POSTGRADO
ECONOMÍA Y
NEGOCIOS
UNIVERSIDAD DE CHILE

"Does Family Control Shape Diversification Decisions? – The Case of Chilean Firms"

**TESIS/AFE PARA OPTAR AL GRADO DE
MAGÍSTER EN FINANZAS**

**Alumno: Alejandro Lehmann
Profesor Guía: Mauricio Jara**

Santiago, julio 2018

To my father and mother, for their constant guidance, support and care.

To my sister Dafna for her support and patience.

To my sister Tania, for her caring.

To Vale, for motivating me and always being there.

To Inchi, who I know she's looking after me.

To Mauricio Jara, for his guidance and help.

You made me who I am today.

Abstract

This paper analyses how family control affects diversification decision on Chilean firms, its characteristics and limitations. Specifically, we introduce the potential agency frameworks such as pyramidal ownership, family, or business groups, as determinants of corporate prevention to diversify. From a dataset composed by 140 Chilean nonfinancial firms listed in the period 2008-2015, we use an OLS method withed year-industry fixed effects. Results show that families tend to diversify less than non-family companies. Nonetheless, they show higher compromise with the segments already owned, showing a manifestation of the socioemotional wealth and the resource-based approach. Interestingly, family firms under business groups or pyramidal structures show positive tendencies to diversify, consistent with the wealth expropriation theories.

I.   Introduction

Corporate diversification is a common practice among firms. Mainly done by mergers and acquisitions or internal growth, it is used as an expansion mechanism. It allows companies to reach areas beyond their main operations. Diversification can be either related or unrelated. When it is related, adaptation tends to be easier as the know-how of operations is already available, but unrelated can provide a more diverse set of opportunities as new knowledge, abilities and technology is needed. In this context, the later way to diversify brings new challenges with the administration, and can be set due to several factors.

As a result, diversification as a growth mechanism causes the number of segments or number of industries to increase. By these means, there is a search of economies of scale, economies of scope and/or market power (Singh & Montgomery, 1987). The available technology and know-how allow interactions among the different segments, sharing their competitive advantages, resulting in synergies which may reduce costs, boost performance or increase revenue. Consequently, it is expected an increment a company's performance and being positively associated with excess values (Hovakimian, 2016). Even more, in case of economic downturns, diversification reduces the corporation's risk by being exposed to more than one market (Volkov & Smith, 2015). Nonetheless, it is well documented that this is not always the case. Diversification also generates drawbacks regarding managerial control, since agency conflicts between subsidiaries can arise due to different objectives. Managers from subsidiaries will maximize their own performance instead of the company as a whole. Thus, having more industries and operations to attend drives away the focus of the main operation. Even more, diversification tends to increase agency costs since ownership is dispersed (Gugler et al., 2008). Considering both positive and negative effects on diversification, there is a negative relationship between these expansion mechanism and a firm's value. However, this may reverse at high levels of diversification (de Andrés et al., 2014). Therefore, diversification is not entirely beneficial or harmful to a firm, but there is an optimal degree that maximizes its value.

As it can be seen, the literature has shown that diversification has a significant impact on a firm's development. It can generate an improvement in performance through synergies or make it perform sub-optimally.

In difference with prior literature, in this paper we analyze the determinants of corporate diversification for a sample of Chilean non-financial firms. Specifically, we introduce the potential

agency frameworks such as pyramidal ownership, family, or business groups, as determinants of corporate prevention to diversify. Chile is a unique context to analyze these effects. This country shows to be the home of an important amount of family firms and pyramidal structures, which tend to behave differently as other company types (Hernández & Galve, 2017; Jara et al., 2015). Together with the unambiguous definition of business groups, indicates how these variables can interact. This will allow anticipating which companies are prone to diversify and face the situations previously described. As a result, these components will be crucial to understanding the tendencies to diversify.

From a dataset composed by 140 Chilean nonfinancial firms listed in the period 2008-2015, we use an OLS method withed year-industry fixed effects. Results show that families tend to diversify less than non-family companies. Nonetheless, they show higher compromise with the segments already owned, showing a manifestation of the socioemotional wealth and the resource-based approach. Interestingly, family firms under business groups or pyramidal structures show positive tendencies to diversify, consistent with the wealth expropriation theories.

II. Literature Review

II.1 Families, Diversification and Divestitures

Empirical literature focus on the effects of the diversification on firm's value (Berger and Ofek 1995; Campa and Kedia 2002). Some evidence suggests the existence of a discount in value due to diversification, whilst other studies show that this could be efficient, resulting in a value premium (Villalonga 2004a, 2004b). In addition, there is a limited evidence of the effect of diversification in family firms. Traditionally, it has been exposed that family firms tend to show a better performance than their counterparts. Nevertheless, no study has related the effect over the value of diversification over a family firm. A recent study of Espinosa et al. (2017) suggests the existence of a positive moderating effect on the relationship between diversification and firm's value. These authors propose that this occurs given the high concentration of family firms, which reduces the chances of wealth expropriations.

The main goal of this paper is to explain the effect that a family firm has over the non-related diversification decision. Two opposite arguments can explain the relationship between family business and non-related diversification.

On the one hand, family firms can behave more conservative to take diversification strategies. The socioemotional wealth theory (Gomez-Mejia et al., 2010) allows to understand how diversification decisions are taken within a family business, since family property usually relates to a long term corporate control position. In this type of organizations, there is a higher belonging sentiment from the family towards corporate governance, and seeks to keep the status quo from the original family founder. The way of doing business faces more reluctance to changes (Hall & Nordqvist, 2008), so they maintain several historical practices (Feldman, 2014). In addition, designing family members at management levels (Pérez-González, 2006), owners will try to preserve the family legacy (Berrone et al. 2010; Zellweger et al. 2010). At the same time, the possibilities to include skilled managers is reduced. Thus, maintaining the socioemotional wealth plays a crucial role in the utility function of managers and in the incentives that maximize the firm's value. Hence, preserving the socioemotional wealth implies that the company remains competitive in the segments most tied to the legacy of the family, which can influence negatively over the decision to engage in non-related diversification.

The resource-based approach also can explain why families are less prone to diversify. This perspective is associated to a set of resources inherent to families, which is scarce, inimitable and irreplaceable (Habbershon et al. 2003; Rau 2014). This unique set of resources and capabilities is known as "*familiness*", which results from the interaction between the family with the company (Habbershon and Williams 1999). It generates a sense of belonging which aligns the member's and the company's objectives. As a result, using correctly the family firm's resources, can effectively create a long-term competitive advantage, which leads to a higher performance (Chirico et al. 2011). In this sense, it is expected that this type of firms push towards the development of dynamic organizational capabilities that ensure the value creation over generations (Chirico and Nordqvist 2010; Chirico et al. 2012). Thus, non-related diversification potentially harms the family resources due to more complex structures, unless the diversification generates economies of scope.

The empirical evidence suggests that the propensity to diversify is related to how families exercise control. For instance, Schmid et al. (2015) use a sample of German firms and show that companies where family involvement is higher, measured as family members in management positions, and firms tend to concentrate their business in a reduced number of segments. In contrast, family firms that are managed by non-family managers show higher levels of diversification. Similarly, Gomez-Mejia et al. (2009) proposes that family firms are more conservative towards new investments. On fact, these type of firms tend to be less internationally diversified compared to non-familiar firm. If they do, diversification occurs usually in countries with similar cultures.

On the other hand, families can be less prone to engage in divestitures. Note that the possibility that this type of firms divests less not imply that they could incur more in non-related diversification. Families could deal with retain the non-related segments if this is a way to keep the family`s heritage (Feldman, 2014). This occurs even tough divestitures are positively associated with a firm value (Bergh, 1995) due to a major focus on their core competencies (Daley et al., 1997). It must be noted that divestitures require a high amount of resources considering the restructures, where major management changes must be done (Corley & Gioia, 2004). It can also be seen as a sign of failure (Dranikoff et al., 2002). Therefore, the benefits of reducing the number of segments must overcome their costs in order to be implemented, even though a business is not performing as expected. Divestitures in family firms will only occur when the benefit is significantly higher than its cost. As a result, divestitures are more positively associated with firm value when they are performed by family firms (Feldman et al., 2016).

Given these arguments, we state that:

Hypothesis 1a: *Family firms are negatively related to diversification strategies.*
Hypothesis 1b: *Family firms will show more commitment with segments on which they participate.*

II.2 Pyramidal Structures and Business Groups

As we noticed above, Schmid et al. (2015) suggest that the type of control is relevant to influence the strategic orientation of managers. They argue that families tend to be more conservatives in order to engage in new businesses when firms are managed by founders. On the contrary, family firms that are managed by non-family CEOs tend to show higher levels of non-related diversification. They also analyze the interaction between families and external shareholders, and find that firms monitored by external *blockholders* concentrate more in their core segment.

The main objective of families is to retain the firm's control. Hence, how the control is achieved could give some insights about how different business strategies can be executed. We hypothesize that the type of control could influence unrelated diversification strategies. More specifically, we argue that control enhancing mechanism in families such as pyramidal structures and business groups can bust the corporate diversification decisions.

In pyramidal structures the control rights are exacerbated through a chain of control (direct and indirect ownership links), in which a firm owns another firm, which at the same time owns a fraction of other firms. Hence, a vertical flow is generated, being able for the manager to make decisions on the whole structure. This mechanism allows ultimate shareholders to achieve an excess of control rights over cash flow rights (La Porta et al., 1999) which is generally associated with more private benefits extraction (Jara et al., 2017). The private benefits extraction perspective suggests that potentially, a firm's controller will behave prioritizing their own interest at expense of the minority shareholders. This behavior can result in a more aggressive investment policies (Lan & Wang, 2003), including decisions to diversify in unrelated segments that's increase the range of investment target. This allows controllers to enjoy of a widely range of mechanism of wealth expropriation. In sum, this argument explains a positive relationship between pyramidal ownership and diversification.

In families, the socioemotional wealth approach and resource-based approach can also explain a positive moderating effect of pyramidal ownership on family firms over diversification. First, under

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the socioemotional wealth approach, pyramids may increase their power and family legacy trough the control of other firms (in unrelated segments), which is desirable as the group is seen more powerful. By owning fractions of other firms, the founder`s legacy is maintained as the operations of original firm does not have to be modified. The way of doing business is maintained. Second, the resource-based approach suggests the unique set of assets, "*familiness*", can be served to the other unrelated business target new firms or industry segments. This gives a competitive advantage to the new firms or segments that they could not access previously, and hence rising their performance. Therefore, either for the socioemotional wealth or the resource-based approach, family firms under pyramidal structures will diversify more. This due to the ability to keep the family's heritage or to trespass their unique set of assets to new firms.

Given these arguments, we state that:

Hypothesis 2: The negative expected relationship between *Family firms* and *Unrelated Diversification* is attenuated when they are organized in a pyramidal structure. This implies more wedge between voting rights and cash flow rights. This is consistent with the expropriation hypothesis, where pyramidal firms seek to maximize their wealth in expense of other business.

We also analyze the effect of business groups on the relationship between family control and business diversification. By nature, business groups tend to be diversified. Backed up by the Commission for the Financial Markets in Chile ("*CMF*"), which defines business groups as the "Set of entities that have links in their ownership, administration or credit responsibility, which make presume that the economic and financial performance of its members is guided by the common interests of the group or subordinated to them, or that there are common financial risks in the credits that they are granted or in the acquisition of securities that they issue."

Working under the same administration can exploit synergies, firms affiliated with a business group shows to provide superior long-term performance relative to stand-alone firms (Popli et al., 2017). Therefore, business groups allow companies to share resources and work under a unique philosophy, allowing control and encourages the formation of synergies. As a result, in presence of a business group, family firms tend to diversify more and show a high commitment towards their segments. As in the case of pyramidal firms, the family heritage and reputation can be boosted in business groups.

Chile is an example where business groups are characterized for being structured in a pyramidal manner (Majluf et al., 2014), since Chile`s legal protection to investors is lower than the Anglo-Saxon common law countries (Jara et al., 2018). As a result, pyramidal structures allow managers to take decisions facing a fraction of the costs, which can lead to a horizontal agency problem between stakeholders and managers (Lefort & Gonzalez, 2008). In addition, ownership concentration tends to be high. Thus, few business groups own several pyramidal organizations in Chile. As a result, there is a risk of expropriation by family controlling shareholders, increasing the risk over the equity of minor stakeholders (Jara et al., 2018). This certainly increases agency costs.

It is clear that to evaluate the family firms under pyramidal structures of business groups is key to understand diversification patterns in Chile, since it creates different objectives and behave differently.

Given the previous statements, another hypothesis is raised:

Hypothesis 3: The negative expected relationship between *Family firms* and *Unrelated Diversification* is attenuated when the firms are affiliated to a Business Group.

III.   Data Sources and Variables

III.1 Data

From an initial data set of 210 firms listed in the Santiago Stock Exchange for the 2008-2015 period, we exclude financial firms and firms with missing information on sales, assets, debt, and stock prices.

Our data set comes from several sources. First, we obtain the financial information from Thomson Reuters Eikon. Second, we obtain information about firm's operating segment using the footnotes of the yearly financial reports. Third, we collect the identity of business groups from the Chilean Stock Exchange regulator (*Comisión Para el Mercado Financiero*). We also collect information on the board of directors and the top management team from credit rating agencies, the financial press, and company sources.

Regarding to the process of data collection, to compute the diversification measures we hand collect the information about revenue in unrelated industrial segments in which firms participates[1]. Once we obtain a detailed information about revenues and industry segment name, we match each segment with the industrial SIC[2] 3-digits code classification, and we consider unrelated segment if it belongs to different SIC classification. We delete firms with incomplete explanation about the clusters in which they operate.

To calculate the pyramidal ownership, we hand collect information about ownership structure and control. According to previous studies, we follow the control chain to identify the ultimate shareholder of the pyramidal structure, that is, the shareholder who effectively controls the firm (Ruiz Mallorquí and Santana Martín 2011; La Porta et al. 1999)[3]. In this process, we follow the weakest link plus direct participation to compute voting rights[4]. Cash flow rights are computed as the multiplication of indirect participation. We then sum the direct participation.

As result of the different data sources, our sample comprises an unbalanced panel of 774 firm-year observations from 140 firms for the 2008–2015 period.

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[1] The information of assets of each segment have not been included, considering that the data does not show consistency, even on a same firm under different years. Contrastingly, revenue shows to be consistent over the years.
[2] Standard Industrial Classification.
[3] In some cases, the ultimate controller is a closed society. In this case, we identify the ultimate shareholder by the notarial document of the society constitution.
[4] In a few cases, we control for dual class shares by weighting the voting power (number of directors elected by the series over total directors) of each share class.

Although family firms and business groups are a common feature (Institutional Shareholder Services 2007; La Porta et al. 1999; Enriques and Volpin 2007), Chile provides an especially suitable corporate framework. The corporate ownership of the Chilean firms is mainly in the hands of families or business groups (in some cases owned by families) who control firms through direct ownership and pyramidal structures (Silva and Majluf 2008; Buchuk et al. 2014; Masulis et al. 2011).

According to previous studies, we use three criteria to consider a firm as 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, it 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 members who are related to the ultimate family owner, or if the firms it controls are run at the senior management level by one or more members who are related to the ultimate family owner (Block 2011; Vandekerkhof et al. 2015).

According to the Chilean capital markets law, a firm belongs to a business group if any of the follow conditions hold: (a) the firm has the same controller as other firms, and the controller holds at least 25% of direct ownership; (b) a significant portion of the firm's assets are allocated to business groups; or (c) the firm is controlled by one or more firms that belong to a business group controlled by an ultimate shareholder. The *CMF* website periodically provides a list of firms that are affiliated to each of business group[5]. Table 1 lists the distribution of the observations across industries.

III.2 Methodology

Our paper analyzes the determinants of diversification. To determine if a firm participate in unrelated segment, we check if the firm have revenue from different segments according the Standard Industrial Classification (SIC) 3-digits code. Once we ensure that the firm has different segments, we estimate three measures to proxy unrelated diversification.

First, we estimate an inverse Herfindahl index (Hirschman, 1964) which incorporates the different revenues a segment brings to the total firm.

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[5] http://www.svs.cl/sitio/mercados/grupos.php (accessed in October 2017).

$$HERF_i = 1 - \sum_{K=1}^{n} p_{i,k}^2 \qquad (1)$$

where "p" is the relative proportion of segment k's sales in firm "i".

Second, following De Andrés et al. (2017), we estimate *INTER* as a proxy for firm's commitment with their segments. *INTER* measures the inequality over the distribution in the diversification level, in terms of revenue.

$$INTER = \frac{\sum_{K=1}^{n-1}(P_{i,s} - Q_{i,s})}{\sum_{S=1}^{n-1} P_{i,s}} \qquad (2)$$

and

$$Q_{i,s} = \frac{\sum_{K=1}^{S} p_{i,k}^2}{HERF_i} \qquad (3)$$

Where "i" stands for each firm. "s" stands for the firms segments that goes from 1 to n-1, ordered from highest to lowest revenue. "n" is the total number of segments of each firm and "P" denotes the cumulative proportion of each firm's sales. "Q" denotes the cumulative proportion of the total diversification.

Third, the last dependent variable of this study is *DIVER*, which is a dummy variable that takes value 1 if the firm participate in unrelated segments and 0 otherwise.

According to our hypothesis, we define family as a dummy variable that takes value 1 when the ultimate shareholder of a firm is defined as a Family, and zero otherwise. *DVDFC* represents the difference between voting rights and cash flow rights of the ultimate shareholder, and *BG* is a dummy that takes value 1 when the firm is affiliated to a business group.

To enhance the comparability of our results, we introduce several control variables that could potentially affect the diversification decision. We define the Tobin's Q as the relation between firm's market value and book value. Ln (Assets) is the natural logarithm of total assets. Debt is the financial leverage, defined as debt to total assets. ROA is the return on assets. Cash Flow Rights is the ownership of the ultimate large shareholder estimated by the sum of direct ownership plus the multiplication of indirect participations.

Therefore, the empirical baseline regression equations to estimate are:

$$Div._{i,t+1} = \beta_0 + \beta_1 Family_{i,t} + \beta_2 Family_{i,t} * BG_{i,t} + \beta_3 BG_{i,t} + \delta\, CV + ys_t + u_{i,t} \qquad (5)$$

$$Div._{i,t+1} = \beta_0 + \beta_1 Family_{i,t} + \beta_2\, Family_{i,t} * DVDFC_{i,t} + \beta_3 Family_{i,t} * BG_{i,t} \\ + \beta_4 DVDFC_{i,t} + \beta_5 BG_{i,t} + \beta_6 BG * DVDFC + \delta\, CV + ys_t + u_{i,t} \qquad (6)$$

where $Div._{i,t+1}$ represent the diversification measure (*Herf, INTER or DIVER*); $Family_{i,t}$ is the family nature dummy; $BG_{i,t}$ is the Business Group affiliation dummy; $DVDFC_{i,t}$ is the wedge between voting and cash flow rights; $CV_{i,t}$ is a set of control variables, defined in Appendix A. In addition, we include a set of fixed effects at different aggregation levels to control for unobservable time-invariant and time-variant fixed effects. In particular, fixed effects are included at year-industry level (ys_t). These capture industry time-variant variables, such as industry growth, technological changes, and regulations, among others. Since the main explanatory variables do not change radically across time, the standard errors are clustered at firm level[6].

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[6] We also cluster standard errors at industry level. The statistically significance hold. Results are available under request.

IV.   Results

IV.1 Descriptive Statistics

Table 1 shows the descriptive statistics. As it is observed, more than half of the firms in the sample are not diversified, since the diversification dummy (*DIVER*) shows that the 47.2% of the firms are diversified. However, the average of sales Herfindahl is 0.187 (Std dev. 0.246), indicating that in average Chilean firms mainly focus in core segments, and diversification in unrelated segment is a partial complement. Inter has a mean of 0.055 (0.246 of Std. dev.) suggesting that is uncommon for firms to show commitment to the segments. Instead, there is a higher focus towards their core one.

The ownership concentration of firms is high. Large shareholders voting power is in average 59.7%, and cash flow rights are in average 53.7%. This difference occurs because shareholders tend to enhance their control through pyramidal structures and business groups. Pyramidal ownership implies a divergence of voting rights and cash flow rights that is 6.1% on average. Business groups affiliation to firms are present in the 68.3% of the firm-year observations. Finally, regarding to the identity of the controlling shareholder, 68.3% of the sample are family owned firms, who boost their control by hiring family members in management positions. Family members on management are around 10.7% of the total sample.

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	P10	P25	P50	P75	P90
Herfindhal	0.187	0.246	0.0	0.0	0.0	0.413	0.587
Inter	0.055	0.149	0.0	0.0	0.0	0.081	0.218
Diver	0.472	0.500	-	-	-	-	-
Wedge of Rights (DVDFC)	0.061	0.110	0.0	0.0	0.0	0.068	0.249
Voting Rights	0.597	0.210	0.319	0.477	0.588	0.740	0.901
Cash Flow Rights	0.537	0.239	0.228	0.367	0.538	0.708	0.870
Family	0.758	0.428	-	-	-	-	-
Business Group	0.683	0.466	-	-	-	-	-
Fman	0.107	0.309	-	-	-	-	-
Tobin's Q	0.967	0.591	0.433	0.611	0.817	1.184	1.641
Ln (Assets)	26.454	1.815	23.872	25.383	26.474	27.681	28.813
Debt ratio	0.239	0.150	0.001	0.118	0.255	0.340	0.428
ROA	0.041	0.080	-0.017	0.015	0.041	0.072	0.105
Observations	789						

Table 2: Correlations

Variables	Herfindhal	Inter	Diver	Wedge of Rights	Voting Rights	Cash Flow Rights	Family	Business Group	Fman	Tobin's Q	Ln (Assets)	Debt Ratio
Inter	0.534^{***}											
Diver	0.814^{***}	0.395^{***}										
Wedge of Rights	-0.055	0.022	-0.136^{***}									
Voting Rights	-0.113^{**}	-0.043	-0.092^{**}	-0.018								
Cash Flow Rights	-0.074^{**}	-0.049	-0.017	-0.478^{***}	0.887^{***}							
Family	-0.056^{*}	-0.048^{*}	-0.154^{***}	0.050	-0.059^{*}	-0.075^{**}						
Business Group	0.121^{**}	0.150^{***}	0.106^{**}	0.347^{***}	0.030	-0.134^{***}	-0.111^{**}					
Fman	-0.046	0.043	0.011	-0.113^{***}	-0.106^{***}	-0.04	0.195^{***}	0.000				
Tobin's Q	0.094^{***}	0.112^{***}	0.069^{*}	0.015	-0.084^{**}	-0.081^{**}	0.001	0.040	0.028			
Ln (Assets)	0.2^{***}	0.211^{***}	0.187^{***}	0.008	0.081^{**}	0.067^{**}	-0.045	0.326^{***}	0.027	0.0613^{*}		
Debt Ratio	0.053	0.059^{*}	0.082^{**}	0.029	-0.058^{*}	-0.064^{**}	-0.039	-0.069^{***}	0.092^{***}	0.062^{**}	0.334^{***}	
ROA	0.074^{**}	0.043	0.04	0.039	0.079^{**}	0.051	-0.062^{*}	0.127^{***}	0.002	0.350^{***}	0.073^{**}	-0.189^{***}

Table 2 shows that family firms negatively correlate with diversification (*HERF*, *DIVER*) but show a higher commitment towards its segments. This is consistent with the Socioemotional wealth hypothesis and resource-based approach, since the family control seeks to keep the family heritage and keep each segment stable. The "*familiness*" assures that each segment has good performance. Nonetheless, they also show a higher tendency to be organized in a pyramidal manner.

This table also shows a positive relationship between size and *BG*, which is consistent with literature considering that business groups naturally seek to create a bigger company.

Regarding return, business groups appear to be positively correlated with higher return over assets, showing that this organizational structure tend to create synergies. In addition, firms with lower leverage appear to generate higher returns and bigger companies tend to perform better than small ones.

IV.2 Explanatory Analysis

The main purpose of the estimations is to test whether the family nature influence unrelated diversification. Table 3 presents the results of the baseline estimations introducing core industry-year fixed effects. In columns 1 and 2 shows the results of the estimation of equation (5) using *INTER* as dependent variable, columns 3 and 4 shows the results using *HERF* as dependent variable, and columns 5 and 6 use *DIVER* as dependent variable.

The evidence across columns 1 and 2 of Table 3 indicates that family owned firms are negatively related to the inverse measure of segment commitment, measured by *INTER* (-0.028, *t-stat*=-1.895; and -0.038, *t-stat*=-1.856, respectively). This evidence suggest that families are more committed with the segments in which they participate, and is consistent with the socioemotional wealth approach. The results observed are explained by the view that family companies seek to keep all its segments working efficiently in order to prevent long term under performance, which can lead to divestitures. This means that a portion of the legacy of the companies' founder is lost, affecting the socioemotional wealth (Hall & Nordqvist, 2008; Feldman 2014). This directly relates to Hypothesis 1b: *Family firms will show more commitment with segment on which they participate.* As it can be seen, family firms do show a higher commitment to their segments.

In consistency with Hypothesis 1, columns 3 to 6 of Table 3 indicates that family diversify less than non-family counterparts. The coefficient of Family is negative in column 3 and 4 using *HERF* as dependent variable (-0.078, *t-stat*=3.930; and -0.159, *t-stat*=3.930, respectively) and in column 5 and 6 using *DIVER* (-0.227, *t-stat*=4.743; and -0.511, *t-stat*=6.248, respectively). These results can be argued by the family resilience to change and keep status quo. Also, in order to retain the control of the firms operating and stability, family will be less prone to diversify due to the existence of higher levels of socioemotional wealth, so they will focus to maximize the family legacy thought the core family business segment (Hall & Nordqvist, 2008; Feldman 2014). Moreover, an alternative explanation is that when owners have more segments the socioemotional wealth can be damaged, and family controllers will adopt more diversification strategies.

To check the robustness of our results, in the appendix A2 we estimate a propensity model in order to asses which is the likelihood of families to diversify. Column 1, 4, 5 and 6 give support to the results in table 3. Quantitatively, our results show that family firms are less likely to diversify in around 25%. This proves Hypothesis 1a to be correct. *Family firms are negatively related to diversification strategies.*

<p style="text-align:center">**Table 3**: Family Firms and Diversification</p>

VARIABLES	(1) INTER $_{t+1}$	(2) INTER $_{t+1}$	(3) HERF $_{t+1}$	(4) HERF $_{t+1}$	(5) DIVER $_{t+1}$	(6) DIVER $_{t+1}$
Family$_t$	-0.028*	-0.038*	-0.078***	-0.159***	-0.227***	-0.511***
	(-1.895)	(-1.856)	(-3.145)	(-3.930)	(-4.743)	(-6.248)
Family$_t$ x Business Group$_t$		0.013		0.110**		0.381***
		(0.521)		(2.231)		(3.837)
Business Group$_t$	0.050***	0.038	0.067***	-0.025	0.102**	-0.216**
	(4.689)	(1.540)	(3.296)	(-0.530)	(2.405)	(-2.445)
Tobin's Q$_t$	0.036**	0.036**	0.032*	0.030*	0.041	0.036
	(2.052)	(2.042)	(1.764)	(1.668)	(1.443)	(1.243)
Ln (Assets)$_t$	0.016***	0.016***	0.021***	0.021***	0.040***	0.040***
	(3.865)	(3.874)	(3.756)	(3.837)	(3.388)	(3.525)
Debt ratio$_t$	-0.004	-0.004	-0.007	-0.003	0.042	0.056
	(-0.123)	(-0.114)	(-0.111)	(-0.043)	(0.307)	(0.414)
ROA$_t$	-0.027	-0.022	0.299***	0.342***	0.444*	0.589**
	(-0.438)	(-0.355)	(2.608)	(2.946)	(1.731)	(2.241)
Constant	-0.409***	-0.402***	-0.400***	-0.337**	-0.534*	-0.310
	(-3.782)	(-3.713)	(-2.820)	(-2.381)	(-1.867)	(-1.055)
Observations	774	774	782	782	789	789
R-squared	0.142	0.143	0.161	0.167	0.152	0.168
Year-Industry FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0503	0.0492	0.0723	0.0771	0.0631	0.0796
F-statistic	9.128	8.395	10.89	10.57	10.11	12

Estimated coefficients [z-statistic] of the ordinary least squares estimates of Eq. (5) The dependent variable for columns 1 and 2 is the commitment towards the Segment (INTER), for columns 3 and 4 is Herfindahl and 5 and 6 the diversification dummy. We control for year and industry effects.

<p style="text-align:center">Robust t-statistics in parentheses.</p>

<p style="text-align:center">*** p<0.01, ** p<0.05, * p<0.1</p>

By nature, business groups are more diversified, allowing controllers to enhance their position as owners and reducing risk of a standalone segment. The parameter for Business groups is positive and statistically significant in columns 3 and 5 (0.067, *t-stat*: 3.296; 0.102, and 0.102, *t-stat*: 2.405, respectively). However, we also test whether the existence of a business group structure moderates the effect of families on diversification strategies. Columns 4 and 6 of Table 2 shows that the parameter of the interaction $Family_{i,t} * Business\ Group_{1,t}$ is positive and statistically significant (0.110, *t-stat*: 2.231; and 0.381, *t-stat*: 3.837, respectively). Our results suggest that the business group affiliation moderates positively the negative relationship between corporate diversification and family firms. Business groups allow firms to generate an internal capital market, and the diversification strategy allows firms to share resources. Thus, families can take advantage from diversification in

such structures, expanding the "familiness" resource to other segments. Moreover, family firms that are one of the segments of business groups rather than the business group itself, diversify more than when they are not organized in this manner.

Table 4: Family Firms, Pyramidal Ownership, and Diversification

	Dependent Variable: Herfindahl Index			
	(1)	(2)	(3)	(4)
VARIABLES				
Wedge of Rights (DVDFC)	-0.205**	-0.281***	-0.585***	-0.732
	(-2.557)	(-3.351)	(-6.019)	(-1.513)
Family			-0.098***	-0.070***
			(-3.584)	(-2.846)
Family x Wedge of Rights			0.431***	
			(3.278)	
Business Group			0.082***	0.081***
			(3.783)	(3.607)
Business Group x Wedge of Rights				0.461
				(0.937)
Cash Flow Rights	-0.087**	-0.066	-0.070*	-0.065
	(-2.163)	(-1.614)	(-1.731)	(-1.609)
Tobin's Q	0.027	0.031*	0.027	0.031*
	(1.473)	(1.706)	(1.558)	(1.703)
Ln (Assets)	0.026***	0.019***	0.019***	0.019***
	(4.776)	(3.160)	(3.188)	(3.227)
Debt ratio	-0.029	0.006	0.012	-0.002
	(-0.468)	(0.100)	(0.192)	(-0.037)
ROA	0.334***	0.317***	0.319***	0.321***
	(2.975)	(2.815)	(2.834)	(2.823)
Constant	-0.474***	-0.295**	-0.272*	-0.304**
	(-3.446)	(-2.064)	(-1.895)	(-2.115)
Observations	782	782	782	782
R-squared	0.143	0.171	0.179	0.172
Year-Industry FE	YES	YES	YES	YES
Adj R-squared	0.0514	0.0808	0.0875	0.0802
F-statistic	9.581	9.710	10.98	8.751

Estimated coefficients [z-statistic] of the ordinary least squares estimates of Eq. (6) The dependent variable Herfindahl. We control for year and industry effects. *t-statistics* of standard errors clustered at firm level in parenthesis.

*** p<0.01, ** p<0.05, * p<0.1.

Table 4 incorporates how the Wedge between voting rights and cash flow rights affect diversification of companies, maintaining family firms and business groups in the analysis. Wedge of rights shows to have a negative impact over diversification (-0.205 *t-stat*: -2.557; -0.2081 *t-stat*: -3.351; -0.585*t-stat*: -6.019 and -0.732*t-stat*: -1.513 in columns 1 through 4 respectively. Therefore, companies that have higher pyramidal structures diversify less. This is consistent with the view that pyramidal structures use several firms as investment properties, not as production units. Supported by these

results, pyramids allow wealth expropriations. The Probit model (Table A2) emphasizes this finding, as a higher wedge of rights reduces the probability of a firm to be diversified.

Even so, family firms under pyramidal structures tend to diversify more (0.431 *t-stat*: 3.584). This is associated with families under proper circumstances, seek to increase their control over their segments. There can be due to a boost of the segments where "familiness" is present in expense of other segments. This impacts positively on the prestige of the family name. The Probit model (Table A2) also supports this analysis. By another hand, there is no effect in business groups diversification if their corporate structure is pyramidal.

Higher cash flow rights impact in a negative manner towards corporate diversification. Having higher cash flows can be used either as payment to stakeholders or investment, which can be expanding current divisions or expand towards new ones. Therefore, having higher cash flow rights restrain the diversification alternative, resulting in a negative coefficient. This can also be explained with the agency problem. Higher Cash Flows increase the chance of overinvestments. Thus, to prevent agency problems, these resources are not used for diversification. Table A2 indicates that higher cash flow rights reduce the chance of the firm to be diversified. This is due to the same reasons explained before.

For divestitures, a different analysis is done, as its only registered when a family reduces the number of owned segments. This is achieved with the dependent variable "Divestiture". The results are exposed in Table 5.

Table 5: Family Firms, Pyramidal Ownership and Propensity to Divest

VARIABLES	Dependent Variable: Divestiture					
	(1)	(2)	(3)	(4)	(5)	(6)
Family*	-0.127***	-0.291***		-0.118**	-0.167***	-0.118**
	(-2.677)	(-3.203)		(-2.473)	(-3.120)	(-2.473)
Family x Business Group		0.191**				
		(2.055)				
Business Group	0.010	-0.150*		0.033	0.029	0.029
	(0.247)	(-1.696)		(0.761)	(0.661)	(0.645)
Wedge of Rights			-0.333*	-0.317	-0.955**	-0.833
			(-1.800)	(-1.637)	(-2.412)	(-0.677)
Family x Wedge of Rights					0.822**	
					(1.964)	
Business Group x Wedge of Rights						0.526
						(0.423)
Cash Flow Rights			-0.057	-0.045	-0.060	-0.046
			(-0.683)	(-0.552)	(-0.736)	(-0.555)
Tobin's Q	0.023	0.021	0.017	0.022	0.018	0.022
	(0.728)	(0.676)	(0.528)	(0.690)	(0.566)	(0.688)
Ln (Assets)	0.017	0.016	0.015	0.012	0.013	0.013
	(1.448)	(1.444)	(1.390)	(1.035)	(1.127)	(1.070)
Debt ratio	-0.124	-0.115	-0.089	-0.102	-0.094	-0.111
	(-0.907)	(-0.838)	(-0.669)	(-0.747)	(-0.690)	(-0.799)
ROA	0.402	0.490*	0.432*	0.419*	0.437*	0.423*
	(1.603)	(1.869)	(1.764)	(1.679)	(1.729)	(1.690)
Observations	634	634	634	634	634	634
Year-Industry FE	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.0606	0.0662	0.0545	0.0643	0.0699	0.0645
Chi-squared	42.91	44.31	42.09	45.74	48.58	45.96

Estimated coefficients [z-statistic] of the ordinary least squares estimates of Eq. (5) The dependent variable is divestitures. We control for year and industry effects.

Robust z-statistics in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Consistent with previous studies, families are reluctant to engage in divestitures. Even though it can be optimal to sell a segment that is not performing as expected, it is less likely under this type of corporate structure. This is due to two main reasons; socioemotional wealth, where a family keeps the way of doing business as the original owner and maintain the familiar heritage, or to prevent being associated as a failure, where selling a segment can be seen as the incapability of running the business effectively.

This proves Hypothesis 1b to be correct. *Family firms show more commitment with the segments on which they participate.*

Pyramidal structures show to affect negatively divestitures. As pyramidal structures allow a higher control of the companies, selling a segment decreases the decision power over the cash flow rights.

By another hand, family firms under a pyramidal structure are more prone to divest. This suggests that an excessive control raised due to familiar bonds and wedge of rights can increase agency costs, and despite the socioemotional wealth effect, the company must sell one or more segments to achieve optimal performance. Otherwise, minor stakeholders can cause an internal conflict.

Contrastingly, business groups tend to do divestitures if required. Being a business group affects positively this dependent variable. The finding is consistent with business groups that search for an optimal functioning of each segment in order to achieve synergies. If a segment is not performing as desired, there is no emotional bonding that prevents its sellout. This benefit must be certainly higher than transaction and reputational costs. In addition, family firms that already belong to a business group individually, tend to diversify given their nature.

This proves Hypothesis 2 to be correct. *The negative relationship between family firms and Unrelated Diversification is attenuated when the firms are organized in a pyramidal structure.*

In the same line, family firms under business groups also have a positive impact over divestitures. Even though they do have emotional bonds that tend to limit divestitures, the pressure of the other groups forces the sellout of segments in order to improve overall performance.

This proves Hypothesis 3 to be correct. *The negative relationship between family firms and Unrelated Diversification is attenuated when the firms affiliated to business groups.*

In addition to prior results, this table shows how being a family-CEO affect diversification. Under this structure, family firms even are less prone to diversify than when the family firm has an external CEO (-0,057, *t-stat*: -1,977; -0.075, *t-stat*: -2.518; -0,069, *t-stat*: -2,312; -0,091, *t-stat*: -3,148). This is consistent with Schmid et al. (2015), reinforcing that in this case, there is a more conservative firm. By having a family member as a CEO, a higher control is available, allowing a higher chance to maintain the socioemotional wealth.

IV.3 Control Variables

All the models in Table 1, 2, 3 and 4 suggest that Tobin's Q positive influence unrelated diversification.

There is a positive relationship between Tobin's Q and Diversification. Inter models show that a higher ratio generates a higher commitment with the segments owned. *DIVER* and *HERF* models indicate that a higher Tobin's Q increases diversification along with higher chances to diversify (Probit models).

Bigger companies tend to diversify more, have higher chances to diversify, but show a lower commitment to its subsidiaries. This is due to the fact that this type of firms has an easier access to the capital market and obtain the resources to explore new industries. Its size allows it to tolerate higher risks and survive under bad investment choices. They can exploit synergies considering that more productive processes can benefit with the new resources. Thus, it is more likely to create synergies. By another hand, the lower commitment suggests that firms with higher returns expand to other segments in order to boost current subsidiaries rather than a search of new growth opportunities. In that event, new segments pass new assets but tend to be neglected.

Return over assets has a positive impact over diversification. This is associated with more credibility to succeed in new areas and exploit new opportunities which can also be spread to other subsidiaries. Even more, higher return increases the probability of a firm to diversify. Regarding commitment, higher return increases this aspect. Good performance increases the appetite to explore new investment opportunities, thus the firm ensures its proper development.

V.   Concluding Remarks

This study shows that family firms exhibit different behavior than other firms in terms of diversification strategies. Chile, with a unique set of attributes, shows to be a proper environment to analyze these suppositions. In that context, several findings have been observed.

First, family firms tend to diversify less and be involved more into the segments their firm already has, evidenced in their less observed divestitures. This is due to two main theories, the socioemotional wealth and the resource-based approach. The first one refers to the belonging sentiment from the family towards corporate governance, and seeks to keep the status quo from the original family founder. The second one refers to the unique set of capabilities that arise from the interaction between the family members with the company. If the firm decided to diversify, these aspects could be dissipated.

Nonetheless, the family's reluctance to diversify can be attenuated if certain conditions are present. If the family firm is organized in a pyramidal structure, and if the family firm is affiliated to a business group. This is consistent with the wealth expropriation theory and expand the "*familiness*" to a broader range of subsidiaries. In terms of divestitures, they tend to engage it more often due to a higher importance performance rather that status quo, as more stakeholders are present.

For further analysis regarding these topics, next steps are to measure the family ownership over diversification decisions in other countries. As previously stated, Chile has a unique set of characteristics that allow a proper measurement of the interaction between these variables. Thus, countries with different regulations should be analyzed. Even more, other countries may have other countries, where "familiness" and socioemotional wealth affect differently the population. Another step is to measure international diversification, which will also provide new insights regarding family control and their interaction with other economies.

VI.   References

Anderson, R., S. A. Mansi, and D. M. Reed. 2003. Founding family ownership and the agency cost of debt. *Journal of Financial Economics* 68:263-285.

Bergh, D. D. 1995. Size and relatedness of units sold: An agency theory and resource-based perspective. *Stretegic Management Journal* 16: 221-239.

Berger, P. G., and E. Ofek. 1995. Diversification's effect on firm value. *Journal of Financial Economics* 37 (1):39-65.

Berrone, P., C. Cruz, L. R. Gomez-Mejia, and M. Larraza-Kintana. 2010. Socioemotional Wealth and Corporate Responses to Institutional Pressures: Do Family-Controlled Firms Pollute Less? *Administrative Science Quarterly* 55 (1):82-113.

Block, J. H. 2011. How to Pay Nonfamily Managers in Large Family Firms: A Principal—Agent Model. *Family Business Review* 24 (1):9-27.

Bonilla, C., J. Sepulveda, and M. Carvajal. 2010. Family Ownership and Firm Performance in Chile: A Note on Martinez et al.'s Evidence. *Family Business Review* 23 (2):148-154.

Buchuk, D., B. Larrain, F. Muñoz, and F. Urzúa. 2014. The internal capital markets of business groups: evidence from intra-group loans. *Journal of Financial Economics* 112 (2):190-212.

Campa, J. M., and S. Kedia. 2002. Explaining the Diversification Discount. *Journal of Finance* 57 (4):1731-1762.

Chirico, F., and M. Nordqvist. 2010. Dynamic capabilities and trans-generational value creation in family firms: The role of organizational culture. *International Small Business Journal* 28 (5):487-504.

Chirico, F., M. Nordqvist, G. Colombo, and E. Mollona. 2012. Simulating Dynamic Capabilities and Value Creation in Family Firms: Is Paternalism an "Asset" or a "Liability"? *Family Business Review* 25 (3):318-338.

Chirico, F., D. G. Sirmon, S. Sciascia, and P. Mazzola. 2011. Resource orchestration in family firms: investigating how entrepreneurial orientation, generational involvement, and participative strategy affect performance. *Strategic Entrepreneurship Journal* 5 (4):307-326.

Corley, K. and Gioia, D. 2004. Identity Ambiguity and Change in the Wake of a Corporate Spin-Off. *Administrative Science Quarterly* 49 (2): 173-208.

Daley, L., Mehrotra, V. and Sivakumar, R. 1997. Corporate focus and value creation evidence from spinoffs. *Journal of Financial Economics* 45 (2): 257-281.

De Andrés, P., de la Fuente, G. and Velasco, P. 2014. Growth opportunities and the effect of corporate diversification on value. *The Spanish Review of Financial Economics*, 12 (2): 72-81.

De Andrés, P., de la Fuente, G. and Velasco, P. 2017. Does it really matter how a firm diversifies? Assets-in-place diversification versus growth options diversification. *Journal of Corporate Finance* 43: 316-339.

Dranikoff, L., Koller, T. and Schneider, A. 2002. Divestiture: Strategy's missing link. *Harvard Business Review* 80 (5): 74-83.

Enriques, L., and P. Volpin. 2007. Corporate governance reforms in Continental Europe. *Journal of Economic Perspectives* 21 (1):117-140.

Espinosa, C., M. Jara-Bertin, and C. Maquieira. 2017. The influence of family and pyramidal ownership on corporate diversification in Chile. *The North American Journal of Economics and Finance*.

Feldman E. R. 2014. Legacy divestitures: motives and implications. *Organization science* 25: 815-832.

Feldman, E. R., Amit, R. and Villalonga, B. 2016. Corporate divestitures and family control. Strategic Management Journal 37:429-446.

Gomez-Mejia, L., Cruz, C., Berrone, P. and de Castro, J. 2011. The Bind that Ties: Socioemotional Wealth Preservation in Family Firms. *The Academy of Management Annals* 5 (1): 653-707.

Gugler, K., Mueller, D. and Yurtoglu, B. 2008.Insider ownership, ownership concentration and investment performance: An international comparison. *Journal of Corporate Finance* 14 (5): 688-705.

Habbershon, T. G., M. Williams, and I. C. MacMillan. 2003. A unified systems perspective of family firm performance. *Journal of Business Venturing* 18 (4):451-465.

Habbershon, T. G., and M. L. Williams. 1999. A Resource-Based Framework for Assessing the Strategic Advantages of Family Firms. *Family Business Review* 12 (1):1-25.

Hall, A. and Nordqvist, M. 2008. Professional Management in Family Businesses: Toward an Extended Understanding. *Family Business Review* 21:51–69.

Hernández, A. and Galve, C. 2017. Diversification and family control as determinants of performance: A study of listed business groups. *European Research on Management and Business Economics* 23 (1): 46-54.

Hirschmann, A. 1964. The Paternity of an Index. *American Economic Review* 54:761.

Hovakimian, G. 2016. Excess value and restructurings by diversified firms. *Journal of Banking and Finance* 71: 1-19.

Institutional Shareholder Services. 2007. Report on the Proportionality Principle in the European Union. External Study Commissioned by the European Commission.

Jara M., Torres, J. and López, F. 2018. Firm Value and Pyramidal Strucutes: New Evidence for Family Firms. Working Paper.

Jara M., López-Iturriaga, F. and Espinosa, C. 2015. Diversification and control in emerging markets: The case of Chilean firms. *BRQ Business Research Quarterly* 18 (2): 259-274.

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer. 1999. Corporate Ownership Around the World. *Journal of Finance* 54 (2):471-517.

Lefort, F. and Gonzalez, R. 2008. Hacia un Mejor Gobierno Corporativo en Chile. *Abante* 11 (1): 19-45.

Masulis, R. W., P. K. Pham, and J. Zein. 2011. Family business groups around the world: Financing advantages, control motivations, and organizational choices. *Review of Financial Studies* 24 (11):3556-3600.

Maury, B. 2006. Family ownership and firm performance: Empirical evidence from Western European corporations. *Journal of Corporate Finance* 12:321-341.

Pérez-González, F. 2006. Inherited Control and Firm Performance. *American Economic Review* 96 (5): 1559-1588.

Popli, M., Ladkani, R. and Gaur, A. 2017. Business group affiliation and post-acquisition performance: An extended resource-based view. *Journal of Business Research* 81: 21-30.

Rau, S. B. 2014. Resource-based view of family firms. *The SAGE Handbook of Family Business*:321-340.

Ruiz Mallorquí, M. V., and D. J. Santana Martín. 2011. Dominant institutional owners and firm value. *Journal of Banking & Finance* 35:118-129.

Schmid, T., Ampenberger, M., Kaserer, C., and Achleitner, A. 2015. Family Firm Heterogeneity and Corporate Policy: Evidence from Diversification Decisions. *Corporate Governance: An International Review* 23: 285–302.

Silva, F., and N. Majluf. 2008. Does family ownership shape performance outcomes? *Journal of Business Research* 61 (6):609-614.

Singh, H. and Montgomery, C. A. 1987. Corporate acquisition strategies and economic performance. *Strategic Management Journlal* 8: 377-386.

Vandekerkhof, P., T. Steijvers, W. Hendriks, and W. Voordeckers. 2015. The Effect of Organizational Characteristics on the Appointment of Nonfamily Managers in Private Family Firms: The Moderating Role of Socioemotional Wealth. *Family Business Review* 28 (2):104-122.

Villalonga, B. 2004a. Diversification Discount or Premium? Evidence from the Business Information Tracking Series. *Journal of Finance* 59 (2):479-506.

———. 2004b. Does diversification cause the "diversification discount"? *Financial Management* 33 (2):5-27.

Volkov, N. and Smith, G. 2015. Corporate diversification and firm value during economic downturns. *The Quarterly Review of Economics and Finance* 55: 160-175.

Zellweger, T. M., K. A. Eddleston, and F. W. Kellermanns. 2010. Exploring the concept of familiness: Introducing family firm identity. *Journal of Family Business Strategy* 1 (1): 54-63.

VII. Appendix

Table A1: Variable Definitions

Abbreviation	Variable	Definition
Dependent Variables		
Herf$_{t+1}$	Herfindahl Diversification Index	Measurement of a Company's diversification in respect to number of segments
Inter $_{t+1}$	Segment Commitment	Measurement of a Company's Inequality in respect of segment's revenues
Diver$_{t+1}$	Diversification	Diversification dummy
Hypothesis Explanatory		
Family	Family company	Family nature dummy
BG	Business Group company	Business Group affiliation dummy
DVDFC	Wedge of rights	Difference between voting rights and cash flow rights
Fman	Family Manager	Family member is part of the Company's management
Control Variables		
Tobin's Q	Tobin's Q	Relation between firm's market value and book value
Ln (Assets)	Company's Size	Measure of company's size
Debt Ratio	Company's leverage	Total Financial Debt over Total Assets
ROA	Return Over Assets	Net Income over Assets
Fixed Effects		
Industry FE	Industry Fixed Effects	Set of industry dummies

	Dependent Variable: Diversification Dummy					
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES						
Family*	-0.236***	-0.509***		-0.210***	-0.259***	-0.210***
	(-4.637)	(-5.258)		(-4.025)	(-4.459)	(-4.027)
Family x Business Group*		0.406***				
		(3.530)				
Business Group*	0.113**	-0.242**		0.191***	0.185***	0.187***
	(2.544)	(-2.221)		(3.989)	(3.874)	(3.802)
Wedge of Rights			-0.938***	-1.082***	-1.806***	-1.506
			(-4.519)	(-4.937)	(-4.401)	(-1.097)
Family x Wedge of Rights					0.922**	
					(2.113)	
Business Group x Wedge of Rights						0.434
						(0.315)
Cash Flow Rights			-0.207**	-0.161	-0.178*	-0.161
			(-2.144)	(-1.601)	(-1.770)	(-1.602)
Tobin's Q	0.041	0.041	0.027	0.041	0.035	0.041
	(1.185)	(1.166)	(0.776)	(1.138)	(0.971)	(1.140)
Ln (Assets)	0.045***	0.045***	0.050***	0.030**	0.032**	0.031**
	(3.423)	(3.446)	(4.149)	(2.283)	(2.385)	(2.307)
Debt ratio	0.079	0.070	0.059	0.132	0.143	0.124
	(0.532)	(0.470)	(0.409)	(0.878)	(0.953)	(0.809)
ROA	0.578*	0.702**	0.706**	0.647**	0.670**	0.650**
	(1.831)	(2.134)	(2.321)	(2.057)	(2.113)	(2.063)
Observations	759	759	759	759	759	759
Year-Industry FE	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.0899	0.103	0.0806	0.114	0.117	0.114
Chi-squared	97.11	107.8	83.85	118.9	123.9	118.8

Estimated coefficients [z-statistic] of the oprobit of Eq. (5) The dependent variable is the diversification

dummy. We control for year and industry effects. Robust t-statistics in parentheses.

Robust z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A3: Family CEO, Pyramids and Diversification

VARIABLES	Dependent Variable: Herfindahl index			
	(1)	(2)	(3)	(4)
Family	-0.070***	-0.059**	-0.085***	-0.082***
	(-2.790)	(-2.358)	(-3.020)	(-2.931)
Family x Fman	-0.057**	-0.075**	-0.069**	-0.091***
	(-1.977)	(-2.518)	(-2.312)	(-3.148)
Family x Wedge of Rights			0.383***	0.346***
			(2.891)	(2.585)
FamDVDFCCEO				0.708
				(1.302)
Wedge of Rights		-0.312***	-0.579***	-0.574***
		(-3.693)	(-5.850)	(-5.783)
Cash Flow Rights	0.001	-0.064	-0.067	-0.068
	(0.029)	(-1.521)	(-1.614)	(-1.625)
Tobin's Q	0.040**	0.038**	0.035**	0.034*
	(2.196)	(2.122)	(1.978)	(1.873)
Ln (Assets)	0.022***	0.018***	0.019***	0.018***
	(3.700)	(3.146)	(3.171)	(3.142)
Debt ratio	-0.003	0.018	0.022	0.026
	(-0.052)	(0.284)	(0.343)	(0.400)
ROA	0.339***	0.355***	0.355***	0.354***
	(2.912)	(3.061)	(3.065)	(3.065)
Business Group	0.064***	0.087***	0.084***	0.085***
	(3.020)	(3.989)	(3.850)	(3.896)
Constant	-0.420***	-0.306**	-0.285**	-0.280*
	(-2.951)	(-2.139)	(-1.983)	(-1.945)
Observations	777	777	777	777
R-squared	0.168	0.180	0.185	0.189
Year-Industry FE	YES	YES	YES	YES
Adj R-squared	0.0762	0.0881	0.0930	0.0954
F-statistic	8.893	9.426	10.43	9.810

Estimated coefficients [z-statistic] of the ordinary least squares estimates of Eq. (5) The dependent variable is Herfindahl.
We control for year and industry effects.
Robust t-statistics in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$