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The Effects of Ownership Structure and Intragroup Loans on Leverage: Evidence from Family Firms in Chile

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ABSTRACT: This article examines the effects of family control and pyramidal ownership on firms' capital structure decisions. After studying a sample of listed family and nonfamily firms in Chile, we find that families take a conservative approach to debt and financial risk exposure. We test the hypothesis that family firms restrict the use of debt in order to avoid the monitoring role of creditors, which could limit their enjoyment of the private benefits of control. In keeping with this hypothesis, we find a U-shaped relationship between leverage and the degree of pyramidal ownership that is more pronounced among family firms than nonfamily firms. We do not find any evidence that is consistent with the hypothesis that family-controlled firms have low leverage ratios due to their access to internal capital markets. In fact, conversely, we find that listed family firms provide more loans to related companies than comparable nonfamily firms.

KEY WORDS: business groups, capital structure, family firms, internal capital markets, ownership structure, pyramidal structure

JEL CLASSIFICATION: G32

The relationship between family firms and performance is a point of contention in prior literature. The vast majority of research shows that family-controlled firms have better financial performance than nonfamily firms (e.g., Andres 2008; Anderson and Reeb 2003a; Barontini and Caprio 2006; Maury 2006; Villalonga and Amit 2006).[1] The arguments for the superior performance of family firms include families' long-term investment horizons (e.g., Zellweger 2007), reputational concerns (e.g., Chen et al. 2010; Pindado, Requejo, and de la Torre 2011; Zellweger et al. 2011), and reduced agency problems between managers and shareholders (e.g., Isakov and Weisskopf 2014). However, recent research suggests that family firms may have agency problems between controllers and minority shareholders, especially when families enjoy higher levels of private benefits of control (Dick and Zingales 2004; Villalonga and Amit 2006, 2010). Thus, the literature provides no consensus on whether family control is beneficial or detrimental to the organization (Pindado, Requejo, and de la Torre 2015).

In this article, we explore the financing policies of family firms as another explanation for their performance. Previous studies analyze the effect of family control over decisions on capital structure. For instance, González et al. (2013) show that when family involvement stems from direct and indirect ownership, the family–debt relationship is a positive one. More recently, Pindado, Requejo, and de la Torre (2015) investigate the distribution of control among shareholders. They find that family firms in the Eurozone have higher levels of debt compared to other family firms and even nonfamily firms, especially those without any separation between voting rights and cash flow rights. Using a sample of Chilean firms listed on the Santiago Stock Exchange, we obtain contrasting results.

Ours differentiate from prior studies in that we specifically estimate the relationship between particular control-enhancing mechanisms[2] and leverage in markets where it is typical to have high ownership concentration coupled with low distribution of control among shareholders. In addition, no prior study has directly examined the effects of internal capital markets on leverage decisions of family firms.[3]

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We expand on the existing literature by establishing a link among family firms, control-enhancing mechanisms, internal capital markets, and leverage decisions. Two contrasting arguments predict the relationship between family ownership and financial leverage. They state that the use of debt can be moderated or strengthened in accordance with the firm type (family vs. nonfamily). First, the unwillingness of family firms to use equity financing in order to avoid the dilution of family control suggests a positive relationship. That is, family firms may prefer debt to new equity. Prior literature suggests that family firms issue more debt than nonfamily firms for the purpose of growing a business without diluting ownership (e.g., Croci, Doukas, and Gonenc 2011; King and Santor 2008; Setia-Atmaja, Tanewski, and Skully 2009). Furthermore, Björnberg and Nicholson (2012) interviewed family firm owners in the United Kingdom and found that the value of ownership for these family owners is more emotional than it is financial. Additionally, as long as debtholders perceive family businesses to be less risky, family firms will have comparatively easier access to debt financing and, therefore, will tend to use more debt (e.g., Croci, Doukas, and Gonenc 2011; Anderson, Duru, and Reeb 2012). Furthermore, Anderson, Mansi, and Reeb (2003) show that alleviating agency problems between shareholders and debtholders in family firms explains why their debt financing costs are comparatively lower.

Second, family firms may prefer internally produced funding to external debt due to conservative behavior that arises from reputational concerns and the undiversified portfolios of family owners. For more on the image and reputational concerns of family firms, see the literature review of Sageder, Mitter, and Feldbauer-Durstmüller (2016). The under-diversified portfolios of family owners and their desire to reduce firm risk have been documented in Anderson and Reeb (2003b) and Kim, Pantzalis, and Chul Park (2014). Additionally, debt significantly increases financial distress and bankruptcy risks (e.g., Anderson and Reeb, 2003b; Faccio, Marchica, and Mura 2011). In fact, previous evidence by González et al. (2013) shows that when family members are involved in management or control the board of directors, aversion to high risk will lead to lower debt levels. In summary, family ownership may be negatively related to leverage because of both reputational concerns and considerations surrounding risk exposure.

Our results show that the financial leverage of family controlled firms is lower than that of nonfamily controlled firms. Specifically, we find that a dummy variable representing family control is negatively associated with leverage. These findings therefore support the hypothesis that families take a conservative approach to debt and financial risk exposure.

The literature also suggests that the degree to which family firms use control-enhancing mechanisms influences family firms' leverage decisions. The expected effect of pyramidal ownership on leverage can be dual. On the one hand, reviewing a sample of Chinese listed companies, Jiang, Lee, and Yue (2010) show that controlling shareholders exacerbate the use of intragroup corporate loans to extract funds. They find that these loans represent a substantial portion of the reported assets and market capitalization of Chinese firms. They also show that this form of tunneling is most severe at higher levels of separation between voting rights and cash flow rights. Consequently, in a context of potential tunneling activities, we expect family firms to present increased levels of external leverage that are needed to finance-related companies. This relationship should be the strongest when the degree of divergence between voting rights and cash flow rights in the firm is high. On the other hand, restricting the use of debt can enable family firms to avoid the monitoring role of creditors, which can limit the ability of family owners to enjoy the private benefits of control (Volpin 2002) such as tunneling funds from publicly listed companies to unlisted related companies. Thus, controlling family shareholders may restrict the use of debt to preserve their ability to extract benefits from this control.[4] Our results confirm this last expectation.

In this article, we also combine the effects of family control with the separation between control and cash flow rights. We have done this to gain a more comprehensive picture of family firms' financing patterns and, more importantly, to empirically test whether family control increases or decreases the conflict of interest between controlling shareholders, minority shareholders, and debt providers. With this goal in mind, we analyze whether debt levels vary across family firms that have higher degrees of separation removing control from cash flow rights. We expect the negative relationship between

leverage and family control to be more pronounced in family firms with higher degrees of voting rights than cash flow rights (i.e., higher levels of separation).

Although we find a U-shaped relationship between voting and cash flow rights separation from financial leverage in both family and nonfamily firms, our results show that this relationship is less pronounced for family firms than nonfamily firms. In other words, when the divergence between voting and cash flow rights exceeds a certain threshold, firms become more leveraged. However, in keeping with the conservative behavior of families, leverage in family firms is still lower than that of their nonfamily counterparts at higher levels of voting and cash flow rights divergence. These results remain robust after the inclusion of industry and year fixed effects, and the use of an instrumental variable approach to control for endogeneity concerns since a number of unobservable firm characteristics can simultaneously drive both pyramidal ownership and leverage.

Lastly, perhaps the most surprising results relate to the extent to which family control and separation of voting and cash flow rights motivate the use of intragroup loans as a solution for underdeveloped capital markets (Khanna and Yafeh 2007) or, alternatively, the redirection of funds from firms in which the controlling shareholder has low cash flow rights to firms in which he or she has high cash flow rights. For instance, Lemmon and Lins (2003) show that during the Asian crisis, many firms that experienced strong price declines made related party loans. Similarly, La Porta, Lopez-de-Silanes, and Zamarripa (2003) find that when Mexican banks lend to firms controlled by the bank owners, such lending tends to occur under better terms, although default is more likely. More recently, Buchuk et al. (2014) provide evidence that lending relationships tend to arise between firms that are near each other in the control pyramid and are in the same industry or more integrated industries. They also find that firms in which controlling shareholders have high cash flow rights receive more loans than do other firms.[5]

We formally test these relationships by examining whether the levels of intragroup loans of family-controlled firms are greater than those of nonfamily-controlled firms. Our results suggest that family firms have higher related party net loans than nonfamily firms. These loans are measured as the difference between the accounts receivable and accounts payable of related companies. Thus, the hypothesis that a family-controlled firm has lower leverage ratios because of its access to internal capital markets is not supported. Overall, the evidence suggests that family firms have economic incentives to lend more money to related companies than nonfamily firms.

Empirical Model

The Effects of Family Control on Leverage

The first analysis examines the effects of family control on a firm's financial leverages. We hypothesize that family control is negatively related to leverage. Here is the baseline regression model:

$$Leverage_{it} = \alpha + \beta_1 Family_{it} + \gamma' \mathrm{X}_{it} + yi_{it} + \epsilon_{it}, \tag{1}$$

Leverage is the firm's leverage ratio, and *Family* is a binary variable that equals one if firm i is controlled by a family, and zero if it is not. The vector X_{it} contains control variables. We calculate all firm-level control variables on a yearly basis. Fixed effects are included at the year-industry level (yi_{it}).

The definition of a family firm is a key concept of our article. Previous studies show that one of the characteristics of family firms is the presence of an individual investor or a family group as the ultimate large shareholder (Martínez, Stöhr, and Quiroga 2007; Naldi et al. 2015; Sacristán-Navarro, Gómez-Ansón, and Cabeza-García 2011). In keeping with comparable research, we use control chain methodology to identify the ultimate family or family group shareholder of the pyramidal structure, that is, the shareholder who effectively controls the firm (La Porta, Lopez-de-Silanes, and Shleifer 1999; Ruiz-Mallorquí and Santana-Martín 2011). We use the weakest link in the control chain and

direct participation in order to compute voting rights. Cash flow rights are computed by multiplication of indirect participation. We then sum the direct participation.

Additionally, in line with Villalonga and Amit (2006), and Bonilla, Sepulveda, and Carvajal (2010), we use three criteria to determine whether or not a firm is a family business. First, if annual reports explicitly state the existence of a controlling shareholder and the chain of control shows that the ultimate controlling shareholder is a group of individuals of the same family, the firm is categorized as a family-controlled firm. Second, if annual reports do not explicitly state the existence of a controlling shareholder, we categorize a firm as family controlled if the board of directors is majority controlled by individuals who are family members connected to the ultimate family owner. Finally, we categorize a firm as family controlled if the firm is run at the senior management level by one or more family members related to the ultimate family owner (Block 2011; Vandekerkhof et al. 2015).

We also control for other known determinants of a firm's leverage that have been reported in prior literature. Earlier empirical studies show that some of the most pervasive determinants of leverage are the firm's level of profitability, its growth opportunities, size, and tangibility of assets. Consequently, vector X_{it} in Equation (1) includes proxies that reflect these key factors. We control for overvaluation and a firm's growth opportunities using Tobin's *Q* ratio, defined as the sum of the equity market value and debt book value scaled by the firm's book value. We also control for the following firm characteristics: return on assets (*ROA*), natural log of total assets (*size*), dividends to equity (*dividends*), and property, plant, and equipment to assets (*tangibility*), cash to total assets (*cash*), inventory to total assets (*inventory*), and age of the firm (*age*).

Finally, we control for other ownership characteristics and the separation between voting rights and cash flow rights. One aspect is whether or not the firm is affiliated with a business group according to the definition used by the Chilean regulator, the Superintendent of Securities and Insurance (SVS). The SVS maintains a list of business groups in the country. According to the Chilean Capital Markets Law,[6] a firm belongs to a business groups if it meets any of the following conditions: (1) the firm has the same controller as other firms and the controller has at least 25% direct ownership, (2) a significant portion of the firm's assets are assigned to business groups, or (3) the firm is controlled by one or more firms that belong to a business group controlled by an ultimate shareholder. The SVS website periodically provides a list of firms that are affiliated with each business group.[7] We also control for the cash flow rights of the ultimate shareholder (*cash flow rights*), the difference between voting rights and cash flow rights (*excess control rights*), and the squared term of excess control rights (*excess control rights squared*). Table S1, available online, provides definitions of all variables.

The Effect of Family Control and Excess of Control Rights on Leverage

Next, we investigate whether family-owned firms with high levels of separation between voting and cash flow rights (excess control rights) maintain less financial leverage compared to other firms. We hypothesize that family control plays a large role in decreasing the leverage of firms with high levels of excess of control rights. The model to test this hypothesis is as follows:

$$Leverage_{it} = \alpha + \beta_1 Family_{it} + \beta_2 Excess\,Control\,Rights_{it} + \theta' Interaction\,terms + \gamma' X_{it} + yi_{it} + \epsilon_{it}. \quad (2)$$

The variables of interest in this model are the interaction terms between family control and the proxy for excess of control rights. These interaction terms allow us to analyze how a firm's decisions to leverage can vary in relation to the degree of excess of control rights and family ownerships. The vector X_{it} includes control variables. We also control for both year and firm fixed effects.

The Effect of Family Control and Excess of Control Rights on Intragroup Loans

Next, we examine the effects of family control on the flow of intragroup funding. We measure the intensity of the internal capital market using the size of the intragroup loans that a company receives and provides during a given year. Every Chilean listed firm typically reports a line called "notes and account payable from related companies" on the liability side and "notes and accounts receivable from related companies" on the asset side of the balance sheet. We scale the difference between accounts payable and account receivable from related companies by total assets and use the result as our proxy for intragroup funding. We hypothesize that family firms may have lower levels of leverage because they use intragroup transactions to access funds needed for financing.

We begin by examining whether family-owned firms with high levels of internal capital markets have less financial leverage compared to other firms. The model to test this hypothesis is

$$Leverage_{it} = \alpha + \beta_1 Family_{it} + \beta_2 Net\ Loans_{it} + \theta' Interaction\ terms + \gamma' X_{it} + yi_{it} + \epsilon_{it}, \quad (3)$$

Net Loans corresponds to the difference between the total amount of accounts receivable and total amount of accounts payable from related companies reported by a firm on its balance sheet (e.g., Buchuk et al. 2014). We follow Buchuk et al. (2014) and assign end-of-year amount of accounts receivable and accounts payable reported by a firm to the dependent variable. Then, we divide the results by the firm's assets as they stood at the end of the previous year.[8] The vector X_{it} includes control variables. We also control for both year and firm fixed effects. The variables of interest in this model are the interaction terms between family control and net loans.

We also test the hypothesis that family firms have higher levels of internal capital market activity than nonfamily firms do. The econometric specification to test this hypothesis is

$$Net\ Loans_{it} = \alpha + \beta_1 Family_{it} + \gamma' X_{it} + yi_{it} + \epsilon_{it}. \quad (4)$$

We define *Net Loans* and *Family* as in Equations (3) and (2) above.

We estimate Equations (1)–(4) using ordinary least squares (OLS) data panel estimators. However, because OLS estimates can be biased in the presence of endogeneity, we also use instrumental variables panel data estimates to check the robustness of our results. Specifically, our firm-level variable of cash flow rights may be endogenous with performance and other firm-level features (Demsetz and Villalonga 2001; Miguel, Pindado, and Torre 2004; Pindado and Requejo 2015). We deal with this issue by running instrumental variables regressions in a two-stage corrected estimation (Amoako-Adu and Smith 2001). In the first stage, we use the cash flow rights as the dependent variable. We introduce as instrumental variables the first and the second lag of ownership in the hands of institutions that belong to the investment advisors category (de la Hoz and Pombo 2015). This selection of instrumental variables is in line with Roberts' and Whited's (2013) recommendations to address endogeneity issues in corporate finance. We also introduce the same set of control variables defined in vector X_{it}. Once we estimate the first-stage regression, we rerun the same equations corrected for endogeneity.

Data

Our data sets are from several sources. We obtained financial information and stock prices from Thomson Reuters Eikon. Measures related to our proxy of internal capital markets came from Economatica. We identified business groups using the list of Chilean business groups published by the Chilean stock exchange authority, SVS. We also relied on the SVS to determine the ultimate ownership level of voting and cash flow rights. Lastly, we collected information on the boards of directors and the top management teams from credit rating agencies, the financial press, and other company sources.

We only considered stocks listed on the Santiago Stock Exchange for the 2006–2014 period. The final sample is an unbalanced panel of 829 firm-year observations from 105 listed firms for the 2006–2014 period. Within this sample, 525 observations are defined as family firms while 304 are nonfamily firms.

Table S2, available online, presents the number of observation and firms in our sample, categorized by year (Panel A) and industry (Panel B). Table S3, available online, provides descriptive statistics for the final sample of 829 observations. We dropped the outliers in the top and bottom 1% of each variable to minimize their influence. Nearly one-half (46.6%) of firms in the sample have pyramidal structures that allow the separation of voting rights and cash flow rights. Of these firms, the difference in control rights is 8.6% on average. As in similar countries, the ownership structure is highly concentrated (Hormazábal 2010); average ultimate shareholder voting rights and cash flow rights are 59.3% and 50.6% respectively. These findings highlight the potential incentives that pyramidal ownership provides controlling shareholders through excess of voting power over cash flow. We report correlation among variables in Table S4, available online.

Panel A of Table 1 compares the characteristics of family and nonfamily firms. Chilean family and nonfamily firms only differ significantly in leverage and net loans. The mean leverage for family firms is 0.230 (nonfamily, 0.271). The mean difference test between the two groups is statistically significant at the 1% level. Similarly, the difference of mean results between family and nonfamily firms for net loans indicates that family firms tend to provide more resources to other firms in the control chain than nonfamily firms do. The mean net loans for family firms is −0.001 (nonfamily, −0.019). Meanwhile, the mean maximum quarterly net loans for family firms is −0.007 (nonfamily, 0.028). These mean differences between the two groups are also statistically significant at the 1% level.

Panels B Table 1 shows the difference of means for leverage for firms with and without separation of control based on divergence in voting and cash flow rights. The sample is further divided into family and nonfamily firms. The results indicate no difference in leverage between firms with and without divergence of voting and cash flow rights. More importantly, however, family firms with or without divergence have lower levels of leverage than nonfamily firms.

Panel C of Table 1 reports the difference of means based on affiliation with a business group. Again, the sample is split between family and nonfamily ownership. Firms unaffiliated with a business group have higher leverage (0.2667) compared to those affiliated with a business group (0.2351). The difference between the means of the two groups is statistically significant at the 1% level. Only the nonfamily subsample shows a significant difference between firms affiliated and not affiliated with a business group. For example, among nonfamily-owned firms, the mean leverage for nonaffiliated firms is 0.2936. In contrast, the mean leverage of nonfamily firms affiliated with a business group is 0.2545. The difference between the means of the two groups is statistically significant at the 5% level. In addition, family firms affiliated and unaffiliated with a business group have lower levels of leverage than nonfamily firms.

Panel D of Table 1 reports the difference of leverage shows family firms as classified into two categories according to their volume of net loans to related parties. Family-owned firms with low levels of net loans have a mean leverage of 0.2369. In contrast, the mean leverage of family firms with high levels of net loans is 0.2135. The difference between the means of the two groups is statistically significant at the 5% level. The results suggest that family firms that provide more financing to related companies have lower levels of leverage than family firms that receive loans from related parties.

Explanatory Analysis

Family Firms and Leverage

Table 2 presents the results of Equation (1), which analyzes the effect of family control on firm financial leverage. Column 1 shows the results of the equation estimated by OLS regressions, and column 2 presents two-stage least squares regressions. We calculated standard errors clustered at the

Table 1. Univariate analysis for firm-level characteristics, categorized by ownership structure.

Panel A: Characteristics of family and nonfamily firms

Variable	Nonfamily firms	Family firms	Difference
Leverage	0.271	0.230	0.041***
Excess control rights	0.081	0.090	–0.009
Cash flow rights	0.514	0.492	0.023
Size	26.338	26.322	0.016
Tobin's *Q*	0.973	1.004	–0.032
ROA	0.045	0.047	–0.003
Tangibility	0.453	0.460	–0.007
Cash	0.067	0.074	–0.007
Inventory	0.080	0.099	–0.019***
Dividends-to-equity	0.066	0.060	0.007
External finance dependence	–2.789	–1.039	–1.75***
Age	59.435	60.816	–1.381
Net loans	–0.019	–0.001	–0.018***

Panel B: Leverage categorized by family ownership and separation of voting and cash flow rights

		All firms	Nonfamily	Family	Difference
Without separation	Mean	0.2484	0.2779	0.2325	0.0454***
	N	459	161	298	
With separation	Mean	0.2419	0.2652	0.228	0.0372***
	N	524	196	328	
Difference		0.0064	0.0126	0.0044	

Panel C: Leverage categorized by family ownership and business group affiliation

		All firms	Nonfamily	Family	Difference
Non-Business Group (BG) affiliated	Mean	0.2667	0.2936	0.2409	0.0527***
	N	307	150	157	
BG affiliated	Mean	0.2351	0.2545	0.2265	0.028***
	N	676	207	469	
Difference		0.0316***	0.0391**	0.0144	

Panel D: Leverage categorized by family ownership and internal capital markets

		All firms	Nonfamily	Family	Difference
Low net loans	Mean	0.2539	0.2813	0.2369	0.0444***
	N	498	191	307	
High net loans	Mean	0.2339	0.277	0.2135	0.0635***
	N	421	135	286	
Difference		0.02**	0.0043	0.0233**	

Panel A shows the difference of means tests of firm-level characteristics between family and nonfamily firms. Panel B categorizes leverage by family ownership and separation of control and cash flow rights, and business group affiliation. The sample comprises 105 companies listed in the Santiago Stock Exchange between the years 2006 and 2014 (829 observations). We classify a firm as either as family or nonfamily according to three criteria. First, we inspect the list of business groups provided by the Superintendent of Securities and Insurance (SVS). If the group is undoubtedly associated with a business family, we classify firms within the group as family-controlled firms, including a family that maintains control through pyramidal ownership. Second, if a company does not belong to any of these corporate groups, we categorize the firm as a family controlled if one or more members of a family-controlled firm on the SVS list controlled the firm at the senior management level. Third, we classify a company not in any business group as a family-controlled firm if one or more members of a family on the SVS list control its board of directors. *** and ** indicate that the coefficient is significantly different from zero at the 1% and 5% significant level, respectively. ROA: Return on asset.

Table 2. The effects of family control and excess of control rights on leverage.

	OLS model	2SLS model
Dep. variable: leverage	**(1)**	**(2)**
Family	–0.0453***	–0.0599***
	(4.6728)	(4.5094)
Excess control rights	–0.3058***	–1.3715***
	(2.7391)	(5.6104)
Excess control rights squared	0.7522***	2.2682***
	(2.7170)	(5.1372)
Business groups	–0.0494***	–0.0465***
	(4.8009)	(3.3893)
Size	0.0150***	0.0122***
	(5.2003)	(3.5207)
Tobin's *Q*	0.0629***	0.0377**
	(5.6376)	(2.5529)
ROA	–0.9383***	–0.6148***
	(9.0331)	(4.5394)
Tangibility	0.0107	–0.0416
	(0.4007)	(1.1155)
Cash holdings	–0.1434**	–0.0979
	(2.4455)	(1.2432)
Inventory	0.1187*	0.0012
	(1.6644)	(0.0131)
Dividends/Equity	0.0265	–0.1470
	(0.4619)	(1.5283)
Cash flow rights	0.0460**	–0.4875***
	(2.1233)	(4.3336)
External finance dependence	0.0007	0.0003
	(0.9481)	(0.3824)
Age	0.0003**	0.0006***
	(2.1886)	(3.0317)
Constant	–0.1013	0.3165**
	(1.1761)	(2.4409)
Year fixed effects	No	Yes
Industry fixed effects	No	Yes
Year-industry fixed effects	Yes	No
Obs	713	676
Adj. *R*	0.3119	
Uncentered *R*-squared		0.7849
Hansen *J* (*p*-value)		0.8911

This table presents the parameter estimates from ordinary least squares (OLS) and two-stage least squares (2SLS) regressions of the following model:

$$Leverage_{it} = \alpha + \beta_1 Family_{it} + \gamma' \mathrm{X}_{it} + yi_{it} + \epsilon_{it}.$$

All variables are defined in Table S1, available online. We include fixed effects at the industry and year levels. Robust standard errors are in parentheses. ***, **, and * indicate that the coefficient is significantly different from zero at the 1%, 5%, and 10% significant level, respectively.

firm level in all models. The evidence indicates that family firms are negatively associated with leverage. The results are robust to the inclusion of different control variables, fixed effects, and estimation methods. The coefficients for family control are negative in columns 1 and 2 (–0.0453, t = 4.6828; −0.0599, t = 4.5094, respectively) and statistically significant at the 1% level. These

findings are consistent with the notion that family firms take a conservative approach to risk exposure and financing decisions compared to nonfamily firms.

Our results contrast with those of Pindado, Requejo, and de la Torre (2015), who also investigate the effects of family control on firm debt level and find a positive relationship between family control and level of debt. They argue that family firms prefer debt to equity as an external source of funds to avoid diluting the family's control (King and Santor 2008; and Croci, Doukas, and Gonenc 2011). We differ from Pindado, Requejo, and de la Torre (2015) in that they use a sample of Eurozone companies. In our study, by contrast, we estimate the effect of family control on capital structure decisions by using a sample of firms listed in Chile where ownership is highly concentrated and a few family shareholders dominate the corporate system.

We control for a number of firm and deal characteristics addressed in prior literature that may affect firm leverage. First, we consider the effect of the divergence between voting rights and cash flow rights. The parameter for *excess control rights* is negative and significant in columns 1 and 2 (–0.3058, $t = 2.7391$; –1.3715, $t = 5.6104$, respectively). However, when we include the squared value of *excess control rights*, this relationship becomes positive once the excess of voting rights surpasses a certain threshold. In particular, the *excess control rights squared* coefficient is positive and statistically significant in all of our models (0.7522, $t = 2.7170$; 2.2682, $t = 5.1372$, respectively). Consequently, the separation of rights has a U-shaped influence over leverage for both family and nonfamily firms. In other words, at low levels of divergence pyramidal, ownership is beneficial to firm value because controlling owners can exploit certain advantages, such as the use of internal capital markets. However, after a certain threshold is reached, the divergence becomes too large. Above this threshold, controlling owners can take advantage of the excess of control rights to extract private benefits through the use of excessive debt. This finding is similar to the tunneling argument presented by Jiang, Lee, and Yue (2010).

We also control by the effect of business group affiliation. Specifically, in all regressions, we include a binary variable that equals one if the firm is a member of a business group according to the definition used by the Superintendent of Securities and Insurance. If not, the variable equals zero. Our results show that business group affiliation means a reduction in the use of debt. This finding suggests that firms that belong to business groups prefer to take advantage of internal capital markets and thus have lower levels of external debt.

It is notable that the negative relationship between family control and leverage presented in Table 2 suggests that family firms prefer equity to debt when they are in need of external funds. We posit this preference may be due to the family owner's wish to avoid the monitoring role of creditors, which can limit their ability to enjoy private benefits of control (Volpin 2002). We explore this hypothesis in more detail in the next section.

Finally, González et al. (2013) show that the relation between leverage and family control varies significantly depending upon the family owners type of involvement in the firm. As a robustness check, in Table S5 available online, we replace our key independent variable with the two alternative ways (other than ownership) that families can be involved in a firm: through the board of directors or senior management. Although some significance is lost, Table S5 shows that the sign of the coefficient for family persists at previous levels. Therefore, our primary findings remain robust after we set out the different types of family involvement.

The Effect of the Excess of Control Rights on Leverage of Family Firms

In this section, we explore the hypothesis that family firms limit the use of debt to avoid the monitoring role of creditors, which can reduce family owners' ability to enjoy the private benefits of control. We introduce a family firm dummy variable interacted with excess of voting rights. Furthermore, to test for the possibility of a quadratic relationship, we include the interaction between the family control dummy and the squared value of the excess of voting rights. Table 3 presents the regression results. Excess of voting rights and leverage are negatively related (column 1), but family

Table 3. The effects of family control and excess of control rights on leverage, with interaction terms.

	2SLS model				
	All firms			Business group affiliated firms	
Dep. variable: leverage	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Family	–0.0576***	–0.0703***	–0.0783***	–0.1143***	–0.1344***
	(4.2090)	**(4.4451)**	(4.9083)	(4.6606)	**(4.6081)**
Excess control rights	–0.4803***	–0.6102***	–1.6594***	–0.5642***	–1.5457***
	(4.8757)	(4.5532)	(5.4721)	(3.0555)	(3.2566)
Excess control × family		0.1925**	0.5542**	0.2322**	0.6217*
		(2.0594)	(2.1426)	(2.0404)	(1.8665)
Excess control rights squared			2.8558***		2.2449***
			(4.4328)		(2.6845)
Excess control squared × family			–1.0808		–0.8885
			(1.5507)		(1.1447)
Business groups	–0.0338**	–0.0353**	–0.0485***		
	(2.3687)	(2.5164)	(3.6622)		
Size	0.0109***	0.0101***	0.0119***	0.0202***	0.0211***
	(3.1429)	(2.8833)	(3.4998)	(4.5708)	(4.5004)
Tobin's *Q*	0.0315**	0.0309**	0.0380***	0.0320*	0.0386**
	(2.1151)	(2.0846)	(2.6469)	(1.9331)	(2.2135)
ROA	–0.6460***	–0.6478***	–0.6417***	–0.5481***	–0.5326***
	(4.8007)	(4.8747)	(4.9000)	(2.9170)	(2.7774)
Tangibility	–0.0294	–0.0321	–0.0414	0.0270	0.0050
	(0.8022)	(0.8739)	(1.1285)	(0.5576)	(0.0950)
Cash holdings	–0.1175	–0.1399*	–0.1318*	–0.1352	–0.0906
	(1.5032)	(1.7890)	(1.7028)	(0.9007)	(0.5671)
Inventory	0.0722	0.0497	–0.0103	0.2645**	0.1653
	(0.8027)	(0.5497)	(0.1147)	(2.1327)	(1.1748)
Dividends/Equity	–0.1813*	–0.1637	–0.1212	–0.2411**	–0.2179**
	(1.7371)	(1.6083)	(1.3282)	(2.3084)	(1.9748)
External finance dependence	0.0006	0.0005	0.0001	0.0004	0.0001
	(0.8027)	(0.6881)	(0.0765)	(0.4802)	(0.0880)
Age	0.0006***	0.0006***	0.0006***	0.0006**	0.0006**
	(3.2212)	(3.2650)	(3.2087)	(2.5672)	(2.4796)
Cash flow rights	–0.4428***	–0.4371***	–0.4545***	–0.4901***	–0.5672***
	(4.3422)	(4.3552)	(4.3459)	(3.3328)	(3.4626)
Constant	0.2854**	0.3156**	0.3144**	0.0113	0.0801
	(2.2696)	(2.4286)	(2.4792)	(0.0674)	(0.4358)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Obs	676	676	676	465	465
Uncentered *R*-squared	0.7874	0.7909	0.7985	0.8058	0.7866
Hansen *J* (*p*-value)	0.6579	0.7343	0.9640	0.2428	0.1585
Marginal effects					
Excess control × family (family = 1)		–0.4177***	–0.7898***	–0.332***	–0.6366***
Excess control squared × family (family = 1)			3.55***		2.7129***

This table presents the parameter estimates from two-stage least squares (2SLS) regressions of the following model:

$$Leverage_{it} = \alpha + \beta_1 Family_{it} + \beta_2 Excess\ Control\ Rights_{it} + \theta' Interaction\ terms + \gamma' \mathrm{X}_{it} + yi_{it} + \epsilon_{it}$$

All variables are defined in Table S1, available online. We include fixed effects at the industry and year levels. Robust standard errors are in parentheses. ***, **, and * indicate that the coefficient is significantly different from zero at the 1%, 5%, and 10% significant level, respectively.

control does moderate the negative effect of excess of voting rights on leverage decisions (column 2). We also find that the marginal effect of pyramidal ownership on leverage is not linear, rather, there is a U-shaped relationship between the variables (column 3). More importantly, however, we note that even at higher levels of separation, where the relationship between the excess of control rights and leverage is positive, the effect is lower for family firms compared to nonfamily firms. Figure S1 available online illustrates the U-shaped relationship between the excess of control rights and leverage and the effects of family control.

All results are robust after the use of an instrumental variable approach to control for endogeneity concerns because a number of unobservable firm characteristics can simultaneously drive both excess of control rights and leverage. The result for the Hansen statistic for weak instruments surpasses the suggested threshold indicating that the test does not reject the null hypothesis of validity of the instruments.[9] Finally, for a simpler interpretation of these results, Table 3 includes the marginal effects. It depicts the quantitative relevance of family firms and divergence on leverage decisions, which was computed as the partial derivative of leverage with respect to excess of control rights.

Columns 4 and 5 of Table 3 provide regression results only for firms affiliated with a business group. The magnitude of the negative relationship between family control and leverage for this subsample is even larger. One explanation for this result is that access to business groups allows firms to reduce the amount of their external debt with banks and bondholders (Buchuk et al. 2014). Therefore, family firms' use of internal capital markets can explain the lower total leverage of family firms. We explore this hypothesis in the next section.

The Effect of Family Control and Excess of Control Rights on Intragroup Loans

We next examine the internal capital markets of family firms and the effects of family control on the flow of intragroup funding. Prior studies suggest that controlling shareholders use intragroup loans as a solution for underdeveloped capital markets (Khanna and Yafeh 2007). Consequently, family firms may have lower levels of leverage because they use intragroup transactions to access funds needed for financing. Therefore, they can reduce the amount of debt taken from external sources such as banks and bondholders.

We start by including the interaction between family and net loans (defined as the difference between the total amount of accounts receivable and total amount of accounts payable, over total assets) in the regression for leverage. Table 4 shows that the interaction terms are statistically significant at the usual significance levels. More importantly, the negative sign of the estimated coefficients for the interaction term shows that family-controlled firms that receive loans from related companies (i.e., negative net loans) have higher levels of leverage than comparable nonfamily firms. Thus, the hypothesis that family-controlled firms have lower leverage ratios due to their access to internal capital markets is not supported.

Finally, we hypothesize that family firms siphon funds from publicly listed companies to related productive companies, especially those with high divergence between voting rights and cash flow rights. As previously argued, family firms may keep low levels of leverage to avoid the monitoring role of creditors, which can limit the family's ability to lend money opportunistically to firms in which the controlling family has high cash flow rights. Table 5 provides the results of the tests of this hypothesis.

The estimated coefficients in Table 5 show that family-controlled firms have larger net loans than do nonfamily firms. In other words, listed family firms provide more loans to related companies than comparable nonfamily firms. These results remain robust after controlling for other determinants of intragroup loans and endogeneity concerns. Thus, the hypothesis that family-controlled firms have lower leverage ratios due to their access to internal capital market is not supported. In fact, listed family firms receive less financing from related companies than nonfamily firms, further disproving the previous hypothesis that family-controlled firms have low leverage ratios due to their access to internal capital markets. Moreover, the fact that listed firms provide financing to related companies

Table 4. The effects of family control and intragroups loans on leverage.

	All firms		Business group affiliated firms
	OLS model	2SLS model	2SLS model
Dep. variable: leverage	**(1)**	**(2)**	**(3)**
Family	–0.0632***	–0.0748***	–0.1018***
	(6.4130)	(6.6471)	(5.7042)
Net loans	0.2862	0.2199	0.4733*
	(1.3446)	(0.9950)	(1.8730)
Net loans × family	–0.8475*	–0.9479**	–1.4178***
	(1.9517)	(2.1870)	(2.9024)
Excess control rights	–0.5158***	–1.1256***	–1.1224***
	(4.5041)	(5.7313)	(3.8767)
Excess control rights squared	1.3103***	2.2428***	2.0664***
	(4.4218)	(5.7167)	(4.0269)
Business groups	–0.0533***	–0.0526***	
	(5.2231)	(4.5768)	
Size	0.0128***	0.0112***	0.0186***
	(4.5491)	(3.9072)	(4.4943)
Tobin's *Q*	0.0662***	0.0511***	0.0370**
	(5.8788)	(4.1020)	(2.2048)
ROA	–0.8898***	–0.6750***	–0.5236***
	(8.9129)	(6.2139)	(2.9958)
Tangibility	0.0010	–0.0248	0.0275
	(0.0376)	(0.8260)	(0.6249)
Cash holdings	–0.1300**	–0.1125*	–0.0637
	(2.2415)	(1.6642)	(0.4311)
Inventory	0.0969	0.0374	0.1226
	(1.4780)	(0.5197)	(1.0583)
Dividends/Equity	0.0894	–0.0049	–0.1037
	(1.5473)	(0.0816)	(1.0398)
Cash flow rights	0.0171	–0.2842***	–0.4735***
	(0.7974)	(3.5546)	(3.4193)
External finance dependence	0.0005	0.0002	0.0002
	(0.7525)	(0.2759)	(0.2438)
Age	0.0003***	0.0006***	0.0004*
	(2.6846)	(3.4655)	(1.8613)
Constant	–0.0169	0.2073**	0.0719
	(0.2033)	(2.0708)	(0.4749)
Year fixed effects	No	Yes	Yes
Industry fixed effects	No	Yes	Yes
Industry-year fixed effects	Yes	No	No
Obs	669	636	444
Adj. *R*	0.3642		
Uncentered *R*-squared		0.8644	0.8339
Hansen *J* (*p*-value)		1.6632	0.2875
Marginal effects			
Net loans + family × net loans (family = 1)	–0.56130	–0.7279*	–0.9445**

This table presents the parameter estimates from ordinary least squares (OLS) and two-stage least squares (2SLS) regressions of the following model:

$$Leverage_{it} = \alpha + \beta_1 Family_{it} + \beta_1 Net\,Loans_{it} + \beta_1 Family_{it} \times Net\,Loans_{it} + \gamma' \mathrm{X}_{it} + yi_{it} + \epsilon_{it}.$$

All variables are defined in Table S1, available online. We include fixed effects at the industry and year levels. Robust standard errors are in parentheses. ***, **, and * indicate that the coefficient is significantly different from zero at the 1%, 5%, and 10% significant level, respectively.

Table 5. The effects of family control and excess of control rights on intragroup loans.

	All firms		Business group affiliated firms
	OLS	2SLS	2SLS
Dep. variable: net loans	**(1)**	**(2)**	**(3)**
Family	0.0060**	0.0061**	**0.0071****
	(2.2151)	(2.4542)	(2.1289)
Excess control rights	–0.0392**	–0.0374	–0.0745**
	(2.0446)	(1.4877)	(1.9794)
Business groups	–0.0022	–0.0015	
	(0.6516)	(0.4334)	
Size	0.0021*	0.0021*	0.0016
	(1.6638)	(1.6921)	(1.0235)
Tobin's *Q*	0.0059*	0.0065*	0.0116***
	(1.9143)	(1.8953)	(3.1385)
ROA	–0.0345	–0.0406	–0.1307***
	(1.0498)	(1.1297)	(2.6289)
Tangibility	0.0059	0.0055	0.0147
	(0.7522)	(0.7485)	(1.6313)
Cash holdings	0.0345**	0.0290*	0.0471*
	(2.2127)	(1.9014)	(1.7704)
Inventory	0.0612***	0.0636***	0.0567**
	(3.5355)	(3.7756)	(2.0892)
Dividends/Equity	–0.0125	–0.0073	–0.0332
	(0.6527)	(0.3684)	(0.9321)
External finance dependence	0.0041	0.0085	–0.0467
	(0.8073)	(0.4424)	(1.4918)
Age	0.0000	0.0000	0.0000
	(0.8250)	(0.3484)	(0.3257)
Cash flow rights	–0.0001	–0.0002*	–0.0002
	(1.2959)	(1.6943)	(1.1775)
Constant	–0.0775**	–0.0820**	–0.0468
	(1.9667)	(2.1525)	(1.0392)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Obs	673	640	446
Adj. *R*	0.1096		
Uncentered *R*-squared		0.1600	0.1706
Hansen *J* (*p*-value)		0.9838	1.5346

This table presents the parameter estimates from ordinary least squares (OLS) and two-stage least squares (2SLS) regressions of the following model:

$$Net\ Loans_{it} = \alpha + \beta_1 Family_{it} + \gamma' \mathrm{X}_{it} + yi_{it} + \epsilon_{it}.$$

All variables are defined in Table S1, available online. We include fixed effects at the industry and year levels. Robust standard errors are in parentheses. ***, **, and * indicate that the coefficient is significantly different from zero at the 1%, 5%, and 10% significant level, respectively.

could explain why family firms have lower levels of debt. If firms are providing loans to related parties, it means that they are increasing their investments using the difference between accounts receivable and accounts payable thus affecting their cash flows. Consequently, family firms will be less prone to increase their debt levels in order to avoid having high degrees of pressure upon their cash flows and any potential financial distress.[10]

The relationship between leverage and intergroup loans raises an interesting question about whether family firms have higher incentives than nonfamily firms to tunnel money to related companies. To delve into this question, we examine the impact of the separation of ownership and control on net loans. Given their incentives to tunnel, we expect family firms to have higher net loans whenever the level of voting–cash flow rights divergence is greater. However, unreported results show that the interaction between family control and the separation of control and ownership is not a statistically significant determinant of net loans. This result indicates that family firms in which the controlling shareholder enjoys the lowest cash flow ownership rights do not systematically have the largest net loan balances as we had hypothesized.

Concluding Remarks

This study examines how family control and pyramidal ownership affect the financial leverage of firms. Using a panel data set of family-controlled firms and comparable nonfamily firms in Chile, we test the hypothesis that family firms have lower leverage ratios than nonfamily firms. We confirm this hypothesis and show that family control has a negative direct effect on a company's level of debt. This result provides evidence that family firms take a conservative approach regarding their debt and financial risk exposures. Our results contradict some of the prior empirical literature regarding the effects of family control on capital structure decision-making.

We also test the hypothesis that family firms restrict the use of debt to avoid the monitoring role of creditors, which can limit the ability of family owners to enjoy the private benefits of control. Consistent with this hypothesis, we find that the magnitude of the negative relationship between leverage and family control is most pronounced in family firms with a higher degree of voting rights than cash flow rights. Although this relationship between leverage and pyramidal ownership is U-shaped, family control in fact acts as a moderator of the relationship. Therefore, family firms have lower levels of leverage than nonfamily firms for all degrees of pyramidal ownerships.

Finally, we do not find any evidence consistent with the hypothesis that family-controlled firms have lower leverage ratios due to their access to internal capital markets. In fact, conversely, we find that listed family firms provide more loans to related companies than comparable nonfamily firms.

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Supplementary Information

Supplemental data for this article can be accessed on the publisher's website.

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Notes

1. Evidence from Latin American markets in support of family-controlled firms outperforming nonfamily firms includes Martinez et al. (2007), Bonilla, Sepulveda, and Carvajal (2010), González et al. (2013), and Jara-Bertin and Sepulveda (2016).

2. In this article, we use "pyramidal ownership," "control-enhancing mechanism," "separation of voting and cash flow rights," or "excess of control rights" interchangeably.

3. In this regard, Chile provides an especially suitable corporate framework to test the effect of control-enhancing mechanisms on both the capital structures of family businesses and the use of internal capital markets. In September 1973, the Chilean military regime began a privatization process. The government allowed just a few private agents to participate in it. This led to a concentration of ownership and the subsequent formation of business groups (Buchuk et al. 2014; Meller 1993). Currently, the corporate ownership of Chilean firms remains highly concentrated. Ownership is mainly in the hands of individual shareholders or business groups, which maintain control through direct ownership and pyramidal structures (Buchuk et al. 2014; Masulis, Pham, and Zein 2011; Silva and Majluf 2008). Regulations on Chile's internal capital markets require every listed firm to have a line item in their financial reports called "notes and accounts payable from related companies" on both the liability and asset sides of the balance sheet. These accounts allow us to precisely measure the use of internal capital markets by these firms in Chile.

4. The financial literature about family firms usually labels the conflict of interest between controlling (family) shareholders and noncontrolling shareholders as Agency Problem II. This is to differentiate from the conflicts of interest arising between shareholders and managers (Agency Problem I), shareholders and creditors (Agency Problem III), and family insiders and outsiders (Agency Problem IV). Villalonga et al. (2015) have proposed this new conceptualization of agency problems within family firms.

5. However, the authors do not find robust evidence that minority shareholders lose out from intragroup loans, as tunneling predicts.

6. Law No. 18.045 – Title XV, pp. 39–44.

7. http://www.svs.cl/sitio/mercados/grupos.php (*accessed in October, 2015*).

8. In unreported results, we assign quarterly data to the dependent variable. In particular, we use the maximum difference between quarterly notes and accounts payable from related companies scaled by the total assets of the previous year. We perform this additional test to account for the intensity of internal capital markets throughout the year and the possibility that firms use related-party transactions just before the end of the year so they may present better financial statements. Results remain the same for both definitions of net loans.

9. These results hold for the 2SLS regressions in the remaining tables.

10. We wish to thank an anonymous referee for providing this alternative interpretation for our results.

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