NBER WORKING PAPER SERIES

MIXING FAMILY WITH BUSINESS: A STUDY OF THAI BUSINESS GROUPS AND THE FAMILIES BEHIND THEM

Marianne Bertrand
Simon Johnson
Krislert Samphantharak
Antoinette Schoar

Working Paper 13738
http://www.nber.org/papers/w13738

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
January 2008

University of Chicago Graduate School of Business, NBER and CEPR; MIT Sloan, NBER, CEPR and BREAD; University of California at San Diego; MIT Sloan, NBER and CEPR. We thank Thorsten Beck, Utpal Bhattacharya, Alexander Dyck, Francisco Pérez-González, Randall Morck, Andrei Shleifer, and seminar participants Emory University, INSEAD, the Mitsui Life Symposium on Global Financial Markets (University of Michigan), the IMF, the MIT Organization Lunch, the MIT Finance Lunch Vanderbilt University, UCSD, UCLA, NBER Conference in Corporate Finance and the European Summer Symposium in financial markets at Gerzensee for many helpful comments. We particularly thank the organizers and participants at the Darden-World Bank emerging markets conference in May 2006.

Mixing Family With Business: A Study of Thai Business Groups and the Families Behind Them

Marianne Bertrand, Simon Johnson, Krislert Samphantharak, and Antoinette Schoar

NBER Working Paper No. 13738
January 2008
JEL No. D13,G30,J12,Z19

ABSTRACT

Families run a large fraction of business groups around the world. 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 when the founder is no longer present. 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. 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 ownership and control across a set of equally powerful descendants of the founder, which creates a race to the bottom in tunneling resources out of the group firms.

Marianne Bertrand
Graduate School of Business
University of Chicago
5807 South Woodlawn Avenue
Chicago, IL 60637
and NBER
marianne.bertrand@gsb.uchicago.edu

Simon Johnson
Sloan School of Management
Massachusetts Institute of Technology
50 Memorial Drive, E52-562
Cambridge, MA 02142-1347
and NBER
sjohnson@mit.edu

Krislert Samphantharak
IR/PS
UC, San Diego
9500 Gilman Drive
La Jolla, CA 92093-0519
krislert@ucsd.edu

Antoinette Schoar
Sloan School of Management
50 Memorial Drive, E52-455
Cambridge, MA 02142
and NBER
aschoar@mit.edu

1. Introduction

Family firms have attracted a lot of interest over the last few years. Recent research shows that the U.S. prevalence of dispersed ownership, with strong separation of ownership and control, is unusual. 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 and control lies with a single family. La Porta, Lopez-de-Silanes, and Shleifer (1999) show that a large fraction of public and private firms around the world are family-controlled. Family controlled firms often use pyramidal ownership structures to exert control over a large network of firms.[2] 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.[3]

But the finance literature so far has mostly treated the families behind business groups as monolithic entities. Most economic theories of family businesses 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. See, for example, Burkart, Panunzi and Shleifer (2003) and Caselli and Gennaioli (2005). 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, these theories typically ignore that families are constituted of individual members who 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.

Our goal in this paper is to explore how these within-family dynamics affect the organization, governance, and performance of business groups. For this analysis we created a new data set that contains detailed information on the family trees – starting with the founder and following until the current generation – and the exact group structure of over 90 of the largest family groups in Thailand.[4] We have three main sets of findings. First, we document in detail how control, management and ownership are allocated across different family members. The sons of the founder are central in ownership and control for these groups and substantially increase their role in ownership once the founder is gone. In groups where the founder had more sons, the sons hold a significantly larger fraction of the ownership and control rights of the group firms. In

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

[3] See also Battacharya and Rabikumar (1999) and Pérez-González (2006).

[4] Our data sources do not allow us to determine which family members have died (we are able to do this for founders only after substantial additional work for each). For this reason, measures of family size, number of sons, etc are measured from the start of the family business, unless otherwise noted.

fact, we find that sons "crowd-out" the ownership and control rights of other family members.

Second, we show that larger families, more precisely families where the founder had more sons, are associated with lower firm-level performance. Family structure appears to be a major determinant of firm-level performance. This effect is especially pronounced when the founder is dead. In contrast we find that the relationship between firm performance and the number of daughters or number of other family members is much smaller and in most cases insignificant.

Third, we identify a possible governance channel for these performance results. Families that have more sons tend to show a larger discrepancy between control and ownership rights (excess control), which is usually associated with poor governance and incentives for tunneling. The same increase in excess control cannot be found in families that have more daughters or other family members. Moreover, sons show higher levels of excess control once the founder is gone. A parallel relationship can be found for the organizational structure of the groups. Once the founder is gone, larger families are associated with larger groups (more firms in the group) and more pyramidal groups. Finally, we find that, controlling for family ownership, excess control by the founder's sons is associated with lower firm-level performance, again especially when the founder is dead. The same effect of excess control is not found for other family members. This suggests that a family member's ability to extract resources from a group firm depends on that family member's position within the family hierarchy and not just whether he or she has a position on the firm board.

One interpretation that emerges from our analysis is that the decay of family-run groups over time may in part reflect in-fighting for group resources as control becomes more diluted among rival family members, and in particular the sons of the founder. If powerful insiders compete against each other this could lead to a race to the bottom where one brother tries to tunnel resources out of the firm before another brother does. These rivalries across family members seem to become more pronounced when the founder of the family group has more sons and when the founder himself is gone.

However, we should stress that our analysis does not allow us to rule out additional explanations for the negative relationship between family size (and especially number of sons) and firm performance. A greater number of sons may lead to worse management decisions within the group if these family insiders crowd-out potentially more able professional managers. In addition, the average quality of a son may be lower as the number of sons increases, because of the limited parental resources that have to be shared across a larger set of children. The founder might feel compelled to let his sons manage the group firms irrespective of their ability because of personal preferences or cultural inheritance norms, see Bertrand and Schoar (2006).

There are a number of reasons why we focus our analysis on Thailand. First, Thailand is one of the few countries we are aware of where such detailed family structure data could be constructed with reasonable accuracy. For the major family groups now in

existence we were able to identify the founder who created the family business and to trace down the lineage of his children and future generations, in some cases for up to 5 generations. Second, there is a great amount of publicly available data for both publicly traded and privately held Thai family firms, which enables us to explore the role of private firms in more detail than is possible in many countries. Given the structure of business groups it is important improvement over previous studies that only relied on the public firms within the family groups. This data was collected for 1996, i.e. a year before the financial crisis.[5] For each of these business groups, we also constructed organizational charts that describe the network structure of the groups as of 1996.

Our paper builds on several recent studies that document that family firms have on average lower stock market valuations and lower rates of return than non-family firms, however none of these studies have data on the private firms within the family groups (see for example Claessens, Djankov, Fan and Lang (2002), or Conqvist and Nilsson (2003)). More recently, Pérez-González (2006) and Villalonga and Amit (2006) 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. Bennedson, Nielsen, Pérez-González, and Wolfenzon (2007) show a similar result for the case of small private firms in Denmark but are able to use gender composition as an instrument for the availability of male heirs. Our data allow us to go one step further and investigate the within family dynamics and the changes in governance structure that are associated with larger families and founder succession in business groups. 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., while 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. Morck, Stangeland and Yeung (2000) offer an explanation for the positive outcomes of family firms in some countries. If the government plays a central role in the economy, family connections may provide access to limited resources that in turn can lead to an even greater concentration of political influence in the hands of a few families.[6]

Our results are also related to the sociology literature on family groups that 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. 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 business families and how those might alter the direction and growth of the businesses.

[5] In separate work, we look at the effects of the 1997-98 financial crisis on family group structure and performance.

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

The rest of this paper is organized as follows. In section 2 we provide some brief background information on Thai business history, including the evolution of family businesses. Section 3 explains how our data was collected on both families and their groups of firms. Section 4 discusses the descriptive statistics. Section 5 establishes that greater family involvement, particularly by sons of the founder, is associated with worse performance. Section 6 presents our main findings and finally section 7 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. In the wake of this increased openness European businesses entered 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 best-known business families can be traced back to this period (Suehiro, 1997).

The revolution of 1932 marked the end of the absolute monarchy and led to an expansion of many family business groups that are important to this date. 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. These connections allowed the related companies to grow rapidly. The First National Economic Development Plan was introduced in 1961, which marked the beginning of the industrialization of the country. The manufacturing sector started to expand rapidly but was concentrated around few business groups that had connections with the banking sector and the government. The financial liberalization of the late 1980s and early 1990s created investment opportunities in real estate, telecommunication, and tourism and gave rise to new business groups that grew rapidly and eventually reached similar importance as the old groups in shaping the modern Thai corporate sector.

3. Data

The data for this project was collected from a number of different sources. In the following we will explain the data collection process in detail.

a. Firms

Each registered firm in Thailand has to submit annual financial statements, audited by an authorized auditor to the Ministry of Commerce. Registered firms include registered

partnerships, privately held limited companies, and publicly traded companies.[7] The financial statements of the largest 2,000 firms are published every year in a book series called *Thailand Company Information* (TCI). The criteria that TCI uses for including firms are (1) annual revenues of at least 200 million Baht (approximately eight million US dollars, using 1996 exchange rate), (2) listed on the Stock Exchange of Thailand, or (3) one of the leading companies in its industry. We collect this information for the cross section of all firms in 1996, since we wanted to capture the groups' structures and organizations before the Asian financial crisis. In total, our sample contains 2,153 firms in 1996, which includes all publicly traded firms and the largest privately held firms in Thailand.

The TCI database contains financial, ownership and board composition information at the firm level. For all firms, the financial information includes total assets, total liabilities, total revenues and net profits. The database also reports ownership data, the names and the percentage of company shares held by each shareholder, and the names of directors on the firm's board. For publicly traded firms, specific positions on the board a particular person holds are also reported. The database provides information on industry classification similar to 1-digit and 2-digit SIC codes, and founding year for each firm. We supplement this data with direct requests made to the Department of Business Development in the case of missing information. We had to hand-collect the data for our business groups, since TCI only publishes this data in book format.

For publicly listed firms, we can obtain additional information from the Stock Exchange of Thailand (SET), SET's *Listed Company Info*. This data is available in electronic format and distinguishes between consolidated and unconsolidated financial statements. We use unconsolidated financial statements in our analysis when looking at the outcomes of subsidiary firms within the group.

b. Families

To construct family trees for the family groups in our sample that are as accurate as possible we rely on a number of sources. We start at a publication by the Brooker Group entitled *Thai Business Groups: A Unique Guide to Who Owns What*., which covers the 150 leading business groups in Thailand and the history of each of these groups from the time the first business was founded. We then construct family trees for these business groups: For each of the family groups, we identify the founder and trace all of his direct descendants to the youngest generation that is active in business. We exclude family members that are younger than 15 years in 1996. We can infer this from the person's title, since in Thailand people drop their junior title when they turn 15.

Since the Booker book does not provide a full coverage of all family members we gather more detailed descriptions from alternative sources. First, when available, we collect family tree information from the funeral books published and distributed for the group founders or other family members. It is customary in Thailand when a public person dies that the descendants compile a funeral book that contains information about

[7] The Department of Business Development was previously known as the Department of Commercial Registration until the government reorganization that became effective in October 2002.

the person's life and his or her family relationships. These funeral books are collected at the National Library in Bangkok. Second, we compile data from various biographical accounts written on Thai families. For example, Sapphaibul (2001a, b) provide detailed information on 55 of the most famous business families. We supplement the information with articles, obituaries, wedding announcements and anniversary celebrations of these businesses families in various local magazines and newspapers. The full list of the biography and funeral books as well as articles is provided in the data appendix. Finally, we conduct informal interviews with family members of a few business families to verify the accuracy of our data.

The descriptive data are then systematically code in the form of family trees. We include in our family trees all of the family members we identify, whether or not they are involved in the family business. The founder generation is coded as generation one, his children are generation two, and so on. For each family member, we collect information on their specific position in the family tree (defined as the relationship to the founder), gender, birth order (defined as the rank order of children within a specific marriage), and biological vs. adopted status. We also code the information on individual education, working experiences, and involvement in family business, but these are less complete. We also rely on these sources to identify in which of the families the founder is still alive in 1996 and where an heir has taken over. Note that we cannot systematically track whether a given family member is still alive for most of the other family members. Finally, we collect the information on the name of the spouse(s) for each family member. This information is 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 carefully keep track of changes in last names, especially for married female family members and her descendants.

Since we have to rely on secondary sources to construct the family trees, there is some concern about the completeness of this information. In particular, one might be worried 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 93 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. Specifically, the fraction of females including all generations and adopted children is 38%. The fraction of females in the family trees excluding the first generation (the founders) and excluding adopted children is 42%.

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." Boonrwad Satrabutr started the family business in 1932. Boonrawd 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 then has to be 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 spellings 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. To alleviate any bias in matching that might result from the change in last name we also match all the daughters of a given family by first name only. This creates a unique match in all but one case, since in Thai culture it is very uncommon that two children within a family are given the same first name. Overall, we identify the firms that belong to each of our 93 business families. The criterion is that the family as a whole has the highest percentage of ultimate ownership in that company. Ultimate ownership is defined as the cash-flow rights derived from holding shares in the firm directly or indirectly through pyramids or cross-shareholdings.

4. Descriptive Statistics

The Family: Table 1 provides a first overview of the business families in our sample. We have detailed information on 93 families. The data appendix explains precisely how we obtained our sample of firms, including how we ascertained that a family controlled a particular firm. Taken as a whole, the 93 families in our dataset control more than 40 percent of all the assets in our 1996 sample of Thai firms.

While the average family size is 12.9 members, there is wide variation in family size, where the largest family has as much as 122 members and the smallest has three.[8] Note that we use here all family members in the family tree (but not children under age 15 at the time of our study – it is impossible to ascertain exactly how many of them are present in most families). We include all family members in our calculation, regardless of whether we have evidence that they are involved in the business or not, since we would create endogeneity bias in the family size variable otherwise. Due to data limitations, family size does not include spouses or the founder's siblings (and their descendants). In-laws are also excluded. We were not confident in our ability to collect high quality data on these relatives across all families.

There are two main sources of variation in family size: (1) the number of children each couple has, and (2) the number of generations that have passed since the founder started the business. On average, each family group has been around for 2.5 generations, with a minimum of 1 generation (three families), and a maximum of five generations

[8] 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.

(only one family).[9] The vast majority of the families in our data have only 2 or 3 generations. On average the number of male direct descendants of the founder is 9 and the total number of female direct descendants of the founder 5.9. The number of sons is 3.3 and the number of daughters is 2.4. These calculations include the founder's children from all wives. For 72 out of the 93 families, we have been able to ascertain if the founder had more than one wife.[10] This was the case in 24% of the 72 families. Finally, we can document that the founder is dead in a little under half of the families in our sample (48%).

Group Firms: Table 2 reports characteristics of the firms that these families own and operate. Every family in our sample controls at least one firm; 16 out of 93 groups control only one firm (for which we have data), while the remaining families control groups of firms.[11] The average family in our sample controls 6.56 distinct companies in 1996. There is wide variation between families with the biggest family group owning 58 firms. Since this family presents a large outlier in our group size distribution we rerun all our results in the following paper without this family and the results are robust to this omission. The average ROA of the groups is only 3% while leverage is almost 70%, measured as total liabilities divided by book value of total assets. The low average ROA and high leverage reflect the timing of the data, which was at the onset of the Asian financial crisis. On average the groups in our sample own 1.9 public firms and 4.7 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 largest number of vertical 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 average depth of the groups in our sample is 1.64, where the flattest groups have a maximum depth of zero (i.e., they are not pyramidal at all) and the deepest group has seven levels, i.e. seven layers below the firm at the top of the group. We also calculate two more statistics on the complexity of the upstream and downstream ownership holdings within the groups. "Number of firms owning a particular firm" calculates the largest number of downstream ties of an individual firms in the groups, while "number of firms owned by a particular firm" describes the same for upstream ties. The values for these are 1.57 and 2.33 respectively.

[9] Eight families in our sample are 4 or more generations old. However, several second generation family members are still alive in these families. In fact, in 4 out of these 8 families, we identify 2nd generation members with ownership and/or board positions in 1996. We have replicated the main parts of our analysis by dropping those 4 families that are 4 or more generations old and for which we do not see 2nd generation family members with ownership and/or board positions. The main regression results do not change.

[10] In some instances the founder had more than one wife at the same time, while in other cases the wives were consecutive. We do not differentiate between these two kinds of multiple wife situations in our analysis.

[11] By our criterion of assigning a firm to the family with highest ownership, no firms in our sample are owned by, controlled by, or involve more than one family.

Involvement of Family Members in Family Business: Panel A of Table 3 reports the ownership structure of the firms across different family members and the second panel repeats this structure for the board positions of the family members. Table 3, row (1) shows that average family ownership is 45.2% in the firms in our sample and on average 6.23 family members have ownership stakes in at least one firm within the family group. The sons of the founder on average hold 12.6% of the outstanding equity in the group firms while the daughters hold only 5.5%. About 1.4 sons on average have ownership in at least one of the group firms but only 0.8 of the daughters do. Overall, the fraction of family ownership held by the sons is 28% while the daughters own only 10% of the equity that is in the hand of family members.

Panel B shows that the numbers are even more skewed for the distribution of board positions that provide control rights over the firm. The fraction of board positions held by the sons relative to the fraction of other family members with board positions is even higher, at 51%. In contrast, the fraction family ownership held by daughters of the founder is 10% and only 10% of daughters hold board positions.

5. Family Structure and Family Involvement in the Business

As a first step toward understanding the role of individual family members in the performance and governance of the group firms we analyze the ownership and control positions of the different family members. We focus on two types of involvement: (1) board membership and (2) share ownership. We analyze how family involvement in business (board membership and ownership) varies with the size and composition of the family. The idea behind this analysis is to understand whether greater "availability" of family members is associated with more family members taking part in business. A possible alternative would be to select the same number of family members to run the firms, after choosing from a larger talent pool.

a. Ownership Structure

For that purpose, in Table 4, we first compute for each family the number of family members who hold some ownership in at least one of the group firms. In column (1) we regress the number of family members that have some ownership in one of the group firms on the size of the family measured as the number of family members across all generations. These regressions are estimated at the firm level, but standard errors are clustered at the family (i.e., group) level to account for the fact that the decisions to involve family members could be made at the central group level and not at the individual firm. 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.[12]

If the involvement of family members was not sensitive to their “supply” of the members, we should not see a relationship. However, we find a strong positive correlation between the size of the family and the number of family members who are involved in business. The estimated coefficient of 0.241 means that for every 4 additional

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

family members one additional person will have ownership. In column (2) we show that even when we include a dummy variable whether the founder is dead we find literally no change in the coefficient on family size and the coefficient on the founder dead dummy is negative but not significant at all. This suggests that even if the founder is dead there is no significant difference in the overall holdings of the family members.

But, these effects mask stark differences in the roles of different relatives of the founder, which we explore in the remaining columns of Table 4. For that purpose we break down ownership by the fraction of family ownership held by the sons of the founder, the daughters of the founders and the other family members (excluding the founder). In columns (3)-(5) we look at the ownership of sons as a function of the number of sons. Column (3) shows that the fraction of sons' ownership increases sharply with the number of sons. Indeed, the estimated coefficient is 2.651 which economically quite larger. An extra son in the family is roughly equivalent to a 3% more of the group ownership in the hands of the sons. This suggests that the fraction of the group ownership held by the sons is closely tied to the number of sons in the family. Interestingly, in column (4) when we include a dummy for whether the founder is dead, we find a very large positive and significant coefficient. The effect is equivalent to a 20% larger ownership stake be the sons in firms where the founder has died. This suggests that most of the shares of the founder go to the sons after his death. In column (5) we also include a control for family size. The coefficient on family size is negative but barely significant so that other family members have a minor crowed out effect on the sons.

In sharp contrast when we repeat the same analysis for the daughters in columns (6)-(8), we find no significant relationship between the number of daughters and their fraction of ownership in the group firms. Moreover, the holdings of daughters are not higher in families where the founder dead. We find similar result when looking at "other" family members (apart from the children of the founder) in column (9). There is no significant relationship between the share of family ownership held by other family members and by the number of other family members. However, there is a strong negative relationship between the number of sons in the family and the ownership for other family members. There is no such negative result for the number of daughters. Thus we see that sons heavily crowed out other family member but not their sisters. However, the sisters do not seem to hold much of the ownership to start with.

The results in Table 4 suggest that the number of family members involved in business increases with the number of "available" people in the family. However this result is entirely driven by the sons of the founders. If the founder has more sons, they increase their ownership stake at the expense of other family members. Once the founder has passed away, the ownership stakes of the sons increase, while the stakes of other family members including the daughter of the founder do not.

b. Board Positions

In Table 5 we repeat the regressions from Table 4 but where the dependent variable is the number of board positions held by various family members. Parallel to the family ownership, we find that involvement of family members on the board of firms

increases with the size of the family (column 1), and there is no significant change in the overall number of board positions when the founder is dead (column 2). As before, we find a very strong relationship between the number of sons of the founder and the fraction of board positions held by the sons (column 3). But in contrast to the effect of founder death on ownership the faction of board positions held by the sons is not significantly higher when the founder is dead (column 4). This difference to the ownership results suggests that the sons already assume board positions before the founder is dead, but ownership only passes on afterwards. Moreover, in column (5) we find that the number of other family members has a negative and significant (albeit small) relationship with the fraction of board positions held by the sons.

In columns (6) to (8) we show that the fraction of board position held by daughters is positively related to their number in the family, but the relationship is much weaker than that for the sons. In column (7) we show that the fraction of daughters' board positions is not higher in families where the founder is dead. And in larger families other family members reduce the share of board seats for daughters (column 8). Finally in column (9) we find a significant and positive relationship between the fraction of board seats to other family members and the number of "others" in the family. Again this is a contrast to the ownership results where a larger number of other family members did not result in a higher fraction of ownership. However, we again find that the coefficient on the number of sons is negative, indicating that sons crowd out board positions of other family members.

One concern that we find the effects from founder's sons and not from the daughters is that our data on daughters may be less complete than sons. However, given that the daughters included in our sample are more likely to be the ones with ownership and position, the regression coefficients for daughters should be positively biased, if anything. This is contrary to our results.

6. Real Effects of Family Structure on the Businesses They Run

We now turn to the question of whether the differences in the size and composition of families are associated with differences in group performance. Several hypotheses have been put forward as to 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 affect performance. Larger family involvement might also lead to more infighting over resources and segregation of business lines across family members. I It is also possible that business families are faced with a quantity/quality trade-off. As the number of family members increases, the amount of resources that can be devoted to each family member declines, leading to lower average managerial quality. Under these views, a larger family would have worse performance at the group and firm level.

On the other hand, one might conjecture that the market for corporate control and top executive talent is thin in Thailand. A larger family offers a deeper talent pool of potential managers to draw from. Moreover, if 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. These theories would imply that larger families would be positively related to group performance.

a. Family Structure and Firm Performance

In Table 6 we study the relationship between firm performance and the structure of the families behind the firms. Panel A presents regressions for all firms in the group and separately breaks out groups where the founder dead or alive. Panel B separately examines private and public firms. The unit of observation is a group firm (i.e., a firm that belongs to a family group). The dependent variable is residual Return on Assets (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 one-digit industry codes and a control for the measure of the log of total assets of the firm. The residual ROA is computed as the residual from this regression. The estimation of residual ROA includes all firms in our dataset, not just the group firms. Therefore, residual ROA 1996 measures the performance of the firms net of industry and firm size effects.

All regressions in Table 6 also include a dummy variable for the number of generations since the group was started and control for the age of the firm. Standard errors are clustered at the family-group level. In column (1) of Panel A, we regress residual ROA on the size of the family, measured as the number of people in the family tree. The coefficient on the family size is negative and not significant. However, when we include a measure for the number of sons in column (2) of Table 6, the coefficient on the number of sons is negative and highly significant. The estimated coefficient is -0.34. This means a one standard deviation move in the number of sons leads to a 1% decrease in the residual ROA of the family firms. This effect is quite large since all industry variation has already been taken out. The coefficient on the family size measure becomes in significant and very close to zero. In column (3), we add a dummy for the presence of sons from different wives (of the founder). The coefficient on the multiple wives dummy is negative but not significant. In column (4) we add the number of daughters of the founder, and find a negative effect that is similar in magnitude to the effect of sons. The presence of an additional daughter of the founder reduces residual return on assets by 0.216.

When we separate out firms where the founder is still alive versus those where the founder is dead, columns (5)-(8), we find a dramatic asymmetry in the results. In those firms where the founder is not alive anymore (columns (5) and (6)) we see a significant and robust negative relationship between performance and the number of sons, a somewhat smaller negative relationship to the number of daughters. In contrast, for firms in groups where the founder is still active (columns 7-8) we find a positive but not significant relationship between firm performance and number of sons. These results indicate that the negative relationship between firm performance and the number of sons (and to a lesser degree the number of daughters) is only present in families where the founder has passed away. In contrast while the founder is still alive the composition of the family does not appear to affect the performance of the firms. These findings are also consistent with previous studies such as Pérez-González (2006) and Villalonga and Amit

(2006), who also find that the performance of family firms is particularly poor once the founder is gone.

In Panel B of Table 6 we separate family firms into those that are publicly traded and those that are private. When we compare the results for private and public firms in Panel B we find that the negative relationship between the number of sons and firm performance is approximately of the same magnitude in both types of firms. There is no evidence for a significant negative effect of daughters when we divide up the firms in this fashion.

These results are interesting on a number of dimensions. 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. Instead, 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 founders' 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 involvement of sons. As we discussed before, an alternative explanation for this finding could be that family firms forgo the opportunity of hiring outsiders whose managerial skills might be much superior to those of family members; such a difference in managerial quality between family members and outsiders might be especially acute in larger families because of the quantity-quality trade-off in raising children. We unfortunately do not have data on the talent or educational background of sons, which could help us test this alternative story more directly. However, we do not think that this hypothesis is very plausible since these are some of the richest families in Thailand where the quality-quantity tradeoff would not be binding. Moreover, the results in the following section suggest that changes in governance structure do play an important role in the performance of group firms.

b. Governance and Family Structure

A number of papers have documented that pyramidal group structures allow the expropriation of minority shareholders by the shareholders of higher-up group firms by tunneling resources out of these firms, see for example Bertrand et al. (2001) or Claessens et al. (2000). A similar logic can apply even between family members or in our context even between sons of the founder. One plausible explanation for the lower performance of family groups with more sons is that the dilution of ownership between equally powerful sons increases the amount of tunneling from lower down group firms. If the sons of the founder do not trust each other to use their control rights in the interest of the firm, it can lead to a race to the bottom where one brother tries to tunnel resources out of the group firms before another brother can do so.

To investigate whether these performance results can be explained by a deterioration in the governance structure of family groups with more sons, we first analyze whether families with more sons display a greater discrepancy between cash flow

and control rights, which provides incentives for tunneling. We construct several measures of the discrepancy between control and ownership for each of the firms in the groups covered in our sample. We follow the standard measures of excess control defined as the gap between 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 allow us to also compute similar measures of excess control for each individual family member's ownership and control rights within each of the group firm. Given the central role played by sons in the results above, it is of interest to contrast excess control by sons with excess control by other family members.

In Table 7 we analyze whether groups become more pyramidal (i.e. larger excess control structures) if there are more family members (and in particular sons) especially once the founder is gone. While certainly not a proof of tunneling, such evidence would be consistent with greater *incentives* to tunnel. In Panel A of Table 7 we first regress the existence of family excess 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 group has been in existence. As before this family excess control variable includes the holdings of all family members. We find a positive, but only marginally significant relationship. In column (2), we include the number of daughters in the regression and find no significant relationship between family excess control and number of daughters. However, we find a very different picture if we separate the groups where the founder is dead versus those where he is still alive. For those groups where the founder is dead we find a strongly positive relationship between the measure of family excess control and the number of sons in the firms (column 3). We do not find this relationship for the number of daughters (column 4). However, for groups where the founder is still present, this relationship is negative and significant (column 5). Again we do not find this result for the number of daughter (Column 6).

We also replicate these results for the private and public firms within the groups, columns (7)-(10). We find that the sensitivity of family excess control to the number of sons is larger and more significant in public firms. This indicates that more sons is associated with especially high tunneling incentives in publicly-traded firms, especially when the founder is gone. Of course though, because we do not directly measure tunneling, there are other possible interpretations for this finding. For example, this finding may also reflect a desire by founders to have each son manage a (more prestigious) publicly-traded firms, leading to an increase in the number of publicly-traded firms in the lower levels of the pyramidal structure.

In Panel B we focus on excess control in the hands of the sons relative to the rest of the family. The dependent variable is a simple count of the number of sons with excess control. This measure of excess control allows us to understand whether sons in particular see an increase in excess control once the founder is dead. We find that families with more sons also have larger number of sons who have excess control (column1). However, when we include the number of daughters as an explanatory variable (column 2) we find a significant negative coefficient. This suggests that in families with more daughters,

daughters crowd out some of the excess control from the sons. However, the number of sons that have excess control is much larger for families where the founder is gone than where he is still alive (columns 3-6). In fact, the coefficient on the number of sons is about twice as large when the founder is gone (column 14) versus when he is still alive (column 16). And again, we find that the results are stronger for public firms than for private firms (columns 17-20).

We also replicate the results using a measure of the average difference between control and ownership among sons at a given firm (Panel C, columns 21-30). We find that more sons are associated with a higher average difference between control and ownership for sons. The relationship is stronger when the founder is dead and stronger in the subset of publicly-traded firms.

Overall, these results further suggest that the presence of more sons leads to a governance structure that is more pyramidal, which means that the gap between control and ownership rights is becoming more skewed in the hands of the sons. This allows for more "expropriation positions" for sons once the founder is gone. Moreover, if the trust relation between the sons is not strong, there are increased incentives for tunneling between the sons as they race to secure their part of the profits before one of the other brothers can tunnel it out.

One should note that it is theoretically possible that an increase in the number of controlling shareholders might *improve* corporate governance. For example, Gomes and Novaes (2006) suggest that under certain conditions it is optimal for founders to share control with multiple outside shareholders to increase the value of the firm instead of just selling ownership stakes to outside shareholders. Their model assumes that under shared control each of the large shareholders has *veto power* against decisions that would reduce the value of their individual ownership stakes. This can enhance the overall value of the firm if private benefits are distributed unequally among controlling shareholders and projects with low public benefits but high private benefits can thus be blocked. Thus the critical difference between these results and our interpretation relies on the assumption that even controlling shareholders *cannot exercise effective veto power* if each controlling shareholder can tunnel resources from the firm unilaterally. In other words, the hypothesis we propose in the current paper relies on the idea that controlling shareholders cannot block each other's transgression and thus engage in a race to the bottom. These types of misbehaviors become bigger when there are more sons involved as large shareholders. While we admittedly cannot prove this assumption, we think it is a reasonable description of emerging markets where enforcement is weak. In contrast we think that the board negotiation process described in Gomes and Novaes (2006) might be more representative of shareholder behavior in more developed capital markets.

In regressions not reported here, we also directly analyzed how the depth of business groups relates to family size. This analysis very much parallels the analysis performed in Table 7. We defined depth as being the maximum number of layers within a group separating a group firm from the firm(s) at the top of that group. This variable ranges from 0 to 6, with a mean of about 2. Not surprisingly given the results above, we

found that larger families are associated with deeper groups. In families where the founder is dead we see a strong positive relation between the number of sons and group depth. But there is a negative and barely significant relationship when the founder is still around. In other words, consistent with the results in Table 7, larger families are associated with deeper and more pyramidal group structures once the founder is dead.

c. Group Size and Diversification and Family Structure

The above analysis suggests that the organizational and control structure of groups are importantly related to the size and composition of the family behind them, especially once the founder is dead. We now discuss possible relationship between family structure and other group characteristics. Specifically, we analyze whether the number of firms in a group and its level of industry concentration change when there are more sons in the group or the founder is dead. In Table 8, we regress these different group characteristics on our family structure variables. The regressions in this table are performed at the family-level. All regressions in this table include a control for the age of the group.

The first dependent variable we consider is the number of firms in the group (as of 1996). Column (1) of Table 8 documents a positive and statistically significant correlation across families between the number of firms in the group and the number of sons in the family but not a significant relationship with the total number of family members. In column (2) we focus only on the families where the founder is dead and find that this positive relationship between the number of group firms and the number of sons is entirely driven by the those families where the founder is dead. Interestingly, neither family size not the number of sons is correlated with group size in families where the founder is still alive (column 3). In column (4)-(6), we repeat the previous regression but use the total assets as a dependent variable. We find that larger families are associated with larger total group assets; however, the effect is economically much smaller. Moreover, we do not find any relationship with the number of sons in the group. These combined results suggest that the average size of the firms within a group declines with the number of male family members. In other words the assets of the group tend to be divided into more separate firms with the number of sons in the family once the founder is gone.

In columns (7)-(9), we also use the Herfindahl concentration index at the (Thai equivalent of) 2-digit SIC level as a dependent variable. We find that the industry concentration of a group declines when there are more sons in the family but only when the founder is gone. This result can be seen as a corollary to the previous result on the number of firms in a group, since a group can become more diversified when there are more firms within the group.

d. Firm Performance and Excess Control

In a final step, we want to investigate whether there is a direct relationship between the performance of the group firms and the level of excess control by family members. If the poor performance of family firms after the founder's departure is in part explained by the deteriorating governance due to the many sons that are vying for the group's assets, we would expect that there should be a direct relationship between excess control and firm performance. Of course we need to be careful not to make any inference about the direction of causality from this analysis, since we showed above that both performance and governance are related to family structure.

To investigate this question, in Panel A of Table 9 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).[13] We use a control for the year the firm was established in all the regressions. Moreover we include family fixed effects in all regressions to control for fixed differences in the use of control between families. Across all groups, in column (1) we find a robust strong negative correlation between total family ownership and firm performance. Increased family involvement in ownership has a negative correlation with performance. This is in line with our prior findings in Table 7 that groups with larger families perform less well. We also 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. When we repeat this regression for the groups where the founder is dead (column 3) and those where the founder is still around (column 5), we see that there is a significant negative relationship between family ownership and residual ROA once the founder is dead, but no such relationship when the founder is still alive. We also see that the coefficient on the excess family control is negative (but insignificant) when the founder is dead but positive when he is still alive.

We now break out total family control and ownership into individual-specific measures of excess control. Specifically, we contrast the excess control in the hands of the sons with excess control of other family members. In column (2) we find a strong negative correlation between residual ROA and the measure of excess control of the sons, but no effect for the other family members. Then we divide families into those where the founder is gone (column 4 of Panel A) versus those where the founder is still involved (column 6 of Panel A). We find a large and significant negative correlation between residual ROA and the measure of excess control between the sons when the founder is gone but no effect on the other family members. In contrast for those groups where the founder is still involved there is no significantly negative relationship between residual ROA and excess control of the sons. We find parallel results when we use the *number* of sons with excess control rather than the difference between the sons (not reported) but the coefficient estimates are not significant at traditional levels.

[13] For the precise construction of the measure please see Appendix A. If there is excess control at the individual level, there is excess control at the family level.

One possible interpretation for the asymmetry we observe between sons and other family members is that it reflects on the differences in ownership stakes between sons and other family members. It might be that the gap between control and ownership of any shareholder (not only sons) reduced profitability but only when the degree of control is sufficiently large for this shareholder to be relevant. We checked this possibility (results not reported) by creating a dummy variable that equals to 1 when sons' ownership is more than 25% (0 otherwise) and another dummy variable that equals to 1 when other family members' ownership is more than 25% (0 otherwise). We then interacted these dummy variables with sons' excess control and others' excess control, respectively. The results confirm that even when others own more than 25%, their excess control still does not matter for profitability. On the contrary, sons' excess control matters both when their ownership is less than 25% and when their ownership is more than 25%.[14] Hence, it does appear that sons' excess control differentially impact profitability than other family members' excess control, even when these other family members also are relevant shareholders.

These results are very striking. They indicate that excess control in the hands of sons is strongly negatively associated with firm performance but excess control in the hands of other family members does not have the same effect. This might suggest that potential governance abuses within family are not merely a function of the excess control rights a family member holds, but it is also determined by the person's position within the family. A son of the founder might have greater freedom to use any excess control rights he holds to his benefit than other family members, even if they are in a similar position. This might give us an insight into the internal dynamics of the family and could suggest that there is a layer of governance or power structure within the family itself that affects the way family members can exercise their ownership and control rights within the family firms.

Finally, in Panel B of Table 9 we run the same set of regressions we did in Panel A but now divide the sample into public and private firms. We find that the negative relationship between performance and excess control by sons is entirely driven by the private firms (contrast column 11 with column 13). For the public firms the relationship between firm performance and excess control by sons is actually positive and significant. If the public firms within the family group are important for the image of the family or even as a way for the sons to achieve liquidity of their ownership stakes, then the observed positive relationship for the public firms could be suggestive of the propping of public firms where sons hold excess control. Overall these findings reinforce a governance interpretation for our findings as we expect tunneling to be more prominent in the opaque private firms and propping in the more visible public firms.[15]

[14] We do find though that the negative effect of sons' excess control on performance is stronger when their ownership is higher.

[15] At first glance, one could view these findings as inconsistent with the findings in Table 7, where we find a stronger relationship between excess control and number of sons in public firms than private firms. However, it is important to stress again that the analysis in Table 7 only captures tunneling incentives, and not tunneling opportunities or actual tunneling. A given level of incentives for tunneling in public 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, and this is predominantly concentrated at private firms. In addition, the contrast between groups where the founder is no longer present and those where the founder is still alive suggests that the founder may have a disciplining effect on the sons' behavior. 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 company's resources.

7. Conclusion

Families run a large fraction of firms around the world. 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 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. 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. Firms where many sons of the founder 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 son is trying to tunnel resources out of the company before his brother do the same.

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

---

may not translate in as much opportunities for tunneling in these firms given the stronger external monitoring public firms are subject to.

these groups. These conflicts seem to 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 are 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.

References

Akira, Suehiro, (1997) Capital Accumulation in Thailand 1855-1985. Chiang Mai, Thailand: Silkworm Books.

Anderson, Ronald C. and David M. Reeb, 2003, Founding-Family ownership and Firm Performance: Evidence from the S&P 500, The Journal of Finance, Vol 63, 1301-1328.

Bennedson, Morten, Kasper Meisner Nielsen, Francisco Pérez-González, and Daniel Wolfenzon, 2007, Inside the family firm: The role of families in succession decisions and performance, Quarterly Journal of Economics, forthcoming

Bertrand, Marianne, Paras Mehta and Sendhil Mullainathan, 2002, Ferreting out Tunneling: An Application to Indian Business Groups, Quarterly Journal of Economics, 2002, 117(1), pp. 121-48.

Bhattacharya, Utpal and B. Ravikumar, 2003, Capital Markets and the Evolution of Family Businesses, Journal of Business, Vol 74, 187-220.

Brooker Group, 2003, Thai Business Groups: A Unique Guide to Who Owns What.

Burkart, Mike, Fausto Panunzi and Andrei Shleifer, 2003, Family firms, Journal of Finance, October.

Caselli, Francisco and Nicola Gennaioli, 2005, Dynastic Management, revised working paper, London School of Economics, December (earlier version was NBER Working Paper No 9442.)

Chun, Chi-Nien, 2001, Markets, Culture and Institutions: The Emergence of Large Business Groups in Taiwan, Journal of Management Studies, Vol 38, 720-745.

Claessens, Stijn, Simeon Djankov, Joseph P. H. Fan and Larry H. P. Lang, 2002, Disentangling the Incentive and Entrenchment Effects of Large Shareholders, The Journal of Finance, Vol 62, 2741-2771.

Claessens, Stijn, Simeon Djankov and Larry H. P. Lang, 2000, The separation of ownership and control in East Asian Corporation, The Journal of Financial Economics, Vol 58, 81-112.

Cronqvist, Henrik and Mattias Nilsson, 2003, Agency Costs of Controlling Minority Shareholder, Journal of Financial and Quantitative Analysis, Vol 38, 695-719.

Gomes, Armando and Walter Novaes, 2006, Sharing of Control versus Monitoring as Corporate Governance Mechanisms, Working paper.
Jones, G. and M. B. Rose, 1993, Family Capitalism, Business History, Vol 35, 1-16.

Gugler, Klaus, 2001, Corporate Governance and Economic Performance, European Corporate Governance Network, Oxford University Press, Oxford.

Khanna, Tarun and Krishna Palepu, 2000, Is Group Affiliation Profitable in Emerging Markets? An Analysis of Diversified Indian Business Groups, The Journal of Finance, Vol 55, 867-891.

La Porta, Rafael, Florencio Lopez-de-Silanes and Andrei Shleifer, 1999, Corporate Ownership Around the World, The Journal of Finance, Vol 54, 471-518.

Limligan, V.S. (1986) The Overseas Chinese in ASEAN: Business Strategies and Management Practices. Manila: Vita Development Corp.

Marman, Daniel, 2002, The Emergence of Business Groups: Israel and South Korea Compared, Organization Studies, Vol 23, 737-758.

Morck, Randall, David Stangeland and Bernard Yeung, 2000, Inherited Wealth, Corporate Control, and Economic Growth: The Canadian Disease, in Concentrated Corporate Ownership, Randall Morck, editor, NBER conference volume, University of Chicago Press.

Pérez-González, Francisco 2006, Inherited Control and Firm Performance, American Economic Review, forthcoming.

Redding, S. G., 1990, The Spirit of Chinese Capitalism. New York: W. de Gryuter.

Sabphaibul, Thanawat. The Legend of 55 Business Families: Book 1. Bangkok: Nation Publishing, 2001.

Sabphaibul, Thanawat. The Legend of 55 Business Families: Book 2. Bangkok: Nation Publishing, 2001.

Villalonga, Belen and Raphael Amit, 2006, How do family ownership, management, and control affect firm value? Journal of Financial Economics, 80, no. 2 (May 2006): 385–417.

Whyte, M. K., 1996, The Chinese family and economic development: obstacle or engine?, Economic Development and Cultural Change, Vol 45, 1-30.

Wong, Siu-lun, 1997, The Chinese family firm: a model, The British Journal of Sociology, Vol 16, 58-72.

Appendix A: Construction of Excess Control Measures

Individual ownership is calculated by summing a given family member's 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 rights are simply the shares that the family member holds. However, in case of a chain shareholding, control over the voting rights 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 control over all chains. Finally, ultimate control is the sum of direct and indirect control for each family member. Using the previous scenario, Mr. A directly controls 30% voting rights of firm X. He also indirectly controls min{40%, 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 (i.e., extent of control greater than or in excess of ownership stake) at the individual level. In the example above, Mr. A has excess control over firm X (by 12%).

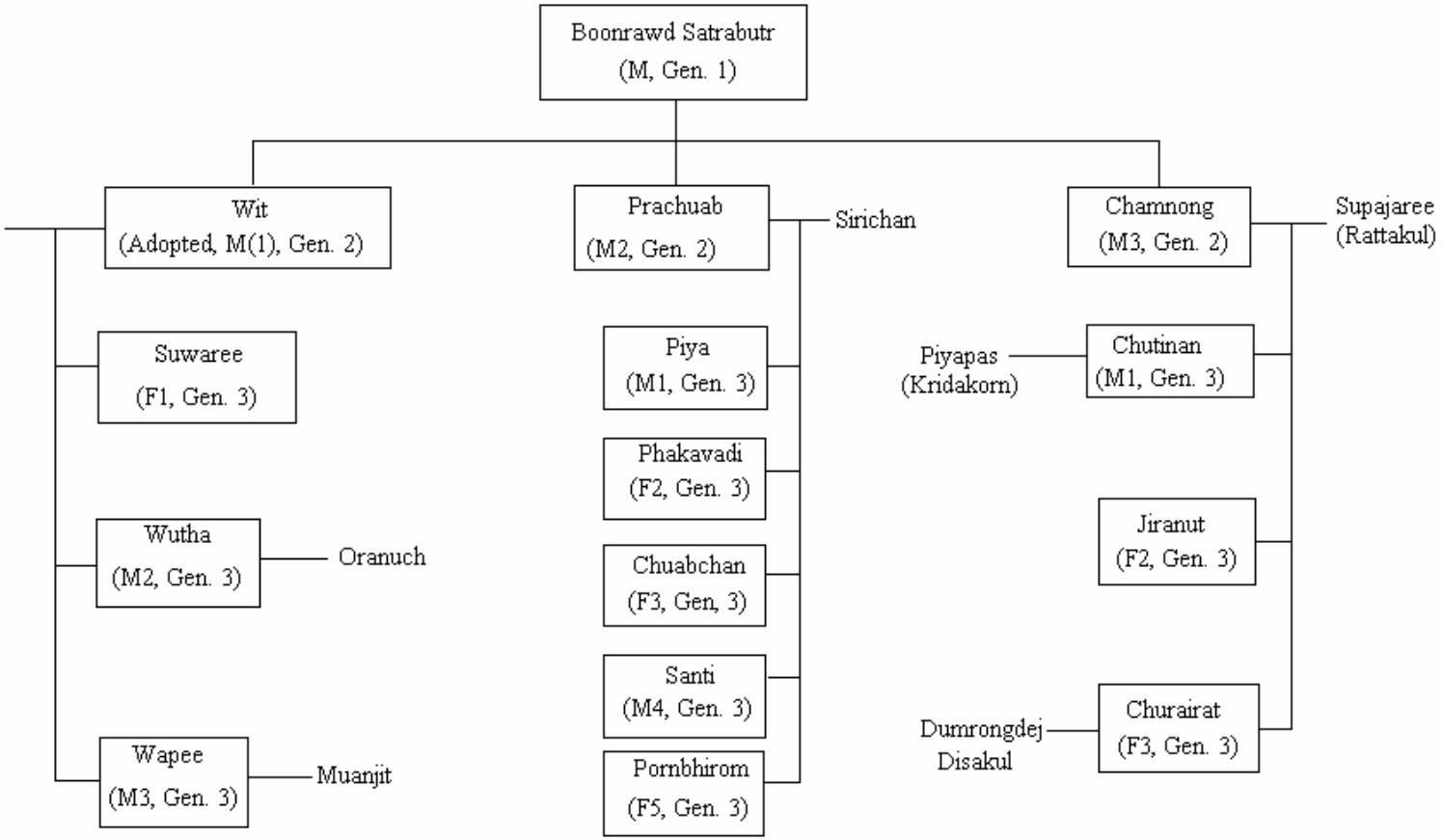
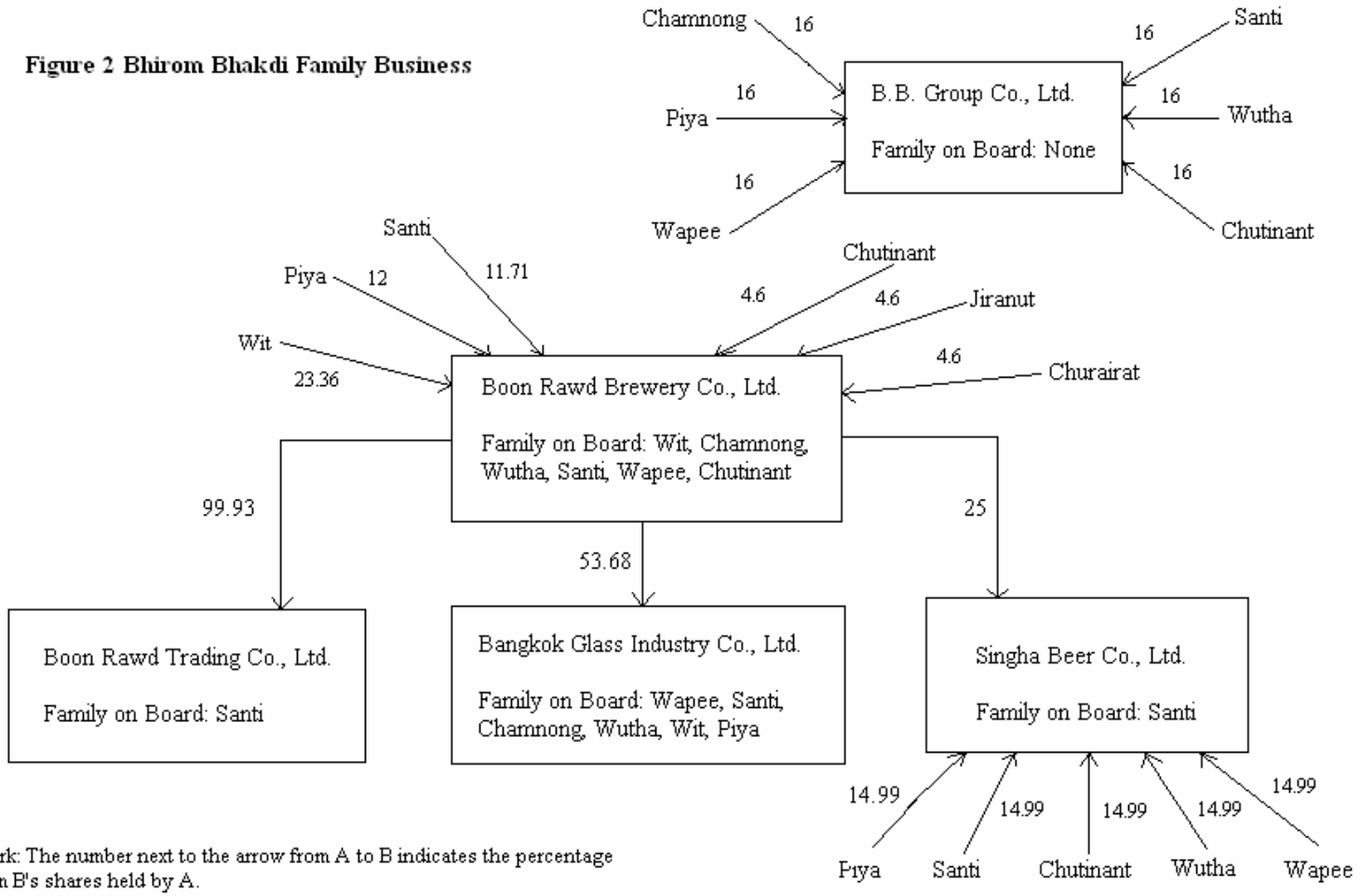


Figure 1 Bhirom Bhakdi Family Tree

Remark: M2 = Male with Birth Order = 2; F3 = Female with Birth Order = 3

Figure 2 Bhirom Bhakdi Family Business



Remark: The number next to the arrow from A to B indicates the percentage of firm B's shares held by A.

Table 1 Summary Statistics: Family Characteristics

The unit of observation is a family. All the data are approximately as of 1996. Family size is the total number of direct descendants of the founder of each business group, including the founder himself. Specifically, family size does not include spouses, founder's siblings and descendants of founder's siblings. Number of generations is defined as the number of generations of the family from the founder (generation 1) to the latest generation that is active in family business. Number of male family members is the total of number of direct descendants of the founder, including the founder himself. Number of female family members is the total number of direct descendants of the founder. Number of sons is the total number of founder's sons from all wives. Number of daughters is the total number of founder's daughters from all wives. Multiple wives is a dummy variable with the value of one if the founder had more than one wives, and zero otherwise. Founder dead is a dummy variable with the value of one if the founder was dead by 1996 and zero otherwise. The number of observations in full sample is 93 families, except for multiple wives.

Variable	Number of Families	Mean	Std. Dev.	Min	Max
Family Size	93	12.94	17.51	1	122
Number of Generations	93	2.47	0.72	1	5
Number of Male Family Members	93	9.06	10.28	1	69
Number of Female Family Members	93	5.88	8.08	0	51
Number of Sons	93	3.26	2.57	0	14
Number of Daughters	93	2.40	2.30	0	12
Multiple Wives	72	0.24	0.43	0	1
Founder Dead	93	0.48	0.50	0	1

Table 2 Summary Statistics: Firm Characteristics

Panel A: The unit of observation is a firm. All data are as of 1996. Return on assets is the net profit divided by the total assets at the end of the year. Leverage is group's total liabilities divided by group's total assets. Residual return on assets is the residual from the OLS regression of return on assets on 1-digit SIC fixed effects and natural logarithm of firm's total assets across all firms in the full sample, including firms not belonging to the 93 families. Firm age is as of 1996.

Panel B: The unit of observation is a family business group. All data are as of 1996. Number of firms is the number of public and private firms in our sample that belonged to families. Log of total assets is the natural logarithm of group's total assets in thousand baht at the end of the year. Return on assets is the net profit divided by the total assets at the end of the year. Leverage is group's total liabilities divided by group's total assets. Group age is defined as the age of the oldest firm for each group in our sample. Group depth is defined as the maxumum depth of the deepest firm in the group, where firm's maximum depth is the longest chain that vertically traces the firm to family's ultimate ownership. Number of firms owning a particular firm is the largest number of group firms that own a particular firm in the same group. Number of firms owned by a particular firm is the largest number of group firms that are owned by a partucular firm in the same group. The total number of groups in full sample is 93. When computing group stucture variables, two groups are dropped out due to their complicated structure of cyclical cross-shareholdings.

Variable	Number of Firms	Mean	Std. Dev.	Min	Max
	Panel A: Firm Level				
Returns on Assets	586	0.03	0.07	-0.11	0.21
Residual Returns on Assets	586	0.10	7.25	-19.86	19.71
Leverage	586	0.71	0.25	0.21	1.10
Firm Age	586	18.06	13.57	0	114
	Panel B: Group Level				
Number of Firms	93	6.56	9.21	1	58
Number of Public Firms	93	1.90	2.58	0	19
Number of Private Firms	93	4.66	7.81	0	53
Log of Total Assets	93	16.43	1.77	12.54	21.22
Returns on Assets	93	0.03	0.04	-0.11	0.21
Leverage	93	0.69	0.18	0.29	1.10
Group Age	93	32.10	16.98	7	114
Group Depth	91	1.64	1.55	0	7
Number of Firms Owning a Particular Firm	91	1.57	1.67	0	7
Number of Firms Owned by a Particular Firm	91	2.33	3.94	0	23

Table 3: Summary Statistics of Family Involvements

The unit of observation is a family business group. For each observation, the variables are computed as the arithmetic average across firms in the group. The data are as of 1996. The number of observations in full sample is 93 groups (families) except for those for fraction of family board positions because some families do not hold any board positions in some family-owned firms.

Family ownership is the total percentage of ultimate ownership directly or indirectly held by family members in a particular firm. Number of family members with ownership is the number of family members that directly or indirectly own a particular firm. Sons' ownership is the total percentage of ultimate ownership directly or indirectly held by all founder's sons. Daughters' ownership is the total percentage of ultimate ownership directly or indirectly held by all founder's daughters. Number of sons with ownership is the number of founder's sons that directly or indirectly own a particular firm. Number of daughters with ownership is the number of founder's daughters that directly or indirectly own a particular firm. Fraction of family ownership held by sons is computed as sons' ownership divided by family ownership. Fraction of family ownership held by daughters is computed as daughters' ownership divided by family ownership. Fraction of family ownership held by others is the fraction of family ownership not held by founder's sons or daughters.

Number of family member with board position is the number of family member with board position in at least one of the group firms. Number of sons with board position is the number of founder's sons with board position in at least one of the group firms. Number of daughters with board position is the number of founder's daughters with board position in at least one of the group firms. Fraction of board positions held by sons is computed as the number of founder's sons on board divided by the number of all family members on board for a particular firm. Fraction of board positions held by daughters is computed as the number of founder's daughters on board divided by the number of all family members on board for a particular firm. Fraction of board positions held by others is computed as the number of family board positions not held by founder's sons or daughters divided by the number of board positions held by any family members for a particular firm.

Variable	Number of Families	Mean	Std. Dev.	Min	Max
Panel A: Involvement in Ownership					
Family Ownership (%)	93	45.17	25.37	3.64	100.00
Number of Family Members with Ownership	93	6.23	4.82	1	36.57
Sons' Ownership (%)	93	12.61	15.52	0	63.08
Daughters' Ownership (%)	93	5.49	10.14	0	45.50
Number of Sons with Ownership	93	1.39	1.38	0	6
Number of Daughters with Ownership	93	0.81	1.11	0	5
Fraction of Family Ownership Held by Sons	93	0.28	0.28	0	1
Fraction of Family Ownership Held by Daughters	93	0.10	0.16	0	1
Fraction of Family Ownership Held by Others	93	0.62	0.33	0	1
Panel B: Involvement in Board Positions					
Number of Family Members with Board Position	93	1.24	0.87	0	5
Number of Sons with Board Position	93	0.51	0.65	0	4
Number of Daughters with Board Position	93	0.10	0.25	0	1
Fraction of Family Board Positions Held by Sons	85	0.40	0.39	0	1
Fraction of Family Board Positions Held by Daughters	85	0.08	0.22	0	1
Fraction of Family Board Positions Held by Others	85	0.52	0.41	0	1

Table 4 Family Involvement in Business Ownership

The unit of observation is a firm. Number of family members with ownership is the number of family members that directly or indirectly own a particular firm. Fraction of family ownership held by sons is computed as sons' ownership divided by family ownership. Fraction of family ownership held by daughters is computed as daughters' ownership divided by family ownership. Fraction of family ownership held by others is the fraction of family ownership not held by founder, his sons or his daughters. Family size is the total number of direct descendants of the founder of each business group, including the founder himself. Founder dead is a dummy variable with the value of one if the founder was dead by 1996 and zero otherwise. Number of sons is the total number of founder's sons from all wives. Number of daughters is the total number of founder's daughters from all wives. Number of others is family size minus number of sons and number of daughters. Firm age is as of 1996. All regressions are estimated using OLS and controlled for number of generations fixed effects. Standard errors are clustered at family-group level. Robust standard errors are in parentheses. * represents coefficients significant at 10%; ** significant at 5%; and *** significant at 1%.

	Number of Family Members with Ownership		Fraction of Family Ownership (x 100) Held by:						
			Sons			Daughters			Others
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Family Size	0.241	0.243			-0.371			0.020	
	(0.086)***	(0.087)***			(0.196)*			(0.085)	
Founder Dead? (Yes=1)		-0.605		20.372	20.499		-0.043	-0.454	-20.359
		(1.285)		(8.437)**	(8.182)**		(8.241)	(8.514)	(10.652)*
Number of Sons			2.651	2.140	3.542			0.268	-3.751
			(1.390)*	(1.398)	(1.437)**			(0.857)	(1.407)***
Number of Daughters						0.369	0.370	0.174	1.066
						(0.629)	(0.601)	(0.793)	(1.617)
Number of Others									0.291
									(0.231)
Firm Age	0.034	0.036	0.044	-0.006	-0.003	0.133	0.133	0.134	-0.119
	(0.024)	(0.025)	(0.107)	(0.098)	(0.096)	(0.067)*	(0.066)**	(0.067)**	(0.119)
Number of Generations F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.498	1.787	20.258	11.388	13.191	4.091	4.111	3.438	82.220
	(1.704)	(1.597)	(8.626)**	(7.423)	(7.543)*	(2.978)	(5.826)	(6.070)	(9.506)***
Observations	521	521	521	521	521	521	521	521	521
R-squared	0.55	0.55	0.39	0.42	0.43	0.08	0.08	0.08	0.41
Number of Families	93	93	93	93	93	93	93	93	93

Table 5 Family Involvement in Board Positions

The unit of observation is a firm. Number of family member with board position is the number of family member with board position in a given firm. Fraction of board positions held by sons is computed as the number of founder's sons on board divided by the number of all family members on board for a particular firm. Fraction of board positions held by daughters is computed as the number of founder's daughters on board divided by the number of all family members on board for a particular firm. Fraction of board positions held by others is computed as the number of family board positions not held by founder, his sons or his daughters divided by the number of board positions held by any family members for a particular firm. Family size is the total number of direct descendants of the founder of each business group, including the founder himself. Founder dead is a dummy variable with the value of one if the founder was dead by 1996 and zero otherwise. Number of sons is the total number of founder's sons from all wives. Number of daughters is the total number of founder's daughters from all wives. Number of others is family size minus number of sons and number of daughters. Firm age is as of 1996. All regressions are estimated using OLS and controlled for number of generations fixed effects. Standard errors are clustered at family-group level. Robust standard errors are in parentheses. * represents coefficients significant at 10%; ** significant at 5%; and *** significant at 1%.

	Number of Family Members with Board Position		Fraction of Family's Board Positions (x 100) Held by:						
			Sons			Daughters			Others
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Family Size	0.013	0.014			-0.746			-0.145	
	(0.003)***	(0.003)***			(0.242)***			(0.077)*	
Founder Dead? (Yes=1)		-0.174		3.474	4.778		2.026	2.655	-6.636
		(0.237)		(9.438)	(8.698)		(6.045)	(5.947)	(10.384)
Number of Sons			3.821	3.753	6.551				-7.011
			(1.278)***	(1.303)***	(1.494)***				(1.287)***
Number of Daughters						1.026	1.003	1.521	1.993
						(0.359)***	(0.369)***	(0.511)***	(1.245)
Number of Others									0.702
									(0.255)***
Firm Age	0.020	0.020	0.062	0.058	0.049	0.038	0.036	0.036	-0.064
	(0.004)***	(0.004)***	(0.114)	(0.113)	(0.123)	(0.064)	(0.059)	(0.059)	(0.118)
Number of Generations F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.424	0.507	24.394	22.634	26.607	1.545	0.415	1.713	71.414
	(0.155)***	(0.231)**	(6.646)***	(8.163)***	(7.516)***	(1.980)	(4.603)	(4.632)	(8.977)***
Observations	580	580	323	323	323	323	323	323	323
R-squared	0.08	0.08	0.20	0.21	0.24	0.06	0.06	0.07	0.29
Number of Families	93	93	93	93	93	93	93	93	93

Table 6 Firm Performance and Family Stucture

The unit of observation is a firm. Residual return on assets is the residual from the OLS regression of return on assets on 1-digit SIC fixed effects and natural logarithm of firm's total assets across all firms in the full sample, including firms not belonging to the 93 families. Number of sons is the total number of founder's sons from all wives. Sons from different wives is a dummy variable with value of one if there are founder's sons from different founder's wives, and zero otherwise. Number of daughters is the total number of founder's daughters from all wives. Firm age is as of 1996. All regressions are estimated using OLS and controlled for number of generations fixed effect. Contants are included but not reported here. Standard errors are clustered at family-group level. Robust standard errors are in parentheses. * represents coefficients significant at 10%; ** significant at 5%; and *** significant at 1%.

	Dependent Variable: Residual ROA (x 100)							
	All Firms				Founder Dead		Founder Alive	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Family Size	-0.043	0.000	0.014	0.016	0.023	0.017	-0.530	-0.136
	(0.032)	(0.025)	(0.023)	(0.023)	(0.022)	(0.021)	(0.425)	(0.791)
Number of Sons		-0.340	-0.473	-0.284	-0.483	-0.334	0.348	0.117
		(0.156)**	(0.132)***	(0.160)*	(0.114)***	(0.151)**	(0.797)	(0.948)
Sons from Different Wives			-0.386		-0.402		4.649	
			(0.802)		(0.681)		(2.828)	
Number of Daughters				-0.216		-0.145		-0.291
				(0.108)**		(0.085)*		(0.821)
Firm Age	0.026	0.024	0.036	0.022	0.049	0.048	0.001	-0.052
	(0.020)	(0.020)	(0.020)*	(0.020)	(0.021)**	(0.021)**	(0.063)	(0.060)
Number of Generations F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	586	586	507	586	309	337	198	249
R-squared	0.03	0.04	0.05	0.04	0.08	0.07	0.04	0.02
Number of Families	93	93	93	93	37	45	33	48

	Public		Private	
	(9)	(10)	(11)	(12)
Family Size	0.068	0.068	-0.025	-0.023
	(0.021)***	(0.023)***	(0.035)	(0.037)
Number of Sons	-0.393	-0.279	-0.427	-0.231
	(0.166)**	(0.225)	(0.180)**	(0.195)
Sons from Different Wives	-1.711		0.376	
	(1.303)		(1.138)	
Number of Dauthers		-0.129		-0.191
		(0.200)		(0.150)
Firm Age	0.022	0.013	0.032	0.019
	(0.029)	(0.031)	(0.031)	(0.028)
Number of Generations F.E.	Yes	Yes	Yes	Yes
Observations	151	169	356	417
R-squared	0.05	0.04	0.06	0.05
Number of Families	52	62	55	75

Table 7 Excess Control and Family Structure

The unit of observation is a firm. "Family Control > Family Ownership" is a dummy variable with the value of one if family has voting rights more than its cash flow rights. See text for detail. "Number of Sons with Control > Ownership" is the number of founder's sons whose voting rights greater than cash flow rights. Difference in sons' control and ownership is the average difference between voting rights and control rights across founder's sons. Number of sons is the total number of founder's sons from all wives. Number of daughters is the total number of founder's daughters from all wives. All regressions are estimated using OLS and controlled for number of generations fixed effect. Contants are included but not reported here. Standard errors are in parentheses. * represents coefficients significant at 10%; ** significant at 5%; and *** significant at 1%.

Panel A: Dependent Variable = Family Control > Family Ownership? (Yes=1)

	All Firms		Founder Dead		Founder Alive		Public		Private	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number of Sons	0.013	0.012	0.021	0.027	-0.057	-0.057	0.026	0.025	0.010	0.006
	(0.007)*	(0.008)	(0.007)***	(0.009)***	(0.018)***	(0.018)***	(0.013)*	(0.015)*	(0.008)	(0.010)
Number of Daughters		0.003		-0.010		0.003		0.002		0.006
		(0.008)		(0.009)		(0.017)		(0.015)		(0.010)
Number of Generations F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	586	586	337	337	249	249	169	169	417	417
R-squared	0.02	0.02	0.04	0.04	0.11	0.11	0.10	0.10	0.02	0.03
Number of Families	93	93	45	45	48	48	62	62	75	75

Panel B: Dependent Variable = Number of Sons with Control > Ownership

	All Firms		Founder Dead		Founder Alive		Public		Private	
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Number of Sons	0.264	0.326	0.259	0.342	0.126	0.147	0.398	0.458	0.223	0.264
	(0.025)***	(0.030)***	(0.033)***	(0.040)***	(0.040)***	(0.039)***	(0.046)***	(0.051)***	(0.030)***	(0.035)***
Number of Daughters		-0.116		-0.143		-0.135		-0.133		-0.074
		(0.029)***		(0.040)***		(0.037)***		(0.052)**		(0.035)**
Number of Generations F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	586	586	337	337	249	249	169	169	417	417
R-squared	0.31	0.33	0.28	0.31	0.05	0.10	0.51	0.53	0.26	0.27
Number of Families	93	93	45	45	48	48	62	62	75	75

Panel C: Dependent Variable = Difference in Sons' Control and Ownership

	All Firms		Founder Dead		Founder Alive		Public		Private	
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Number of Sons	0.501	0.895	0.348	0.834	0.764	0.865	0.981	1.306	0.347	0.711
	(0.119)***	(0.137)***	(0.159)**	(0.191)***	(0.168)***	(0.164)***	(0.210)***	(0.230)***	(0.143)**	(0.169)***
Number of Daughters		-0.741		-0.836		-0.649		-0.727		-0.655
		(0.135)***		(0.190)***		(0.156)***		(0.232)***		(0.169)***
Number of Generations F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	586	586	337	337	249	249	169	169	417	417
R-squared	0.12	0.16	0.09	0.14	0.09	0.15	0.27	0.31	0.09	0.12
Number of Families	93	93	45	45	48	48	62	62	75	75

Table 8 Group Size, Industry Concentration, Organization Structure and Family Size

The unit of observation is a family business group. Number of firms is the number of public and private firms in our sample that belonged to a given family. Total asset is group's total assets in million baht. Industry concentration is computed as the squareroot of the summation of the squares of the fraction of group's assets in each industry to total group's assets in all industries. Specifically, the concentration index equals to one if the group is concentrated in only on industry. Industries are classified approximately at 2-digit SIC. Family size is the total number of direct descendants of the founder of each business group, including the founder himself. Number of sons is the number of founder's sons. Group age is defined as the age of the oldest firm for each group in our sample. All regressions are estimated using OLS. Standard errors are in parentheses. * represents coefficients significant at 10%; ** significant at 5%; and *** significant at 1%. The total number of groups in full sample is 91. Two groups are dropped out due to their complicated structure of cyclical cross-shareholdings.

	Number of Firms			Total Assets (Millions Baht)			Industry Concentration (2-Digit SIC)		
	All Firms	Founder Dead	Founder Alive	All Firms	Founder Dead	Founder Alive	All Firms	Founder Dead	Founder Alive
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Family Size	0.079	0.056	0.007	2.469	2.212	-1.989	-0.001	0.000	-0.002
	(0.050)	(0.068)	(0.194)	(1.324)*	(1.995)	(3.325)	(0.002)	(0.002)	(0.014)
Number of Sons	0.548	1.336	-0.408	2.403	7.475	3.216	-0.002	-0.031	0.040
	(0.314)*	(0.523)**	(0.414)	(8.369)	(15.443)	(7.094)	(0.012)	(0.015)**	(0.030)
Group Age	0.096	0.086	0.084	2.113	2.279	1.150	-0.004	-0.004	-0.004
	(0.047)**	(0.073)	(0.047)*	(1.266)*	(2.144)	(0.806)	(0.002)**	(0.002)*	(0.003)
Constant	0.121	-1.610	3.212	-45.623	-59.297	2.291	0.849	0.929	0.747
	(1.717)	(3.194)	(1.440)**	(45.748)	(94.322)	(24.672)	(0.065)***	(0.093)***	(0.104)***
Number of Observations	91	44	47	91	44	47	91	44	47
R-squared	0.20	0.27	0.12	0.13	0.12	0.05	0.08	0.20	0.13

Table 9 Firm Performance, Family Ownership and Excess Control

The unit of observation is a firm. Residual return on assets is the residual from the OLS regression of return on assets on 1-digit SIC fixed effects and natural logarithm of firm's total assets across all firms in the full sample, including firms not belonging to the 93 families. Family ownership is the total percentage of ultimate ownership directly or indirectly held by family members in a particular firm. "Family Control > Family Ownership" is a dummy variable with the value of one if family has voting rights more than its cash flow rights. See text for detail. Difference in sons' control and ownership is the average difference between voting rights and control rights across founder's sons. Difference in others' control and ownership is the average difference between voting rights and control rights across family members except for founder's sons. All regressions are estimated using OLS and controlled for family fixed effect. Contants are included but not reported here. Standard errors are clustered at family-group level. Robust standard errors are in parentheses. * represents coefficients significant at 10%; ** significant at 5%; and *** significant at 1%.

Dependent Variable: Residual ROA (x 100)	All Firms		Founder Dead		Founder Alive	
	(1)	(2)	(3)	(4)	(5)	(6)
Family Ownership	-0.036	-0.036	-0.050	-0.045	-0.011	-0.020
	(0.016)**	(0.015)**	(0.018)***	(0.018)**	(0.030)	(0.026)
Family Control > Family Ownership? (Yes=1)	-1.059		-2.308		1.134	
	(1.148)		(1.496)		(1.533)	
Difference in Sons' Control and Ownership		-0.168		-0.167		-0.344
		(0.049)***		(0.052)***		(0.265)
Difference in Others' Control and Ownership		0.023		0.026		0.035
		(0.051)		(0.096)		(0.073)
Famiy F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	586	586	337	337	249	249
R-squared	0.26	0.27	0.20	0.21	0.36	0.36
Number of Families	93	93	45	45	48	48

Dependent Variable: Residual ROA (x 100)	Public		Private	
	(7)	(8)	(9)	(10)
Family Ownership	-0.044	-0.028	-0.029	-0.030
	(0.051)	(0.045)	(0.020)	(0.018)*
Family Control > Family Ownership ?	-1.245		-1.091	
	(2.772)		(1.497)	
Difference in Sons' Control and Ownership		0.203		-0.202
		(0.078)**		(0.060)***
Difference in Others' Control and Ownership		-0.255		0.047
		(0.142)*		(0.055)
Famiy F.E.	Yes	Yes	Yes	Yes
Observations	169	169	417	417
R-squared	0.51	0.53	0.26	0.28
Number of Families	62	62	75	75

Table A1 Family Characteristics

The unit of observation is a family. Family numbers are ranked by number of generations, family size and number of sons, respectively. All the data are approximately as of 1996. Family size is the total number of direct descendants of the founder of each business group, including the founder himself. Specifically, family size does not include spouses, founder's siblings and descendants of founder's siblings. Number of generations is defined as the number of generations of the family from the founder (generation 1) to the latest generation that is active in family business. Number of sons is the total number of founder's sons from all wives. Number of daughters is the total number of founder's daughters from all wives. Multiple wives is a dummy variable with the value of one if the founder had more than one wives, and zero otherwise. Founder dead is a dummy variable with the value of one if the founder was dead by 1996 and zero otherwise.

Family	Number of Generations	Family Size	Number of		Multiple Wives?	Founder Dead?	Family	Number of Generations	Family Size	Number of		Multiple Wives?	Founder Dead?
			Sons	Daughters						Sons	Daughters		
1	5	122	3	2	1	1	**48**	2	7	4	2	0	1
2	4	99	6	6	1	1	**49**	2	7	4	2	n.a.	1
3	4	34	6	1	1	1	**50**	2	7	4	2	0	0
4	4	33	5	2	0	1	**51**	2	7	2	4	0	0
5	4	27	4	2	0	1	**52**	2	7	2	4	0	1
6	4	25	1	2	0	1	**53**	2	6	5	0	n.a.	0
7	4	21	5	5	0	1	**54**	2	6	4	1	0	0
8	4	20	3	0	1	1	**55**	2	6	3	2	0	0
9	3	59	14	12	1	1	**56**	2	6	3	2	0	1
10	3	38	8	2	0	1	**57**	2	6	3	2	0	0
11	3	34	8	4	1	1	**58**	2	6	3	2	0	0
12	3	29	5	4	0	1	**59**	2	6	2	3	0	0
13	3	25	5	3	1	1	**60**	2	6	2	3	0	0
14	3	23	10	0	n.a.	0	**61**	2	6	1	4	0	0
15	3	21	8	8	0	1	**62**	2	6	0	5	0	0
16	3	19	4	8	1	1	**63**	2	5	4	0	n.a.	0
17	3	17	7	4	1	1	**64**	2	5	4	0	n.a.	0
18	3	16	6	1	0	0	**65**	2	5	3	1	0	0
19	3	16	2	1	0	1	**66**	2	5	3	1	0	1
20	3	15	6	6	n.a.	1	**67**	2	5	3	1	0	1
21	3	15	6	5	0	0	**68**	2	5	3	0	0	1
22	3	15	3	0	0	1	**69**	2	5	2	2	n.a.	0
23	3	14	2	3	0	0	**70**	2	5	2	2	0	0
24	3	13	2	2	0	1	**71**	2	5	1	3	0	0
25	3	12	5	4	1	1	**72**	2	5	1	3	n.a.	0
26	3	12	2	2	0	1	**73**	2	5	1	3	0	0
27	3	12	1	6	0	1	**74**	2	4	3	0	n.a.	0
28	3	11	4	0	n.a.	1	**75**	2	4	3	0	0	0
29	3	11	3	1	0	1	**76**	2	4	2	1	0	0
30	3	11	2	4	0	1	**77**	2	4	2	1	1	0
31	3	11	1	0	0	1	**78**	2	4	1	2	0	0
32	3	11	0	2	0	1	**79**	2	4	1	2	0	1
33	3	10	4	3	0	0	**80**	2	4	1	2	0	0
34	3	8	2	4	n.a.	0	**81**	2	4	1	2	0	1
35	3	7	3	2	0	1	**82**	2	4	1	2	0	0
36	3	6	3	0	n.a.	1	**83**	2	4	0	2	0	0
37	3	5	1	0	n.a.	1	**84**	2	3	2	0	n.a.	0
38	2	20	8	10	0	0	**85**	2	3	1	1	0	0
39	2	16	9	5	0	0	**86**	2	3	1	1	0	1
40	2	13	10	2	1	1	**87**	2	2	1	0	n.a.	0
41	2	12	4	7	1	0	**88**	2	2	1	0	0	0
42	2	11	4	1	1	0	**89**	2	1	0	0	n.a.	1
43	2	11	4	3	0	0	**90**	2	1	0	0	n.a.	1
44	2	10	4	2	1	0	**91**	2	1	0	0	n.a.	0
45	2	9	4	4	1	1	**92**	1	1	0	0	n.a.	0
46	2	8	4	3	n.a.	0	**93**	1	1	0	0	n.a.	0
47	2	8	2	5	1	0							

Table A2 Group Characteristics

The unit of observation is a family business group. All data are as of 1996. Family numbers correspond to those assigned in Table A1. Number of firms is the number of public and private firms in our sample that belonged to families. Log of total assets is the natural logarithm of group's total assets in thousand baht at the end of the year. Return on assets is the net profit divided by the total assets at the end of the year. Leverage is group's total liabilities divided by group's total assets. Group age is defined as the age of the oldest firm for each group in our sample. Group depth is defined as the maxumum depth of the deepest firm in the group, where firm's maximum depth is the longest chain that vertically traces the firm to family's ultimate ownership. Number of firms owning a particular firm is the largest number of group firms that own a particular firm in the same group. Number of firms owned by a particular firm is the largest number of group firms that are owned by a partucular firm in the same group.

Family	Number of Firms			Log Total Assets	ROA (x 100)	Leverage	Group Age	Group Depth	Number of	
	All	Public	Private						Owning	Owned
1	8	4	4	18.25	1.03	0.90	63	4	3	3
2	14	7	7	20.34	2.00	0.89	64	4	4	7
3	18	7	11	21.22	1.43	0.74	52	5	6	11
4	25	1	24	18.23	7.34	0.65	44	3	3	11
5	22	6	16	17.90	3.79	0.65	114	3	2	8
6	2	1	1	15.42	2.69	0.57	66	0	0	0
7	4	1	3	17.76	-0.01	0.92	49	3	1	1
8	5	0	5	17.12	9.10	0.65	63	1	1	3
9	31	6	25	18.43	1.56	0.69	39	4	2	6
10	35	19	16	17.90	3.75	0.52	44	7	5	23
11	4	0	4	16.21	-0.71	0.96	31	2	6	2
12	1	1	0	15.11	8.54	0.53	27	0	0	0
13	9	1	8	16.48	2.11	0.68	38	3	3	4
14	1	0	1	15.63	0.10	1.05	46	0	0	0
15	4	0	4	15.02	0.44	0.93	54	1	1	0
16	46	7	39	19.19	0.78	0.60	29	5	7	21
17	11	1	10	17.90	5.71	0.73	29	4	2	6
18	8	0	8	16.34	0.83	0.90	20	1	1	1
19	4	4	0	17.16	0.97	0.83	29	2	1	1
20	4	0	4	15.73	7.74	0.54	33	1	1	0
21	2	2	0	18.16	1.38	0.57	28	1	1	0
22	3	3	0	17.05	-1.27	0.75	8	0	0	0
23	7	1	6	17.46	3.95	0.61	41	5	2	3
24	3	2	1	15.51	6.33	0.59	26	1	1	0
25	2	2	0	15.46	-4.25	0.72	16	1	1	1
26	4	1	3	16.13	5.87	0.60	32	3	2	1
27	2	0	2	15.72	9.28	0.39	35	1	1	0
28	8	0	8	16.22	5.77	0.67	24	2	2	3
29	2	2	0	16.50	3.44	0.68	23	0	0	0
30	2	0	2	13.53	0.58	0.69	48	2	1	1
31	1	1	0	12.92	4.45	0.40	18	0	0	0
32	4	0	4	15.85	-3.51	1.00	22	1	1	2
33	7	1	6	16.16	20.86	0.30	29	1	1	3
34	3	2	1	16.75	-11.11	0.90	24	3	2	2
35	17	3	14	17.48	1.66	0.59	43	4	4	1
36	3	1	2	16.17	7.69	0.58	44	0	0	0
37	4	0	4	17.12	4.84	0.56	34			
38	3	2	1	17.25	0.48	0.80	37	1	1	1
39	1	0	1	13.52	0.89	0.96	7	0	0	0
40	4	2	2	18.70	1.31	0.91	57	2	4	2
41	2	0	2	14.92	0.01	0.83	18	0	0	0
42	4	2	2	16.12	4.74	0.58	17	2	1	2
43	2	1	1	15.81	5.87	0.69	32	1	2	0
44	2	0	2	13.47	0.51	0.47	10	1	1	0
45	1	0	1	15.69	0.73	0.43	21	0	0	0
46	3	0	3	17.47	-0.16	0.97	54	2	4	1
47	1	0	1	15.66	0.60	0.95	16	0	0	0
48	8	4	4	19.05	2.99	0.71	67	3	3	3
49	2	0	2	14.44	10.62	0.68	7	2	1	0
50	5	0	5	18.60	-0.27	0.33	55	2	3	3
51	1	0	1	14.74	4.88	1.10	18	0	0	0
52	9	4	5	19.95	1.73	0.89	51	6	7	6
53	1	0	1	15.68	-0.13	0.87	28	0	0	0
54	13	6	7	16.87	4.71	0.41	27	3	4	12
55	10	1	9	19.75	-0.32	0.29	27	4	4	6
56	1	1	0	14.50	-1.37	0.66	27	0	0	0
57	2	1	1	15.11	12.03	0.49	23	1	1	1
58	4	3	1	16.56	4.63	0.55	11	2	1	3
59	3	2	1	14.41	4.54	0.58	26	0	0	0
60	58	5	53	20.28	1.14	0.91	62			
61	7	2	5	16.55	7.33	0.64	31	2	1	2
62	6	2	4	16.13	2.42	0.62	26	2	5	2
63	1	1	0	15.70	1.13	0.79	23	0	0	0
64	3	0	3	13.70	-0.25	0.89	27	1	1	0
65	6	5	1	17.88	3.60	0.61	31	1	1	3
66	6	2	4	18.30	5.80	0.58	16	4	1	3
67	2	0	2	14.59	-0.05	0.74	30	1	1	1
68	3	1	2	14.27	8.15	0.53	8	1	1	1
69	7	0	7	15.70	-1.07	0.78	33	1	1	0
70	2	1	1	15.25	0.40	0.46	32	2	2	1
71	1	0	1	13.58	1.09	0.69	27	0	0	0
72	13	3	10	17.99	-1.68	0.81	33	2	2	4
73	1	1	0	15.27	3.30	0.49	25	0	0	0
74	4	2	2	15.34	11.84	0.51	15	2	1	1
75	2	0	2	14.31	6.41	0.59	17	1	1	0
76	4	4	0	16.38	0.48	0.62	34	1	1	3
77	2	0	2	15.39	-1.62	0.87	19	1	0	1
78	3	1	2	16.60	8.20	0.72	13	0	0	0
79	2	2	0	15.15	-5.22	0.48	23	0	0	0
80	5	4	1	16.86	2.69	0.40	26	1	4	1
81	1	0	1	13.22	0.63	0.77	17	0	0	0
82	8	4	4	17.84	11.99	0.43	13	2	1	4
83	2	0	2	15.73	2.38	0.72	22	1	1	1
84	4	2	2	17.48	0.88	0.91	24	1	1	3
85	16	4	12	17.47	1.03	0.73	35	3	3	8
86	1	1	0	18.60	0.91	0.90	47	0	0	0
87	4	4	0	16.69	-1.35	0.69	43	1	1	2
88	3	3	0	17.76	0.07	0.82	26	2	2	1
89	5	1	4	17.39	0.25	0.90	47	2	2	1
90	1	0	1	13.69	1.71	0.69	23	0	0	0
91	7	3	4	17.32	4.80	0.60	23	2	2	3
92	7	2	5	16.81	0.55	0.83	38	2	2	1
93	1	1	0	12.54	-11.20	1.10	11	0	0	0

Bertrand, Johnson, Samphantharak and Schoar (2007)
Data Appendix

A. Firm Data

A.1 Data Sources

Our firm-level data are from Thailand. Each registered firm in Thailand has to submit annual financial statements, audited by an authorized auditor, to the Ministry of Commerce. Registered firms include registered partnerships, privately held limited companies, and publicly traded companies. The database is physically assembled and maintained by the Ministry's Department of Business Development.[1] We access this database in several ways

(1) *Direct request made to the Department of Business Development* The Department makes the database available to general public upon request. The database contains all the information each firm submits to the Ministry. For each firm, the information include the registration number, registration date, address, name of the firm, notes on change of status or change of names, types of business, the report of the shareholder meetings, financial statements, list of shareholders (names, nationality, profession, number of shares, date of acquire or purchase), and list of the directors. The coverage is all registered firms in Thailand for all available years. The data is not digitalized and must be requested on firm-by-firm basis based only on the registration number. The request must be made in person. Fees are charged based on the number of firms, the number of years and the type of the requested data.

(2) *Thailand Company Information (TCI)* The Department of Business Development gives a right to Advanced Research Group Co., Ltd. to publish the financial statements of approximately top 2,000 registered firms in a series of books called *Thailand Company Information* (TCI). The books are released annually since 1987. The TCI database contains financial, ownership and board composition information at the firm-level. For all firms, the financial information includes total assets, total liabilities, total revenues and net profits. Ownership data report the names of the shareholders and the percentage of company shares directly held by each shareholder. The database includes information of the names of directors on the firm's board. For publicly traded firms, specific positions on the board a particular person holds are also reported. The database provides information on industry classification similar to 1-digit and 2-digit SIC codes, and founding year for each firm. All data in TCI are translated into English.

(3) *Business Online (BOL)* The Department of Business Development also cooperates with Business Online Public Co., Ltd. to digitalize the basic information of over 600,000 registered companied in Thailand. The information includes company's name, registration number, address, financial statement, list of shareholders and directors. As BOL was established in 1996, the database contains only information in recent years. (At the time of working on our project, the BOL financial data goes back to 1993 while the shareholder and director information is back only to 1997.) The data is available for purchase in digital format. The price is based on the number of firms, the number of years and type of the data. Most of the data are in English, except for shareholder and director information, which is mostly in Thai.

[1] The Department of Business Development was previously known as the Department of Commercial Registration until the government reorganization that became effective in October 2002.

(4) *Listed Company Info (SET)* In addition to submitting the annual report to the Ministry of Commerce, all the listed firms must summit the same report and additional data to the Stock Exchange of Thailand (SET). The data that SET makes available to the investors and generally public include company profile, quarterly consolidated and unconsolidated financial statements, daily trading information, announcement and news, among others. The data was digital and came in a series of CD-ROMs. Recently, the Stock Exchange of Thailand changed the format of the data from CD-ROM to online access. Unfortunately, the online access contains only the data for the past 5 years. All the data is in English.

A.2 Construction of Firm Dataset

We construct our dataset from several sources listed above. We start by taking the list of firms directly from *Thailand Company Information* 1997-1998, which publishes the financial data for the end of 1996. The criteria that TCI used in selecting the firms to be included is that the firm must either (1) have annual revenues of at least 200 million Baht (approximately eight million US dollars), (2) are listed on the Stock Exchange of Thailand, or (3) are one of the leading companies in its industry. In total, there are 2,153 firms included in TCI's 1996 list. All of these firms form our sample for 1996. Our 1996 sample therefore includes all publicly traded firms and the largest privately held firms in Thailand. For all firms, we get the general firm's profiles (registration number, name, type of business and founding year) from TCI 1997-1998 books.

The 1996 information on shareholders, board of directors and financial statements come from two sources. For non-listed firms, we rely on the TCI books for all of these data as it was the only source available except for the direct request from the Department of Business Development. However, for listed firms, we get the data from SET's *Listed Company Info* CD-ROMs because the data is digitalized and it distinguishes between consolidated and unconsolidated financial statements. We use unconsolidated financial statements in our analysis.

B. Family Data

B.1 Data Sources

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 Guide to Who Owns What*. This book identifies the 150 leading business groups in Thailand and covers the history of each of these groups since the time the first business was founded until today. The next step is constructing family trees of these business families listed in the Brooker book. Specifically, for each of the family business groups, we identify its founder and try to trace all of his direct descendants to the youngest active generation. To make the definition on family size consistent across families, we do not count the siblings and their descendants as a part of the family when we compute the family size because this set of information is incomplete for many families. However, the information is useful when we analyze the involvement of family members in family business so we still collect the information on the founder's siblings and their descendents whenever possible. We also ignore family members that are younger than 15 in the

late 1990s by including in our family tree only individuals with Mr., Mrs., Miss, Lady (Thanpuying and Khunying), Dr., or military titles.[2]

Although the Booker book helps us identify the prominent business family and construct some family trees, it does not provide systematic information on the full family trees of all the families. We therefore gather more detailed descriptions of the business families from several alternative sources. The most useful source is from various biography books written on several Thai millionaires. For example, Sapphaibul (2001a, b) provide impressive information on 55 of the most famous business families. In addition, 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 or her family relationships. When available, we also collect the family tree information from the funeral books published and distributed for the group founders or other family members. Next, we supplement the information from books with articles from various local Magazine and newspapers. These articles are usually either a story about a famous family or an interview with a group founder or his descendants. The full list of the biography and funeral books as well as articles is at the end of this appendix. We also collect a number of small news clips from social columns in several daily newspapers. Most of these news clips are on engagement announcement, wedding, divorce, death, funeral arrangement, obituary, and anniversary celebration. Finally, we conducted informal interviews with family members of a few business families to verify the accuracy of our data.

B.2 Construction of Family Dataset

With the descriptive information we gather from several sources, we code the information systematically. We include in our family trees all of the family members we identify, whether or not they are involved in the family business. The founder generation is coded as generation one, his children are generation two, and so on. For each family member, we collect information on their specific position in the family tree (defined as the relationship to the founder), gender, birth order (defined as the rank order of children within a specific marriage), and biological vs. adopted status. With less coverage and accuracy, we also code the information on individual education, working experiences, and involvement in family business. We also relied on these sources to identify which specific family members, if any, had been designated as “heir" of the family business. Note that we cannot systematically track whether a given family member in our family tree is still alive or not. However, we do know for all families whether the founder is still alive or not as of 1996.

Finally, for each family member, we collect the information on the name of the spouse(s) whenever possible. This information will be especially interesting for the founders, since several of them 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 carefully keep track of changes in last names, especially for married female family members and her descendants. (More details below.) We also gather the information on relationships across families through marriages.

As a whole, we construct family trees for 93 business families. Ninety four of them are among the Brooker’s list; three of them are additional. By alphabetical order, the families included in our data are Asadathorn, Asavabhokin, Assakul, Bencharongkul, Bhirom Bhakdi, Bodiratnangkura, Boondicharern, Boonnamsap, Boonsoong, Bulakul, Bulsook, Chaiyawan,

[2] In Thailand, a person drops his or her junior title and starts using Mr. or Miss when he or she turns 15.

Chansiri, Chansrichwala, Charnvirakul, Chearavanont, Chirathivat, Chokwatana, Chotitawan, Darakananda, Dumnernchanvanit, Hetrakul, Horrungruang, Jantaranukul, Jungrungruangkit, Kanathanavanich, Karnasuta, Karnchanachari, Karnchanapas, Kiangsiri, Kitiparaporn, Krisdathanont, Kunanantakul, Kuvanant, Lailert/YipInTsoi/Chutrakul, Lamsam, Laohathai, Lee-Issaranukul, Leelaprachakul, Leelasithorn, Leenutaphong, Leeswadtrakul, Leophairatana, Lertsumitrkul, Mahadumrongkul, Mahagitsiri, Maleenont, Nakornsri, Narongdej, Nithivasin, Osathanugrah, Phaoenchoke, Phatraprasit, Phenjati, Phodhivorakhun, Phongsathorn, Phornprapha, Piyaoui, Poolvoralaks, Prasarttong-Osot, Raiva/Sila-on, Ratanarak, Sermsirimongkol, Shinawatra, Sirivadhanabhakdi, Sophonpanich, Srifuengfung, Sriorathaikul, Srivikorn, Sukosol, Supsakorn, Suriyasat, Tangkaravakoon, Tangmatitham, Tantipipatpong, Tantipong-anant, Techaruvichit, Tejapaibul, Tejavibul, Tuchinda, Uahwatanasakul, Umpujh, Vacharaphol, Vanich, Vilailuck, Viraporn, Viriyabhan, Viriyaprapaikit, Vongvanij, Wanglee, Wattanavekin, Wongkusolkit, and Yoovidhaya. The main characteristics of each family are shown in Table A1.

B.3 Matching Family Data with Firm Data

The next task is putting the firm data and the family data together. First, we match the names listed as shareholders and directors to the names listed in our constructed family trees. It is very common that a Thai name is translated into different versions of English spelling so we pay a significant attention when we match the names.

Next, for the firms belonging to our 93 families, we identify firms that belong to each of our 93 business families. The criterion is that the family as a whole has the highest percentage of ultimate ownership in that company. Ultimate ownership is defines as the cash-flow rights derived from holding shares in the firm directly or indirectly through pyramids or cross-shareholdings. The main characteristics of each family business group are shown in Table A2.

Note that we are very careful in matching female family members by looking at both their current last name and their maiden name. Specifically, to alleviate the concern that a female family member may change her last name after marriage, we match the female names in two steps:

First Step: Starting with the family trees, we match the records where *both* the first name *and* the last name are perfectly identical (after correcting for various ways of spelling the same Thai names in English). Out of 4,408 records of ownership, 3,269 individual names and last names (74.16%) were matched in this first stage. Note that we considered both the original last name of the individual and the last name of her husband. Out of 232 daughters in our family trees, 102 have husband's last name. Obviously, we may miss some of the last names, but it is also likely that some of those daughters without husband's last name were indeed not married, and when they got married the last name in the firm database at the Ministry of Commerce may not get updated. We address this concern in the second step.

Second Step: For each of the names in the family tree that were not matched in the first step, we check whether it could have been due to the change in last name. Specifically, we perform a match between family tree and firm records just based on *first* names. We can confidently apply this strategy since it is extremely rare in the Thai culture to give the same first name to more than one person within the same family. This is done for each of the families. There is only one case where we found the same first name in the family tree and firm records, but different last names. For this particular one case, we do not consider this person as a family member.

Given the very small number (e.g. one) of cases we identify under step 2, we are quite confident that our name matching covers most of the family members listed in our family trees and there is no systematic bias between male and female family members in the matching process.

References for Family Information

I. Books

In English

Akira, Suehiro. Capital Accumulation in Thailand: 1855-1985. Chiangmai, Thailand: Silk Worm Books, 1996.

Brooker Group, The. *Thai Business Groups 2001: A Unique Guide to Who Owns What*, 4th edition. Bangkok, 2001.

Brooker Group, The. *Thai Business Groups: A Unique Guide to Who Owns What*, 5th edition. Bangkok, 2003.

In Thai

Chantimathorn, Sathien. *Chin Sophonpanich: The King of Finance*. Bangkok: Matichon Publishing, 1988.

Jaiyen, Boonchai. *Lives of Thai Millionaires: Their Family and Their Business*. Bangkok, undated.

Jaiyen, Boonchai. *Heirs of Thai Millionaires: Their Family and Their Business*. Bangkok, undated.

Jaiyen, Boonchai. *The Riches Man in Thailand: Charoen Sirivadhanabhakdi*. Bangkok: Dokya Group Publishing, 2003.

Kongnirandornsuk, Supranee. Studying Crisis for New Opportunities, Manager Classic No.1, Bangkok: Se-Education, 2002.

Limthongkul, Sonti. *Mafia (Chao Por)*, Manager Classic No.5, Bangkok: Se-Education, 2002.

Limthongkul, Sonti. *New Comer*, Manager Classic No.3, Bangkok: Se-Education, 2002.

Maneenoi, Chupong. *Lives of 25 Millionaires (Set 2)*. Bangkok: Finance and Banking Publishing, 1986.

Sabphaibul, Athiwat. *The Great Four Warriors*. Bangkok: Vanasarn Publishing, 2003.

Sabphaibul, Thanawat. *25 Business Millionaires*. Bangkok: Pim Kam Publisher, 2003.

Sabphaibul, Thanawat. *Life of the Lamsam Millionaire*, 2nd edition. Bangkok: Bangkok Biz News Publisher, 2000.

Sabphaibul, Thanawat. *The Legend of 55 Business Families: Book 1*. Bangkok: Nation Publishing, 2001.
Sabphaibul, Thanawat. *The Legend of 55 Business Families: Book 2*. Bangkok: Nation Publishing, 2001.
Saengthongkam, Wirat, and Kongnirandornsuk, Supranee, eds. *The Player*, Manager Classic No.7, Bangkok: Se-Education, 2002.
Saengthongkam, Wirat; Thangsriwong, Pandop; and Damrongsunthornchai, Somsak. *70-Year Chirathivat: Central*, Manager Classic No.7, Bangkok: Se-Education, 2002.
Yipphan. *Yesterday Millionaires: The Merchants*. Bangkok: Nation Publishing, 2003.
Yipphan. *Yesterday Millionaires: The Bankers*. Bangkok: Nation Publishing, 2003.
Young Blood, Business Interest, Special Issue, 1993.

II. Funeral Books (All are in Thai)

Attaphorn Leenutphong, 2001.
Bancha Lamsam, August 1992.
Boonkrong Bulakul, February 1980.
Nongyao Kanchanacharee, November 1996.
Samrit Chirathivat, November, 1992.
Shin Sophonpanich, April 1987.
Thanpuying Niramol Suriyasat, 2003.
Tiam Chokwatana, August 1991.
Tan Sew Ting Wanglee, November 1985.

III. Magazine and Newspaper Articles (All are in Thai)

"108 Years of British Dispensary (L.P.)," *Manager Magazine*, June 2000.
"24 Key Men of Laemthong Bank," *Who's Who in Business & Finance*, February 1996, pp.32-48.
"6 Heirs of Maleenont Family," *Manager Magazine*, June 1999.

"After Tiam: Profits Rather Than Growth," *Manager Magazine*, September 1991, pp.192-200.
"Anan Asavabhokin and 'Land And House'," *Who's Who in Business & Finance*, May 1995, pp.14-41.
"Angubokul Family," *Praew*, July 2004, pp.160-162.
"Anuphong Asavabhokin: Waiting to Prove Himself," *Manager Magazine*, May 2003.
"Apirak Vanich: Following Akapoj," *Manager Magazine*, July 1992, pp.80-81.
"Asavabhokin Family: The Owner of Land & House," *Boss Magazine*, July 1998, pp.78-81.
"Assakul Family: The Owner of Ocean Insurance," *Boss Magazine*, Special Edition 1996, pp.182-185.
"Assakul: Quiet and Deep Business," *Businessman Magazine*, undated, pp.87-94.
"Attaporn Leenutphong: The Legend of Yontrakit," *Manager Magazine*, March 2001.

"Banthoon Lamsam – Somkid Jatusripitak," *Manager Magazine*, September 2003.
"Before Nailing the Coffin of Chanut Piyaoui," *Manager Magazine*, undated, pp.146-155.
"Bencharongkul Family: The Owner of UCOM Group" *Boss Magazine*, Special Edition 1996, pp.106-109.
"Bhirom Bhakdi and the Legend of Thai Beer," *Businessman Magazine*, undated, pp.20-30.
"Bhirom Bhakdi Family: The Owner of Singha Beer" *Boss Magazine*, August 1997, pp.174-177.

"Boonnam Boonnamsap: A Chinese in Japanese Body," *Manager Magazine*, December 1990, pp.103-127.
"Boonrawd Diversifying to Yacht Market," *Who's Who in Business & Finance*, October 1996, pp.50-81.
"Boonsithi Chokwatana 'Saha Group Will Be Ten Times Bigger'," *Who's Who in Business & Finance*, March 1996, pp.14-26.
"Bulakul Family, Part 1" *Praew*, No.1, April 2005, pp.366-368.
"Bulakul Family, Part 2" *Praew*, No.2, April 2005, pp.376-378.
"Bulakul Family: The Owner of Maboonkrong Building" *Boss Magazine*, Special Edition 1996, pp.174-177.
"Bulsook Family: The Owner of Thai Pepsi," *Boss Magazine*, Special Edition 1996, pp.158-161.

"Central Group: The Change of Generations," *Manager Magazine*, April 2003.
"Central to the 3rd Generation: Maybe Not Chirathivat's? *Manager Magazine*, October 1986.
"Chai Chaiyawan: The 2nd Generation of the Family," *Who's Who in Business & Finance Magazine*, January 1996, pp.23-28.
"Chai Sophonpanich 'I Cannot Retire'," *Manager Magazine*, June 2003.
"Chaiyudh Srivikorn: Heir of the Family," *Who's Who in Business & Finance*, February 1995, pp.64-67.
"Chanut Piyaoui," *Manager Magazine*, February 2000.
"Chanut Piyaoui: Dividing the Wealth," *Manager Magazine*, February 2001.
"Chansrichawala Family: The Owner of Siam Vidhaya Group" *Boss Magazine*, Special Edition 1996, pp.122-125.
"Charoen Sirivadhanabhakdi: Transferring the Army to His Children," *Manager Magazine*, March 2003, pp.34-54.
"Chatikavanich Family: The Owner of Loxley," *Boss Magazine*, July 1997, pp.190-193.
"Charn Issara: Ready to Retire?" *Manager Magazine*, 1988, pp.6-33.
"Chearavanont Family: The Owner of CP Group" *Boss Magazine*, Special Edition 1996, pp.54-57.
"Cherdchu Sophonpanich: Who Is He? *Manager Magazine*, October 2003.
"Chirathivat Family: King of Thai Department Stores, Part 1" *Praew*, No.1, March 2005, pp.326-328.
"Chirathivat Family: King of Thai Department Stores, Part 2" *Praew*, No.2, March 2005, pp.350-352.
"Chirathivat Family: The Owner of Central Department Store" *Boss Magazine*, October 1997, pp.168-171.
"Chirathivat: Family Council," *Manager Magazine*, October 2000.
"Chokwatana Conquering Consumer Product Empire," *Businessman Magazine*, undated, pp.62-73.
"Chokwattana Family: King of Thai Customer Products, Part 1" *Praew*, No.1, September 2004, pp.384-386.
"Chokwattana Family: King of Thai Customer Products, Part 2" *Praew*, No.2, September 2004, pp.272-274.
"Chokwatana Family: The Owner of Sahapattanaphibul" *Boss Magazine*, Special Edition 1996, pp.102-105.
"Chokwattana's Third Generation: Thammarat Chokwattana and Theerada Amphanwong," *Manager Magazine*, March 2003.
"Cholvicharn Family: The Owner of Union Bank" *Boss Magazine*, Special Edition 1996, pp.74-77.
"Chuan Tangmatitham: Grow and Split," *Businessman Magazine*, undated, pp.137-140.
"Critical Period of Samart Group," *Manager Magazine*, February 1992, pp.150-162.

"Darakananda Family: The Owner of Saha-Union" *Boss Magazine*, Special Edition 1996, pp.210-213.
"Doctor Boon Vanasin," *Who's Who in Business & Finance Magazine*, January 1990, pp.125-129.
"Dr.Chaiyudh Kanasutra," *Manager Magazine*, undated, pp.25-47.

"Exclusive Chatree Sphonpanich," *Who's Who in Business & Finance*, December 1994, pp.14-26.

"Heir of Chatree," *Who's Who in Business & Finance*, December 1994, pp.36-37.
"Hetrakul Family: The Owner of Daily News" *Boss Magazine*, Special Edition 1996, pp.110-113.

"Issara Family: The Owner of Charn Issara Tower," *Boss Magazine*, Special Edition 1996, pp.126-129.

"Jakkapak Family: The Owner of Finance One" *Boss Magazine*, Special Edition 1996, pp.130-133.

"Kamron Tejapaibul and Mahanakorn Bank,"undated, pp.35-38.
"Kanasutra Family: The Owner of Ital-Thai Group" *Boss Magazine*, April 1996, pp.86-89.
"Kanasutra General Assembly: Exciting till the End," *Manager Magazine*, January 1987, pp.76-87.
"Karnchanachari Family: The Owner of Seaw-National" *Boss Magazine*, Special Edition 1996, pp.190-193.
"Karnchanapas Family: The Owner of Muangthong Thani" *Boss Magazine*, Special Edition 1996, pp.66-69.
"Karnchanapas Family: The Road to Real-Estate Tycoon, Part 1" *Praew*, No.2, November 2004, pp.-362364.
"Karnchanapas Family: The Road to Real-Estate Tycoon, Part 2" *Praew*, No.1, December 2004, pp.422-424.
"Karnchanapas Family: The Road to Real-Estate Tycoon, Part 3" *Praew*, No.2, December 2004, pp.328-330.
"Keeree Kanchanapas," *Manager Magazine*, April 2003.
"Keeree Karnchanapas: The Great Dragon," *Manager Magazine*, April 1991, pp.138-152.
"Khunying Sasima Srivikorn," *Manager Magazine*, October/November 1987, pp.146-155.
"Kiet Srifuengfung," *Manager Magazine*, October/November 1987, pp.117-129.
"Krisdathanont Family: The Owner of Krisda Mahanakorn," *Boss Magazine*, Special Edition 1996, pp.206-209.

"Lamsam: The Great Family," *Businessman Magazine*, undated, pp.36-47.
"Land And House: How Long It Will Last?" *Manager Magazine*, September 1993, pp.102-122.
"Leenutaphong Family: From Scraps to Automobile Empire," *Praew*, No.1, October 2004, pp.402-404.
"Leenutphong Family: The Owner of Yontrakit" *Boss Magazine*, Special Edition 1996, pp.170-173.
"Leeswadtrakul Family: The Owner of Anoma Hotel" *Boss Magazine*, Special Edition 1996, pp.194-197.
"Lenso: To the Telecommunication Business," *Manager Magazine*, April 1994, pp.110-118.
"Luanchai Vongvanich's Vision," *Who's Who in Business & Finance*, February 1996, pp.22-30.

"M. Thai Group," *Who's Who in Business & Finance*, January 1995, pp.55-58.
"Maboonkrong: A Memorial for Sirichai Bulakul," undated, pp.82-96.
"Mahadamrongkul Family: The Owner of Nakornluang Thai Bank" *Boss Magazine*, Special Edition 1996, pp.30-33.
"Mahadamrongkul: Setting Time, Finding Future," *Manager Magazine*, December 1993, pp.144-156.
"Maleenont Family: The Founder of Channel 3," *Boss Magazine*, Special Edition 1996, pp.125-128.
"Mazda Took over Sukosol," Manager Magazine, May 1999.

"Narin Naruela and Tower Records," *Who's Who in Business & Finance*, January 1997, pp.51-55.
"New Blood," *Manager Magazine*, May 2003.

"Osathanugrah Family: The Owner of Osotspa" *Boss Magazine*, Special Edition 1996, pp.50-53.
"Osotspa 2000," *Who's Who in Business & Finance*, April 1995, pp.15-43.
"Osotspa: Osathanugrah's Monopoly," *Manager Magazine*, undated, pp.89-99.

"Pathra Sila-on: The Oldest Sister of S&P," *Manager Magazine*, September 2001.
"Phenjati Family: The Owner of Phenjati Tower," *Boss Magazine*, Special Edition 1996, pp.198-201.
"Phornprapa Family: The Owner of Siam Motor" *Boss Magazine*, November 1997, pp.176-179.
"Phornprapa: Toward Thai Automobile Empire," *Businessman Magazine*, undated, pp.74-85.
"Piyaoui Family: The Owner of Disit Thani Hotel" *Boss Magazine*, Special Edition 1996, pp.178-181.
"Pong Sarasin on the Political Road," *Manager Magazine*, December 1990, pp.169-170.
"Poolvoralaks Family: King of Thai Movie Theaters, Part 1" *Praew*, No.1, January 2005, pp.298-300.
"Poolvoralaks Family: King of Thai Movie Theaters, Part 2" *Praew*, No.2, January 2005, pp.294-296.
"Poolvoraluks Family: The Owner of RGV Theaters" *Boss Magazine*, Special Edition 1996, pp.142-145.
"Pornsanong Tuchinda: The Last Heir of Thai Dhanu Bank?" *Manager Magazine*, November 1999.
"Prachai Leophairatana: Local Hero," *Manager Magazine*, May 2000.
"Prapa Viriyaprapaikit: Difficult to Read," *Manager Magazine*, undated, pp.156-159.

"Sahakol Air: Will Prasert Prasarttong-Osot Fail?" *Manager Magazine*, January 1987, pp.88-95.
"Sarasin Family: The Owner of Thai Coca-Cola" *Boss Magazine*, Special Edition 1996, pp.86-89.
"Sasima Srivikorn: Reaching to the Star," *Manager Magazine*, March 1999.
"Sawas Horrungruang: Dead Man Walking," *Manager Magazine*, January 2003.
"Shinnawatra Family: The Owner of Shin Group" *Boss Magazine*, August 1998, pp.98-101.
"Siam Motor: How Pornthip-Kasem Keep It?" *Manager Magazine*, undated, pp.38-84.
"Siam Motor: The End of Thavorn or Phornprapa?" *Manager Magazine*, November 1986, pp.61-97.
"Singha Beer: Reorganization," *Manager Magazine*, August 2003.
"Sirivadhanabhakdi Family: The Owner of Mekong Brandy" *Boss Magazine*, Special Edition 1996, pp.46-49.
"Sophonpanich: From Bank to Business," *Businessman Magazine*, undated, pp.22-34.
"Sophonpanich: Managing the Business Bequest," *Manager Magazine*, undated, pp.39-64.

"Srifuengfung Family: The Owner of Thai-Asahi Glass" *Boss Magazine*, December 1997, pp.170-173.
"Srifuengfung Is Thai-Asahi Glass," *Businessman Magazine*, undated, pp.106-113.
"Srivikorn Family: From Landlord to Tycoon," *Praew*, June 2004, pp.110-112.
"Srivikorn Family: The Owner of President Hotel" *Boss Magazine*, Special Edition 1996, pp.134-137.
"Subaru Music Award," *Businessman Magazine*, undate, pp.51-55.
"Sunrise at Channel 3: The Golden Era of Maleenont's Second Generation," *Manager Magazine*, June 1999.
"Supachai Chearavanont: Crisis Coming with Opportunities," *Manager Magazine*, September 1999.
"Supachai Umpujh: From Stock-Checking Boy to Owner of the Mall Group," *Manager Magazine*, August 1987, pp.115-124.
"Supaluck Umpujh," *Manager Magazine*, April 2003.
"Surang Dumnernchanvanit (1932-2002)," *Manager Magazine*, February 2003.
"Surangrat Chirathivat: Central Iron Lady," *Manager Magazine*, October 1990, pp.8-9.
"Suriyon Raiva: The First Tycoon," *Manager Magazine*, October/November 1987.
"Suthichart Chirathivat: The Leader of Generation 3," *Manager Magazine*, March 2003.
"Suvit Wanglee on His Heir," *Who's Who in Business & Finance*, January 1995, pp.35-54.
"Suvit Wanglee: The Gentleman of Nakornthon Bank," *Businessman Magazine*, undated, pp.24-29.
"Syberia: Internet Café," *Who's Who in Business & Finance*, January 1997, pp.29-32.

"Tangkaravakoon Family, Part 1," *Praew*, No.2, October 2004, pp.370-372.
"Tangkaravakoon Family, Part 2" *Praew*, No.1, November 2004, pp.376-378.
"Tangmatitham Family: The Owner of Mankong Kehakarn" *Boss Magazine*, Special Edition 1996, pp.186-189.
"Tejapaibul Family: The Legend, Part 1" *Praew*, No.1, February 2005, pp.318-320.
"Tejapaibul Family: The Legend, Part 2" *Praew*, No.2, February 2005, pp.302-304.
"Tejapaibul Family: The Owner of Srinakorn Bank" *Boss Magazine*, Special Edition 1996, pp.62-65.
"Tejapaibul: The Greatness of Udane," *Businessman Magazine*, undated, pp.48-56.
"Thai Banks before the Fall (1962-1997)," *Manager Magazine*, February 2000.
"Thai Dhanu Bank and Its Challenge," *Who's Who in Business & Finance*, March 1996, pp.27-47.
"Thai-Asahi Glass," *Businessman Magazine*, undated, pp.47-51.
"The 60 Hotels in the Hand of an Iron Lady, Khunying Chanut Piyaoui," *Who's Who in Business & Finance*, July 1995, pp.16-35.
"The Doctor Who Cure Wongkusolkit," *Manager Magazine*, February 1991, pp.42-44.
"The End of Euchukiet-Pathraprasit Legend of Bank of Asia 1998," *Manager Magazine*, August 1998.
"The End of Srinakorn Bank: Not Surprising," *Manager Magazine*, June 2003.
"The Fighting of the Machine Mogul," *Manager Magazine*, December 1990, pp.128-151.
"The Future of British Dispensary in the Hands of Anurut and Luenchai Vongvanich," *Who's Who in Business & Finance*, February 1996, pp.15-21.
"The Greatness of Soon Hua Seng," *Manager Magazine*, pp.140-159.
"The Heavy Loads on Srivikorn Family," *Manager Magazine*, March 1999.
"The Last Paper of Dr. Chaiyud Kanasutra," *Manager Magazine*, February 1999.
"The Latest Situation of Wanglee Family," *Manager Magazine*, August 1999.
"The Man Behind…," *Manager Magazine*, July 2003.
"The Man in front of Bancha Lamsam," *Manager Magazine*, February 1992.

"The New Leader of Central," *Manager Magazine*, May 1992.
"The Thai Rungrueng Empire," *Manager Magazine*, December 1987, pp.113-132.
"Theerada Amphanwong (Chokwattana)," *Manager Magazine*, May 1999.
"Theeraphong Chansiri: The man behind TUF," *Manager Magazine*, October 1998.
"Time to Prove: Suthipong Chirathivat," *Manager Magazine*, June 1998.
"To the Future with Petrochemicals," *Manager Magazine*, May 2000.
"Tracking Sophonpanich's Wealth Abroad," *Who's Who in Business & Finance*, December 1994, pp.31-35.
"Trouble on Central-Chirathivat," *Manager Magazine*, February 2003.
"Tuchinda Family: The Owner of Thai Dhanu Bank" *Boss Magazine*, Special Edition 1996, pp.150-153.
"Two Roles, Two Leaders in Sahaphat," *Manager Magazine*, May 1999.

"Umpujh Family: The Owner of The Mall" *Boss Magazine*, Special Edition 1996, pp.138-141.
"Unveiling 7,000 Million Empire of Prapad Phodhivorakhun," April 1996, pp.14-32.
"Unveiling the Heirs of Business Empires," *Thairath*, July 28, 2004.
"Unveiling the Management Team of Nakornthon Bank," *Who's Who in Business & Finance*, December 1995, pp.28-38.
"Unveiling the Management Team of Union Bank of Bangkok," *Who's Who in Business & Finance*, July 1995, 36-64.

"Vacharaphol Family: The Owner of Thairath Newspaper," *Boss Magazine*, Special Edition 1996, pp.82-85.
"Vanasin Family: The Owner of Thonburi Hospital," *Boss Magazine*, Special Edition 1996, pp.202-205.
"Vanich Family," Manager Magazine, December 1999.
"Vanich-Chai Chaiyawan and the Future of Thai Insurance," *Who's Who in Business & Finance*, January 1996, pp.15-22.
"Vichai Poolvoralaks: High-Tech Movie Theaters?" *Manager Magazine*, January 1998.
"Viriyaprapaikit Family: The Owner of Sahaviriya Group" *Boss Magazine*, September 1997, pp.168-171.
"Viriyaprapaikit: Growth fromVision," *Businessman Magazine*, undated, pp.114-118.
"Vongvanich Family: The Owner of British Dispensary" *Boss Magazine*, March 1997, pp.183-186.

"Wanglee Family: The Owner of Nakornthon Bank" *Boss Magazine*, August 1998, pp.84-87.
"Wanglee: Slow but Sure," *Businessman Magazine*, undated, pp.57-61.
"Wanglee's Family Saga," undated, pp.104-122.
"Wattanavekin Family: The Owner of Kiatnakin Finance" *Boss Magazine*, Special Edition 1996, pp.166-169.
"Wisut Poolvoralaks: A Man Who Makes Thais Love Thai Movies," *Manager Magazine*, January 2000.

"Yoovidhaya Family: The Owner of Red Bulls" *Boss Magazine*, Special Edition 1996, pp.70-73.