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Corporate control and firm value: The bright side of business groups☆

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ABSTRACT

We analyze the effect of pyramidal ownership levels on the performance of Chilean firms by considering the impact of business groups. Using an unbalanced panel of 1018 firm-year observations from 88 quoted firms for the period from 2000 to 2014, we find that higher levels of separation between ownership rights and control rights decrease performance in family firms that are not part of a business group. This result suggests that too much separation of ownership and control rights in family firms can result in deviant incentives for family members to extract private benefits. However, we also find that group affiliation reduces the negative impact of the separation of ownership and control rights in family firms, which corroborates the bright side of internal capital markets for these firms.

1. Introduction and motivation

The specific mechanisms through which family firms are managed and governed and their effects on firm performance have engendered a long and controversial debate in family business research (Basco, 2013; Erbetta et al., 2013; Wagner, Block, Miller, Schwens, & Xi, 2015). In fact, analyses of the impact that corporate control mechanisms such as deviations from *one share-one vote* have on corporate performance is a long-standing issue in the family business literature (Anderson & Reeb, 2003; Basco, 2013; Erbetta et al., 2013; Martinez et al., 2007; Pindado & Requejo, 2015; San Martin-Reyna & Duran-Encalada, 2012). However, systematic research examining the effect of divergence between ownership rights and control rights on the performance of large family firms is scarce. Corporate strategy literature does not, in fact, provide a robust answer to the question of whether unequal ownership rights create or destroy value in family firms (Amit & Villalonga, 2014; Anderson & Reeb, 2003; Barontini & Caprio, 2006; Maury, 2006; Miller et al., 2007).

Corporate control-enhancing mechanisms produce a discrepancy in the relationship between ownership and voting power, shifting from the *one share-one vote* rule, with the result that a shareholder can increase his/her position without disbursing the commensurate equity. While the outcome of control-enhancing mechanisms is context dependent, because they are executed within the shareholder structure, the mainstream in strategy literature often favor the idea that divergence between voting rights and cash flow rights results in galvanizing the shareholders' opportunity to reap private benefits and thus undermines corporate performance (Adams & Ferreira, 2008; Burkart & Lee, 2007; Claessens et al., 2002; Gompers, Ishii, & Metrick, 2003; Lins, 2003). Although control-enhancing mechanisms under family control are not always an expropriating mechanism, much uncertainty still exists about the role of family business in reconciling these apparently conflicting views, such as conflicts of interests among different types of shareholders (Dodd & Dyck, 2015; Madison et al., 2015; Miller, Le Breton-Miller, & Lester, 2011). We suggest that a family-based approach to the control-enhancing mechanisms provides helpful insights that can explain whether the divergence between ownership rights and control rights is profitable and, if so, the circumstances under which it is profitable.

The main contribution of this article is extending the literature on family business strategy by testing the joint effects of corporate control mechanisms in family firms. Previous literature analyzes the impact of the ownership structure on the performance of family firms, but it is not clear how this control-enhancing mechanism jointly modify this effect. Some studies have analyzed the control motivations of family business groups around the world, such as preserving the founder's legacy and

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heritage, behaving responsibly toward employees and other relevant stakeholders, and maintaining social status in the community (Chang & Hong, 2000; Chang, 2003; Chung & Chan, 2012; Chung & Luo, 2008; Chung, 2013; Luo & Chung, 2005), but they do not consider the joint effect of control-enhancing mechanisms, which create heterogeneity among family firms. We analyze the effect of pyramidal ownership, one of the most common corporate-enhancing mechanisms in Chilean family firms (Buchuk, Larrain, Muñoz, & Urzúa, 2014; Lefort & González, 2008). We also examine business group affiliation as a source of variation among family firms performance. We show that business groups significantly affect the relation between family control mechanisms and firm value.

The remainder of this article is organized as follows. We discuss the theoretical basis of our hypotheses. Then, we introduce the sample and the empirical method followed by the main results. Finally we discuss some significant findings, limitations, and suggestions for future research.

1.1. Hypotheses development

In family firms, the interests of managers and controlling shareholders converge. The top managers are less prone toward profit-seeking investment policy-driven behavior. Kuo and Hung (2012) found that family governance means that shareholder and manager interests in growth opportunities and risk are closely aligned. The stewardship theory also provides arguments to support this claim (Madison et al., 2015). Jaskiewicz and Klein (2007) and Pieper, Klein, and Jaskiewicz (2008) established that a stewardship environment will prevail when goal alignment between family insiders and outsiders is high, whereas goal divergence results in an agency environment. In other words, amid a narrow separation of rights, family firm decision makers may be viewed as stewards of outsider shareholders and family wealth, and a wide separation leads to a situation in which decision makers can prioritize family interests at the expense of non-family shareholders (Claessens, Djankov, & Lang, 2000; Sacristán-Navarro, Cabeza-García, & Gómez-Ansón, 2015).

The ownership structure of family firms has a number of features that can overcome the classic agency problem between managers and shareholders (Blanco-Mazagatos, Quevedo-Puente, & Castrillo, 2007). Family firms usually have a more concentrated ownership structure, and their shareholders have a less diversified portfolio (Cheng, 2014; Villalonga & Amit, 2009), which usually tends toward tighter family control. Family shareholders may use a range of mechanisms to retain control, from pyramidal ownership structures to business groups (Bhaumik & Gregoriou, 2010; Levy, 2009; Villalonga & Amit, 2010). Family commitment makes these firms more sensitive to a loss of control than non-family firms.

Cronqvist and Nilsson (2003) and Coles, Lemmon, and Meschke (2012) found that families strongly favored securing corporate votes and the use of disproportional ownership rights. The pyramidal structure is one such mechanism that families adopt to achieve control over expanded firms and is the most common control-enhancing mechanism (Institutional Shareholder Services, 2007). Here, controlling shareholders counter the *one vote-one share* rule through a chain of ownership positions: the family directly controls firm A, which in turn controls firm B, which can then control successive firms with less investment (Almeida & Wolfenzon, 2006; Claessens et al., 2000; Faccio & Lang, 2002). Because pyramids prompt separation between voting rights and cash flow rights, in turn, they can exacerbate agency costs for different types of shareholders. General economic theory argues that pyramid structures can harm minority shareholders whose interests are often at odds with those of the controlling shareholders (Bebchuk, Kraakman, & Triantis, 2000).

Corporate control-enhancing mechanisms produce a discrepancy in the relationship between ownership and voting power, shifting from the *one share-one vote* rule. The mainstream strategy and financial literature often favor the idea that divergence between voting rights and cash flow rights results in galvanizing the shareholders' opportunity to reap private benefits and thus undermines corporate performance (Adams & Ferreira, 2008; Burkart & Lee, 2007; Claessens et al., 2002). Among the ways that controlling shareholders have to exploit the difference between control rights and cash flow rights, we can cite related party transactions, sub-optimal corporate risk taking, seasonal equity offerings, and earnings management (Bhaumik & Gregoriou, 2010; Croci et al., 2011; Huyghebaert & Wang, 2012; Yao et al., 2010). Taken together, all of these mechanisms enhance the tunneling problem in family firms exacerbated by the difference between voting rights and cash flow rights. We state our first Hypothesis 1A as follows:

Hypothesis 1A. Lower levels of separation between control rights and ownership rights increase family-firm value.

Nevertheless, the literature has also provided theoretical foundations to support other types of relationships between the separation of rights and the value of family firms (Almeida, Park, Subrahmanyam, & Wolfenzon, 2011; Bae, Kang, & Kim, 2002; Baek, Kang, & Lee, 2006; Jin & Park, 2015). Anderson and Reeb (2003) did the groundwork in identifying a nonlinear relationship between family ownership and firm performance when they found that firm performance improved until family ownership reached a certain level, beyond which excessive family control was detrimental to a firm's value. Mazzola, Sciascia, and Kellermanns (2013) identified an inverted U-shaped relationship between family involvement in ownership and return on assets. Consistent with this view, Lien, Teng and Li (2016) elaborate on the dual influence of pyramidal ownership by a controlling family. The pyramidal structures may reduce the interests binding the controlling family to the firm, which ultimately could negatively affect the firm performance. Kuo and Hung (2012) demonstrate that excess control rights and board independence can moderate the effect of family control on investment-cash flow sensitivity.

The longer the distance in the control chain between the family shareholders and the firm under control, the less evident are the negative consequences of tunneling, and, in turn, the stronger are the incentives to search for private family benefits. In such cases, the separation between control rights and ownership rights may result in family members taking advantage of their enhanced control without directly bearing the negative outcomes. At low levels of separation, the positive effects of the enhanced control prevail, whereas beyond a given level, too much separation results in conflicting interests and the possible expropriation of nonfamily shareholders, and therefore, the firm can decrease in value. Thus, our second Hypothesis 1B is as follows:

Hypothesis 1B. Higher levels of separation between control rights and ownership rights decrease family-firm value.

Although whether the positive or the negative effect of business pyramids prevails is an empirical issue, business group affiliation can be a relevant moderating factor (Bertrand, Johnson, Samphantharak, & Schoar, 2008). Della Piana, Vecchi, and Cacia (2012) provide an insightful approach to business groups in family firms by suggesting several dimensions that can impact the governance of the group. In the same vein, Almeida and Wolfenzon (2006) underline the role of family business groups to achieve the deviation from one share–one vote.

The so-called bright side of business groups emphasizes the ability of such groups to overcome market friction (Khanna & Tice, 2001). According to this view, in markets with little qualified workforce, firms within business groups can optimize resources by transferring human capital. Similarly, firms with limited access to intermediate funds or in countries with narrow capital markets can benefit from the financial support of the other firms in the group. More balance in information among divisions and headquarters and the possibility of loosening financial constraints by transferring resources from the least productive

units to the most productive affiliates are reasons for this positive effect of pyramids and group affiliation. The family business literature also reports evidence that is consistent with these internal financing motives (Almeida et al., 2011; Carney et al., 2011; Gopalan, Nanda, & Seru, 2007; Masulis, Pham, & Zein, 2011; Wagner et al., 2015). Therefore, Hypothesis 2 is proposed:

Hypothesis 2. The relationship between firm value and the separation of voting rights and control rights is moderated by the influence of a business group.

2. Sample and empirical method

2.1. The sample: the Chilean corporate context

We employ a sample of 88 Chilean non-financial firms to test our hypotheses. Although family firms, ownership pyramids, and business groups are almost ubiquitous around the world (Enriques & Volpin, 2007; Institutional Shareholder Services, 2007; La Porta, Lopez-de-Silanes, & Shleifer, 1999), Chile provides a particularly suitable corporate framework to test the effect of such control-enhancing mechanisms in the performance of family businesses. The corporate ownership of Chilean firms is quite concentrated, primarily in the hands of individual shareholders or business groups who control the firms through direct ownership and/or pyramidal structures (Buchuk et al., 2014; Masulis et al., 2011; Silva & Majluf, 2008). In this framework, the family shareholders dominate the Chilean corporate system.

Our dataset comes from several information sources. First, we obtain financial information from Thomson Reuters Eikon, a reputed dataset, at the firm level. The second source is the Chilean Stock Exchange Authority (SVS or *Superintendencia de Valores y Seguros*), from which we collect the identification of the business groups. Third, we obtain the IPSA[1] index from the Santiago Stock Exchange (*Bolsa de Santiago*). Fourth, we manually collect information concerning ownership participation in the Chilean pension funds (AFP or *Administradoras de Fondos de Pensión*) from the Chilean Pension Funds Regulator website (*Superintendencia de Pensiones*). We also collect information concerning the board of directors and the top management team from credit rating agencies, and the financial press. 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 largest shareholder (Bonilla, Sepulveda, & Carvajal, 2010; Chen, Chen, Cheng, & Shevlin, 2010; Kowalewski, Talavera, & Stetsyuk, 2010; Martínez, Stöhr, & Quiroga, 2007; Naldi, Chirico, Kellermanns, & Campopiano, 2015; Sacristán-Navarro, Gómez-Ansón, & Cabeza-García, 2011). We define three criteria to consider a firm a family business. First, if the annual report explicitly states the existence of a controlling shareholder and the chain of control shows that the ultimate controlling shareholder belongs to a group of individuals of the same family, it is categorized as a family-controlled firm. Second, if the annual report does not explicitly state the existence of a controlling shareholder but the majority of the board of directors belong to the ultimate family owner, it is also considered a family-controlled firm. Finally, when the firm is controlled by senior managers who are related to the ultimate family owner, it is considered a family-controlled firm (Bettinelli, 2011; Block, 2011; Vandekerkhof et al., 2015).

According to the Chilean Capital Markets Law,[2] a firm belongs to a business group if any of these conditions hold: 1) it has the same controller as other firms and the controller holds at least 25% direct ownership; 2) a significant portion of the firm's assets are conceded to the business group; 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.[3]

We focus on non-financial firms and also exclude the utilities sector. We delete the outliers in the top and bottom 1% of each variable. The final sample is an unbalanced panel of 1018 firm-year observations from 88 quoted firms for the period from 2000 to 2014. In this sample, 731 observations are considered firms under family control and 287 are non-family firms. To provide a broad idea of how the firms in the sample use the control-enhancing mechanisms, we divided the sample into four groups based on the structure of the ownership and control: (1) firms with direct family ownership participation (when the voting rights equal the cash flow rights); (2) firms controlled by indirect ownership participation through investment firms that are not affiliated with a business group (pyramidal structure in which there is a separation between voting rights and cash flow rights); (3) firms controlled by direct ownership but belonging to a business group (voting rights are equal to cash flow rights); and (4) firms with pyramidal structures and affiliated with a business group. Further description of the sample by control categories is provided in Table 1.

Family-owned firms account for 71.6% of the total sample. The family firms that feature pyramidal structures account for 48.4% of the sample, and 69.3% of the family-owned firms belong to a business group. Business groups are quite common in Chile and account for 63.6% of the total sample. In addition, 78.3% of the business groups are controlled by a family as the ultimate shareholder.

2.2. Variables and models

To ensure the robustness of our analysis, we use three measures of firm value, all of them based on the market valuation of the firm (Jin & Park, 2015): Tobin's *Q*, Tobin's Q adjusted to the median of the industry-year, and the equity *Market-to-Book* ratio. We define Tobin's *Q* as the sum of the equity market value and debt book value, scaled by the firm book value. This variable is divided by the yearly median of the industry to obtain the Tobin's Q industry adjusted. The *Market-to-Book* is the ratio of equity market value to equity book value.

We define *Family* as a dummy variable that equals 1 when the ultimate controlling shareholder is a family, and zero otherwise. Cash Flow Rights are computed as the multiplication of indirect participation plus the direct participation of the ultimate shareholder. *1st Level Sep* and *2nd Level Sep* are dummy variables that equal 1 when the degree of separation between voting rights and cash flow rights (proxy of pyramidal structure) is under or over the median value. *Business Group* (BG) is the dummy of the business group affiliation according to the Chilean Regulator definition. We followed the Chilean capital markets law's definition, which states that a firm belongs to a business groups if any of the following conditions hold: (i) the firm has the same controller as other firms, and the controller holds at least 25% of direct ownership; (ii) a significant portion of the firm's assets are allocated to business groups; or (iii) the firm is controlled by one or more firms that belong to a business group controlled by an ultimate shareholder.

To enhance the comparability of our results, we control for a number of issues potentially affecting the value of the firm. We defined Log(Assets) as the log of total assets, the financial leverage defined as the Debt/Assets ratio, the dividend payout (Div. Payout) as the total dividends paid to total equity, and the natural logarithm of the firm's age (Log(Age)). We also controlled for the fact of being listed in the IPSA[4] index by introducing an IPSA dummy variable. Because pension funds administrators (*Administradoras de Fondos de Pensiones*; AFPs) are

[1] IPSA or Selective Stock Prices Index (*Indice de Precios Selectivos de Acciones*) is the index with the 40 most often traded stocks in the Chilean capital markets.

[2] Law n. 18,045–Title XV, pp. 39–44.

[3] http://www.svs.cl/sitio/mercados/grupos.php (accessed in October 2015).

[4] The Selective Stock Price Index (IPSA) comprises the 40 most traded companies on the Santiago StockExchange.

Table 1
Distribution of the sample by control categories.

	Family firms	Non-Family firms	Total
Non-Business Group	224	147	371
Direct Ownership	136	90	226
Pyramidal Ownership	88	57	145
Business Group Affiliation	507	140	647
Direct Ownership	241	77	318
Pyramidal Ownership	266	63	329
Total observations	731	287	1018

important external minority shareholders in the Chilean corporate system by law (Lefort & González, 2008; Lefort & Urzúa, 2008) and are supposed to act in the public interest, we define the AFP ownership variable as the proportion of ownership held by AFPs. Appendix A provides the correlation matrix of the variables.

The explanatory analysis is implemented through panel data estimations. The baseline model was proposed by Anderson and Reeb (2003) and used by Martínez et al. (2007), Bonilla et al. (2010), and Pindado and Requejo (2015), among many others. We consider the effect of the family corporate ownership (*Family* variable), the separation of voting rights and cash flow rights (1st Level Sep and 2nd Level Sep), and the business group affiliation (BG). The empirical model is as follows:

$$\begin{aligned} VALUE_{i,t} = {} & \beta_1 Family_{i,t} + \beta_2 Family_{i,t} x 1^{st} LevelSep_{\cdot i,t} + \beta_3 Family_{i,t} \\ & x 1^{st} LevelSep_{\cdot i,t}\ xBG_{i,t} + \\ & \beta_4 Family_{i,t} x 2^{nd} LevelSep_{\cdot i,t} + \beta_5 Family_{i,t} x 2^{nd} LevelSep_{\cdot i,t}\ xBG_{i,t} \\ & + \beta_6 Family_{i,t} xBG_{i,t} + \\ & \beta_7 1^{st} LevelSep_{\cdot i,t}\ xBG_{i,t} + \beta_8 2^{nd} LevelSep_{\cdot i,t}\ xBG_{i,t} + \beta_9 1^{st} Le \\ & velSep_{\cdot i,t} + \\ & \beta_{10} 2^{nd} LevelSep_{\cdot i,t} + \beta_{11} BG_{i,t} + CV_{i,t} + y_t + s_k + u_{i,t} \end{aligned} \quad (1)$$

where VALUE represents our proxies of financial performance and $CV_{i,t}$ is a set of control variables. In addition, we include a set of fixed effects at the industry level(S_k) and year level (y_t) to control for unobservable time-invariant and time-variant fixed effects. The industry level fixed effect is defined as a set of industrial dummy variables according to Thomson Reuters TRBC Business classification, and the year level fixed effect is defined as a set of year dummy variables. We also control for the financial crisis with the CRISIS variable, a dummy variable that equals 1 for 2008 and 2009, and 0 otherwise.

The equation is estimated with the OLS panel data estimator. Because OLS estimates could be biased in the presence of endogeneity, we also use the 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 firm performance (Demsetz & Villalonga, 2001; Miguel et al., 2004; Pindado & Requejo, 2015). We address this issue by running instrumental variable regressions that consist of a two-stage corrected estimation (Amoako-Adu & Smith, 2001). In the first stage, we use the cash flow rights as the dependent variable. As independent variables (instruments assumed to be exogenous to the dependent variable), we introduce three variables: the shareholder protection index of Lee (2006); a lagged dummy variable for the introduction of the Sarbanes-Oxley Act, which only impacts the ADR firms[5]; and the introduction of the three corporate governance regulatory reforms: the "Takeover Law" in 2000, the "Corporate Governance Law" in 2009, and the legal rules concerning board constitution and operation in 2012. This selection of instrumental variables is consistent with the Roberts and Whited (2013) recommendations to address endogeneity issues in corporate finance. We also introduce the same set of control variables. Once we estimate the first stage regression, we execute the same equations again, corrected by endogeneity.

3. Results

Table 1 reports that 46.6% of the firms exhibit pyramidal structures that allow separation of the voting and cash flow rights. On average, this difference between rights is 8.6%. The ownership structure is highly concentrated (Hormazábal, 2010); on average, the ultimate (controlling) shareholder's voting rights and cash flow rights are 59.3% and 50.6%, respectively. These numbers highlight the potential incentives that pyramidal ownership gives to controllers through excess voting power over cash flows. In addition, controlling shareholders of family firms use control-enhancing mechanisms more often than their non-family counterparts.

Table 2 shows the baseline estimation results, which concern the influence of family corporate control-enhancing mechanisms on firm value. The baseline model shows that family control (Family) is positively related to firm value in all estimates. These findings align with previous research on the profitability of family firms, including Martínez et al. (2007) and Bonilla et al. (2010) for Chile and San Martin-Reyna and Duran-Encalada (2012) for Mexico. Specifically, columns 1 and 2 show that family firm profitability is 12.6% higher than that of comparable non-family firms.

Baseline estimations also support the arguments that excess voting rights allow controllers to engage in non-value maximization activities. Our variable of higher levels of excess of voting rights (2nd LevelSep.) is negatively related to firm's value. This result suggests that firms with higher levels of pyramidal control have lower firm value and that the longer the distance is in the control chain between the controlling shareholders, the stronger the incentives are to search for private benefits of control (Levy, 2009; Riyanto & Toolsema, 2008)

Table 3 shows the heterogeneity of family control, which no longer has a positive effect per se. In fact, columns 1–4, 9. and 11 of Table 3 show that parameter *Family* has a negative and significant coefficient. Nonetheless, our first Hypothesis (1A and 1B) predicts that the family influence on firms value depends on the levels of separation between control rights and cash flow rights. No statistical evidence supports Hypothesis 1A, which predicts that lower levels of separation between control rights and ownership rights increase family-firm value. Columns 2, 4, 6, 8, 10, and 12 show that the parameters for the interacted term *Family x 1stLevel Sep.* has no statistical effect on the firm value.

In comparison, results in Table 3 support Hypothesis 1B, which predicts that higher levels of divergence between control rights and cash flow rights decrease family firm value. A family's increasing controls on the firm through high levels of pyramidal structures has a negative impact on the firm's value. All columns show that the parameter for the interaction *Family x 2stLevel Sep.* is negative and statistically significant. For example, in column 1 the marginal effect of family control at higher levels of pyramidal ownership is $-0.145–0.843$**2stLevel Sep*. If the *2stLevel Sep* equals 1, the result is a marginal effect of -0.988 (t-stat = 3.77, p-value = 0.00). This finding is in line with general economic theory on pyramidal structures, which argues that pyramids can be harmful to minority shareholders whose interests are often at odds with those of controlling shareholders (Bebchuk et al., 2000). Because pyramids cause a separation between voting rights and cash flow rights, they can exacerbate the agency costs for different types of shareholders and provide the possibility of private benefits at a less-than-proportional cost. This negative effect can be the result of corporate decisions such as investment in nonvalue-maximizing projects, tunneling and propping, and biased dividend policies

[5] ADR (*American Depositary Receipt*) is a common way for non-American companies to be listed in US capital markets such as the NYSE or NASDAQ. ADR firms have to adopt the mandatory rules stated in the Sarbanes-Oxley Act.

Table 2
Baseline Estimations.

	Tobin's Q		Tobin's Q/Median (industry-year)		Market-to-Book ratio	
	OLS (1)	2SLS (2)	OLS (3)	2SLS (4)	OLS (5)	2SLS (6)
Family	0.098**	0.154**	0.126***	0.129**	0.127*	0.091*
	(2.329)	(2.107)	(3.513)	(2.000)	(1.894)	(1.701)
1st LevelSep	−0.044	−0.080	−0.050	−0.080	−0.094	−0.197*
	(−0.911)	(−1.220)	(−1.087)	(−1.295)	(−1.242)	(−1.872)
2nd LevelSep.	−0.230***	−0.519***	−0.202***	−0.450***	−0.250***	−0.759***
	(−4.679)	(−6.758)	(−4.723)	(−6.867)	(−2.961)	(−5.832)
BusinessGroup(B.G.)	−0.038	−0.052	−0.034	−0.078*	−0.087	−0.024
	(−0.926)	(−1.040)	(−0.883)	(−1.866)	(−1.219)	(−0.243)
CashFlowRights	−0.278***	−1.389***	−0.310***	−1.336***	−0.638***	−2.569***
	(−2.730)	(−5.043)	(−3.635)	(−6.079)	(−3.836)	(−4.815)
LN(Assets)	−0.088***	−0.056***	−0.067***	−0.040**	−0.014	0.070**
	(−5.670)	(−3.168)	(−5.085)	(−2.388)	(−0.546)	(2.140)
Div.Payout	2.404***	1.947***	1.650***	1.054***	4.118***	3.903***
	(5.457)	(4.625)	(4.510)	(3.706)	(6.102)	(4.981)
Debt/Assets	−1.755***	−2.334***	−1.367***	−1.799***	0.884***	0.298
	(−14.953)	(−14.706)	(−12.821)	(−12.246)	(4.308)	(1.088)
AFPownership	0.611	0.851	0.520	0.612	0.421	−0.332
	(1.073)	(1.396)	(1.023)	(0.962)	(0.884)	(−0.536)
CRISIS	0.092	−0.055	0.163*	0.092**	0.154	−0.104
	(0.919)	(−1.232)	(1.852)	(2.127)	(0.938)	(−1.286)
IPSA	0.283***	0.384***	0.225***	0.314***	0.415***	0.509***
	(5.743)	(5.853)	(5.908)	(6.140)	(5.184)	(5.102)
LN(Age)	0.004	−0.025	−0.001	−0.018	−0.005	−0.027
	(0.221)	(−0.807)	(−0.036)	(−0.762)	(−0.177)	(−0.511)
Observations	1018	950	1018	950	1018	950
F-Test	24.93	19.01	7.872	12.29	16.45	22.08
R-squared	0.457	0.436	0.324	0.312	0.379	0.366
Adj. R-Squared	0.436	0.415	0.298	0.287	0.355	0.343
Uncentered R-squared		0.887		0.871		0.787
LM-Stat p-value		0.000		0.000		0.000
Hansen J p-value		0.209		0.205		0.172
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Notes: Estimated coefficients (t-statistics from robust standard errors) from the OLS and 2SLS regressions of the baseline equation are presented. The dependent variables are the Tobin's q, the Tobin's q adjusted by the median of the industry, and the market-to-book ratio. Family is a dummy variable that equals 1 when the ultimate controlling shareholder is a family, and 0 otherwise. 1st Level Sep. is a dummy variable that equals 1 when the separation of cash flow and voting rights is under the median value and 2nd Level Sep. when such separation is over the median value. Business Groups (B.G.) is a dummy variable that equals 1 if the firm belongs to a business group, Cash Flow Rights is the cash flow rights of the ultimate shareholder, Ln(Assets) is the natural logarithm of the total assets, Div. Payout is the dividend payout ratio and is defined as total dividends paid to total equity, Debt/Assets is the financial leverage, AFP ownership is the ownership held by pension funds, IPSA is a dummy variable for whether the firm is included in the index of Chilean Stock Market selective prices, ln(Age) is the natural logarithm of the firm's age, and CRISIS is a dummy variable that equals 1 for 2008 and 2009, and 0 otherwise. We include fixed effects at industry level (s_k) and year level (q_t). The LM-Statistic in 2SLS regressions is distributed as χ^2 under the null hypothesis that the equation is underidentified. The Hansen J in 2SLS regressions is a test of overidentifying restrictions, distributed as χ^2 under the null hypothesis of no correlation between the instruments and the error term. The Family marginal effect test gives the combined effect of family control when either B.G. = 0 or B.G. = 1, irrespective of the level of separation of rights. ***, **, and * represent a level of significance lower than 1%, 5%, and 10%, respectively.

(Bona, Pérez, & Santana Martín, 2011; Ruiz Mallorquí & Santana Martín, 2009).

We now address the question concerning the extent to which the effect of family control and disproportional ownership can be moderated by business groups by introducing the Business Group dummy variable (Hypothesis 2). The BG variable equals 1 when the firm belongs to a business group as defined by the Chilean Stock Exchange Commission (SVS).

Business group (B.G.) affiliation impacts negatively and significantly the firm's performance, which is consistent with the dark side of business groups. Nevertheless, both the family and the business group effects revert when jointly considered (*Family*Business group*). This interacted variable has a positive and significant effect on the value of the firm. This means that being affiliated with a business group attenuates the negative effect on value for the firms under family control, and it is consistent with the bright side of business groups. These results support our second hypothesis and are consistent with other research regarding Chilean business groups (Buchuk et al., 2014; Farías, 2014; Khanna & Palepu, 2000). Thus, the business groups have a positive effect on the performance of the family-controlled firms by allowing them to overcome the friction of the Chilean markets.

Columns 2, 4, 6, 8 10, and 12 of Table 3 show that the marginal effect of family when the Business Groups variable takes the value of 1 is positive and significant. In sum, family control has a negative effect on the value of the firm for high levels of separation of rights (*Family*2nd Level Sep*). Second, business group affiliation is positive for family controlled firms (*Family*Business Group*). However, what about the joint effect of a great separation of rights and group affiliation in a family-controlled firm? The interaction *Family*2nd Level Sep*Business Group* variable has a positive and significant coefficient across all of the columns in Table 3. This result indicates that business group affiliation moderates the negative influence of higher levels of separation between voting rights and cash flow rights in family firms.

The financial literature uses the term *bright side* to describe the internal capital markets in business groups that have a positive impact on firm performance due to group affiliation (Fan, Jin, & Zheng, 2016; Khanna & Tice, 2001; Ozbas & Scharfstein, 2009). The total effect of our results indicates that the bright side of group affiliation prevails over

Table 3
Firm performance, pyramidal ownership levels, business group affiliation and family control.

	Tobin's Q				Tobin's Q/Median (industry-year)				Market-to-book ratio			
	OLS		2SLS		OLS		2SLS		OLS		2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Family	−0.145**	−0.137*	−0.221**	−0.285**	0.014	−0.007	0.037	−0.013	−0.214*	−0.175	−0.384**	−0.339
	(−2.112)	(−1.693)	(−2.336)	(−1.982)	(0.280)	(−0.129)	(0.320)	(−0.068)	(−1.650)	(−1.084)	(−2.097)	(−1.069)
Family*x*1st LevelSep		−0.024		0.116		0.085		0.085		−0.135		−0.118
		(−0.153)		(0.602)		(0.823)		(0.376)		(−0.519)		(−0.318)
Family*x*1st LevelSep. *xB. G.*		0.297		0.017		0.173		0.258		0.560*		0.543
		(1.631)		(0.074)		(1.279)		(0.932)		(1.885)		(1.252)
Family*x*2nd LevelSep.	−0.843***	−0.840***	−0.718***	−0.642***	−0.693**	−0.659**	−1.112***	−1.059***	−1.854***	−1.872***	−1.567***	−1.597***
	(−3.139)	(−3.100)	(−4.149)	(−3.153)	(−2.568)	(−2.449)	(−5.978)	(−4.645)	(−4.767)	(−4.671)	(−4.385)	(−3.702)
Family*x*2nd LevelSep. *x*B.G.	0.756***	0.842***	0.651***	0.634***	0.544**	0.587**	0.812***	0.962***	1.460***	1.619***	1.119***	1.406***
	(2.700)	(2.975)	(3.654)	(2.854)	(1.965)	(2.124)	(4.183)	(3.744)	(3.550)	(3.818)	(2.984)	(2.969)
Family*xB. G.*	0.250***	0.168*	0.374***	0.390**	0.192***	0.146**	0.192	0.064	0.480***	0.327*	0.656***	0.388
	(3.167)	(1.814)	(3.446)	(2.393)	(3.158)	(2.071)	(1.422)	(0.310)	(3.384)	(1.877)	(3.226)	(1.124)
1st LevelSep. *xB. G.*		−0.031		0.111		0.181*		−0.244		−0.106		−0.552
		(−0.213)		(0.523)		(1.892)		(−0.953)		(−0.439)		(−1.303)
2nd LevelSep. *xB. G.*	−0.716***	−0.732***	−0.681***	−0.644***	−0.697***	−0.653**	−0.723***	−0.858***	−1.439***	−1.479***	−1.030***	−1.302***
	(−2.700)	(−2.726)	(−4.477)	(−3.302)	(−2.741)	(−2.570)	(−4.677)	(−3.869)	(−3.674)	(−3.660)	(−3.068)	(−3.039)
1st LevelSep		−0.183		−0.183		−0.287***		−0.220		−0.248		−0.047
		(−1.361)		(−1.033)		(−3.380)		(−1.084)		(−1.158)		(−0.136)
2nd LevelSep.	0.522**	0.458*	0.520***	0.461***	0.528**	0.446*	0.233*	0.136	1.347***	1.255***	0.715**	0.686*
	(2.038)	(1.774)	(3.915)	(2.794)	(2.125)	(1.798)	(1.719)	(0.716)	(3.614)	(3.274)	(2.281)	(1.780)
BusinessGroup(B.G.)	−0.208***	−0.206***	−0.321***	−0.369**	−0.050	−0.102**	−0.201	−0.103	−0.344***	−0.326**	−0.522***	−0.283
	(−3.345)	(−2.720)	(−3.249)	(−2.426)	(−1.204)	(−2.056)	(−1.620)	(−0.521)	(−2.996)	(−2.185)	(−2.792)	(−0.868)
CashFlowRights	−0.344***	−0.400***	−0.058	0.059	−0.237***	−0.245***	−2.862***	−2.907***	−0.639***	−0.736***	−2.236***	−2.308**
	(−3.854)	(−4.150)	(−0.117)	(0.108)	(−3.573)	(−3.374)	(−4.792)	(−4.586)	(−4.062)	(−4.393)	(−2.584)	(−2.494)
LN(Assets)	−0.041***	−0.038***	−0.049***	−0.051***	−0.034***	−0.032***	−0.001	0.005	0.032	0.038	0.068***	0.077***
	(−3.148)	(−2.954)	(−3.705)	(−3.497)	(−3.495)	(−3.304)	(−0.048)	(0.267)	(1.376)	(1.630)	(2.732)	(2.935)
Div.Payout	2.575***	2.689***	2.225***	2.297***	1.767***	1.880***	0.754**	0.821**	4.264***	4.465***	3.696***	3.756***
	(5.560)	(5.736)	(5.289)	(5.137)	(4.593)	(4.835)	(2.304)	(2.371)	(6.136)	(6.344)	(5.074)	(4.957)
Debt/Assets	−1.707***	−1.743***	−1.863***	−1.887***	−1.070***	−1.129***	−1.789***	−1.820***	1.071***	1.018***	0.944***	0.935***
	(−18.56)	(−18.30)	(−11.78)	(−11.81)	(−12.18)	(−12.08)	(−9.357)	(−9.390)	(6.037)	(5.628)	(3.450)	(3.407)
AFPownership	−0.004	0.179	0.167	0.294	−0.005	0.170	−0.443	−0.201	−0.818*	−0.535	−1.941***	−1.670***
	(−0.014)	(0.677)	(0.500)	(0.844)	(−0.024)	(0.783)	(−0.968)	(−0.438)	(−1.916)	(−1.218)	(−2.995)	(−2.603)
CRISIS	0.116	0.110	0.025	0.017	0.140*	0.135	−0.008	−0.031	0.207	0.199	0.269	0.242
	(1.220)	(1.158)	(0.220)	(0.149)	(1.684)	(1.627)	(−0.070)	(−0.272)	(1.346)	(1.316)	(1.432)	(1.259)
IPSA	0.308***	0.316***	0.436***	0.435***	0.187***	0.187***	0.344***	0.353***	0.438***	0.450***	0.580***	0.591***
	(6.336)	(6.424)	(6.573)	(6.483)	(5.125)	(5.132)	(4.606)	(4.594)	(5.813)	(5.983)	(5.727)	(5.804)
LN(Age)	−0.027	−0.022	−0.036	−0.028	−0.036**	−0.026	−0.104***	−0.101***	−0.061**	−0.056*	−0.072	−0.075
	(−1.405)	(−1.117)	(−1.167)	(−0.865)	(−2.340)	(−1.619)	(−3.086)	(−2.952)	(−2.028)	(−1.769)	(−1.523)	(−1.483)
Obs.	1018	1018	950	950	1018	1018	950	950	1018	1018	950	950
F-Test	21.67	19.59	15.12	12.97	8.614	8.004	5.608	5.027	16.82	15.69	14.47	12.82
R-squared	0.397	0.405	0.399	0.390	0.290	0.303	0.371	0.354	0.406	0.414	0.372	0.384
Adj. R-squared	0.372	0.374	0.352	0.327	0.261	0.270	0.327	0.353	0.348	0.352	0.319	0.331
Uncentered R-squared			0.873	0.869			0.750	0.747			0.780	0.785
LM-Stat p-value			0.000	0.001			0.001	0.001			0.001	0.002
Hansen J p-value			0.399	0.415			0.262	0.279			0.134	0.130
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family marginal effect (B.G. = 0)	−0.988***	−1.00**	−0.939***	−0.81***	−0.679***	−0.581**	−1.075***	−0.986***	−1.66***	−1.76***	−1.950***	−2.055***

(continued on next page)

Table 3 *(continued)*

	Tobin's Q				Tobin's Q/Median (industry-year)				Market-to-book ratio			
	OLS		2SLS		OLS		2SLS		OLS		2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	(−3.77)	(−3.37)	(−6.24)	(−3.31)	(−2.55)	(−2.10)	(7.03)	(−3.84)	(4.01)	(−3.86)	(−6.30)	(−4.30)
Family marginal effect (B.G. = 1)	0.017	0.306**	0.086	0.231*	0.057	0.324***	−0.071	0.297*	−0.079	0.471*	−0.176	0.281
	(0.24)	(2.24)	(1.07)	(1.68)	1.01	(2.83)	(−0.78)	(1.68)	(−0.49)	(1.90)	(−1.23)	(1.11)

Notes: Estimated coefficients (t-statistics from robust standard errors) from the OLS and 2SLS regressions of the baseline equation are presented. The dependent variables are the Tobin's q, the Tobin's q adjusted by the median of the industry, and the market-to-book ratio. Family is a dummy variable that equals 1 when the ultimate controlling shareholder is a family, and 0 otherwise. 1st Level Sep. is a dummy variable that equals 1 when the separation of cash flow and voting rights is under the median value and 2nd Level Sep. when such separation is over the median value. Business Groups (B.G.) is a dummy variable that equals 1 if the firm belongs to a business group, Cash Flow Rights is the cash flow rights of the ultimate shareholder, Ln(Assets) is the natural logarithm of the total assets, Div. Payout is the dividend payout ratio and is defined as total dividends paid to total equity, Debt/Assets is the financial leverage, AFP ownership is the ownership held by pension funds, IPSA is a dummy variable for whether the firm is included in the index of Chilean Stock Market selective prices, ln(Age) is the natural logarithm of the firm's age, and CRISIS is a dummy variable that equals 1 for 2008 and 2009, and 0 otherwise. We include fixed effects at industry level (s_k) and year level (a_t). The LM-Statistic in 2SLS regressions is distributed as χ^2 under the null hypothesis that the equation is underidentified. The Hansen J in 2SLS regressions is a test of overidentifying restrictions, distributed as χ^2 under the null hypothesis of no correlation between the instruments and the error term. The Family marginal effect test gives the combined effect of family control when either B.G. = 0 or B.G. = 1, irrespective of the level of separation of rights. ***, **, and * represent a level of significance lower than 1%, 5%, and 10%, respectively.

Fig. 1. Marginal effects of business group affiliation in family firms classified by lower and higher levels of divergence.Notes: This figure plots how the relationship between firm's value (Tobin's Q) and different levels of voting/cash flow rights divergence varies with the Business Group affiliation. Both solid lines plots the main effect of the business group affiliation and the dashed lines are 95 percent confidence intervals. Lines uses the model of column 2, Table 3. The 1st Level Sep. line represent the second partial derivative of Tobin's Q respect to Family and the 1st level Separation between voting rights and cash flow rights. The 2ndt Level Sep. line represent the second partial derivative of Tobin's Q respect to Family and the 2nd level Separation between voting rights and cash flow rights. Both lines show a positive effect of Business Group affiliation. In the 1st Level Sep. line the business group has positive effect over firms value, overcoming the industry average. In the 2nd Level Sep. line the Business groups affiliation attenuate the negative effect of higher levels of divergence between voting and cash flow rights.

the incentives for private benefit extraction (dark side) in family firms. In other words, the beneficial effect of business groups related to the existence of internal capital markets outweighs the negative influence of pyramidal ownership. Although voting–cash flow rights increase, the negative effect of the wedge can be attenuated and even surpassed by the bright side of business groups.

Fig. 1 illustrates the effect of the estimation from column 2 of Table 3 for business groups affiliation on firm value. The estimates of firm value increase with the business groups affiliation in family firms with both lower levels of divergence (*1st Level Sep*) and higher levels of divergence (*2nd Level Sep*). However, when family firms with higher levels of separation (2^{nd} *Level Sep*) are affiliated with a business group, the industry-adjusted firm value increases to the average of the industry. Thus, the figure supports the argument related to the bright side of business groups.

4. Concluding comments

The use of mechanisms to enhance the control of family firms is widespread in many countries (Della Piana et al., 2012; Faccio & Lang, 2002; Jin & Park, 2015; Sacristán-Navarro & Gómez-Ansón, 2007; Sacristán-Navarro et al., 2015). In this article, we analyze the effect of pyramidal ownership on Chilean family firms' value. Chile is a unique environment to test such effects because business groups are obliged to report to the Chilean Stock Exchange Authority. Thus, we have an objective and unambiguous definition of business groups. We use the methodology of the ultimate shareholder to identify the firms that are under family control (Claessens et al., 2000). We find that family control is very common among Chilean firms, which is consistent with previous research in developing countries (Jin & Park, 2015). We document that approximately three out of four (71.8 percent) Chilean-listed firms are controlled by a family or an individual. Although both family and non-family ultimate shareholders use pyramidal structures to control the firm in slightly less than half of the cases (48.4% and 41.8%, respectively). One of our key results validates the positive moderating effect of business group affiliation on the relation between

firm value and pyramid control in family firms located within a developing country. Business group affiliation prevails among family firms: 69.4 percent of family-controlled firms are affiliated with a business group, while 48.8 percent of non-family firms also belong to a group.

We acknowledge that the sample and the environmental setting of this study limits our findings. Nevertheless, we suggest three major implications of our research for family business theory. First, the control-enhancing mechanisms can incentivize the family shareholder to be involved in value creation and improve the capital allocation. Nonetheless, these mechanisms can exacerbate the conflicts among family controlling and minority non-family shareholders and lead to an inefficient allocation of funds among business units. Our results also suggest that family control is beneficial in terms of firm performance, but after controlling for specific effects of the enhanced control, the firms that are under family control outperform their non-family counterparts.

Second, we suggest a dual effect of pyramid structures in Chilean family firms. Lower levels of separation between control rights and ownership rights increase the firm performance. Nevertheless, too much separation can result in perverse incentives for family members to extract private benefits. Consequently, an excessive separation of control and ownership rights can aggravate potential conflicts of interest inside family firms.

Third, although some literature suggest that business groups have a broad negative effect on firm performance (Bertrand et al., 2008), we find that group affiliation has a positive effect on performance for Chilean family-controlled firms between 2000 and 2014. This result suggests that family business groups alleviate the negative effect of the disproportionate control and corroborates the bright side theory of internal capital markets for family firms (Khanna & Palepu, 2000; Khanna & Tice, 2001). Business groups in developing countries can improve the allocation of funds and increase the market value of the firm by mitigating the asymmetric information problems and allowing for the transfer of qualified human and financial resources among affiliates (Guillén, 2000).

Our study of family-controlled Chilean firms calls for further research in different institutional environments. Future research should investigate under which circumstances the mechanisms for family control exhibits an inverted U-shaped relation with performance, as previously shown in the European, Asian, and African context. For authorities in capital markets, our research emphasizes how informationally transparent frameworks improve the corporate landscape in the Chilean case. Future research should also investigate whether better and more widely disclosed information on the use of control-enhancing mechanisms results in more efficient individual and corporate financial decisions in other developing countries.

We also see a need for a comprehensive definition of a family business across countries. Our definition of family firms relies on the identification of the ultimate shareholder and the involvement of the family as directors or managers. Future research should analyze issues such as the presence of the founder or the generation in charge of the firm to enhance the definition of family firms.

Finally, this study has not controlled for the degree of diversification in business groups. Family business strategy theory can be enlightened by analyzing the question about how value can be created or destroyed through business diversification. Future research can address this question by comparing performance of family firms that have decided to follow related versus non-related diversification strategies. We see great opportunities to explore family business strategies in emerging contexts in simple and insightful ways through corporate control mechanisms.

Appendix A

See Table A1.

Table A1
Correlations.

	Tobin's Q	Tobin's Q/Median	MTB	Family	1st Level Sep	2ndLevel Sep.	Business Group	CashFlow Rights	LN(Assets)	Div./(br)Payout	Debt/Assets	AFP ownership	CRISIS	IPSA
Tobin's Q/Median	0.803***													
Market-to-book ratio	0.623***	0.487***												
Family	0.098***	0.171***	0.060**	−0.043										
1st LevelSep	0.046	0.067	0.012	−0.123***	−0.247***									
2nd LevelSep.	−0.069**	−0.095***	−0.123***	0.038	−0.008	0.101***								
BusinessGroup	0.003	0.027	−0.010	−0.069	−0.008		−0.028							
CashFlowRights	−0.103***	−0.086***	−0.110***	−0.064**	−0.137***	−0.315***	0.355***	0.028						
LN(Assets)	−0.174***	−0.143***	0.222***	−0.056*	0.086***	0.070**	−0.044	−0.068**	0.021					
Div. Payout	0.268***	0.195***	0.336***	−0.066**	0.199***	−0.049	−0.097***	0.008	0.353***	0.011				
Debt/Assets	−0.463***	−0.374***	0.260***	−0.112***	0.081***	−0.115***	0.224***	−0.025	0.387***	0.042	0.178***			
AFPownership	−0.006	−0.013	0.027*	−0.222***	0.128***	0.047	0.007	0.037	0.046	0.008	0.018	0.064*		
CRISIS	−0.051	0.002	−0.041	−0.007	−0.002	−0.003	0.275***	−0.001	0.570***	0.014	0.312***	0.523***	−0.007	
IPSA	−0.010	−0.012	0.257***	−0.096***	0.085***	0.052*	0.062**	−0.065**	0.066**	−0.033	0.011	0.058*	0.017	0.044
LN(Age)	−0.004	−0.033	−0.005	0.091***	0.011	−0.048								

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