Mixing Family With Business:

A Study of Thai Business Groups and the Families Behind Them

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October 21, 2005

Abstract

A large fraction of business groups around the world are run by families. In this paper, we analyze how the structure of the families behind these business groups affects the groups' organization, governance and performance. To address this question, we constructed a unique data set of family trees and business groups for nearly 100 of the largest business families in Thailand. We find a strong positive association between family size and family involvement in the ownership and control of the family business. The sons of the founders play a central role in both ownership and board membership, especially when the founder of the group is gone. The availability of more sons is also associated with lower firm-level performance, especially in private firms and when the founder is gone. We identify a possible governance channel for this performance effect. Excess control by sons, but not other family members, is associated with lower firm performance. In addition, excess control by sons increases with the number of sons and with the death of the founder. Relatedly, at the group-level, we find that larger families are associated with larger (more firms) and more pyramidal groups, again especially when the founder is gone. One hypothesis that emerges from our analysis is that part of the decay of family-run groups over time may be due to a dilution of the ownership stakes across a set of equally powerful descendants of the founder, with each possibly trying to tunnel resources out before others do. Some preliminary analysis also suggests that such wider involvement of family members in the family business may also have led to less efficient restructuring after the East Asian financial crisis, again especially when the founder is no longer involved in the family business.

1 Introduction

Family firms have attracted a lot of interest over the last few years. Recent research shows that the U.S. experience of dispersed ownership, with strong separation of ownership and control, does not match the typical corporation across countries. Instead, most firms around the world are likely to be part of a group of companies, linked together through common ownership. Often the ultimate ownership lies with a single family. La Porta et al. (1999) show that a large fraction of public and private firms around the world are family-controlled and often follow a pyramidal ownership structure.[1] The use of pyramidal ownership structures allows the family to exert control over a large network of firms. While family firms appear to be more prevalent in countries with weak minority shareholder protection, a number of recent studies show that family involvement is quite widespread, even in the U.S. For example, Anderson and Reeb (2003) find that founding families are present in one third of S& P 500 firms and hold on average about 18% of equity in these firms.[2]

The economic literature so far has mostly treated the families behind business groups as monolithic entities. Most models of family businesses in the economic literature focus on the role of families as second best solutions to imperfections in the financial markets, the market for corporate control or the market for managerial talent.[3]. These models generally assume that trust relationships between family members can serve to (partially) solve principal agent problems between owners and outside managers, if monitoring of managers is difficult. However, families are constituted of individual members who may have their own personal objectives and claims over the family businesses. The divergence in objectives might even lead to an erosion of trust within families, especially once the founder has passed control to the next generation and an increasing number of family members become involved in the business over time. Our goal in this paper is to explore how these family dynamics affect the organization, governance and performance of business groups. One hypothesis that emerges from the analysis performed below is that the decay of family-run groups over time may in part reflect in-fighting for group resources as controls become more diluted among different family members.

To perform this analysis, we created a unique data set that contains detailed information on the

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[1]See also Claessens, Djankov, Fan and Lang (2000) for a study of family involvement in East Asian countries, and the European Corporate Governance Network (2001) for a similar study for European countries.

[2]See also Battacharya and Rabikumar (1999) and Perez-Gonzalez (2002).

[3]See, for example, Burkard, Panunzi and Shleifer (2003) and Caselli and Gennaioli (2003)

family trees (starting with the founder and following until the current generation) of about 100 of the largest business groups in Thailand. There are several motivations for our focus on Thailand. First, Thailand is one of the only countries we are aware of where such detailed family structure data could be constructed with reasonable accuracy. Second, the majority of Thai business families are of Chinese origin. Since Chinese families are very prevalent in business across South-East Asia, our findings potentially apply beyond the Thai context.

In addition to building these family trees, we have also compiled detailed balance sheet information on the businesses that are controlled by these families. For each of these family business groups, we have obtained information on the number of firms in the group, the financial performance of these firms, as well as their board composition and ownership structure. This data was collected for 1996 and 2001, i.e. a year before the financial crisis and a year after the crisis. For each of these business groups, we also constructed organizational charts that describe the network structure of the groups as of 1996.[4]

Our main findings are as follows. First, we document how control, management and ownership are allocated across family members. The sons of the founder play a central role in ownership and control and substantially increase their role in ownership once the founder is gone. Larger families have more widespread involvement of family members in business, both in the form of ownership and board membership. In particular, the founders sons involvement in the family business is elastic to the supply of sons.

The governance of the group is also affected by family structure. More sons imply a larger discrepancy between control and ownership, especially when the founder is gone. Excess control by sons especially increases when the founder is gone. This family structure-governance relationship is also reflected in the group structure. Once the founder is gone, larger families are associated with larger (more firms) and more pyramidal groups.

We then analyze the implications of these family structure variables for group performance. We show that larger families, but more precisely families with more sons, are associated with lower firm-level performance, especially at private firms and when the founder is dead. We identify a possible governance explanation for this performance finding. Controlling for family ownership, we find that excess control by sons, but not by other family members, is associated with lower

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[4]We are currently constructing such organizational charts for 2001.

firm-level performance, especially when the founder is gone. One hypothesis that emerges from this analysis is that part of the decay of family-run groups over time may be due to a dilution of the ownership stakes across a set of equally powerful descendants of the founder, with each possibly trying to tunnel resources out before others do.

Some preliminary analysis in the last section of the paper also suggests that such wider involvement of family members in the family business may also have led to less efficient restructuring after the East Asian financial crisis, again especially when the founder is no longer involved in the family business.

Our paper builds on several recent studies which document that founder succession is important in explaining the relatively poor performance of family firms. Indeed, several papers have shown that family firms have on average lower stock market valuations and lower rates of return than non-family firms (see for example Claessens, Djankov, Fan and Lang (2002), or Conqvist and Nilsson (2003)). More recently, Perez-Gonzales (2002) and Villalonga and Amit (2004) show for U.S. firms that this negative performance effect is in large part related to the passing of active management and control from the founder to the descendants. Similarly, Bennedsen, Nielsen, Perez-Gonzalez and Wolfenzon (2005) show for Danish firms that family succession leads to lower performance even when instrumenting family successions with the gender of the first born child.[5] But not all papers conclude that family firms perform worse on average. For example, Anderson and Reeb (2003) find higher performance for family firms in the U.S. Khanna and Palepu (1997) show that business groups in India (which are for the most part family-controlled) on average perform better than stand-alone firms in matched industries.

Our results are also closely related to a sociological literature on family groups which tends to focus more on detailed descriptions of *within-family* dynamics. For example, a number of sociological studies, relying for the most part on case studies, interviews or anecdotal evidence, have stressed the importance of cultural factors in explaining the emergence of family firms. For example, Redding (1990), Jones and Rose (1993) and Whyte (1996) explore this argument in the context of Chinese families. These papers suggest that family traditions and inheritance rules might be central to the evolution of family businesses. They also highlight the possibility of conflicts within

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[5]Using Swedish data, Conqvist and Nilsson (2003) also shows that family firms with controlling minority ownership stakes are 50% less likely to be taken over but have a three times higher bankruptcy probability than non-family firms.

business families and how those might alter the direction and growth of the businesses. Moreover, the importance of family structure also plays a prominent role in political models of family firms, where specific family members present an important source of reputation capital in political markets. For example, Morck, Stangeland and Yeung (2002) suggest that if the government plays a central role in the economy, family connections may provide access to resources. This can lead to a cycle whereby resources become even more concentrated in the hands of a few families, which then further increase their political influence.[6]

The rest of this paper is organized as follows. In section 2, we provide background information on Thai business history, including the evolution of family businesses. Section 3 explains in details how the data was collected. We provide summary statistics of the data and its limitations. Section 4 describes the involvement of different family members in the group firms. Section 5 focuses on the relationship between family structure and group structure, governance and performance. Section 6 presents some preliminary analysis on how family structure might have affected restructuring post financial crisis. Finally, section 6 concludes.

2   Brief Historical Background

The Thai economy was integrated into the world economy in 1855 when the Bowring Treaty was signed between Britain and Siam. This treaty ended the King's monopoly power over international trade and lowered the tariff on exports and imports. This trade expansion induced European businesses to enter Thailand, mainly through trading-houses, banks, and in the forestry, mining, and engineering sectors. Over the same period, the number of Chinese immigrants increased. Almost three million Chinese immigrants arrived in Thailand between 1882 and 1931. By the end of the 1920s, almost 12% of the total population of Thailand was of Chinese origin (Limlingan, 1986). Most of these immigrants were poor and worked as laborers in the growing export industries such as rice milling. But a number of these immigrants became entrepreneurs in various industries such as agriculture, trade, and mining, and started to expand their business extensively. The origin of some of the most well-known business families can be traced back to this period (Suehiro, 1997).

The revolution of 1932 marked the end of the absolute monarchy. The King's Privy Purse Bureau was dissolved and replaced by the Crown Property Bureau – one of the largest business

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[6]See Mamon (2002) for a similar description of the emergence of family firms in South Korea and Israel.

groups in Thailand today. Other large family groups such as the Wanglee family and the Lamsam family also expanded during this period due to their oligopoly in agriculture-related business, especially rice milling and exporting. Despite the government's nationalistic policies, these families managed to cooperate with the government in running a number of state-owned enterprises.

After the Second World War, Thailand entered a long period of successive military dictatorships that lasted until the 1970s. During this period, the government and military leaders became involved in business through share holdings or board participation in both state-owned enterprises and private companies. This involvement ranged from agriculture and manufacturing to banking and other services. These connections allowed the related companies to grow rapidly. Examples are the Thai Farmers Bank of the Lamsam Family and the Bangkok Bank of the Sophonpanich family.

The First National Economic Development Plan was introduced in 1961, which marked the beginning of the industrialization of the country. The Thai economy has moved toward industrial manufacturing since then. Real GDP grew at an average rate of 7.7% per year between 1960 and 1998. During this time period the economy witnessed the expansion of domestic business groups as well as the entry of new entrepreneurs and multinational corporations. The Securities Exchange of Thailand was established in 1975 with nine companies listed. The number of listed companies increased substantially during the 1990s. Economic growth began to slow down in the mid 1990s and was negative during the East-Asian crises. There were 454 companies listed on the stock market prior to the crisis; by the end of 2001 this number had dropped to 382. Almost half of the de-listed firms were in the financial sector. The financial crisis forced many families to reorganize their business groups but also led to the bankruptcies of many family firms that had been prominent in the Thai economy for decades. After 1999, the economy started growing again at an average rate of 3.6

3 Data Collection

3.1 Firm Data

All registered firms in Thailand have to submit annual financial statements to the Department of Business Development at the Ministry of Commerce. The data must be audited by an authorized auditor. On top of this information, all listed firms are required to submit additional balance

sheet data to the Security and Exchange Commission. These financial records are available in the *Thailand Company Information* database.

The *Thailand Company Information* database contains financial, ownership and board composition information at the firm-level. The financial information includes total assets, total liabilities, total revenues and net profits. Ownership is reported as the percentage of company shares directly held by separate legal entity (ordinary persons and judicial persons such as other firms). The database also includes information of the names of all the directors on the firms board. For publicly traded firms we also know the specific position on the board a particular person holds, allowing us to distinguish between executive and non-executive board positions.[7] The database also provides information on industry classification similar to 1 and 2-digit SIC codes, and founding year for each firm.

From this database, we construct a two-year (1996 and 2001) firm panel data set. Starting in 1996, we restrict our sample to those firms that have annual revenues of at least 200 million Baht in that year (approximately eight million US dollars) or are listed on the Stock Market Exchange of Thailand (SET). Our 1996 sample therefore includes all publicly traded firms and the largest privately held firms in Thailand, for a total of 2153 firms in 1996. We then track the same set of firms to 2001. Out of 2153 firms in 1996, 1718 are still in operation in 2001.[8] This implies a cumulative exit rate of 20 percent, which matches aggregate figures obtained from alternative sources. It is interesting to note, however, that the exit rate for the firms in our family sample is less than ten percent. For 2001, we supplement the *Thailand Company Information* database with the *Listed Company Information*, provided by the Stock Market Exchange of Thailand, as well as with data from Business Online Co., Ltd. (BOL).

3.2 Family Data

Our objective is to construct family trees for the family groups in our sample that are as accurate and comprehensive as possible. For that purpose we rely on a number of sources. We start with information from a publication by the Brooker Group entitled *Thai Business Groups: A Unique*

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[7]We classify as executive board members CEO's, presidents, chairpersons, managing directors, executive directors, and the associated vice, deputy, and assistant positions. Other directors are defined as non-executives (which may include "honorary" positions).

[8]We are careful to track firms that changed their names between 1996 and 2001 by tracing their registration numbers. We also double-check any name changes filed with the Ministry of Commerce.

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Guide to Who Owns What. This book identifies the 150 leading business families in Thailand, and covers the history of each of these families since the time the first business was founded until today. While this source helps us to identify the relevant set of business families, it does not provide systematic information on the full family tree. We therefore construct more detailed descriptions of Thai business families from several alternative sources. First, we collect information from the Funeral Book Collection at the National Library in Bangkok. It is customary in Thailand when a public person dies that the descendants compile a funeral book that contains information about the person's life and his family relationships. Second, Sapphaibul (2001a, b) also provides impressive information on 55 of the most famous business families. Third, we supplement this information with articles from various local business magazines and newspapers. And finally, we also conducted interviews with family members of a few business families to verify the accuracy of our data.

The data we collected starts with the founder of each business group. We then track all direct descendants of the founder up to the last generation that is currently active in business. We include information on all direct descendants of the founder, *whether or not* they are involved in the family business. The founder generation is coded as generation one, the children of the founder are generation two, and so on. For each family member, we collect information on their specific position in the family tree, gender and birth order (defined as the rank order of children within a specific marriage).

For each family member we also collect information on the name of the spouse, whenever possible. This information will be especially interesting for the founder, since several of founders have multiple wives and also children from multiple wives. We do not, however, count spouses as part of the family when we construct measures of family size. We also collected information on relationships *across families*, through marriages, cross-family joint ventures, or directorships. Finally, we also relied on these sources to identify which specific family members, if any, had been designated as "heir" of the family business.

As an example, Figure 1 displays one of the family trees we have constructed based on these sources. The Bhirom Bhakdi family owns and manages a beer business in Thailand under the brand "Singha." The family business was started in 1932 by Boonrwad Satrabutr. Boonrwad is coded as the first generation in our data. He adopted Wit, who is a son of his brother, as his child. He later had two other sons, Prachuab and Chamnong, from his own wife. Wit, Prachuab and

Chamnong are considered as the family's second generation. There are eleven family members in the third generation: five males and six females. They are sons and daughters of Wit, Prachuab and Chamnong.

Each individual in the family tree was then matched to the ownership and board composition data collected at the firm-level, allowing us to determine whether a specific family member is involved in the family business, in which capacity (through ownership and/or control) and in which firms. There are two major data challenges in performing this matching exercise. First, there are typically many different English spelling for a given Thai name, forcing us to do most of this matching by hand. Second, special care had to be taken in matching female family members to the ownership and board information as they may have dropped their maiden name after getting married.

Since we have to rely on secondary sources to construct the family trees, there is some obvious concern about the completeness of this information. In particular, one might be concerned that there is a bias in coverage of family members that are involved in business, while family members that are more private will not be mentioned in these sources. For that purpose, we have limited our sample to nearly 100 families for which we can cross check the information using several different sources. But even for these families, there is still some concern that the information we have obtained may not be complete. For example, the coverage of female family members seems to be incomplete. On average across all groups, there are about 40 percent of females in the family trees. Another limitation of our family data is that we cannot systematically track whether a given family member in our family tree is still alive or not. We will come back to how we deal with this issue later in the text. However, we do know whether the founder is still alive or not.

3.3 Description of Family Groups

Table 2 provides a first overview of the business families in our sample. While the average family has 13 members, there is wide variation in family size, where the largest family has as much as 122 members and the smallest has two.[9] There are two main sources of variation in family size: (1) the average number of children each couple has, and (2) the number of generations that have passed since the founder started the business. On average, the family groups we cover have been

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[9]We directly address the skewness of the family size variable when moving to our empirical tests. We verify the robustness of all results to dropping the largest families or performing median regressions.

around for 2.5 generations, with a minimum of 1 generation (three families), and a maximum of five generations (only one family). The vast majority of the families in our data have only 2 or 3 generations. We record that the founder is dead is a little more than half of the families in our sample; in about 60 percent of the families, an heir (almost always a son of the founder) has taken over as head of the group.

Table 1 describes the business operations that these families run. The average family in our sample controls seven 6.4 different companies in 1996. Again there is wide variation between families with one firm and those with 58 firms. On average the groups in our sample have about 2 public firms and 4.5 private firms. To provide a better picture of the structure of the groups in our sample, we calculate the depth of the groups. "Depth is measured as the number of ownership links between firms within a group. We set the depth of firms at the top of the group structure as zero. For example, if firm A owns B and firm B own C, we calculate the maximum depth of the group as two. Table 2 shows that the maximum depth of the groups in our sample is 1.6, where the flattest groups have a maximum depth of zero (not pyramidal at all) and the deepest group has seven levels. The average *firm* across all groups has a depth of 0.9.

As a whole, the nearly 100 families we cover control more than 40 percent of all the assets in our 1996 sample of firms.

4   Involvement of Family Members in Family Business

As a first step, we want to describe which family members are involved in the management and control of the family business. We focus on two types of involvement: (1) board membership and (2) ownership. Information on board membership and ownership is derived directly from the firm-level data.

Table 3 shows that on average six family members have ownership in at least one firm within the family group, while significantly fewer family members have board positions (3.3 family members). Similarly, about 1.8 sons on average have ownership in at least one of the group firms but only 1.23 sons on average hold a board position. Overall, the fraction of family ownership held by the sons is 37% (and the fraction of sons that have an ownership stake relative to the number of family members with ownership stake is 53%). The fraction of board positions held by the sons relative to the fraction of other family members with board positions is even higher, about 41%.

In contrast, the fraction of daughters with ownership stakes is only 35% and the fraction of daughters with board positions if even lower, only 14%. Finally the fraction of other family members with ownership stakes or board seats, is only 23% or 12%, respectively. These numbers show that the sons of the founder hold the majority of the ownership and control positions in the firms.

4.1 Family Size and Involvement

We now analyze how family involvement in business (board membership and ownership) varies with the size of the family. The idea behind this analysis is to understand whether greater "availability of family members is associated to more family members taking part in business. Alternatively one might imagine that a family group that has more family members will select the same number of family members to run the firms, but can choose from a larger talent pool.

For that purpose, in Table **??** Panel A, we first compute for each family the number of family members that hold at least some ownership in one of the group firms. As discussed above, we obtained detailed data on the name of all board members and owners of the firms in our sample. In column (1) we regress the number of family members that have *any* ownership in one of the group firms on the size of the family measured as the number of family members across all generations.[10] Theses regressions are estimated at the family level. We also include dummy variables for the number of generations since the group was founded and a control for the age of the business group, measured as the year in which the oldest firm in the group was established. [11] We find a strong positive correlation between the size of the family and the number of family members that are involved in business. The estimated coefficient of 0.3 is high. However, in column (2) when we include a dummy for whether the founder is dead we find that the number of family members who hold an ownership stake decreases once the founder is dead.

We now want to understand in more detail who among the family members shows the highest sensitivity of family size to involvement. In other words which group of family members are most likely to hold large ownership stakes and who is more likely to be crowded out by other family members. For that purpose we now break out the ownership by the fraction of ownership held by

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[10]Note that we use here all family members in the family tree. One would optimally like to use only family members that are alive and of working age. Unfortunately, as we discussed above, we do not have complete information on age in our data. We obtain, however, qualitatively similar results when we focus on number of people in "active generation," i.e. generations where we observe at least one active family member in that generation.

[11]All results are robust to running median regressions or dropping the largest families from the sample.

the sons of the founder, the daughters of the founders and the other family members. In column (2) we regress the fraction of the overall ownership in the family firms that the sons hold on the number of sons and the size of the rest of the family (excluding the sons). We see that the fraction of group ownership is very sensitive to the number of the sons in the group, but the sensitivity to the rest of the family is negative, but the coefficient is economically very small and not significant. In column (4) we again add a dummy variable for whether the founder is dead and we see that the fraction of ownership held by the sons increases significantly once the founder dies, which suggests that most of his ownership passes to his sons. When we repeat the same regressions for the daughters of the founder, in column (5) we find that the ownership of daughters is much less sensitive to the death of the founder and also less sensitive to the number of daughters in the family. Finally, we also repeat this exercise for the remaining family members in the group in column (6). We show that the ownership of other family members only marginally increases with the number of family members in the group. And interestingly the fraction of ownership held by other family members is strongly negatively correlated with the number of sons in the family. These results suggest that the number of family members who get involved in business increases with the number of "available people in the family. However this result is mainly driven by the sons of the founders. If there are more sons in the family, they appear to increase their ownership stake at the expense of other family members. Once the founder is dead the ownership stakes of the sons increase very substantially, while the stakes of other family members do not.

In Panel B of Table 3 we now repeat the same regressions for the number of *board positions* that different family members hold. Again we find that involvement of family members on the board of firms increases with the size of the family, but goes down when the founder is dead. However, for the sons we find that the fraction of board positions goes up with the number of sons in the family, but does not increase significantly when the founder is dead (as was the case with ownership). This might indicate that the sons already assume central board positions before the founder is dead, however the ownership only passes on when the founder is dead. In column (4) and (5) we again find that the daughters are much less involved in the family business than the sons. Finally in column (6) we again see that the sons crowd out board membership by other family members.

4.2 Allocation of Control and Ownership to Specific Family Members

We now investigate in more detail how control and ownership are allocated to *specific* family members. We start with the allocation of *control rights* through board membership and executive positions. As before, we focus on the 1996 data and look at the within family allocation of family involvement on broads. Ideally, we would like to focus only on family members that are alive and of working age, but as mentioned before we have only limited information on date of birth and death. To deal with this issue we control for the number of *active generations* in each of these families. We define a generation as *active* if at least one family member in that generation holds a position within the family business in 1996.[12]

The results of this analysis are presented in Table 4. We categorize family members based on their relationship to the group founder of the group. We also separate between groups where the founder is dead and those where the founder is still around. For each position in the family tree (e.g. founder, son, grandson etc.), we determine the number of positions held by family members in that position. We compute these fractions either based on a simple count of positions, or based on an asset-weighted count. The asset-weighted count gives more weight to board membership in larger firms.

As might have been expected, the sons of the founder hold the largest number of positions among the family members, relative to the daughters and later generation of children. This trend is especially strong in families where the founder is dead. A comparison between the regressions for groups where the founder is dead to those where he is alive suggests that the ownership and positions of the founder passes from the founder to the sons. In contrast the ownership stakes and number of positions of daughters and other family members decreases once the founder is dead.

5 Family Structure and Firm Performance

We now turn to analyze whether the above documented differences in involvement of family members in business are associated with differences in performance. On the one hand, there are several reasons why we could expect lower performance for groups run by larger families. If family managers are less skilled than outside managers, greater involvement of family members will negatively

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[12]Obviously, the notion of active generation could be somewhat endogenous. For example, older family members may decide to retain control longer in families where less young family members are available.

affect performance. Larger family involvement might also lead to more infighting over resources across family members. On the other hand, one might conjecture that the market for corporate control and top executive talent is thin in Thailand. If a good governance of professional (outside) managers is difficult to establish, relying on trust relationship along kinship lines might be preferential since it could serve as a substitute for direct monitoring. Moreover, a larger family offers a deeper talent pool of potential managers to draw from. These theories would imply that larger families would be positively related to group performance.

In Table 5 we study the relationship between firm performance and the structure of the families behind the firms. Panel A presents regressions of all firms in the group, and Panel B separately breaks out the private and public firms. The unit of observation is a group firm. The dependent variable is residual ROA, which we construct as follows. We first define firm ROA as the ratio of net profits in 1996 divided by the firm assets in 1996. We then regress firm-level ROA in 1996 on two digit industry codes and a control for the measure of the log of total assets of the firm. The estimation of residual ROAs includes *all firms* in our sample, not just the group firms. Therefore, residual ROA 1996 measures the performance of the firms controlling for the industry and size of a firm. All regressions in that table also include a dummy variable for the number of generations since the group was started and a control for the age of the firm. Columns (1) through (4) include all groups in the sample, columns (5) to (7) only include groups where the founder is dead and columns (8) to (10) only focus on groups where the founder is still around.

In column (1), we regress firm ROA on the size of the family, measured as the number of people in the family tree. The coefficient on the family size variable is negative and significant (albeit economically not very large). However, when we include a measure for the number of sons in the family in column (2) of Table 5 the coefficient on the family size measure becomes zero, but the coefficient on the number of sons is negative and significant. In columns (3) and (4) we also re-estimate this relationship using a dummy for families that have more than one son. This allows us to ensure that our results are not driven by a few families that have a very large number of sons. We find that the coefficient on multiple sons is negative and economically significant, but statistically not significant. If we include a separate dummy in column (4) for families that have sons from multiple wives we again find that the coefficient on this variable is negative but not significant.

But if we break out firms where the founder is still active versus those where the founder is

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not active we find an interesting discrepancy. In those firms where the founder is not active any more (column 5 to 7) we see a significant and robust negative relationship between performance and family size and also a negative relationship between performance and the number of sons. This relationship becomes even stronger if use our alternative measure of multiple sons. We also find that those groups where the founder had sons from multiple wives show particularly poor performance once the founder is gone. In contract for the firms where the founder is still active (columns 8-10) we find a positive but not significant relationship between performance and number of sons. This last finding is consistent with previous studies such as Perez Gonzales (2003) and Villalonga and Amit (2004), who also find that the performance of family is particularly low once the founder is gone.

In Panel B of Table 5 we separate the family firms into those that are publicly traded and those that are private. Again we break out groups where the founder is still around and those where the founder is gone. When we compare the results for private and public firms in Panel B we find that the negative relationship between the number of sons (or multiple sons) and firm performance is concentrated in the private firms of the family groups, and again especially for the groups where the founder is gone. For the public firms the coefficient on the number of sons is positive but not significant, if the founder is gone. If the founder is still there we show a positive relationship between the number of sons and performance in the public firms.

These results are interesting on a number of dimensions. First, they suggest that the lower performance of family firms is not uniformly due to a greater involvement of all family members if the family is larger. But our results suggest that the sons of the founder may play a particular role, since the poor performance of family firms is mainly associated the number of sons in the family. The results are not consistent with the hypothesis that trust relationships among family members (in particular the sons) and the ability to draw from a deeper talent pool in larger families provides a source of comparative advantage to these families. These findings are instead more supportive of theories that suggest efficiency losses through greater family involvement. As mentioned before, this could either be due to the fact that family firms forgo the opportunity of hiring (high-skilled) outside managers or because the involvement of several sons in the business creates inefficiencies in the operations of the family firms. Second, the finding that the result is much stronger for the private firms and once the founder is gone is a first suggestive indication that the documented lower

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performance of firms with many sons might be due to governance problems or a fight for resources among the sons. We investigate this idea in more detail in the following section.

5.1 Firm Performance and Excess Control

One of the important distortions that has been documented in pyramidal business groups is expropriation of minority shareholders by the shareholders of higher-up group firms. See for example Bertrand at al (2001) or Claessens et al. (2000). These papers show that tunneling between group firms allows majority shareholders to take out cash from the operations of the firms. Given our findings of lower performance of family groups that have more sons, we now want to analyze whether the lower performance is a function of the ownership and control structure in these groups with more sons. One candidate explanation is that the dilution of ownership across equally powerful sons increases the amount of tunneling of resources out of the lower-down group firms.

To investigate this explanation, we construct several measures of the discrepancy between control and ownership for each of the firms in the groups covered in our sample. We compute the standard measures of *total* family ownership and *total* family control as calculated in Porta, Lopez-de-Silanes and Shleifer (1999), and Claessens, Djankov and Lang (2000). However, our data also allows us to also compute similar measures of *individual* family member ownership and *individual* family member control for each firm.

Individual ownership is defined by summing a given family members direct and indirect ownership over a given firm. Direct ownership is simply the percentage of shares that a given family member owns. When there is a chain shareholding along the pyramid, we also compute the indirect ownership along the chain by calculating the product of shares held by a given individual along the chain. The calculation is more complicated if there are more than one chain for each firm. In such case, the total indirect ownership is the sum of the ownership over all chains that can be traced back to the given family member. For example, Firm X is 30% owned by Mr. A, and 70% owned by firm Y. Firm Y is 40% owned by Mr. A. We say that Mr. A directly owns 30% of firm X. He also indirectly owns 40%*70% = 28% over firm X through firm Y along the pyramid chain. His ownership in firm X is therefore 30+28 = 58%.

Control is based on the voting rights a given family member has. Due to a one-share-one-vote rule, direct control right is simply the shares that the family member holds. However, in case of

a chain shareholding, control over the voting right of a firm is the weakest link, i.e. the smallest share along each chain. The total indirect control is defined as a sum of the controls over all chains. Finally, the ultimate control is the sum of direct and indirect control for each family member. From previous scenario, Mr. A directly controls 30% voting rights of firm X. He also indirectly controls min40%, 70% = 40% over firm X. His control in firm X is therefore 30+40 = 70%.

Using this approach, we can define a measure of excess control (control > ownership) at the individual level. In the example above, Mr. A has excess control over firm X. Given the central role played by sons in the results above, it will be of most interest to us to contrast excess control by sons compared to excess control by other family members. The idea is to test whether the lower performance of family firms in groups with more sons is mostly associated with those situations where the sons have excess control.

In Table 6, we first regress firm-level (residual) ROA on total family ownership in the firm and a dummy variable for excess family control (i.e. total family control is larger than total family ownership). We include family fixed effects in the regression (and all following regressions in this table) and a control for the year the firm was established. Across all groups, we find that higher excess control for the family overall is negatively correlated with residual ROA in the full sample, but the effect is not significant. However when we break out families into those where the founder is gone (column 4) versus those where the founder is still around (column 6), we find that there is a significantly negative correlation when the founder is gone. However, if the founder is still around this relationship is positive but not significant. This result suggests that excess control in the hands of family members only correlates with negative performance once the founder is gone. In contrast, while the founder is still around these patterns do not appear. These results are also similar to the findings in Claessens at al. (2002) where family firms in East Asia show poorer performance if the families are more pyramidal. Note that we also find also find a strong negative correlation between total family ownership and firm performance.

We now break down total family control and total family ownership into individual-specific measures of control and ownership. Specifically, since the results in the previous section suggest that the number sons seem to be pivotal in understanding the lower performance of family firms, we contrast the excess control in the hands of the sons with excess control of other family members. First, we regress the residual ROA at the firm level on the number of sons that have excess control

in a given firm and the number of other family members that have excess control in a given firm. Our regressions still include a control for total family ownership, family fixed effects and the year in which the firm was established.

Column (2) of Table 6 shows a negative correlation with the number of sons that have excess control, but no relationship (the coefficient is literally zero) with the number of other family members with excess control. But for the full sample the results are not statistically significant. We then break down the families into those where the founder is still around (column 5) and those where he is gone (column 7). We find that the negative effect of number of sons with excess control on performance is somewhat stronger and more significant when the founder is not around anymore. The number of other family members with excess control does not appear to be related to performance, even when the founder is gone.

As an alternative specification, we also compute the average difference between control and ownership among sons and among other family members at a given firm. We find very similar pattern under this alternative measure. Specifically, a larger average difference between control and ownership for sons is associated with lower firm performance when the founder gone. We find relationship between performance and the average difference between control and ownership for other family members.

Finally, in Table 7 we replicate the regressions above but sort firms into public and private ones. We find that the negative relationship between performance and excess control by sons is entirely driven by the private firms among the group firms. For the public firms the relationship is positive but not (strongly) significant. These findings help reinforce a governance interpretation for our findings as we expect governance issues to be more likely to transpire into lower performance at the more opaque private firms.

Overall, these findings suggest that not all family members may have the power or inclination to take advantage of their excess control position at group firms. Only excess control in the hands of sons appears to significantly hurt performance (at private firms). In addition, the contrast between groups with founder and those with founder not gone suggests that the founder may have a disciplining effect on the sons behavior. In addition, the fact that performance is negatively related to the *number* of sons with excess control suggests that the amount of distortion might be driven by competition between the sons over a given companys resources.

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5.2 Excess Control and Family structure

In the previous section we documented a negative relationship between the excess control in the hands of the sons and the average performance of the group firms. As we showed before, this relationship is predominantly driven by the groups where the founder is gone. In contrast we do not find that excess control by other family members leads to the same poor performance. This raises the obvious next question: Is the structure of governance more tilted towards excess control situations when the founder is gone and/or when there are more sons in the family?

We analyze this question in Table 8. We first excess family control (i.e. a dummy for whether total family control is larger than total family ownership) on number of sons, controlling for the number of generations the groups has been around. As before this variable includes the holdings of *all* family members. We find a positive, but statistically not significant relationship. In column (2), we include a dummy for whether the founder is dead. Again we find a positive but only barely significant estimate of the coefficient on "founder dead". However, the *sensitivity* of family excess control to number of sons does change once the founder is gone. When the founder is dead, there is a positive relationship between the number of sons and the level of excess control that the family holds (column 3). However, if the founder is still around, this relationship is negative and significant (column 4). This means once the founder is dead, more sons imply a larger average discrepancy between control and ownership at family firms.

As before we can now break out the excess control in the hands of the sons relative to the rest of the family. We first use a measure of the average difference between control and ownership among sons at a given firm. We find that more sons are associated with a higher average difference between control and ownership for sons. In addition, this difference increases when the founder is gone.

This measure of excess control does not differentiate between a situation where only one son has a huge amount of excess control and the others do not, versus a situation where each son individually has some excess control. To account for this, we also use as a dependent variable a simple count of the *number* of sons with excess control at a given firm. We find that more sons are also correlated with a larger number of sons who have excess control. Also, we find that the number of sons with excess control at a given firm increases significantly once the founder is gone. Overall, these results suggest that the presence of more sons leads to governance structure that are

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more tilted towards "expropriation position (for sons), especially when the founder is gone.

This analysis suggests that family structure and genealogical lines may be important in understanding the allocation of control rights in business groups. In Table 9, we report complementary patterns at the group level. In that table, we relate different characteristics of the groups to family structure variables. First we regress the number of firms in a group on family size and find a strong positive relationship only when the founder is gone. That suggests that once the founder is dead the assets of the firms get chopped up into several separate firms within the group. This could be viewed as suggestive evidence that the different sons in the firm are trying to carve out their own independent piece of the "family pie. In addition, we find that the depth of the group increases with family size, again only when the founder is gone. As another take on the pyramidal structure of the groups, we also find that the average number of firms owned by a given a group firm increases with family size, again only when the founder is gone. In other words, the above firm-level patterns of a governance structure that becomes more tilted towards expropriation in larger families (i.e. more sons) when the founder is gone are confirmed in this analysis of group structure.

6 Restructuring after the Asian Financial Crisis

Finally, we undertake a very preliminary look at the response of family firms to the Asian financial crises in the late 1990s. The financial crisis was triggered when Thailand was forced to float its currency in July of 1997. Although some people had anticipated the slowdown of the Thai economy since 1996, the financial crisis with this enormous magnitude was largely unexpected. Therefore, the crisis serves as a significant, exogenous shock to the firms in our sample. In this section, we will explore the responsiveness of family firms to the adverse shock. Specifically, we would like to ask whether family structure affects the ability of groups to restructure and recover after the Asian financial crisis. As we have argued, families are not monolithic, but consist of many different members with possibly diverging objectives. One hypothesis is that larger family involvement may lead to more difficulty in shutting down underperforming units, as each family member is trying to protect his or her own personal stake in the family business. In other words, large family involvement may lead to important coordination issues in the post-crisis restructuring and therefore potentially less restructuring. In addition, given our results above, we might expect that any such coordination issues to be more important when the founder is no longer there to

exercise disciplining over the various family members. Moreover, given our results above, we might expect any such coordination issues to be especially important among the sons of the founders, as each may attempt to protect his own interest in the family business.

In order to take these ideas to the data, we analyze firms response to the crisis and performance after the crisis. Since the restructuring may take several years, we look at firms survival and performance at the end of 2001, which was four and a half years after the crisis and five years after our pre-crisis 1996 data.

We first explore in Table 10 whether the structure of family ownership at a given firm affects the likelihood of firm exit by 2001 in response to high leverage in 1996 or low ROA in 1996. Specifically, for each firm in our sample, we compute the number of family members with an ownership stake on that firm and the number of sons with an ownership stake on that firm. The dependent variable is a dummy variable that equals 1 if the firm exited between 1996 and 2001. All regressions control for establishment year (firm age), industry fixed effect, and number of generation fixed effects. We include as the explanatory variables the number of sons with ownership in the firm, residual ROA in 1996, leverage in 1996, family ownership in the firm, and a dummy variable that equals one if family control in the firm is larger than family ownership in the firm.

Our findings in that table indicate that, as the number of sons with an ownership stake on a given increases, the sensitivity of that firms exit to low performance or high leverage decreases. Interestingly, we find no similar patterns for ownership by other family members. In other words, it is a larger number of sons with ownership stakes that lowers the likelihood of firm shut-down in case low performance or high leverage.

Finally, we analyze how the responsiveness differs between groups with founder dead (columns 5 and 6) and groups with founder alive (columns 7 and 8). Interestingly, the lower sensitivity of shut-down to bad performance/high leverage as the number of sons with ownership increases is concentrated in those groups where the founder is gone. While there might be alternative interpretations that need to be explored in further analysis, these findings are prima facie consistent with the idea of more sluggish restructuring in response to the financial crisis on those groups where family involvement is more widely distributed across equally powerful family members (i.e. sons of the founder).

Table 11 overall confirms the results presented in table 10. In that table, we first regress the exit

dummy on 1996 leverage and 1996 residual ROA for all firms, controlling for establishment year, industry fixed effects, and generation fixed effects (column 1). Next, we stratify our sample into groups where the founder is gone (column 2) and groups where founders are still alive (column 3). Again, we find that the sensitivity of exit to high leverage is much weaker when the founder gone. For firms where the founder is gone, exit did not respond to high pre-crisis leverage. Futhermore, the point estimates in the last two columns suggest that the weaker sensitivity of exit to high leverage when the founder is gone is especially pronounced in those families with multiple sons. The standard errors are too large however to draw any strong inference from these results.

Finally, we explore the performance of surviving firms in 2001. Assuming that the results above really indicate "too little restructuring, we would expect high leverage in 1996 to be associated with lower performance in 2001 among surviving firms at those groups where the founder is gone and family involvement in the business is broader (i.e. more sons). This is exactly the pattern that we observe in Table 12. Specifically, we regress the residual ROA of a firm in 2001 on its 1996 leverage and its 1996 residual ROA. We find that 2001 ROA is negatively related to high leverage in 1996 only among the groups where the founder is gone, and especially when the founder had multiple sons.

Overall, the results in this section suggest that groups whose founder has gone and have wider family involvement in the business (more sons) may have experienced less efficient restructuring post-crisis. While alternative explanations will need to be further investigated, these patterns are consistent with the idea that involvement in the business by several equally powerful family members may lead to coordination problems as each family member is trying to protect his own stake in the groups operations. This problem seems much reduced when the founder is still around, suggesting that the founder may act as the natural coordinating authority for the groups.

7   Conclusion

TO BE COMPLETED

A large fraction of firms around the world are run by families. Families themselves, however, are not monolithic entities but are composed of individual members, who may have different stakes and objectives in the family businesses. The current paper takes a first step in going beyond the case-study evidence to ask whether constraints imposed by family structure affect the corporate

structure and ultimate performance of these family-run firms.

We show that inheritance of control within family business groups follows genealogical lines, i.e. control is passed from the founder to his sons, grand-sons etc. Moreover, the larger the family, in particular the more sons the founder has,

the more positions within family firms are held by family members instead of outside managers and board members. We find, however, that the number of the sons of the founder a pivotal. Groups that are run by larger families (especially more sons) tend to have lower performance and to be financially less sound. All of these effects are especially pronounced in groups where the founder is no longer active and ultimate control has been passed on to an heir. Most interestingly, we analyze how the pyramidal ownership structure of group firms affects the performance of the firms. We find that an important channel which explains the lower performance of firms with several sons is the gap in excess control. Firms where many brothers indirectly own a fraction of the ownership show lower performance. This finding is consistent with an interpretation that having several sons with excess control, can lead to a race to the bottom, where each sons is trying to tunnel resources out of the company before the next brother can do it.

Overall, these findings provide novel evidence that wider family involvement in business groups alters business decisions and the performance of family-run firms. One hypothesis that emerges from our analysis is that the decay of family-run groups over time may be due in part to increased incentives *between* family members to tunnel resources out of the firm as control becomes more diluted among different family members. A slightly different interpretation is that outright in-fighting for group resources leads to inefficient decision making. Conflicts between different parts of the family might lead to distortions in the governance structure and internal operations of these groups. These conflicts might be especially important once the founder has retired.

One deeper question in this context is why families do not separate the control rights (i.e. management) more effectively from the ownership structure of the firm by placing management control in the hand of professionals but retaining ownership control within the family. Arrangements like this are widely used in many European countries where family firms are still prevalent, such as Italy or Germany. This would allow family members to fight over the cash flow streams, without distorting the efficiency of the business decisions within the firms. We conjecture that a potential answer to this question lies in the limited enforcement of contracts and market for governance

in a country like Thailand. It could be that cash flow rights de facto can only be guaranteed in conjunction with control rights. Therefore, family members may have to stay directly involved in the operations of the business if they want to protect their cash flow rights. Our analysis suggests that individual family members may not only have to be concerned about expropriation by outsiders, but also expropriation by other (more powerful) family members. For example, the fact that weaker family members, such as daughters of the founder, are less likely to hold positions in firms where sons of the founder are also on board is quite suggestive in this regard. Similarly, our findings that larger families and larger family involvement is associated with a break down group assets into a larger set of (smaller) firms may also indicate that access to cash flow for a given family member requires control rights for that family member.

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Table 1
Summary Statistics: Business Group Characteristics (1996) [a]

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Characteristic	Mean	Std. Dev.	Min	Max
Number of firms	6.4	9.1	1	58
Number of public firms	1.9	2.5	0	19
Number of private firms	4.5	7.7	0	53
Log (group total assets) (in thousand Baht)	16.4	1.8	12.5	21.2
Maximum depth	1.6	1.5	0	7
Average number of firms owning a given firm	0.8	0.8	0	3.3
Average number of firms owned by a given firm	0.4	0.5	0	2.6
Average ROA, asset weighted (1996)	.024	.046	-.11	.21
Average leverage, asset weighted (1996)	0.69	0.19	0.24	1.10
Minimum establishment year	1964	16.7	1882	1989

[a]Notes:

1. The unit of observation is a business group (N=97). All group characteristics are computed as of 1996.

2. "Number of firms" is the total number of firms in a group (within our sample). "Maximum depth" is the maximum length of chain ownership in a group. A firm at the top of pyramid, as well as a singleton firm, has length equal to zero. "Average number of firms owning" is the average number of group firms owning a given group firm. "Average number of firms owned" is the average number of group firms owned by a given group firm. "Average ROA, asset-weighted" is the asset-weighted average ROA (net profits divided by total assets) across firms in a group. "Average leverage, asset-weighted" is the asset-weighted average leverage (financial liabilities divided by total assets) across firms in a group. "Minimum establishment year" is the year the oldest firm in a group was established (within our sample).

3. See text for details on data sources and sample construction.

Table 2
Summary Statistics: Family Characteristics [a]

Characteristic	Mean	Std. Dev.	Min	Max
Family size	12.56	17.16	1	122
Number of generations (founder's generation = 1)	2.45	0.72	1	5
Founder dead? (Y=1)	0.56	0.50	0	1
No heir(s) active? (Y=1)	0.39	0.49	0	1
Number of heirs	0.81	0.77	0	4
Multiple wives? (Y=1)	0.17	0.37	0	1
Number of founder's sons	3.2	2.5	0	14
Number of founder's daughters	2.4	2.3	0	12
Multiple sons? (Y=1)	0.71	0.45	0	1

[a]Notes:

1. The unit of observation is a family (N=97).

2. "Family size" includes the founder and all of his direct descendants. "Number of generations" is the number of generations in the family tree (with founder's generation equal to 1, the founder's children's generation equal to 2, etc). "Founder dead?" is a dummy variable that equals 1 if the founder of the group is dead, 0 otherwise. "No heir(s) active?" is a dummy variable that equals 1 is at least one heir has taken over control of the family business. "Number of heirs" is the total number of heirs that have appointed in the family business. "Multiple wives" is a dummy variable that equals 1 if the founder had multiple wives, 0 otherwise. "Multiple sons" is a dummy variable that equals 1 if the founder had multiple sons.

3. See text for details on data sources and sample construction.

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Table 3
Summary Statistics: Family Involvement in Business (1996) [a]

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Characteristic	Mean	Std. Dev.
N of family members with ownership	5.97	5.95
N of family members with board seats	3.33	3.03
N of sons with ownership	1.79	1.89
N of sons with board seats	1.23	1.51
Frac of family ownership held by sons	0.37	0.34
Frac of family's board seats held by sons	0.41	0.38
Frac of sons with ownership	0.53	0.44
Frac of sons with board seats	0.37	0.38
Frac of daughters with ownership	0.35	0.42
Frac of daughters with board seats	0.14	0.28
Frac of other family members with ownership	0.23	0.34
Frac of other family members with positions	0.12	0.22

[a]Notes:

1. The unit of observation is a family (N=97).

2. "Frac of sons with ownership (board seats)" is the fraction of the founder's sons that have ownership stakes (board seats) in the family group. "Frac of daughters with ownership (board seats) is the fraction of the founder's daughters that have ownership stakes (board seats) in the family group. "Frac of other family members with ownership (board seats) is the fraction of other family members that have ownership stakes (board seats) in the family group; "other family members" include all family members except the founder, his sons and his daughters. "Frac of family ownership held by sons" is the fraction of total family ownership held by the founder's sons. "Frac of family's board seats held by sons" is the fraction of total asset-weighted family's board seats held by the founder's sons.

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Table 4
Family Involvement in Business (1996) [a]

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Panel A: Family Involvement in Ownership

Dep. Var.:	N of family members with ownership		Frac. of family ownership held by			
	sons [1]	[2]	sons [3]	sons [4]	daughters [5]	others [6]
Founder dead		-.683 (.883)		.242 (.075)	.062 (.052)	.023 (.071)
Family size	.300 (.031)	.300 (.031)				
N of sons			.050 (.014)	.049 (.013)		-.037 (.013)
Family size, excl. sons			-.005 (.003)	-.005 (.003)		
N of daughters					.033 (.010)	-.007 (.014)
Family size, excl. daughters					-.002 (.002)	
N of other fam. members						.005 (.003)
Min. est. year	-.024 (.027)	-.027 (.027)	.004 (.002)	.005 (.002)	.000 (.002)	-.004 (.002)
Generations F.E.?	yes	yes	yes	yes	yes	yes
R^2	0.64	0.64	0.21	0.30	0.19	0.27

Panel B: Family Involvement in Board Membership

Dep. Var.:	N of family members with board seats		Frac. of family's board seats held by			
	sons [1]	[2]	sons [3]	sons [4]	daughters [5]	others [6]
Founder dead		-.143 (.555)		.091 (.080)	.021 (.069)	.135 (.080)
Family size	.133 (.019)	.133 (.020)				
N of sons			.071 (.015)	.072 (.015)		-.047 (.016)
Family size, excl. sons			-.010 (.003)	-.010 (.003)		
N of daughters					.044 (.013)	-.015 (.017)
Family size, excl. daughters					-.004 (.003)	
N of other fam. members						.01 (.003)
Min. est. year	-.025 (.017)	-.026 (.017)	-.002 (.002)	-.002 (.002)	.004 (.002)	-.000 (.002)
Generations F.E.?	yes	yes	yes	yes	yes	yes
R^2	0.46	0.45	0.30	0.30	0.10	0.35

[a]Notes:

1. The unit of observation is a family (N=97).

2. "Founder dead" is a dummy variable that equals 1 if the founder of the group is dead, 0 otherwise. "Frac of family ownership held by sons (daughters, others)" is the fraction of total family ownership held by the founder's sons (daughters, other family members). "Frac of family's board seats held by sons (daughters, others)" is the fraction of total asset-weighted family's board seats held by the founder's sons (daughters, other family members). "Other family members" include all family members except the founder, his sons and daughters. "Generations F.E." are dummy variables for the number of generations in the family group. "Minimum establishment year" is the year in which the oldest firm in the group was established.

3. All regressions are estimated using OLS.

Table 5
Family Characteristics and Firm-Level Performance (1996)[a]

Panel A: Private and Public Firms

Dependent Variable: Residual ROA 1996

Sample:	All Groups [1-4] (N=615)				Heir(s) Active [5-7] (N=406)			No Heir Active [8-10] (N=209)		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Family size	-0.0004 (0.0002)	0.0000 (0.0003)			-0.0004 (0.0002)			0.0001 (0.0002)		
N of sons		-0.003 (0.001)			-0.004 (0.001)			0.006 (0.005)		
Multiple sons			-0.008 (0.009)	-0.010 (0.009)		-0.041 (0.015)	-0.037 (0.018)		0.013 (0.012)	0.004 (0.012)
Sons from diff. wives				-0.010 (0.007)			-0.015 (0.008)			0.0034 (0.029)
Est. year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Generations F. E.?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.02	0.03	0.02	0.02	0.05	0.04	0.03	0.01	0.01	0.01

Panel B: Private versus Public Firms

Dependent Variable: Residual ROA 1996

Sample:	Private Firms [1-6] (N=435)						Public Firms [7-10] (N=180)			
Sample:	Heir(s) Active [1-3]			No Heir Active [4-6]			Heir(s) Active [7-8]		No Heir Active [9-10]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Family size	-0.0002 (0.0004)			-.0008 (.004)			.0006 (.0004)		.0004 (.004)	
N of sons	-0.004 (0.002)			.003 (0.007)			-0.004 (0.003)		0.015 (0.008)	
Multiple sons		-0.058 (0.021)	-0.061 (0.025)		0.004 (0.017)	0.000 (0.017)		-0.012 (0.023)		0.041 (0.015)
Sons from diff. wives			-0.011 (0.010)			0.048 (0.039)				
Est. year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Generations F. E.?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.04	0.05	0.04	0.01	0.00	0.00	0.00	0.00	0.06	0.09

[a]Notes:

1. The unit of observation is a firm.

2. The dependent variable in all regressions is residual ROA in 1996. Residual ROA is computed as follows. First, we define firm-level ROA as the ratio of firm net profits over firm total assets. For the *full* sample of firms in our data (i.e. including firms that are not part of the 97 business groups studied here), we then regress firm-level ROA on 2-digit industry fixed effects and the logarithm of the firm's total assets. Residual ROA is the residual from this regression.

3. "Heir(s) active" is the sub-sample of firms belonging to a family where at least one family heir was appointed; "No heir active" is the sub-sample of firms belonging to a family where no heir was yet appointed.

4. "Family size" includes the founder and all of his direct descendants. "Multiple sons" is a dummy variable that equals 1 if the founder had multiple sons. "Sons from different wives" is a dummy variable that equals 1 if the founder had sons from different wives. "Generations F.E." are dummy variables for the number of generations in a given family. "Establishment year" is the year a given firm was established.

5. All regressions are estimated using OLS. Standard errors are reported in parentheses and clustered at the family-level.

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Table 6
Firm Performance, Ownership and Control (1996)[a]

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Dependent Variable: Residual ROA 1996

Sample:	All Groups [1-3]			No Heir Active [4-5]		Heir(s) Active [6-7]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Family ownership	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Family control > family ownership	-0.010			0.020		-0.022	
	(0.008)			(0.014)		(0.011)	
N sons with control > ownership		-0.004			-0.005		-0.006
		(0.003)			(0.009)		(0.003)
N oth. fam. members with control > ownership		0.000			0.005		0.000
		(0.001)			(0.006)		(0.002)
Av (control-ownership) among sons			-0.001				
			(0.000)				
Av (control-ownership) among oth. fam. members			0.000				
			(0.001)				
Family F. E.?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.11	0.12	0.12	0.15	0.12	0.12	0.12

[a]Notes:

1. The unit of observation is a firm.

2. The dependent variable in all regressions is residual ROA in 1996. Residual ROA is computed as follows. First, we define firm-level ROA as the ratio of firm net profits over firm total assets. For the *full* sample of firms in our data (i.e. including firms that are not part of the 97 business groups studied here), we then regress firm-level ROA on 2-digit industry fixed effects and the logarithm of the firm's total assets. Residual ROA is the residual from this regression.

3. "Heir(s) active" is the sub-sample of firms belonging to a family where at least one family heir was appointed; "No heir active" is the sub-sample of firms belonging to a family where no heir was yet appointed.

4. "Family ownership" is the family ownership in the firm (mean=34). "Family control > family ownership" is a dummy variable that equals 1 if family control in the firm is larger than family ownership in the firm, 0 otherwise (mean=.72). "Number of sons with control > ownership" is the number of sons whose control stake on the firm exceeds their ownership stake (mean=1.5). "Number of other family members with control > ownership" is the number of other family members (i.e. not sons) whose control stake on the firm exceeds their ownership stake (mean=2.7). "Average (control-ownership) among sons" is the average difference between control and ownership among sons (mean=8.7). "Average (control-ownership) among other family members" is the average difference between control and ownership among other (i.e. not sons) family members (mean=12.7). "Family F.E." are dummy variables for the different families in our sample.

5. All regressions are estimated using OLS. Standard errors are reported in parentheses.

Table 7

Firm Performance, Ownership and Control-Private versus Public Firms (1996)
Private versus Public Firms (1996) [a]

Dependent Variable: Residual ROA 96

Sample:	Private [1-2]			Public [3-4]
	[1]	[2]	[3]	[4]
Family ownership	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.000)	(0.000)	(0.000)
N sons with	-0.006		0.004	
control > ownership	(0.003)		(0.007)	
N oth. fam. members with	0.001		0.001	
control > ownership	(0.002)		(0.002)	
Av (control-ownership)		-0.001		0.002
among sons		(0.000)		(0.001)
Av (control-ownership)		0.000		-0.002
Among oth. fam. members		(0.001)		(0.001)
Family F. E.?	Yes	Yes	Yes	Yes
Adj. R^2	0.09	0.09	0.32	0.23

[a]Notes:

1. The unit of observation is a firm.

2. The dependent variable in all regressions is residual ROA in 1996. Residual ROA is computed as follows. First, we define firm-level ROA as the ratio of firm net profits over firm total assets. For the *full* sample of firms in our data (i.e. including firms that are not part of the 97 business groups studied here), we then regress firm-level ROA on 2-digit industry fixed effects and the logarithm of the firm's total assets. Residual ROA is the residual from this regression.

3. "Family ownership" is the family ownership in the firm (mean=34). "Number of sons with control > ownership" is the number of sons whose control stake on the firm exceeds their ownership stake. "Number of other family members with control > ownership" is the number of other family members (i.e. not sons) whose control stake on the firm exceeds their ownership stake. "Average (control-ownership) among sons" is the average difference between control and ownership among sons. "Average (control-ownership) among other family members" is the average difference between control and ownership among other (i.e. not sons) family members. "Family F.E." are dummy variables for the different families in our sample.

4. All regressions are estimated using OLS. Standard errors are reported in parentheses.

Table 8
Excess Control and Family Structure (1996)[a]

Dependent Variable:	Family control > family ownership [1-4]				Av (control-ownership) among sons [5-6]		N sons with control > ownership [7-8]	
Sample:	All		Founder dead	Founder alive			All	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
N of sons	0.018	0.010	0.018	-0.075	0.617	0.522	0.190	0.174
	(0.007)	(0.007)	(0.007)	(0.021)	(0.225)	(0.225)	(0.025)	(0.026)
Founder dead		0.08				5.25		0.797
		(0.05)				(1.78)		(0.209)
Generations F. E.?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.01		0.03	0.11	0.05	0.07	0.25	0.27

[a]Notes:

1. The unit of observation is a firm.

2. "Family control > family ownership" is a dummy variable that equals 1 if family control in the firm is larger than family ownership in the firm, 0 otherwise. "Average (control-ownership) among sons" is the average difference between control and ownership among sons. "Number of sons with control > ownership" is the number of sons whose control stake on the firm exceeds their ownership stake. "Founder dead" is a dummy variable that equals 1 if the founder is dead, 0 otherwise. "Generation F.E." are dummy variables for the number of generations in a given family.

3. All regressions are estimated using OLS. Standard errors are reported in parentheses.

Table 9
Table 9
Family Size, Group Size and Group Structure (1996) [a]

Dependent Variable:	Number of firms			Maximum Depth		
Sample:	All	Heir	No heir	All	Heir	No heir
	[1]	[2]	[3]	[4]	[5]	[6]
Family size	0.227	0.240	-0.172	0.034	0.041	-0.032
	(0.071)	(0.097)	(0.151)	(0.015)	(0.018)	(0.045)
Min. est. year	Yes	Yes	Yes	Yes	Yes	Yes
Generation F.E.	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.19	0.17	0.04	0.17	0.13	0.11

Dependent Variable:	Average number of firms..					
	..owning a given firm			..owned by a given firm		
Sample:	All	Heir	No heir	All	Heir	No heir
	[7]	[8]	[9]	[10]	[11]	[12]
Family size	0.017	0.021	-0.027	0.010	0.012	-0.023
	(0.007)	(0.008)	(0.026)	(0.005)	(0.006)	(0.015)
Min. est. year	Yes	Yes	Yes	Yes	Yes	Yes
Generation F.E.	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.12	0.14	0.17	0.10	0.07	0.11

[a]Notes:

1. The unit of observation is a family/business group.

2. "Number of firms" is the total number of firms in a group (within our sample). "Maximum depth" is the maximum length of chain ownership in a group. A firm at the top of pyramid, as well as a singleton firm, has length equal to zero. "Average number of firms owning" is the average number of group firms owning a given group firm. "Average number of firms owned" is the average number of group firms owned by a given group firm. "Family size" includes the founder and all of his direct descendants. "Generations F.E." are dummy variables for the number of generations in the family group. "Minimum establishment year" is the year in which the oldest firm in the group was established.

3. "Heir(s) active" is the sub-sample of families/groups where at least one heir was appointed; "No heir active" is the sub-sample of families/groups where no heir was yet appointed.

Table 10
Exit (by 2001) and Structure of Family Ownership [a]

Dependent Variable: Exit

Sample:	All Firms [1-4]				Founder dead [5-6]		Founder alive [7-8]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
N sons owning	-0.007	-0.010	-0.021	-0.010	-0.016	-0.013	-0.013	0.006
	(0.006)	(0.006)	(0.014)	(0.006)	(0.007)	(0.007)	(0.020)	(0.022)
Residual ROA 96	-0.081	-0.313	-0.100	-0.255	-0.518	-0.407	0.067	-0.304
	(0.159)	(0.216)	(0.158)	(0.246)	(0.270)	(0.316)	(0.312)	(0.486)
Leverage 96	0.078	0.082	0.165	0.081	0.014	0.014	0.194	0.182
	(0.050)	(0.050)	(0.068)	(0.051)	(0.060)	(0.061)	(0.094)	(0.096)
N sons owning* Res. ROA 96		0.105		0.108	0.122	0.119	-0.096	-0.226
		(0.063)		(0.058)	(0.074)	(0.072)	(0.201)	(0.257)
N sons owning* Leverage 96			-0.041					
			(0.019)					
N fam. members owning* Res. ROA 96				-0.011		-0.013		0.152
				(0.023)		(0.024)		(0.136)
Family ownership	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Dummy for family control > family ownership?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for est. year?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry F. E.?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Generation F. E.?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.04	0.04	0.04	0.03	0.02	0.02	0.06	0.08

[a]Notes:

1. The unit of observation is a firm.

2. "Founder alive" is the sub-sample of families where the founder is still alive; "Founder dead" is the sub-sample of families where the founder is dead. "Multiple sons" is the sub-sample of families where the founder had more than one son. "One son or less" is the sub-sample of families where the founder had at most one son.

3. The dependent variable in all regressions is a dummy variable that equals 1 if a firm has exited between 1996 and 2001.

4. "Residual ROA 1996" is computed as follows. First, we define firm-level ROA as the ratio of firm net profits over firm total assets. For the *full* sample of firms in our data (i.e. including firms that are not part of the 97 business groups studied here), we then regress firm-level ROA on 2-digit industry fixed effects and the logarithm of the firm's total assets. Residual ROA 1996 is the residual from this regression. "Leverage 1996" is defined as the ratio of a firm's total liabilities in 1996 to total assets in 1996. "Number of sons owning" is the number of sons with ownership stakes at the firm. "Number of fam. members owning" is the total number of family members with ownership stakes at the firm. "Family ownership" is the family ownership in the firm. "Family control > family ownership" is a dummy variable that equals 1 if family control in the firm is larger than family ownership in the firm, 0 otherwise. "Generations F.E." are dummy variables for the number of generations in a given family. "Industry F.E. are dummy variables for 1-digit industries. "Establishment year" is the year a given firm was established.

5. All regressions are estimated using OLS.

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Table 11
Exit (by 2001) on Leverage (1996) [a]

Dependent Variable: Exit

Sample:	All Firms	Founder alive	Founder dead [3-5] All	Multiple sons	One son or less
	[1]	[2]	[3]	[4]	[5]
Leverage 96	0.119	0.242	0.046	0.031	0.152
	(0.046)	(0.070)	(0.055)	(0.039)	(0.139)
Residual ROA 96	-0.075	0.192	-0.159	-.199	0.015
	(0.163)	(0.286)	(0.187)	(0.207)	(0.401)
Est. year	Yes	Yes	Yes	Yes	Yes
Generation F. E.	Yes	Yes	Yes	Yes	Yes
R^2	0.01	0.01	0.03	0.00	0.00

[a]Notes:

1. The unit of observation is a firm (N=622 in column 1).

2. "Founder alive" is the sub-sample of families where the founder is still alive; "Founder dead" is the sub-sample of families where the founder is dead. "Multiple sons" is the sub-sample of families where the founder had more than one son. "One son or less" is the sub-sample of families where the founder had at most one son.

3. The dependent variable in all regressions is a dummy variable that equals 1 if a firm has exited between 1996 and 2001.

4. "Residual ROA 1996" is computed as follows. First, we define firm-level ROA as the ratio of firm net profits over firm total assets. For the *full* sample of firms in our data (i.e. including firms that are not part of the 97 business groups studied here), we then regress firm-level ROA on 2-digit industry fixed effects and the logarithm of the firm's total assets. Residual ROA 1996 is the residual from this regression. "Leverage 1996" is defined as the ratio of a firm's total liabilities in 1996 to total assets in 1996. "Generations F.E." are dummy variables for the number of generations in a given family. "Establishment year" is the year a given firm was established.

5. All regressions are estimated using OLS.

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Table 12
Firm Performance (2001) on Leverage (1996) [a]

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Dependent Variable: Residual ROA 2001

Sample:	All Firms	Founder alive	Founder dead [3-5]		
			All	Multiple sons	One son or less
	[1]	[2]	[3]	[4]	[5]
Leverage 96	-0.066	-0.042	-0.090	-0.098	0.041
	(0.025)	(0.043)	(0.031)	(0.034)	(0.091)
Residual ROA 96	0.200	0.526	-0.025	-0.070	0.383
	(0.090)	(0.156)	(0.109)	(0.117)	(0.276)
Est. year	Yes	Yes	Yes	Yes	Yes
Generation F. E.?	Yes	Yes	Yes	Yes	Yes
R^2	0.06	0.11	0.02	0.02	0.00

[a]Notes:

1. The unit of observation is a firm. Sample is the set of group firms as of 1996 that survived until 2001 (N=567 in column 1).

2. "Founder alive" is the sub-sample of families where the founder is still alive; "Founder dead" is the sub-sample of families where the founder is dead. "Multiple sons" is the sub-sample of families where the founder had more than one son. "One son or less" is the sub-sample of families where the founder had at most one son.

3. The dependent variable in all regressions is residual ROA in 2001. Residual ROA (for 1996 or 2001) are computed as follows. First, we define firm-level ROA as the ratio of firm net profits over firm total assets. For the *full* sample of firms in our data (i.e. including firms that are not part of the 97 business groups studied here), we then regress firm-level ROA on 2-digit industry fixed effects and the logarithm of the firm's total assets. Residual ROA (for 1996 or 2001) is the residual from this regression.

4. "Leverage in 1996" is defined as the ratio of a firm's total liabilities in 1996 to total assets in 1996. "Generations F.E." are dummy variables for the number of generations in a given family. "Establishment year" is the year a given firm was established.

5. All regressions are estimated using OLS.