Governance and Financial Performance in Family Business Groups: The Case of Mexico

Abstract: We analyze the performance of companies in large Mexican family-based groups. Performance is influenced by the social connections (family relations) between the managers of the related companies and the CEO of the parent firm. Our purpose is to understand the decision behind having and keeping family members as division managers by analyzing the relationships between social connections and performance of the divisions.

We use data from 15 family-based business groups that own 44 companies which in turn are traded on the Mexican Stock Exchange (BVM) during the period 1996-2011. The 487 observations are used to test four hypotheses concerning performance of family-managed vs. outsider-managed divisions, as well as the generation of the family managers, tenure, company size and age, and several control variables. We also show that family-based groups and conglomerates outperform independent firms on the Mexican stock exchange.

We find that divisions led by founders have superior performance to those led by outside managers, who in turn outperform other family members such as sons and grandsons. Founders tend to have the longest tenure in the firms, followed by family members by generation, and finally outsiders.

Our results support the nepotism view of family business management, in which relatives are preferred over outside managers, despite generally worse performance by the family-managed divisions.

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I. Introduction

Since the vast majority of large companies in emerging markets, other than state-owned enterprises, are family-based organizations (Claessens et al 2000; Khanna and Yafeh 2007; Grosse 2015), the subject of corporate governance in these companies is an important concern today. Many of these family-based companies operate in multiple industries, so they can be viewed as business groups (conglomerates) rather than single-industry firms. The issue of corporate governance in family business groups thus arises in parallel to governance in widely-held companies as analyzed fairly extensively in the US context (Shleifer and Vishny 1997; Dalton et al 2007).

Among the many issues in corporate governance, from the agency problem between owners and managers to the problem of succession in family-based groups, we are concerned with the assignment of leadership responsibility to insiders versus outsiders. We are specifically interested in the performance of divisions/subsidiaries of family-based groups that are managed by family members versus outsiders.

Almeida & Wolfenzon (2006a) discuss the conditions that lead to the creation of business groups. They claim that a firm is more likely to be added to a business group when its value is easier to divert to the family owners and required investment is high, since it is difficult for a talented entrepreneur to finance the required investment independently in the external market. Thus, families that already own successful firms might be the only ones with sufficient financial resources to set up the new firm, regardless of whether they are the most efficient owners. The conventional argument behind the existence of family business groups focuses on the control motivations of founding families (Masulis, Pham, & Zein, 2011). Some authors have explored the family's incentives to create and maintain business groups, arguing that they might allow the family to control a firm using only a small share of cash flow (in pyramidal structures) (La Porta et al., 1999); alleviate external financing difficulties (Almeida & Wolfenzon, 2006a; Masulis et al., 2011); enhance the family reputation (Gomes, 2000; Khanna & Palepu, 2000; Masulis et al., 2011); prevent potential raiders from seizing valuable control (Bebchuk, 1999); create regulatory or tax benefits (Morck, 2003); produce a resource-sharing advantage (Cheong, Choo, & Lee, 2010); and substitute for missing markets, such as

the labor market (Khanna & Palepu, 1999) and the financial market (Ghatak & Kali, 2001; Kim, 2004).

However, there are some skeptical authors who question whether the potential benefits of group affiliation could be overshadowed by its costs, for instance when there are: conflicts of interest between the controlling family and the minority shareholders; capital misallocations where the cash flow generated by profitable divisions is being invested in unprofitable ventures; inefficient compensation schemes due to internal equity reasons; and difficulties in acquiring experience in several industries at the same time (Khanna & Palepu, 2000).

Moreover, Bae et al. (2002) and Bertrand et al. (2002) claim that family business groups (pyramids) are associated with high diversion of cash flows. However, Almeida & Wolfenzon (2006) discuss that pyramids do not facilitate this diversion, but that it is driven by a selection effect. They explain that when the new firm requires a large startup investment and generates low revenues, and when investor protection is low, diversion is expected to be high. These authors also point out that pyramids might lead to overinvestment, since this cost is shared with existing shareholders of the business group. So, pyramidal structures might destroy value because of the possibility of overinvestment. However, Almeida & Wolfenzon (2006) show that this negative effect on performance is also due to a selection effect, since low-value firms are selected into the business groups. In addition, one of the main concerns underlying family business groups is the agency conflicts that arise in such structures; meaning that managers may act on behalf of the controlling family, instead of the wellbeing of the company and the rest of the shareholders.

Finally, even though Almeida & Wolfenzon (2006a) show that pyramidal business groups can be efficient for the family, their model is not adequate to establish efficiency from the perspective of social welfare. In fact, Khanna & Yafeh (2007) claim that from a welfare perspective, business groups can sometimes be ‘paragons’ and, at other times, ‘parasites’. On one hand, some scholars argue that family business groups can have harmful effects on overall economic efficiency, since they foster an inefficient allocation of corporate control through family inheritances (Morck et al., 2000; Morck & Yeung, 2003); they hinder the development of external capital markets (Almeida & Wolfenzon,

2005); and they lobby for regulations that impede financial development (Morck & Yeung, 2003; Rajan & Zingales, 2003). On the other hand, other authors claim that the presence of business groups could improve economic efficiency since their internal capital allocations allocate funds among member firms more efficiently than the underdeveloped external capital market does (Almeida & Wolfenzon, 2006b; Khanna & Palepu, 1997; Stein, 1997).

Our findings as presented below demonstrate that large Mexican companies tend to follow nepotistic practices (often assigning leadership roles to family members rather than outsiders), though this practice is decreasing over time. The financial performance of the family-led companies/divisions of business groups tends to be worse for descendants of the founder, while the founder and outside managers perform better. We also find that family-owned firms and business groups outperform independent companies in the Mexican stock exchange. Among our contributions to the literature are these empirical findings, as well as our argument that family-based firms should be expected to outperform independent companies because of their abilities to share information, resources and risks.

II. Family Business Groups in Mexico -- Hypotheses

According to Flores (2000), the transformation of large companies into business groups in Mexico was motivated by industrial regulations during the seventies. Husted & Serrano (2002) argue that given that these groups are mainly familial (see La Porta, Lopez-De-Silanes, & Shleifer (1999)), the market for corporate control is practically non-existent in Mexico. Family business groups manage different types of stock in order to maintain control of their firms (or divisions). For instance, 'Class A' stocks provide full voting rights to the family owners, while other classes of stock only give limited or no voting rights to minority shareholders, thus "control resides with the families that own the controlling interest in the voting classes of stock" (Husted & Serrano, 2002, p.10-11).

A distinctive characteristic of Mexican family business groups is that cross-holdings of shares between companies usually take place within the business group, so that the firms remain within the control of the same family. However, Husted & Serrano (2002) highlight that family control has

become more diffused as ownership passes to the second or third generation. These authors further explain that agency problems might rise when companies are held by the second or third generation of the founding family.

Almeida & Wolfenzon (2006a) argue that the firm value and firm performance (Tobin's Q) in family business groups is lower than in stand-alone firms. Claessens et al. (2000), Singh et al. (2007) and Volpin (2002) find similar results, explaining that the separation of ownership and control is detrimental to performance.

However, Almeida & Wolfenzon (2006a) give a particular interpretation to this implication, claiming that it is a consequence of a selection effect; it is expected to see a negative relationship between firm value and pyramids since family business groups undertake lower profitability projects, thus, low-value firms are selected into the group. In line with this, Carney, Gedajlovic, Heugens, Essen, & Oosterhout (2011) developed a meta-analysis of 28 countries around the world and found that group affiliation diminishes firm performance, in general. Similar results were found in East Asia (Claessens et al., 2000), Canada (Morck et al., 2000), Western Europe (Faccio & Lang, 2002), Belgium (Buysschaert, Deloof, Jegers, & Rommens, 2008), and Colombia (González, Guzmán, Pombo, & Trujillo, 2012). Thus, the following hypothesis is formulated:

Hypothesis 1: Firms belonging to a family business group have a lower performance than stand-alone firms.

Moreover, since we are dealing with the social connections embedded in a firm, it is relevant to not only consider the family firms belonging to a group, but all the publicly-traded family firms. This relationship between ownership structure and financial performance is one that has interested academics for years. The work by Anderson and Reeb (2003, 2004) is considered among the most influential in the family firms literature. These authors analyzed the firms belonging to the S&P500 and concluded – against their initial conjectures and prior literature (Demsetz & Lehn, 1985; Fama & Jensen, 1983; Shleifer & Vishny, 1986) – that family firms perform better than non-family firms. Similar results were found in Norway (Mishra et al., 2001), Chile (Martinez et al., 2007) and Germany (Andres, 2008). Thus, the following hypothesis is formulated:

Hypothesis 2: Family firms have superior performance compared to non-family firms.

As mentioned before, performance might not be the only variable behind assignment of responsibilities in family business group; social connections must also be considered, especially in emerging markets where family firms dominate (La Porta et al., 1999). For instance, Bennedsen et al. (2007) analyze the economic consequences of the decision of promoting a family member or an unrelated CEO in Danish firms. They find that non-family managers provide extremely valuable services to the organizations they head. They actually claim that "family CEOs hurt firm performance" (p.689). Similarly, Gomez-Mejia et al. (2003) and Gomez-Mejia et al. (2001) argue that family CEOs are 'firmly entrenched' given the emotional ties with the board and family altruism, which could lead to suboptimal risk taking and lower performance. Moreover, in a family business group, the CEO of the group (which in most cases is the head of the family), not only deals with the decision of allocating capital to the divisions based on different indicators (such as performance), but he also has to deal with the fact that the divisions are managed by family members and non-family members. Thus, the family tie might have unconsciously more weight than any other indicator (nepotism). Thus, the following hypothesis is formulated:

Hypothesis 3: Within a family business group, firms managed by non-family members have a superior performance relative to firms managed by family members.

The relationship among founders and other family members has received some academic attention. Aldrich & Cliff (2003) claim that that families help founders to recognize the opportunities around which to create a venture and lend support to ensure its birth and sustenance over time. In addition, Lubatkin, Ling, & Schulze (2003) argue that the extent of self-control used by founders differentiates far-sighted founders from myopic-altruism founders. Far-sighted founders are those able to withhold immediate gratification of each and every need of family members in turn of actions that could enhance the long-term value for the family and the firm. Myopic altruism founders are those that find it difficult to take such actions, thereby violating rules of procedural and distributive justice, leading to their being perceived as unjust by family and non-family members.

The importance of the company founders cannot be overstated. For instance, Garcia-Alvarez, Lopez-Sintas, & Saldaña Gonzalvo (2002) claim that their influence on the culture goes beyond their tenure (in Spanish firms). Anderson & Reeb (2003) disclose a positive role of the founder on the financial performance of the firm. This performance is favorably for the founders when compared to family descendants and non-family CEOs. These authors suggest that founders bring a unique value to the firm.

In addition, regarding generational transitions, Sonfield & Lussier (2004) compare first-, second- and third-generation family firms. They found that the first-generation family businesses do less succession planning than second- and third-generation family firms. Similarly, Morck & Yeung (2003) argue that the succession from the founder (first-generation) to someone else (second-generation) is a value-destruction event, since corporate control is passed from a highly able entrepreneur to the next generation, which is likely to be less able, and the heir's heir even less able (third-generation). Thus, the following hypothesis is formulated:

Hypothesis 4: Within family business groups, firms managed by a founder have a superior performance compared to family business groups managed by someone other than the founder.

In addition, Collins & Porras (1994) acknowledge the influential position of the company founders on the culture, values and performance of the firm. Anderson & Reeb (2003) argue that this influence is attributable to their long tenures and the centrality of their position. Several efforts have been made to understand the different leadership styles and the interactions between family and non-family members. For instance, McConaughy (2000) finds that family leaders tend to have much longer tenures than non-family executives (three times as long in fact). Some other authors have focused their efforts into understanding the experience of these long-tenured founders. While some authors claim that founders experience loneliness and boredom (Gumpert & Boyd, 1984), others argue that they remain energetic and rejuvenated (Kenyon-Rouvinez, 2001). In addition, managers with longer tenures are assumed to have greater knowledge of the firm, and more connections to the firm, thus the following hypothesis is formulated:

Hypothesis 5: Within a family business group, managers with longer tenures outperform managers with shorter tenures.

However, even though we are expecting Hypothesis 5 to be supported by evidence, this potential positive result might be due to reverse causality. In other words, perhaps it is not the long-tenured manager insight that enhances the performance of the firm, but the better performing firms are handed to certain managers, thus, keeping them in the job for a longer time than those managing the not-so-well performing firms.

Relations are important to family business groups. However, there are two different approaches to these relations: (1) network centrality, considering the relations between each division of the business group and the entire universe (sample) of firms, and (2) family centrality, considering the relations within the same business group. Regarding the first approach, some scholars have analyzed the centrality of the founders' position. This approach focuses on the relationships among individuals (known in literature as 'interlocking directorates' (Koenig & Gogel, 1981; Mizruchi, 1996)), by assuming that they are embedded within a network of interrelations with other individuals (Brass, 1995). This author suggests that "it is this intersection of relationships that defines … [an individual's]…position in the social structure, and provides opportunities and constraints on behavior" (p.39). The centrality of an individual is considered not within its business group, but within the entire network of firms. An example of this theory applied to family firms is provided by Kelly, Athanassiou, & Crittenden (2000). These authors analyze the central role that a founder plays in a family business from a social network perspective and develop the basis for the founder centrality concept. Thus, considering the network centrality as an advantage, the following hypothesis is formulated:

Hypothesis 6: Within a family business group, firm with more central managers outperform firms with less central managers.

It is worth mentioning that the potential positive results expected to obtain after testing Hypothesis 6 might be due to endogenous pecking order issues. Meaning that these "more central

managers" might be those favored by the pecking order theory: first, the founder of a firm; second, his children; third, his extended family, and so on.

III. Methodology

Data and Method of Analysis

The sample is comprised of the Mexican firms that were listed **o**n the Mexican Stock Exchange (MSE) in the period 1996 to 2011. Hypotheses 1 and 2 relate to all 142 firms listed on the MSE during this period. Hypotheses 3 through 6 require family business group-specific data, since they attempt to understand the behavior within business groups**.** Therefore, the data collected to test these hypotheses is from the 44 family group, non-financial firms that were listed. Family group firms were defined as companies in which one family has a controlling (voting) interest. They are listed in Appendix Table 3.

The financial data for all 142 firms are collected from Bloomberg, and the family business group data have been gathered manually through the firms' annual reports and local newspapers: "*El Norte*" and "*Reforma*" for companies established in Monterrey and Mexico City, respectively. Finally, the econometric models are tested through a Balanced Panel (OLS) structure using the software EViews7. The data have an annual frequency.

Models and Variables

In order to test the formulated hypotheses, three models are developed using different measures of performance. The models test hypotheses 3 through 6:

(1)

$$Performance = \beta_0 + \beta_1(Family\,Managed) + \beta_2(Founder) + \beta_3(Generation) + \beta_4(Tenure) + \beta_5(Pecking\,Order) + \beta_6(C$$

Dependent Variables

As shown in the models, there are three dependent variables used in this study: ROA, Tobin's Q, and profit margin.

Tobin´s Q is used as the main indicator to measure financial performance since it incorporates the firm´s current operations, potential opportunities for growth and future operating performance

(Hermalin & Weisbach, 1991); it represents the ratio of the market value of a firm to the replacement cost of the firm's assets. The Q ratio is useful for the valuation of a company, since it is based on the hypothesis that in the long run the market value of a company should roughly equal the cost of replacing the company's assets. Companies with Tobin's Q values above one indicate that the market has an exceptionally good perception of the company, or that the expected agency costs are very small (McIntyre, Murphy, & Mitchell, 2007). This variable is calculated as the sum of market capitalization, liabilities and preferred equity, divided by total assets. The optimal measurement of this variable includes considering the preferred equity as the market value of preferred stock, instead of its book value. However, since the preferred stock rarely trades it is usually not possible to obtain. Thus, for the purpose of this research we consider the book value of the preferred equity, which is almost negligible.

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. This variable is calculated as the ratio between operating income and total assets. This variable is calculated as the ratio between operating income and net sales.

Independent Variables

The following list defines the variables that are used to test the hypotheses developed earlier:

- Family Managed: binary variable that equals one if the firm is managed by a family member, and zero otherwise (managed by an outsider).
- Founder: binary variable that equals one if the firm is managed by its founder, and zero otherwise.
- Generation: binary variable that takes values from one to three which indicate the family generation relative to the founder, and zero if the firm is managed by an outsider.
- Tenure: natural logarithm of the manager's tenure in years. The natural logarithm transformation is used in order for the variables to be on the same scale (Guthrie, Sokolowsky, & Wan, 2011; Masulis & Mobbs, 2011).
- Pecking order: index given to family managers, where children of founders receive a higher number than nephews, and older children are favored over younger children. Non-family managed firms and founder-managed firms receive a value of zero.

Control Variables

Six variables are introduced to control for additional firm characteristics:

- Firm size: natural logarithm of total assets.
- Firm age: natural logarithm of the number of years since foundation. The natural logarithm transformation is used in order for the database to be on the same scale (Anderson & Reeb, 2003a).
- Capital structure: long term debt over long term debt plus equity.
- Sales growth: the ratio between the net sales for the current period and the last period minus one. This variable is used to identify firms with large investment opportunities.
- Family group: dummy variable equal to 1-14 for the various groups to which the 44 companies belong.
- Industry: dummy variables that indicate the sector to which each firm belongs. The industrial sector classification was made according to the criteria used by the Mexican Stock Exchange.
  - Ind1_Industrial: binary variable that take the value of one if the firm belongs to the industrial sector and zero otherwise.
  - Ind2_Materials: binary variable that take the value of one if the firm belongs to the materials sector and zero otherwise.
  - Ind3_CommonCP: binary variable that take the value of one if the firm belongs to the common consumption products sector and zero otherwise.
  - Ind4_Health: binary variable that take the value of one if the firm belongs to the health sector and zero otherwise.
  - Ind5_TelecomServ: binary variable that take the value of one if the firm belongs to the telecommunication services sector and zero otherwise.
  - Ind6_NonCommonCGS: binary variable that take the value of one if the firm belongs to the non-basic consumption goods and services sector and zero otherwise.

Descriptive Statistics

Table 1 presents the 142 listed Mexican firms depending on whether they belong to a family business group (group) or not (stand-alones) and categorizes them by their industrial sector. The most dominant sector among the firms belonging to the MSE is the industrial sector (26%), followed by the non-basic consumption goods and services sector (21%) and the common consumption products sector (19%). However, when observing the family business group affiliated firms, the most dominant industrial sector is the telecommunication services sector (30%), followed by the materials sector

(20%) and the common consumption products sector (20%). This shift in sector dominance means that even though the group firms represent 31% of the overall sample (44 out of 142), they have a preference for these sectors. For instance, the most obvious preferences in family business groups is that they favor firms belonging to the telecommunication services sector (13 out of 16 are group firms), and avoid those belonging to the non-basic consumption goods and services sector (5 out of 30 are group firms) and health sector (no group firm belong to this industrial group)[1].

Table 1 – Firms Categorized by Industrial Sector

This table categorizes the firms according to their industrial sector. The sample consists of 142 firms between 1996 and 2011. Firms are included in the sample if they were listed in the Mexican Stock Exchange (MSE) for at least one year, and if they do not belong to the financial sector. The industrial sectors were defined according to the categories used by the MSE. The table presents the number (percentage) of firms belonging to each industrial sector for the whole sample (second column), the group or group-affiliated firms (third column) and the stand-alone firms (fourth column).

Industrial Sector	All Firms	Group	Stand-alones
Industrial	37 (26%)	8 (18%)	29 (30%)
Materials	25 (17%)	9 (20%)	16 (16%)
Common Consumption Products	28 (19%)	9 (20%)	19 (19%)
Health	6 (4%)		6 (6%)
Telecommunication Services	16 (11%)	13 (30%)	3 (3%)
Non-basic Consumption Goods and Services	30 (21%)	5 (11%)	25 (26%)
Total	**142 (100%)**	**44 (100%)**	**98 (100%)**

Consider next just the set of family group-affiliated firms. Table 2 shows that 49% of the firms belonging to a family business groups are, on average, managed by a family member: 15% of the managers belong to the first generation, 13% to the second, 17% to the third, 4% to the fourth, and 51% are non-family managers. The managers belonging to the first generation are also the founders of the firm, with the exception of "Industrias CH (ICH)" which is managed by the brother of the founder. Moreover, managers that belong to the family have a longer tenure (Family Managers 12 years vs. Non-Family Managers 5.2 years).

Table 2 – Descriptive Statistics Specific to Family Business Groups

This table presents the descriptive statistics for the firms belonging to a family business group. The sample consists of 487 observations for 44 group affiliated firms between 1996 and 2011. Firms are included in the sample if they were listed on the Mexican Stock Exchange for at least one year, and if they do not belong to the financial sector. The table presents the mean, median and standard deviation for each variable.

Family managed is a binary variable that equals one if the firm is managed by a family member, and zero otherwise (managed by outsider). *Founder* is a binary variable that equals one if the firm is managed by its founder, and zero otherwise. *Generation I* is a binary variable that equals one if the family manager belongs to the first generation relative to the founder (i.e. founder, brother), and zero otherwise. *Generation II* is a binary variable that equals one if the family manager belongs to the second generation relative to the founder (i.e. son), and zero otherwise. *Generation III* is a binary variable that equals one if the family manager belongs to the third generation relative to the founder (i.e. grandson), and zero otherwise. *Generation IV* is a binary variable that equals one if the family manager belongs to the fourth generation relative to the founder (i.e. great-grandson), and zero otherwise. *Tenure* refers to the natural logarithm of the manager´s tenure in years. *Pecking order* is an index given to family managers, where children of founders receive a higher number than nephews, and older children are favored over younger children. Non-family managed firms and founder-managed firms receive a value of zero (Appendix 2 gives a correlation matrix for these variables).

Variable	Group		
	Mean	**Median**	**S.D.**
Family Managed	0.49	0.00	0.50
Founder	0.12	0.00	0.32
Generation I	0.15	0.00	0.35
Generation II	0.13	0.00	0.34
Generation III	0.17	0.00	0.38
Generation IV	0.04	0.00	0.19
Tenure	2.15	2.08	0.93
Pecking Order	1.06	0.00	1.55

Note: Group firms refer to firms affiliated to a family business group.

IV.Model 1 -- Performance of Group vs Non-group and Family vs. Non-family Firms

The following table presents the results for Model 1 that tested Hypotheses 1 and 2. They were developed using an OLS panel data structure and a white period coefficient covariance method in order to acknowledge the clustered standard errors (Arellano, 2003; Petersen, 2009). The white period coefficient method was included to reduce the potential residual correlation across firms and across time present in panel data sets, which could bias the OLS standard errors and either over or underestimate the true variability of the coefficient estimates (Petersen, 2009). Table 3 presents the results for these models.

Table 3 – Performance of Family Firms vs. Independent Firms in Mexico

	Tobin's Q	ROA	Profit Margin
Group Firms	0.16**	0.27***	0.24**
Family Owned	0.15**	0.34****	0.18**
Firm Size	0.09****	0.06***	0.14****
Firm Age	-0.03	-0.01	-0.04
Capital Structure	-0.02	-0.12**	-0.16****
Sales Growth	0.01**	0.01****	0.02***
Ind1_Industrial	-0.26**	-0.38**	-0.11**
Ind2_Materials	-0.43***	-0.17*	-0.32
Ind3_CommonCP	0.06	-0.07	-0.03
Ind5_TelecomServ	0.02	-0.27	0.55
Ind6_NonCommonCGS	-0.09	-0.26	0.28
C	0.82****	1.26****	1.08****
Adjusted R-squared	0.34	0.37	0.34
Observations	1,683	1,683	1,683
Firms Included	142	142	142

****, ***, **,* indicate statistical significance at 0.1%, 1%, 5% and 10% test levels, respectively.

The initial conjecture of this research was that group firms selected lower profitability projects, implying a negative relationship between group affiliation and firm value (Almeida & Wolfenzon, 2006a). However, this research finds evidence that rejects this hypothesis (Hypothesis 1) for Mexican companies; in fact meaning that publicly traded firms that belong to family business groups have a significantly superior performance (Tobin's Q, ROA and profit margin) over stand-alone firms. These results – even though they are not dominant in the literature (Carney et al., 2011) – are consistent with evidence found in India (Khanna & Palepu, 2000) and China (Guest & Sutherland, 2009).

A possible explanation for this behavior is provided by Khanna & Palepu (2000), who argue that the relationship between diversification and performance is U-shaped in emerging markets; firm performance initially declines with group diversification and subsequently increases once group diversification exceeds a certain level. Thus, group firms outperform stand-alone firms beyond a threshold value of diversification. Observing the firms in the sample and the results from the previous table, we can say that the diversification degree in Mexican firms is an advantage that improves the firm's performance.

Even though the results reject Hypothesis 1, it does not come as shocking or unexpected. By looking at the sample it is obvious that most of the group firms are part of the largest companies in Mexico and in the world. For instance, Forbes (2013) annually publishes a ranking about the world's biggest public companies. This year, 13 out of the 16 Mexican companies that made the list belong to a family business group (See Table 4). Another important factor to consider is that besides their size, some of these firms are oligopolies or monopolies. For instance, the Azcarraga Vidaurreta family dominates the television industry (TLEVISA), the Gonzalez Barrera family controls tortilla production (GRUMA and MASECA), the Slim Domit family monopolizes the telephone industry (AMX and TELMEX), and the Zambrano Family dominates the cement industry (CEMEX).

Table 4 – Mexican Firms listed in Forbes' (2013) The World's Biggest Companies List

This table presents a list of the 16 Mexican firms that made the 2013 annual Forbes ranking about the world´s biggest companies. The table also shows that all of these firms are family owned (third column), and that 13 out of the 16 firms belong to a diversified family business group (fourth column).

Rank (out of 2000)	Firm	Family Name	Group
112	America Movil (AMX)	Slim Domit	Yes
440	Fomento Económico Mexicano (FEMSA)	Garza Lagüera	Yes
501	Grupo Mexico (GMEXICO)	Larrea Mota	No
633	Grupo Financiero Banorte (GFNORTE)	Gonzalez Barrera	Yes
802	Grupo Elektra (ELEKTRA)	Salinas Rocha	Yes
812	Grupo Modelo (GMODELO)	Fernandez Gonzalez	No
867	Industrias Peñoles (PEÑOLES)	Bailleres Gonzalez	Yes
886	Cemex (CEMEX)	Zambrano	Yes
993	Slim	Slim Domit	Yes
1006	Grupo Bimbo (BIMBO)	Servitje	No
1057	Alfa (ALFA)	Garza Sada	Yes
1100	Grupo Televisa (TLEVISA)	Azcarraga Vidaurreta	Yes
1128	Fresnillo (FRES)	Bailleres Gonzalez	Yes
1433	Grupo Carso (GCARSO)	Slim Domit	Yes
1450	El Puerto de Liverpool (LIVEPOL)	Michel Suberville	Yes
1982	Minera Frisco (MFRISCO)	Slim Domit	Yes

Source: Elaborated by the authors based on Forbes (2013).

Note: we are considering LIVEPOL as a group, since it belongs to a family business group along with INVEX. However, since this research does not consider firms from the financial sector (INVEX), I am not including it in the sample.

The outperformance of group firms relative to stand-alone firms might be attributable to the fact that they benefit from group affiliation through sharing intangible and financial resources with other firms (Chang & Hong, 2000), and by sharing the group's reputation capital by just being associated with a prestigious group (Chang & Hong, 2000). Barney (1991) suggests that group-based reputation may help group firms attain a sustained superior performance. In line with this, Ma, Yao, & Xi (2006) argue that the group's reputation might also help group-affiliated firms in emerging markets, where financial intermediaries are either absent or not fully evolved, since "insider lending appears to substitute for a formal financial system and to give firms access to otherwise scare capital where markets are inadequate at allocating funds" (p.470).

As mentioned previously, given that we are attempting to understand the behavior of Mexican business groups, and they are all controlled by families, it is relevant to also understand the behavior of family firms (groups and stand-alones). Table 3 shows results supporting Hypothesis 2; thus, concluding that family firms do have a significantly superior performance (Tobin's Q, ROA and profit margin) than non-family firms. This result is in line with evidence found in Norway (Mishra et al., 2001), United States (Anderson & Reeb, 2003a), Chile (Martinez et al., 2007), Germany (Andres, 2008) and Colombia (González et al., 2012).

Anderson & Reeb (2003a) suggest that a possible interpretation of this result follows the stewardship theory (Davis, Schoorman, & Donaldson, 1997; L. Donaldson & Davis, 1991; Greenwood, 2003); meaning that the family understands the business and the involved family members view themselves as the stewards of the firm. However, given our results and Anderson & Reeb's (2003a) argument, some doubt arises: what happens to the agency problems? Could this mean – against the most influential literature on the matter (Jensen & Meckling, 1976) – that these problems are stronger in non-family firms?

The essence of agency theory is based on the idea that the separation of management and ownership in a firm leads to a principal-agent relationship in which principals (owners) have no assurance that the agents (managers) who make the decisions that affect shareholder wealth will act

on behalf of shareholders' interest. This theory portrays individual actors as self-interested and utility-maximization motivated (Jensen & Meckling, 1994). In contrast, from a stewardship theory perspective (Davis et al., 1997; Donaldson & Davis, 1991; Greenwood, 2003), there are not conflicts of interest between principals and agents; managers are not opportunistic but good stewards of society who will act in the best interest of shareholders (Donaldson & Davis, 1991). This theory proposes a strong relationship between the managers' beneficial pursuit of the interests of the company, and not only the satisfaction of the shareholders, but also the satisfaction of other participants in the enterprise collective reward (stakeholders). From this approach, the other-regarding or selfless behavior displayed by controlling family business owners is motivated by their collectivistic rationality that there is greater utility in cooperative behavior (Hofstede, 2001).

Academics working in the field of family firms suggest that the agency costs may be reduced (under stewardship theory) to some extent in family firms without leading to severe losses in decision-making efficiency (Anderson & Reeb, 2003a; Gomez-Mejia & Nuñez-Nickel, 2002; Schulze, Lubatkin, Dino, & Buchholtz, 2001). Perhaps family firms are more efficient allocating their resources or are better at spotting business opportunities than non-family firms. Or maybe this result is also influenced by the fact that the largest Mexican firms are controlled by families (See Appendix 1). In line with this, La Porta et al. (1999) analyzed the corporate ownership around the world, where they included the 20 largest Mexican firms that have ADRs. These authors found that Mexico is the only country in their sample (out of 27) where all the firms are family-owned.

Moreover, a very important issue to consider is that these large groups are usually protected by the government through 'incentives' (ie. tax incentives, energy subsidies), particularly in the cases of oligopolies and monopolies. Since 2001, the Mexican government has increased incentives to large firms in order to promote their expenditure and investment in technological development. The federal government expends in fiscal incentives around 4,500 million Mexican pesos annually (355 million USD approximately) (Fernandez-Vega, 2010). For instance, in 2011, the Gonzalez Barrera Family received a government subsidy of 292 million Mexican pesos for MASECA (23 million USD approximately) (Alonso Sanchez, 2012). The Organization for Economic Co-operation and

Development (OECD) calculated that the energy subsidies given by the government represented more than 1.5 percent of the GDP on average between 2005 and 2009 (El Universal, 2011).

Besides the federal incentives, there are also political connections between certain families and the government. For instance, in 2001, an investigation regarding Raul Salinas's finances (brother of former Mexican president Carlos Salinas) revealed several questionable financial transactions between Raul Salinas and important Mexican businessmen; ie. Carlos Hank Rhon (Gonzalez Barrera family) and Ricardo B. Salinas Pliego (Salinas Rocha family). Chen (2005) suggests that firms affiliated to a business group usually indulge in using political connections to solicit privileges from the government and to leave financial intermediaries no incentive to monitor. Hence, it is difficult to divide the benefits of political subsidies from superior performance; the market value might be higher for these companies simply because shareholders expect the government to rescue, protect and subsidize them in the future.

Another possible explanation of family firms outperforming non-family firms is provided by Bennedsen et al. (2007). These authors analyze the impact of family characteristics in corporate decision making and the consequences of these decisions on firm performance in Denmark. They argue that data is influenced by a sample selection bias in which families retain the better assets and sell the inferior ones. They address this issue using an exogenous family trait of the gender of the firstborn child of the departing CEO in order to identify whether the family tends to divest or retain assets. A similar argument is provided by Anderson & Reeb (2003a), who state that families in poorly performing firms (or foreseeing poor performance) are more likely to sell their shares and exit the firm.

To sum up, the results found for Model 1 (Hypotheses 1 and 2) suggest that ownership structure and group affiliation matter in Mexican publicly listed firms. Family firms outperform non-family firms; and within family firms, those affiliated to a business group show an even superior performance over those that are not (stand-alones). Regarding the control variables, we can conclude that better performing firms are those which are larger, less leveraged and with increasing year-to-

year sales. Moreover, it seems that firms belonging to the industrial and materials sector are outperformed by firms belonging to other sectors.

V. Mexican Group Firms – Performance of Internal and External Managers

Model 1 analyzed the entire universe of Mexican public firms (142), and classified them as group and stand-alone firms, as well as family and non-family owned. This section, however, is focused on understanding those firms affiliated to a group, which we already know show a superior performance from those standing alone. Model 2 focuses on these 15 groups comprising 44 group firms.

The following table presents the results for the models of performance. They were developed using an OLS panel data structure and a white period coefficient covariance method in order to acknowledge the clustered standard errors (Arellano, 2003; Petersen, 2009). Table 6 presents the results for these models.

Table 5 – Regression Results for Models of Family Group Performance

This table presents the regression results for Model 2. The sample consists of 487 observations for 44 group affiliated firms between 1996 and 2011. Firms are included in the sample if they were listed in the Mexican Stock Exchange for at least one year, and if they do not belong to the financial sector.
The model includes three dependent variables measuring financial performance: *Tobin´s Q* which refers to the sum of market capitalization, liabilities and preferred equity (which is almost negligible), divided by total assets; *ROA* is the ratio between operating income and total assets; and *Profit margin* is the ratio between operating income and net sales.
The model also includes control variables. *Firm size* is the natural logarithm of total assets. *Firm age* is the natural logarithm of the number of years since foundation. *Capital structure* refers to the ratio of long term debt and long term debt plus equity. *Sales growth* is the ratio between net sales for the current period and the last period minus one. *Ind1_Industrial* is a binary variable that take the value of one if the firm belongs to the industrial sector and zero otherwise. *Ind2_Materials* is a binary variable that take the value of one if the firm belongs to the material sector and zero otherwise. *Ind3_CommonCP* is a binary variable that take the value of one if the firm belongs to the common consumption products sector and zero otherwise. *Ind5_TelecomServ* is a binary variable that take the value of one if the firm belongs to the telecommunication services sector and zero otherwise. And finally a dummy variable for n-1 of the 15 family groups that own the 44 firms. The models in the table included a fixed effect for the year.

FIXED EFFECTS	Tobin's Q		ROA		Profit Margin	
	(1)	(2)	(1)	(2)	(1)	(2)
Family Managed	- 0.47 ***		-0.17 **		-0.24 **	
Founder		0.32 *		0.99 **		0.86 ****
Generation II		- 0.31 *		- 0.73 **		- 0.64 ***
Generation III		- 0.35 **		- 0.47 **		- 0.33 ***
Pecking Order		- 0.12 *		- 0.01 *		0.05
Tenure	- 0.15 *	- 0.17 ***	-0.06	- 0.11 ***	-0.08	- 0.11
Firm Size	0.04 ***	0.07 **	0.14 ***	0.20 *	0.21 ***	0.44 ****
Firm Age	- 0.05 *	- 0.03	0.09	- 0.06 *	-0.15	- 0.23
Capital Structure	- 0.37 *	- 0.33 *	-0.84 **	- 1.16 **	-0.72 *	- 1.12 *
Sales Growth	0.07 *	0.08 *	0.10 *	0.11 ****	0.05	0.05 *
Ind1_Industrial	- 0.28 *	- 0.33 **	0.07	- 0.04	- 0.01	0.24 ***
Ind2_Materials	- 0.19	0.28 *	-0.03	0.25 *	0.22 *	0.38
Ind3_CommonCP	- 0.11	- 0.23	-0.21	- 0.26	- 0.26	0.48
Ind5_TelecomServ	- 0.04	- 0.24	-0.15	- 0.22	0.15	- 0.13
Slim_Domit	0.03	0.06	0.18	0.27	-0.17	- 0.11
Bailleres_Gonzalez	0.00	0.07	0.15	0.38	0.07	0.21
Garza_Sada	- 0.30 *	- 0.20	0.18	0.36	-0.27	- 0.17
Salinas_Rocha	0.28 *	0.31 *	0.07	0.24	0.23	0.32
Garza_Laguera	0.32 *	0.32 *	0.30	0.40	-0.18	- 0.14
Gonzalez_Barrera	- 0.15	- 0.24 *	-0.14	- 0.24	-0.61 *	- 0.67 *
Aguirre_Gomez	- 0.11	0.14	0.13	0.60	0.69 *	1.02 *
Azcarraga_Vidaurrieta	0.25 *	0.31 *	-0.33	- 0.17	-0.21	- 0.12
Gallardo_Thurlow	- 0.06	0.06	0.16	0.47	-0.19	- 0.01
Garza_Santos	- 0.26	- 0.22	0.50	0.60	0.12	0.05
Madero	- 0.00	- 0.13	-0.16	- 0.29	-0.25	- 0.35
Robinson_Bours	- 0.10	- 0.08	0.24	0.32	-0.03	0.00
Sada_Trevino	- 0.43 *	- 0.26	-1.44 *	- 1.04 *	-1.46 *	- 1.22 *
Vigil_Gonzalez	- 0.48 *	- 0.32 *	0.24	0.57 *	0.22	0.48
C	0.25	- 0.03	0.41	- 0.23	0.85	0.44
Adjusted R-squared	0.37	0.57	0.43	0.44	0.48	0.55
Observations	487	487	487	487	487	487
Firms Included	44	44	44	44	44	44

****, ***, **,* indicate statistical significance at 0.1%, 1%, 5% and 10% test levels, respectively.

As shown in Table 5, firms managed by non-family CEOs significantly outperform (Tobin's Q, ROA and profit margin) those managed by family members; thus, supporting Hypothesis 3. It is worth noting that for the period under examination, family management declines over time; while this management style was dominant in 1996 (64 percent of the firms had a family CEO), by 2003, most firms were being managed by an outsider. This trend has been increasing over time; by 2011, only 39 percent of the firms remain with a family CEO. This means that more and more controlling shareholders appear to recognize the value in bringing professional managers to the firm.

Smith & Amoako-Adu (1999) argue that the negative relationship between family management and performance can be attributable to the fact that outside managers present a bigger pool of talent and expertise; and, as Luo & Chung (2005) argue, they 'boost the legitimacy of the

firm'. However, by closely examining the characteristics of family managers (whether they founded or inherited the firm), we find that family-managed, group-affiliated firms have superior performance (Tobin's Q, ROA and profit margin) relative to non-family managed firms only when the CEO is the founder of the firm; thus, supporting Hypothesis 4. This result can be attributable to the fact that founder managers bring special skills and attributes that outside managers do not possess, as well as innovative and value-enhancing expertise to the firm (Anderson & Reeb, 2003a), and they act as stewards who identify strongly with the firm and consider its performance an extension of their own wellbeing (Davis et al., 1997).

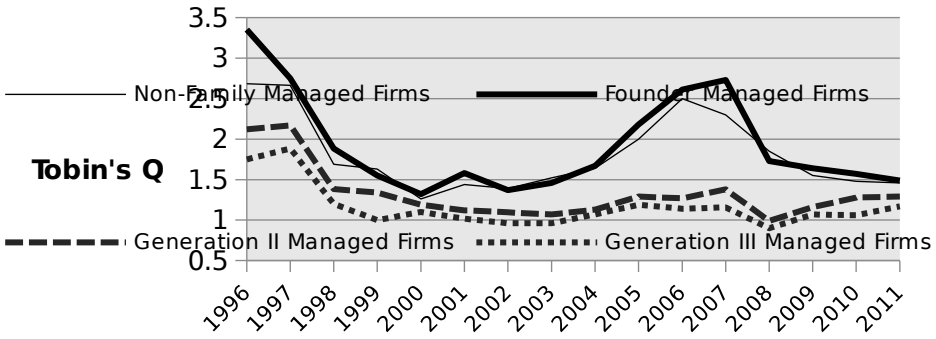
While founder CEOs enhance performance, family managers belonging to the subsequent generations destroy value. Smith & Amoako-Adu (1999) suggest that founders show a personal bias towards their offspring given that individuals more competent than the chosen family members are not considered. These authors mention other problems that arise with family successions, such as sibling rivalry and social pressures to provide perquisites to the family. The evidence provided in this research suggests that this succession trend worsens as the management changes from one generation to the next; in other words, founders add value to the firm, their children destroy value, and their grandchildren do even worse. Similar results were found in the United States (Adams, Almeida, & Ferreira, 2009; Pérez-González, 2006; Villalonga & Amit, 2006), Denmark (Bennedsen et al., 2007), Thailand (Bertrand, Johnson, Samphantharak, & Schoar, 2008) and Italy (Cucculelli & Micucci, 2008).

Figure 1 shows the performance (Tobin's Q) of the firms managed by non-family and family managers. It displays the performance of the family managed firms through generations: founders, sons (generation II) and grandsons (generation III). Even though the sample contains firms that are managed by founder's brothers (generation I) and great-grandsons (generation IV), this figure does not show them given that these management characteristics are present only in a few firms.

Figure 1 –Performance through Family Generations in Group Affiliated Firms

This figure presents the financial performance (Tobin´s Q) between founder managed firms, generation II managed firms (sons), generation III managed firms (grandsons) and non-family managed firms. The sample consists of 487 observations for 44 group affiliated firms between 1996 and 2011. Firms are included in the

sample if they were listed in the Mexican Stock Exchange for at least one year, and if they do not belong to the financial sector. *Tobin´s Q* refers to the sum of market capitalization, liabilities and preferred equity (which is almost negligible), divided by total assets.

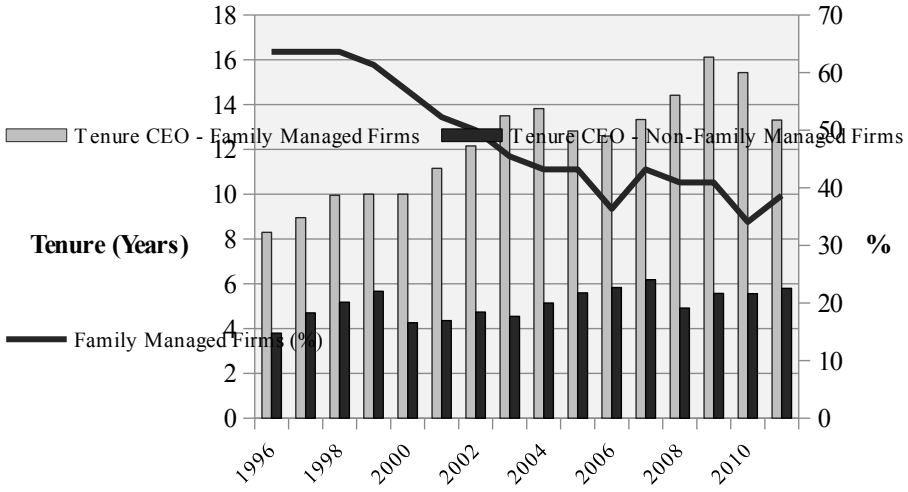


Source: Elaborated by the authors.

The results here and in Table 5 suggest that the tenure of the CEO is significantly and negatively related to the performance of the firm (Tobin's Q, ROA and profit margin), thus rejecting Hypothesis 5. This evidence is in line with the previous results, as unrelated managers seem to have shorter tenures than family managers. Figure 2 illustrates that in the sample, family managers' tenures more than double those of non-family CEOs (family: 12.24 years vs. outsider: 5.11 years, on average). In fact, this figure shows a 1-unit annual increase in tenure for family managers. This means that the same person who was CEO in 1996, probably still is the firm's manager. However, looking into professional CEOs, you cannot see this trend. In fact, their graph is fairly flat (average=5.11, stdev=0.67), which implies that outside CEOs do not stay in the firm for long (high turnover, shorter tenures). As mentioned before, Figure 2 also shows that for the period under examination, family management declines over time. So, the flatness in the professional manager's graph could also be explained by this inclusion of new non-family managed firms.

Figure 2 – Tenure CEO: Family vs. Non-Family Managed Firms

This figure presents the tenure of the CEOs between family and non-family managed firms. The sample consists of 487 observations for 44 group affiliated firms between 1996 and 2011. Firms are included in the sample if they were listed in the Mexican Stock Exchange for at least one year, and if they do not belong to the financial sector. The figure also illustrates the percentage of family managed firms. While the number of group firms has been increasing over the years, family management has declined from 60% to 40% 1996 to 2011.



Source: Elaborated by the authors.

The results in Figure 2 and Table 5 suggest that pecking order is significantly and negatively related to firm performance (Tobin's Q and ROA), thus rejecting Hypothesis 6. The negativity of this result corroborates the results presented earlier, in which founders and non-family managers enhance the performance of the firm, and managers who are descendants or relatives of the founder reduce performance.

To sum up, the findings presented in this research are in line with the family group inefficiency approach (Billett & Mauer, 2003; Lamont, 1997; Rajan et al., 2000; Scharfstein, 1998; Shin & Stulz, 1998), and suggest that business groups display socialist tendencies by favoring weaker performance firms (family managed).

V. Conclusions, Research Limitations and Further Research

Performance of group-related firms is a topic that is being studied in recent years in the family firm literature; however, most of this research takes place in the United States, Europe and China. Moreover, this research generally does not analyze family business groups, only individual companies. Thus, our contribution is to understand this behavior in Latin-American firms, specifically in Mexican firms where nepotism practices are extremely common. We found that in Mexico family

connections matter and matter a lot, and that the founder´s children and grandchildren worsen the performance of the firms. Luckily, this trend has begun to shrink (at least on paper, since boards of directors are usually managed by family directors who might strongly influence a non-family CEO).

This analysis shows that professional managers (non-family managers) outperform family managers, except when the CEO is the founder of the firm. This means that, founder managers strongly enhance the performance of the firm, whereas subsequent descendants hurt it. This succession trend worsens as the management changes from one generation to the next; in other words, founders add value to the firm, their children destroy value, and their grandchildren do even worse. This result implies that founders have a personal bias toward their offspring, given that more competent external individuals are not chosen to manage the firm. A firm is most likely to be managed by a family member if the departing CEO has at least one son; this likelihood increases if the son is the firstborn, and even more if the departing manager has more than one son. Additionally, this research exhibits the fact that family management has been declining in Mexican listed firms in the last 15 years. While this management style was dominant in 1996 (64 percent of the firm had a family CEO), by 2003, more than half of the firms were being managed by an outsider, and by 2011 only 39 percent of the firms remained with a family manager. This finding implies that more and more controlling shareholders appear to recognize the value in bringing professional managers to the firm.

There are three main limitations with this research that should be kept in mind when considering the results. First, there are sample size constraints due to Mexico's small stock market and the lack of earlier government regulations that made publication of financial statements and company information mandatory only after 1996. Second, there is a lack of accurate and trustworthy databases to measure the family characteristics in Mexican firms, so the database constructed for this analysis may contain errors or may be incomplete since it was collected manually from newspaper articles and social magazines. And third, perhaps the most important limitation of the study is that the statistical methodology suffers from causality questions. For instance, we do not know if in fact the

founder's descendants are poor managers who hurt performance, or if the weak-performing firms were given to them in the first place. However, the sample does include four spinoffs that are completely independent from the group (no cross-subsidization or capital allocation) and are managed by non-family members. These causality issues were originally going to be addressed through a family trait that is likely to be exogenous: such as marriages, births, divorces, deaths and feuds. Even though these events obviously do occur, the problem was that only a few of them were observable, meaning that there was not enough data in public records to allow us to include them in the models.

Further research may focus on redressing these limitations, as well as increasing the number of quantitative analyses that complement the emerging qualitative work on performance of divisions/ companies within family business groups. Also, the inclusion of private firms would help to obtain a clearer idea of how family business groups behave. For instance, the 'Slim Domit Family' has eleven public firms – including Grupo Inbursa from the financial sector – but, the group actually owns more than 50 firms. And lastly, the development of studies that provide evidence from other emerging markets in Latin America and elsewhere will help to ensure the applicability of our findings in other contexts. Progress in these areas will be instrumental in developing a rich body of theory in the family business and capital markets areas, as well as in developing company strategies and government policies for such firms.

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Appendix Table 1 – Theoretical Background Summary

This table exhibits a summary of the most prominent literature in the fields of internal capital markets, family firms and business groups. The table is divided according to two issues that were identified as the most relevant for this research: economic efficiency (performance) and agency conflicts. These issues were categorized into four different types of companies: family firms, non-family firms, family business groups and non-family business groups.

	Type of Company			
Issue	**Family Firms**	**Non-Family Firms**	**Family Business Groups**	**Non-Family Business Groups**
Economic Efficiency	(Anderson & Reeb, 2003a, 2004; Andres, 2008; Bustani & Morales, 2010; Demsetz & Lehn, 1985; Fama & Jensen, 1983; Martinez, Stöhr, & Quiroga, 2007; Mishra, Randøy, & Jenssen, 2001; Morck, 2007)	(Anderson & Reeb, 2003a, 2004; Andres, 2008; Bustani & Morales, 2010; Demsetz & Lehn, 1985; Fama & Jensen, 1983; Martinez et al., 2007; Mishra et al., 2001; Morck, 2007)	(Almeida & Wolfenzon, 2005, 2006a, 2006b; Bae et al., 2002; Bertrand et al., 2002; Ghatak & Kali, 2001; Gomes, 2000; T. Khanna & Palepu, 2000; T. Khanna & Yafeh, 2007; Kim, 2004; Masulis et al., 2011; Morck et al., 2000; Morck & Yeung, 2003; Morck, 2007)	(Almeida & Wolfenzon, 2006b; T. Khanna & Yafeh, 2007; Morck, 2007)
Agency Problems	(Bolton & Scharfstein, 1996; Dewatripont & Maskin, 1995; Morck, 2007; Tirole, 2006)	(Aghion & Tirole, 1997; Alchian, 1969; Bolton & Scharfstein, 1996; Burkart, Gromb, & Panunzi, 1997; Dewatripont & Maskin, 1995; Eisenhardt, 1989; Gertner et al., 1994; Jensen & Meckling, 1976; Morck, 2007; Tirole, 2006; Von Thadden, 1995; Williamson, 1975)	(T. Khanna & Palepu, 2000; Morck, 2007; Rajan et al., 2000; Scharfstein & Stein, 2000; Stein, 2003)	(Brusco & Panunzi, 2005; Hart & Moore, 1990; Meyer, Milgrom, & Roberts, 1992; Milgrom & Roberts, 1988; Milgrom, 1998; Morck, 2007; Stein, 2002, 2003; Tirole, 2006)

Source: Elaborated by the authors.

Appendix Table 2 – Correlation Matrix for Model 2, Testing Hypotheses 3-6

This table presents the correlation matrix for Model 2. The sample consists of 487 observations for 44 group affiliated firms between 1996 and 2011. Firms are included in the sample if they were listed on the Mexican Stock Exchange for at least one year, and if they do not belong to the financial sector. Family managed is a binary variable that equals one if the firm is managed by a family member, and zero otherwise (managed by non-family member). Founder is a binary variable that equals one if the firm is managed by its founder, and zero otherwise. Generation I is a binary variable that equals one if the family manager belongs to the first generation relative to the founder (i.e. founder, brother), and zero otherwise. Generation I1 is a binary variable that equals one if the family manager belongs to the second generation relative to the founder (i.e. son), and zero otherwise. Generation II1 is a binary variable that equals one if the family manager belongs to the third generation relative to the founder (i.e. grandson), and zero otherwise. Generation IV is a binary variable that equals one if the family manager belongs to the fourth generation relative to the founder (i.e. great-grandson), and zero otherwise. Tenure refers to the natural logarithm of the manager´s tenure in years. Pecking order is an index given to family managers, where children of founders receive a higher number than nephews, and older children are favored over younger children. Non-family managed firms and founder-managed firms receive a value of zero. Firm size is the natural logarithm of total assets. Firm age is the natural logarithm of the number of years since foundation. Capital structure refers to the ratio of long term debt and long term debt plus equity. Sales growth is the ratio between net sales for the current period and the last period minus one. Ind1_Industrial is a binary variable that take the value of one if the firm belongs to the industrial sector and zero otherwise. Ind2_Materials is a binary variable that take the value of one if the firm belongs to the material sector and zero otherwise. Ind3_CommonCP is a binary variable that take the value of one if the firm belongs to the common consumption products sector and zero otherwise. Ind4_Health is a binary variable that take the value of one if the firm belongs to the health sector and zero otherwise. Ind5_TelecomServ is a binary variable that take the value of one if the firm belongs to the telecommunication services sector and zero otherwise. Ind6_NonCommonCGS is a binary variable that take the value of one if the firm belongs to the non-basic consumption goods and services sector and zero otherwise.

Family Managed	1.00						
Founder	0.39****	1.00					
Generation I	0.39****	0.99****	1.00				
Generation II	0.31****	-0.20****	-0.20****	1.00			
Generation III	0.44****	-0.27****	-0.27****	-0.22****	1.00		
Generation IV	0.17***	-0.11*	-0.11*	-0.09	-0.12**	1.00	
Tenure	0.40****	0.50****	0.50****	-0.17***	0.11*	0.04	1.00
Centrality	0.24****	0.35****	0.35****	-0.13**	0.05	-0.01	0.40****
Pecking Order	0.69****	-0.29****	-0.29****	0.45****	0.58****	0.27****	0.05
Firm Size	-0.16***	-0.34****	-0.34****	-0.01	0.20****	- 0.09	-0.13**
Firm Age	0.04	-0.02	-0.02	-0.31****	0.41****	- 0.21****	0.30****
Capital Structure	0.07	-0.06	-0.06	-0.05	0.09	0.18***	-0.07
Sales Growth	0.02	-0.05	-0.05	0.22****	-0.13**	0.05	-0.04
Ind1_Industrial	0.07	0.07	0.07	-0.08	0.12**	-0.09	-0.10*
Ind2_Materials	0.04	-0.27****	-0.27****	-0.22****	0.54****	-0.12**	0.03
Ind3_CommonCP	0.19	0.23****	0.23****	0.18***	-0.09	-0.11*	0.16***
Ind5_TelecomServ	-0.19***	-0.26****	-0.26****	0.16***	-0.30****	0.41****	-0.30****
Ind6_NonCommonCGS	-0.09***	0.28****	0.28****	-0.04	-0.27****	-0.11*	0.21****

****, ***, **,* indicate statistical significance at 0.1%, 1%, 5% and 10% test levels, respectively.

Note 1: The variable "Generation IV" was dropped from the models, since it contained few observations and the models could not run.

Note 2: The variable "Ind4_Health" does not appear in this correlation, since there are not any group firms that belong to this industrial sector (See Table 2).

Note 3: The variable "Ind6_NonCommonCGS" was dropped from the models, since it is the sector with fewest observations.

Appendix Table 3 44 Family Based Business Groups listed on the Mexican Stock Exchange

No.	Family Name	Listed Company (Ticker)	Sector
1	Slim Domit	America Movil (AMX)	Telecommunication Services
2		Carso Global Telecom (TELECOM)	Telecommunication Services
3		Carso Infraestructura y Construcción (CICSA)	Industrial
4		Grupo Carso (GCARSO)	Industrial
5		Grupo Sanborns (GSANBOR)	Non-basic Consumption Goods and Services
6		Impulsora del Desarrollo y el Empleo en América Latina (IDEAL)	Industrial
7		Inmuebles Carso (INCARSO)	Industrial
8		Minera Frisco (MFRISCO)	Materials
9		Teléfonos de Mexico (TELMEX)	Telecommunication Services
10		Telmex Internacional (TELINTL)	Telecommunication Services
11	Bailleres Gonzalez	Fresnillo (FRES)	Materials
12		Grupo Palacio de Hierro (GPH)	Non-basic Consumption Goods and Services
13		Industrias Peñoles (PE&OLES)	Materials
14	Garza Sada	Alfa (ALFA)	Industrial
15		Alpek (ALPEK)	Materials
16		Hylsamex (HYLSA)	Materials
17		Sigma Alimentos (SIGMA)	Common Consumption Products
18	Salinas Rocha	Biper (MOVILA)	Telecommunication Services
19		Grupo Elektra (ELEKTRA)	Non-basic Consumption Goods and Services
20		Grupo Iusacel (CEL)	Telecommunication Services
21		TV Azteca (AZTECA)	Telecommunication Services
22	Garza Lagüera	Coca Cola Femsa (KOF)	Common Consumption Products
23		Fomento Económico Mexicano (FEMSA)	Common Consumption Products
24		Savia (SAVIA)	Common Consumption Products
25	Gonzalez Barrera	Gruma (GRUMA)	Common Consumption Products
26		Grupo Industrial Maseca (MASECA)	Common Consumption Products
27	Aguirre Gomez	Grupo Radio Centro (RCENTRO)	Telecommunication Services
28		Maxcom Telecomunicaciones (MAXCOM)	Telecommunication Services
29	Azcarraga Vidaurreta	Empresas Cablevisión (CABLE)	Telecommunication Services
30		Grupo Televisa (TLEVISA)	Telecommunication Services
31	Gallardo Thurlow	Grupo Azucarero Mexico (GAM)	Common Consumption Products
32		Grupo Embotelladoras Unidas (GEUPEC)	Common Consumption Products
33	Garza Santos	Maquinaria Diesel (MADISA)	Industrial
34		Promotora Ambiental (PASA)	Industrial
35	Madero	Compañía Industrial de Parras (PARRAS)	Industrial
36		San Luis Corporación (SANLUIS)	Non-basic Consumption Goods and Services
37	Robinson Bours	Industrias Bachoco (BACHOCO)	Common Consumption Products
38		Megacable Holdings (MEGA)	Telecommunication Services
39	Sada Treviño	Cydsa (CYDSASA)	Materials
40		Vitro (VITRO)	Materials
41	Vigil Gonzalez	Grupo Simec (SIMEC)	Materials
42		Industrias CH (ICH)	Materials
43	Zambrano	Axtel (AXTEL)	Telecommunication Services
44		Cemex (CEMEX)	Materials

Source: compiled by the authors

1 Perhaps the business groups' lack of a preference for investing in the health industry has to do with the fact that this is also the smallest industry sector (6 out of 142 publicly listed firms belong to it). It also could be due to the regulations that go along with this sector. In contrast, the groups' favoritism towards the telecommunication sector may be due to the rapid growth of the sector worldwide and the relative ease to create or acquire a second telecom firm (technology platforms).