provided by the owners of the firm to obtain financing. However, due to the characteristics of a bank-based financial system, family-name reputation and personal guarantees provided by the owners of family businesses are very relevant. These guarantees reduce bank incentives to collect information about FF, decreasing information costs and asymmetries, thus potentially affecting the financial structure of FF; iii) our results should be considered with some caution since the concept of FF used was constructed according to the availability of data, which prevented us from using other definitions based on the degree of *familiness*. Thus, it would be interesting to research whether our results change when different definitions of FF are used; iv) finally, primary survey data obtained from wine firms' CEOs could better identify FF and evidence the motivations behind different leverage ratios. Notice that there might be other corporate policy decisions that are affected by firms' characteristics, such as diversification, internationalization, R&D expenditures, etc., and even personal traits of the managers such as gender, age, or the level of education. Another limitation is that there is a high degree of heterogeneity among FF, leading to different financial behaviors. A possible extension of the present work could be to analyze the decisions on the financial structure of private family businesses, depending, for instance, on the degree of professionalization or financial literacy (Dekker et al., 2013).



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