The Value of Family Networks: Marriage and Network Formation in Family Business Groups

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Abstract

This paper investigates the formation of networks of family-owned business groups. We show that marriage of offspring can be used as a corporate strategy to establish family networks. We construct a detailed data set of newlyweds who are the offspring of big-business families in Thailand covering the period from 1991 to 2006. We find positive abnormal returns when the wedding partner is from a politically and economically well-connected family with the weddings associated with a three-day cumulative abnormal return (CAR) of 0.94% and 1.29%, respectively. In addition, we find that the choice of marriage is determined by the family business. Offspring are more likely to choose their spouse from a well-connected family when the family's businesses are more diversified, are in the property and construction industries, depend on government concessions and contracts, and have more leverage. The results suggest that family networks help to provide information and enforce contracts, thus reducing market frictions faced by firms in emerging economies. Our results also suggest that family connections are important in providing access to state resources and contracts.

JEL classification: G15; G34; G38; K23

Keywords: Business groups, corporate governance, emerging economies, family firms, political connections

1 Introduction

Family firms have recently received a lot of attention in the economic literature due to their prevalence around the world. Burkart, Panunzi, and Shleifer (2003) and Morck, Wolfenzon, and Yeung (2005) argue that business practice rests on family networks in developing economies mainly because of weak economic and legal institutions. So, firms face a variety of uncertainties when transacting with other firms, such as their trustworthiness. Family networks may help to provide information and enforce contracts, thus reducing those uncertainties. A growing body of literature shows that family ties indeed play an important role in shaping the business organization and its efficiency (Bertrand, Johnson, Samphantharak, and Schoar, 2005; Perez-Gonzales, 2006; and Bennedsen, Nielsen, Perez-Gonzales, and Wolfenzon, 2007).[1]

We extend the literature by examining empirically the formation of business networks in family firms. We focus on the "family" networks that are established via marriage of offspring. We hypothesize that the big-business owners use marriage to establish business networks. To test this hypothesis, we construct a detailed data set of newlyweds who are the offspring of big-business families in Thailand.

Family networks created by marriage have characteristics distinct from other types of ties. Marriage creates a strong and long-lasting bond that binds family members together. Marriage not only creates networks but also consolidates and reinforces friendship and other social ties. Family networks, therefore, are firm-value enhancing for several reasons.[2] First, the family is a stable institution that facilitates alignment, trust, and coordination among its members (e.g., Banfield, 1958; Fukuyama, 1995). Second, via family networks, a family fortune can be enlarged and transferred. Family members often share various resources including finances, human resources, input suppliers, contracts, reputations, other privileges, and markets (e.g., Khanna and Rivkin, 2006).

We argue that family firms can encourage sons and daughters to make strategic alliances. We build the methodology based on the existing economic models of marriage to analyze

[1] There is a large body of literature on the role of family ties in the business group context. Khanna and Yafeh (2007) provide an excellent review of the literature.

[2] There are enormous studies in the sociology literature on the role of family networks in business, for example, Burt (1992), Granovetter (1985, 2005), Mizruchi (1996), and Podolny (1994, 2001).

how marriages are formed. The marriage models describe marriage as an individual's search for a partner whom he or she regards as the most attractive according to his or her own preferences. We argue that if one is the child of a family that owns an extensive business empire, the marital selection is also presumably related to seeking a partner with assets and qualifications that benefit the family's business.

Our empirical analysis is based on an original data set that we construct from large family firms in Thailand. This data set records the information on newlyweds who are the offspring of the top 150 business group families. Most of these families are of Chinese origin, and the founder has established a large business empire. Our data set is unique because it contains detailed information on newlyweds and their family trees. We go through 2,225 wedding announcements during 1991 - 2006 and find 200 couples in which the bride and/or groom is a member of the top 150 families in our sample. We classify the newlyweds based on the partner's family background: whether or not he or she is from a well-connected family. We define well-connected families as families associated with business and political networks. Out of the 200 newlyweds, 93 are connected to business networks and 66 to political networks.

We test whether the marital choice of offspring of big-business families is determined by family businesses. In the first analysis, we show that a new network established via marriage adds value to firms owned by the newlyweds' families. The results on the stock market reaction to the wedding announcements indicate significant positive abnormal returns. When the wedding partners are from well-connected families with the business and political networks, we observe a three-day cumulative abnormal return (CAR) of 0.94% and 1.29%, respectively. In contrast, when the marriage partner is not from a well-connected family, the family's firms do not experience abnormal returns. The results suggest that marriage creates networks for the family firms for economic advancement.

Next, we test whether marital choice is correlated with the firm characteristics and family structure. We employ probit regressions in which the control variables are individual traits such as age, gender, education, and social background. Very interesting results emerge. We find that both family traits and business characteristics strongly influence marital decisions toward choosing a partner who is from a well-connected family. More specifically, we find

that offspring are more likely to choose their spouse from a well-connected family when the family's businesses (1) are more diversified, (2) are in the property and construction industries, (3) are based on government concessions and contracts, and (4) have more leverage. The results are consistent with the view that family networks facilitate information exchanges between families and firms and that families in the same network share financial resources and government contracts. Our results also suggest that family connections are important in providing access to resources and contracts if the government plays a central role in an industry.

In addition, our results show that the Chinese-Thai family traditions and inheritance rules affect the marital choice. Offspring are more likely to marry a person from a well-connected family if he or she is an heir, which we measure by whether he or she is (1) from the main family line or (2) a board member in group firms.

Overall, our results suggest that the choice of spouse by offspring of big-business families appears to align with the family structure and its business interests. We think that our results go beyond Thailand to other Asian countries where business is often thought to be a family affair. Perhaps the most accurate picture of an Asian economy is a diagram of an extended family tree connecting clans, with dotted lines sometimes leading to the government similar to what we show in this study.[3] The Asian culture makes the bond via marriage strong because marriage is between two kin groups rather than two individuals.

Our paper is also related to recent literature measuring the economic role of family and family ties. This growing body of research shows that the organization of the family has important consequences for many economic decisions and attitudes, from participation in the labor force, home production, savings, geographical mobility to risk taking, trust, and social capital. For example, Caselli and Gennaioli (2005), Bertrand and Schoar (2006), and Alesina and Giuliano (2007) show that the strength of family ties affects macroeconomic outcomes. La Ferrara (2003) shows that extended families substitute for absent credit markets in Africa.

[3] For example, in Korea the Samsung Group and the the LG Group, which are ranked among the top five business groups, are linked via marriage of the offspring of the two group founders. A daughter of the Samsung Group's founder and sister of the current chairman is married to Koo Ja Hak, who was the chairman of LG Semiconductor. Koo Ja Hak's brother was the chairman of the LG Group.

2 Big-business owners in Thailand: Family, marriage, and business

In this section, we describe family structure and marriage practices of wealthy families that own a business empire. The majority of these families are of Chinese origin, whose founders migrated to Thailand during the early twentieth century. So, in these families a combination of Chinese and Thai customs and norms is often used. There are some similarities between the two cultures, however.[4]

The traditional Thai family has a hierarchy, and each member has his or her specific place based on age, gender, and rank within the family. Relationships are strictly defined and named with terms so precise that they reveal the relationship (such as parental, sibling, uncle, aunt, cousin), the relative age (younger, older), and side of the family (maternal or paternal). These terms are used more often in conversation than the person's given name. These extended family members can expect help and security as long as they remain within the confines of this order.

Parents are involved in almost every aspect of an individual's life, such as education, career, and marriage decisions, and remain involved in his or her life after the marriage. Like its in other East Asian countries, Thai children are educated from youth to respect and honour their parents as the most sacred people in their lives. This education results from the Thai belief that parents have done them the biggest favor possible by giving them life and raising them to adulthood. (This gratitude is called "Boon Khun.") Therefore, children should be grateful to their parents and must fulfill the obligations of filial piety. This means that they have to obey their parents, respect their wishes during their lifetime, and care for them when they get old. Breaking this rule is regarded as very bad and sinful. The Buddhist law of karma is in operation here – if one does a bad deed, it will always lead to a bad outcome.

If a young man wishes to marry a young girl, he has to become well acquainted with the whole family of the bride-to-be and get consent. His family often includes not only his parents and siblings but also grandparents, aunts, uncles, and cousins. The same practice

[4] See Jin and Xu (2006) for social norms of families on mainland China.

applies to the girl as well. A marriage without the family's blessing is likely to face enormous difficulties as the couple interacts with the family in future economic or domestic issues.

Only after obtaining consent from both families will the parents of the young man delegate a respected person to propose to the girl's parents for the hand of their daughter. When both families agree on the wedding expenses and the "bride price", the date for the wedding is fixed. The bride price, in the form of gold, jewelry, money, or properties, will be made to the bride by parents of the groom. The bride's parents provide her dowry, which becomes the asset of the newlywed couple. Among many wealthy families, it is also customary for the groom's family to build the couple a house of their own near the family house. In the Chinese-Thai tradition, a woman marries not just her husband but his whole family as well.

In business, typically, as with family firms elsewhere, top management succession is within extended families. So, both sons and daughters of the top business families are well educated, and some attend Western universities. The children often join the family firms soon after graduation. Those whose father is the founder of a business group often hold a board position right away and soon rise to the executive level. While traditionally inheritance of control within families often follows genealogical lines, that is, control is passed from the founder to his sons, grandsons, and so on (e.g., Bertrand, Johnson, Samphantharak, and Schoar, 2005), recent practice includes daughters.

Divorce was traditionally considered to be socially unacceptable in Thailand. As in other countries, the attitude toward divorce has changed over time, however. According to Thailand's national statistics, the average rate of divorce was low, less than one per 1,000 in 1994, but the rate went up to 1.28 in 2003. Despite such increases, the divorce rate is much lower compared with that of other countries such as Japan (2.08 per 1,000 in 2004), South Korea (2.9 per 1,000 in 2004), Sweden (2.36 per 1,000 in 2003), the U.K. (2.8 per 1,000 in 2003), the U.S. (4 per 1,000 in 2003).[5] The low divorce rate implies that a Thai marriage creates a long-lasting bond between not only the couples but their families as well. This bond between families in turn makes the relationships trustworthy.

[5] Data sources are United Nations, Demographic Yearbook (2003) and the Japanese Ministry of Health, Labor and Welfare, Demographic Statistics (2005).

3 Conceptual framework

This section provides the conceptual and empirical background for analyzing the value of family networks and determinants of the marriage decision. We hypothesize that an individual from a big-business family does not choose a spouse only according to his own preferences. We seek to understand whether the family and its business influence his choice of whom to marry.

3.1 Related literature

The existing economic models of marriage imply it to be a matching process (Becker, 1973, 1974, 1981). Women and men meet each other randomly and choose each other based on an observed and expected matching quality. Individuals marry when the benefits of being married are higher than the net benefits of remaining single. In other words, individuals try to maximize their future family income and social status by searching for what they regard as the most attractive partner. Sorting may stem from individuals' preferences or search frictions, that is, the time cost of meeting and getting to know prospective spouses. An extensive number of studies in the literature show that women and men match along socioeconomic attributes such as income, ability, race, and education in addition to physical attractiveness (e.g., Burdett and Coles, 1997; Mare, 1991; Mortensen and Pissarides, 1999; Fisman, Iyengar, Kamenica, and Simonson, 2006; and Wong, 2003).

Parents also have an enormous influence on their children's choice, attitudes, and behavior. Parents can teach and inspire their children. In the marriage context, an extensive literature in psychology and sociology argues that individuals are likely to choose partners similar to their opposite-sex parents (for reviews see Daly and Wilson, 1990 and Epstein and Guttman, 1984). Economists have only recently become interested in parental influences on children's attitudes toward spouse selections. For example, Bisin and Verdier (2000) and Bisin, Topa, and Verdier (2004) show that parents want to and are capable of transferring their religious faith to their children. The preference for exposing children to people of the same religious faith drives the marriage choice. Similarly, Fernandez, Fogli, and Olivetti (2004) show empirically that a man brought up by a working mother is more likely to marry

a working wife.

3.2 The value of family networks and ties

Based on the economic literature of marital choice, we hypothesize that for those who belong to big-business families, their choice of whom to marry is not simply an individual matter. In these families, offspring's choice of marriage may be subject to greater influence by their families. A young adult's tastes or attitudes are affected by his or her family in such a way that he or she will choose a spouse who is aligned with the interests of the family as well as the family business. Parents can influence their children's choice of whom to marry in several ways both directly and indirectly. For example, parents educate the children from youth on their responsibility toward the family and the family's business. They may be involved in the actual search process. For example, they may have them socialize with people in the same business circle. If a son-preferred candidate is not perfectly aligned with the parents' preference, parents can reduce or deny his inheritance. This threat is serious because the parents control key resources. In other words, the authority of the parents is linked to the extent to which the children depend on them economically.

Business families have strong economic incentives to ensure that their offspring choose the right partner. Family traditions and inheritance rules might drive the success of family businesses (e.g., Redding, 1990; Jones and Rose, 1993; and Whyte (1996)). To ensure the longevity of the family business, parents must convince the best and brightest of their large extended families to take up the reins of the business.

More importantly, sons and daughters can be used to build strategic alliances or networks between families on a secure and long-term basis (e.g., James, 2006). We argue that family networks enhance firm value in emerging economies with weak legal institutions. In this environment, a firm faces a variety of uncertainty when dealing with other firms. For example, there is a considerable risk about a project's product and technological outcomes, the ability of the management team, as well as, the trustworthiness of the trading partners. The network and business group literature suggests that trust associated with family relationships may ease uncertainty more effectively than partnerships of individuals for several reasons.

First, families interact frequently and intimately. Family networks therefore provide high-quality and reliable information, knowledge, and technology (e.g., Mcmillan and Woodruff, 1999; Ingram and Simon, 2002). Family ties also ensure community enforcement of contracts; the ties can broaden both the number of sanctioning parties and the menu of penalties for improper behavior. Family relationships, therefore, are characterized by higher levels of trust and empathy as well as reciprocity, which do not exist in relationships established for purely instrumental purposes (Granovetter, 1985). Accordingly, family relationships in business are regarded as the next-best solution to imperfections in the financial markets and corporate governance (Burkart, Panunzi and Shleifer, 2003 and Caselli and Gennaioli, 2005).

Second, specific family members are an important source of reputation capital in product, input, and political markets (e.g., Granovetter, 1985 and Greif, 1993). Extensive studies indeed show that family connections help firms gain access to various resources such as finance and government contracts (Morck, Wolfenzon, and Yeung, 2005).

Third, via family networks, a family fortune can be enlarged and transferred. In other words, family members can have access to the family's pool of financing, human resources, input suppliers, contracts, and other privileges. Family networks thus help secure mutual interests, eliminate competition, and merge firms. As suggested by the business group literature, business risk can also be shared by the whole extended family, a form of safety net (Khanna and Yafeh, 2005).

In summary, we hypothesize that closely networked firms gain better access to inputs, credit, human resources, technologies, contracts, and markets. So, establishing successful networks is one of a firm's strategic decisions. One of the most important corporate strategies is to use marriage as a means of economic advancement.

Numerous anecdotal evidence supports our hypothesis that marriage is a key to family business success and hence provides strong economic motivation for a family to influence its offspring choices. For example, Ferguson (1998) argues that the House of Rothschild's success from the late eighteenth into the early twentieth century was due not only to the financial skills of the partners but also to their innovative strategies in the sphere of marriage and succession. The bank was organized by Mayer Amschel Rothschild, one of the founder's

five sons, into five branches in five different countries. The ties between these branches were reinforced by repeated intermarriage among nephews and first or second cousins. Similarly, Ingram and Lifshcitz (2006) show that family ties led to a sharing of managerial ideas, technology, and human resources among leading shipbuilders on the Clyde River in the United Kingdom. This close collaboration helped them become the world most famous shipbuilders from the nineteenth into early twentieth century.

In Asia, where government decision making remains opaque, most laws are still passed without public hearings, and concessions continue to be granted without public scrutiny of their terms and conditions. Strong political connections are needed for access to government favors and deals as well as capital markets. An extensive number of studies show that firms indeed benefit from having connections in Thailand, China, Malaysia, Pakistan, Indonesia, and Korea.[6] Bunkanwanicha and Wiwattanakantang (2007) also show that, via such connections, big families can crowd out new entrants in Thailand.

4 Data

4.1 Database construction

We construct a data set of 200 weddings that were held during 1991 - 2006. This sample includes weddings in which the bride or groom is an offspring of one of the top 150 richest business families in Thailand. Our data-collection process involves four phases.

In the first phase, we identify the top 150 richest families using the information from Brooker Group (2001) and Polsiri and Wiwattanakantang (2006). To measure their wealth, we use the total assets of the companies that are ultimately owned by the family. To identify companies that are ultimately owned by the top 150 families, we focus on listed and nonlisted companies that are among the 2,000 largest companies ranked on total assets as of the end of 2000. A remark should be added at this point that we may underestimate the real value held by such families if they own smaller companies. The accounting and ownership information is obtained from two sources. The first source is the Business On

[6] See Fisman (2001); Charumilind, Kali, and Wiwattanakantang (2006); Fan, Rui, and Zhao (2006); Johnson and Mitton (2003); Khwaja and Mian (2005); Leuz and Oberholzer-Gee (2006); and Siegel (forthcoming).

Line (BOL) database. The BOL has a license from the Ministry of Commerce to reproduce the accounting and ownership information of all registered companies. Our second source of data is the Stock Exchange of Thailand databases, namely the I-SIM CD-ROM and the SETSMART online service.

We trace the ultimate owners of the firms in the sample by using the standard approach suggested by La Porta, Lopez-de-Silanes, and Shleifer (1999) and Claessens, Djankov, and Lang (2000). A firm is controlled by a family if the family owns more than 20% of the voting rights, taking into account the pyramidal structure. As it turns out, this requirement is not necessary because there are only a few cases in which a family own less than 20% of the voting rights. We treat all family members as well as companies ultimately owned by these members as a single shareholder. A shareholder, therefore, includes individuals with the same surname as well as families linked by marriage. Surnames can be used to trace family relationships because family names in Thailand are unique and only people belonging to a family may use that family's name. To obtain a family's wealth, we sum up the total assets of all firms that are ultimately owned by the family.

The second phase consists of constructing family trees. For each family member, we collect information on his or her specific position in the family tree, gender, and birth order (defined as the rank of children within a specific marriage). We hand-collect the information to track the family relationships from various sources. The most important source is the cremation volumes that are published and distributed as gifts on the occasion of cremation ceremonies. The data from these booklets include the biography of the deceased. the names, gender, and date of birth of his or her parents, siblings, spouse(s), children, and grandchildren. Many booklets of the business group founder/leader (for example, Chot Lamsam, Chin Sophonpanich, and Thiam Chokwattana) include detailed genealogical diagrams of the family and their related families. We obtained these booklets from the cremation volume collection at the National Library of Thailand (which, according to its own rules, is to receive samples of every book published in the country).

Additional family tree information is obtained from Brooker Group (2001) and Sappaiboon (2000, 2001). These books provide us with information on the family backgrounds of the top 100 families such as the names of the founder, his spouse, children, and siblings.

Finally, we collect additional information on families that own listed companies from the companies' annual report (FM 56-1). This data source provides information on the family relationships between major shareholders and board members as well as the date of birth of members of the board.

In the third phase, we hand-collect the wedding information. The data source is the most popular local newspaper, *Thairath,* which publishes news on weddings of celebrities on page 4 almost every day. The news includes the names of the couples, their parents, the people who presided over the wedding, the wedding date, the venue, and pictures of the couple taken at the wedding reception with their parents and other important guests. A wedding notice is usually published two days after the wedding took place. We retrieve the notices from January 1, 1991 until December 31, 2006 from the newspaper microfilm collections at the National Library of Thailand. There are a total of 2,225 weddings. Then, we match the names of the wedded couples with the names of the members of the top 150 families.

In the final phase, we collect the personal information on newlywed couples. The date of birth is obtained from the family registration official record available at the Department of Provincial Administration of the Ministry of the Interior. Education backgrounds are obtained from the listed company annual report (FM 56-1) and corporate websites. We complement these sources of information with Thai business newspapers and magazines websites.

4.2 Event characteristics

Table 1 presents the number of newlywed couples in our sample that held a wedding reception during 1991 - 2006. We find 200 cohorts of couples in which the bride/groom is an offspring of one of the top 150 business families. These 200 couples are offspring of 91 business families. The weddings appear to occur throughout the period of our study. The wedding observations are a little concentrated in 2005, when weddings account for 11.5% of our total observations. The year of financial crisis (1997) had the fewest (seven observations).

In Table 2, we classify the newlyweds based on the partner's background: whether or not he or she is from one of the "*well-connected families*". The well-connected families

are defined as the families associated with *business or political* networks. The families in the business networks include (1) the top 150 business group families and (2) the business families that are not the top 150. Families with political networks are defined as (1) royal and noble families and (2) the families of politicians and high-ranking civil servants and military officers. Out of 200 newlyweds, we find 93 and 66 cases of marriage in which the partner is an offspring of the business and political networks, respectively.

[Insert Table 1 and Table 2 here]

5 Market reactions to wedding news

In this section, we examine the stock return responses to wedding announcements We use an event-study methodology in order to measure the effects of the weddings of offspring of big-business owners on their family business. If the wedding of the controlling family's offspring benefits the firms in that it helps establish a new business network, we should observe significant positive abnormal returns around the announcement date. On the other hand, if the wedding is irrelevant to the family's business or not important for the firm's prospects, we should not observe any significant change in market valuation around the event. We consider marriages in which partners are from either (1) business networks or (2) political networks as marriages may be instrumental in family-network building.

We follow the approach as described in Brown and Warner (1985) to calculate cumulative market-model abnormal returns (CARs) around the announcement date. Our analysis incorporates three sets of portfolios. We classify the firms into each portfolio based on the family background of the offspring's bride/groom, whether she/he is from (1) business networks, (2) political networks, or (3) others. Hereafter, we call these portfolios *business networks*, *political networks*, and *other families*. We also investigate the overall effect of marriage on all connected families by creating another portfolio, *network marriage*, which is defined as the *business networks* plus the *political networks.* The firms in the business networks and political networks portfolios are classified as networked firms. The *other families* portfolio contains the firms that belong to the newlywed family whose partner is not from a well-connected family and hence serves as a benchmark.

A remark is in order here. Because we investigate stock returns, only publicly traded firms are included in the portfolios in the following analysis. Accordingly, we focus on 66 cases of marriage with business networks, 44 cases of marriage with political networks, and 30 cases of marriage with others. Daily prices and returns (dividend included) are obtained from Datastream.

In the event-study analysis, we define the announcement date (t=0) as the first trading day the wedding news is published in the local newspaper, *Thairath*. Announcement-period abnormal returns are computed as a firm's equity return minus a market-adjusted return and summed over the announcement period. To obtain OLS estimates of the market parameters, we regress a firm's returns on market index returns during 200 trading-day windows from days -210 to -21 prior to each announcement date. As a proxy for the market index, we use the Stock Exchange of Thailand value-weighted market index.

The primary event windows are the two windows around the event date: the three-day period (-1, +1) and five-day period (-2, +2). The test statistic under the null hypothesis of zero abnormal returns is computed for each sample using the test statistics described in Brown and Warner (1985). More specifically, the test statistic is the ratio of the average CAR to its standard error, estimated from the time-series of average abnormal returns. This test statistic accounts for cross-sectional dependence in abnormal returns.

Table 3A reports the mean and median CARs of the portfolios. The conspicuous pattern in the table occurs on the days just around the announcement by the first two sets of firms where the owner's offspring is married to a person from an economically and politically well-connected family. These two portfolios have significant positive average abnormal returns each trading day from day -1 through day +1 and day -2 to +2. The value being created by the wedding is statistically and economically significant. The estimated three-day CAR and five-day CAR for the group whose offspring's partner is from the business networks is 0.94% and 1.31%, respectively. The value created by the wedding to the political networks is somewhat larger. The firms that are linked via marriage to the political networks gain 1.29% and 1.88% in value from day -1 through day +1 and day -2 through +2, respectively. To the contrary, the market does not react to the wedding announcement of an offspring whose partner is an unconnected family. The estimated CARs are not significant at the

conventional levels.

For robustness tests, we run OLS regressions using the abnormal returns as the dependent variables. We include three dummy variables indicating the marriage types in the regressions: business networks, political networks, and network marriages. In other words, we compare the abnormal returns of firms connected to business and political networks with those of firms that do not establish such connections. We introduce a set of variables controlling for firm-specific characteristics. Size is measured as the logarithm of total assets. Leverage is defined as the ratio of total debt to total assets. The ratio of EBIT to total assets captures the firm's profitability effect on market valuation. The control variables are measured at the end of the year when the wedding was held. To ensure that the results are not driven predominantly by industry membership, we include 6 industry dummy variables in the regressions. All regression models are estimated using the OLS method with standard errors clustered at the family level. The t-statistics computed using the clustered standard errors are, therefore, adjusted for heteroskedasticity and robust-to-inherent correlation in the long-run returns within a cluster.

The regression results in Table 3B are qualitatively and quantitatively similar to those for the univariate tests. The estimated coefficients on the three dummies are positive and strongly significant at the 5% level for all regressions. The striking positive abnormal returns for the firms that are linked to the business and political networks by marriage, and the lack of market reaction to the firms controlled by the families whose offspring wed to an unconnected family, strongly support our hypothesis. Based on these results, it appears that the market interprets the marriage of an offspring of big-business families as an indication of economic benefits to networked firms.

[Insert Table 3 here]

6 Family businesses/structure and marriage decisions

In this section we complement our analysis of value effects by providing evidence on the effect of family factors and family business on the marriage choice. More specifically, we investigate the hypothesis that offspring of top business families consider the benefits to

their family business when deciding whom to marry. It should be noted that this argument does not disregard the affection component. However, we argue that attraction and love do not operate arbitrarily. Rather, marital selection is related to seeking a partner with assets and qualifications that maximize one's preferences, which include the future family income, among other things. In other words, marriage can be instrumental for achieving economic benefits.

6.1 Empirical specification

We estimate the probability of choosing a partner from a well-connected family as a function of the family business and family traits. We use probit regressions which are controlled for personal and other attributes that may affect the marriage choice. Our basic regression specification is a linear probability model of the form:

$$Prob\ (Network\ marriage) = f(\alpha + \beta_1 Family\ business_i + \beta_2 Family\ structure_i + \beta_3 Individual\ attribute_i + \sum \beta_j \mathbf{X}_{ij} + \varepsilon_i)$$

where *Network marriage* is an indicator variable equal to one if the wedding partner is from a well-connected family and zero otherwise. *Family business*, *Family structure*, and *Individual attribute* are defined as follow.

Family business We relate a number of characteristics of a family's business to the choice of marriage. As discussed earlier, family networks may facilitate information exchanges between firms. The benefits of such exchanges are greater for firms whose operations are highly dependent on information, such as the property and construction and government contracting industries. In these industries, to get a business off the ground, networking is an absolute necessity. For example, networks provide the information on the demand and supply of properties.

In addition, we apply political models of family firms where specific family members present an important source of reputation capital in political markets (Morck, Stangeland, and Yeung, 2000). Interaction with government officials and key market players helps foster goodwill among different types of people. Also, government officials are the people who formulate development plans, control budgets, set the rules for contractors to enter and op-

erate in the industry, examine credentials, authorize contracts, and pay the bills for services rendered. So, close relationships with public officials facilitates receiving lucrative contracts. In addition, via such networks, big-business owners can manipulate the government to serve their interests.

Many anecdotes from Thailand support this argument. For example, big-business leaders often manage to influence government officials on the selection of a new road to be built, the route of that road, or a new construction project.[7] Benefits may also simply come from having access to official information on new construction projects. Then a developer would buy properties around the area before such information is made public and property prices rise.[8] There is also plenty of anecdotal evidence in a slightly different context. Coordinating with other market players seems to play a prominent role in securing contracts with the government. Close relationships among market players facilitate such coordination. For example, contractors may collude by having an arrangement whereby they bid for particular projects but structure their bids so that each one of them in turn is the winning bidder. In order to ensure that maximum benefit is received from the collusion, the bids would be structured so that the winning bid, although the lowest, would still be significantly higher than if there had been genuine open competition. This arrangement can be difficult to detect, particularly when experienced contractors are aware of how to pitch a bid to ensure that it is not so excessively high as to arouse undue suspicion.

We proxy the preference for building business networks by the family business whether its business is (1) in the property and construction industries, (2) dependent on government concessions and contracts, (3) diversified, and (4) highly leveraged. We use a dummy variable to indicate whether a family owns a business that is in the property and construction industries, dependent on government concessions and contracts, and diversified. A family business is considered diversified if its businesses are in more than two different SIC codes

[7] For example, the SC Assets Plc. was recently accused of benefiting from the a Cabinet resolution on July 4, 2003. This resolution approved a project building a new road from Ratchadapisek to RamIntra. The new road immediately increased the value of the property development project of SC Assets as it turned the plot with no access into a golden project (The *Nation*, September 26, 2006). Apparently, SC Assets was ultimately owned by the Shinnawatra family, whose group leader was the prime minister during that period.

[8] There were allegations that in speculation of a new Bangkok airport to be constructed and opened in 2006, prominent developers with strong political connections had bought large plots of land surrounding the airport (The *Nation*, June 26, 2006).

defined at a two-digit level. Extensive business networks may become more important in a more diversified business group, as it needs to have access to the information on industry trends and market conditions. Highly leveraged groups have strong incentives to build networks for seeking access to new financing or stabling of their financing obligations. We measure leverage by the group total debt divided by total assets.

Family structure We test whether the structure of the families behind these business groups plays a prominent role in the marital choices of the offspring. As in Bertrand, Johnson, Samphantharak, and Schoar (2005) and Bennedsen, Nielsen, Perez-Gonzales, and Wolfenzon (2007), we look at the heirs. Since it is not common among Thai firms to explicitly nominate an heir, we use a number of variables to proxy for heir candidates. The successor choices are influenced by the Chinese-Thai inheritance customs and the current trend in gender equality. Typically the oldest son is the natural heir of the main business. Other sons inherit control over other businesses. Daughters are also highly educated and have become more involved in top management in the family business in recent years. Therefore, we allow for more than one heir successor.

More specifically, we use the following two measures to measure heir candidates. First, *main line,* is a dummy variable that indicates whether or not one is from the main line of the family. We define the *main line* as the direct family of the current head, which includes his children and his grandchildren. The head of a group is defined as the founder if the founder is still alive. Otherwise, the head is the CEO or chairman of the largest firm of the family group firms. So, based on this definition, we consider all the children of the current head as heir candidates and his grandchildren as the next-generation heir candidates. Second, *board member*, is a dummy variable that indicates whether or not one is on the board of family firms in the year of the wedding.

One may argue that an offspring from big-business families may select his or her partner from the same social circle. To capture the "*same circle*" effect, we use a dummy variable, *business dynasty.* Following Landes (2006), *business dynasty* takes a value of one if the family has been in business for more than two generations (offspring are in the fourth or fifth generation) and zero otherwise.

Individual attributes Following the economic model of marriage, we control for the effect of gender and age differences between the bride and groom. We did not include differences in education and races as suggested by the literature because there is no significant variation in these two individual traits between the couples. More precisely, we use the bachelor degree as a cutoff and consider there to be a gap in the couple's education when the bride has a bachelor degree but the groom holds a lower degree and vice versa. The education difference turns out to be zero, as all the brides and grooms have at least a bachelor degree. Similarly, given that Thai society is relatively homogeneous, it is not necessary to control for differences in ethnic and religious backgrounds.

The vector of control variables $\mathbf{X}_{ij}$ includes other family business factors, namely size and profitability. Size is measured by the total assets of all firms in the same group. Profitability is the group returns of assets, which is measured by the ratio of earning before interest and taxes (EBIT) to total assets.

6.2 Results

To understand the role of family on the marital choice, we first discuss the characteristics of the bride and/or groom who is an offspring of one of the top 150 families. Table 4 show the results. First, we break down the sample by gender. The results show that out of the 200 cohorts, 113 (or 56.5%) are male offspring and 87 (or 43.5%) are female offspring.

Second, on the relationship of the bride/groom to the current head of a business group, our results show that marriages are concentrated in the current head's sons/daughters (83 cases) and nephews/nieces (100 cases). The rests are marriages of the current head himself (1 case), his siblings (12 cases), his grandson/daughter (3 cases), and his grandnephew/niece (1 case).

Third, we count the number of newlyweds who are heir candidates of the family business. We find that there are 84 marriages of offspring who are from the *main line*. In addition, in 37 marriages, the groom is the first son of the current head. Finally, we find 83 cases of which the bride/groom is holding a board position of family firms when the wedding took place.

Next, we categorize the cohorts based on the family businesses and look at whether the

wedding partner is from a well-connected family. Table 5 presents the percentage of cohorts in each category. As hypothesized, in almost all cases of weddings of offspring from the families whose businesses depend on information and business and political connections, the partner is from a well-connected family. Statistically, there are 43 out of 45 cohorts in the real estate and construction industries and 14 out of 15 cohorts in concession-based businesses.

In Table 6, we run univariate tests comparing firm characteristics of the business groups in which the offspring are married to connected and nonconnected families. The results show that the groups whose offspring are married to connected families have a higher debt ratio. Besides debt, there is no significant difference between these two groups in terms of size, profitability, and asset tangibility.

Table 7 presents the probit results. We find a strong correlation between family business and family characteristics on the marital choice of the offspring of top business families. We observe an influence of the family business attributes on partner choice. The coefficients on the three dummy variables indicating whether the family businesses are diversified and depended on real estate and concession industries are strongly significant at the 1% level. In addition, we find evidence that offspring from more leveraged firms are more likely to choose their partners from a well-connected family.

For the effect of family attributes, which are measured by the variables *main line*, *board member*, and *business dynasty*, the results are positive. A two-tailed test on the significance of the estimated coefficients on the former two variables reveals that this effect is statistically significant at the 1% level. The coefficient on the *board member*, however, is weakly significant. Lastly, we do not observe any effects from gender, age difference, group size, and profitability.[9]

To provide further evidence on the determinants of marriage choice, we employ multinomial logistic models with different reference categories. The multinomial logit regression allows us to distinguish and derive simultaneous comparisons among the determinants of the three types of marriage: *business networks*, *political networks*, and *others*. We use a

[9] In unreported results, we used logit models. The analyses yield qualitatively identical results to the probit models presented above.

categorical dependent variable to indicate the three categories of marrying choices. The marriage to *others* is used as the comparison group. The results are in Table 8. Column (1) analyzes the probability of "business networks" to "others" marriage. Column (2) contrasts the probability of "political networks" vs. "others" marriage.

The empirical findings are consistent with the following notions. First, on the effect of family business, the real estate business is positively related to the two types of marriage, business networks and political networks. We observe differences in the influence of family businesses on marriage choices between the business networks and political networks. The probability of choosing a partner from a business network family is positively related to whether or not a subject is from a diversified business group. However, whether or not a subject is from a diversified business group is unrelated to the marriage choice between political and nonconnected families. In addition, while family business in concession industries is positively related to choosing a partner from a political network family, such a business is unrelated to the choice of having a partner from a business family.

Second, on the influence of the family, the variables *main line* and *business dynasty* are positively related to the probability of choosing a partner from both business and political network families. We observe a difference between marrying to a business or political network: when a subject is holding a board position when getting married, he/she prefers to choose a person from a business network.

[Insert Table 4, Table 5, Table 6, Table 7, and Table 8 here]

7 Conclusion

This paper investigates the marriage choices of offspring of top business families in Thailand. We show that marriage can be used as a corporate strategy to benefit a family's businesses. The effect of family networks on shaping the success of business has long been documented in the sociology and organizational studies literature. Economists' interest in family firms, however, is still limited to the expropriation role of the controlling families. The lack of studies beyond such issues is surprising in lieu of the extensive evidence on the pervasiveness of family ownership around the world. A deeper understanding of various economic

roles of families is essential for analyzing the effect of families and their firms on economic development.

A natural extension of our work will be to develop a data set to explore the long-term consequences of marriage to well-connected families. An empirical analysis identifying the channels through which family networks would benefit a family's businesses would in particular be important.

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Table 1
The sample

This table reports the sample by year. Our sample consists of the announcements of the weddings of the offspring who are members of the top 150 big-business families in Thailand.

Year	Number	Percentage
1991	12	6.0%
1992	13	6.5%
1993	8	4.0%
1994	15	7.5%
1995	12	6.0%
1996	15	7.5%
1997	7	3.5%
1998	13	6.5%
1999	11	5.5%
2000	11	5.5%
2001	18	9.0%
2002	13	6.5%
2003	10	5.0%
2004	9	4.5%
2005	23	11.5%
2006	10	5.0%
Total	200	100.0%

Table 2
The partner's family background

This table describes the family background of the partner who married the offspring who is a member of one of the top 150 big-business families in Thailand.

		Number	Percentage
A. Family background of the partner			
Royal, noble	[1]	17	8.5%
Politician, high-ranking military officers/civil servants	[2]	49	24.5%
Big business	[3]	42	21.0%
Business	[4]	51	25.5%
Foreigner	[5]	11	5.5%
Others	[6]	30	15.0%
Total		200	100.0%
B. Family related to political and business networks			
Political networks [1]+[2]	[7]	66	33.0%
Business networks [3]+[4]	[8]	93	46.5%
Others [5]+[6]	[9]	41	20.5%
Total		200	100.0%
C. Well-connected family			
Well-connected family [7]+[8]	[10]	159	79.5%
Others [9]	[11]	41	20.5%
Total		200	100.0%

Table 3A
The value of network marriages

This table reports the statistics of the cumulative abnormal returns (CARs) around the wedding announcement dates of the offspring who are members of the top 150 big-business families in Thailand. This analysis includes only publicly traded firms. The event date is defined as the first trading day after the news published in the *Thairath* newspaper. *Network marriages* are the weddings in which the partner is a member of the family related to business or political networks. *Business networks* are the weddings in which the partner is a member of (i) the top 150 big-business families, or (ii) other smaller business families. *Political networks* are the weddings in which the partner is a member of (i) royal or noble family, or (ii) politician, high-ranking military officer or civil servant family. *Others* are the weddings in which the partner is from nonconnected families. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Network marriages		Business networks		Political networks		Others	
	CAR (-1,+1)	*CAR (-2,+2)*	*CAR (-1,+1)*	*CAR (-2,+2)*	*CAR (-1,+1)*	*CAR (-2,+2)*	*CAR (-1,+1)*	*CAR (-2,+2)*
Mean	1.08%***	1.54%***	0.94%***	1.31%***	1.29%***	1.88%***	-0.02%	0.03%
p-value (clustered by family)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.95)	(0.92)
Median	0.71%***	0.91%***	0.65%***	0.85%***	0.74%**	1.22%**	0.00%	0.21%
Sign-test p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.57)	(0.11)
Positive *CAR* (%)	72%	71%	74%	73%	68%	68%	50%	63%
Number of observations	110	110	66	66	44	44	30	30

Table 3B
The value of network marriages: regression analysis

This table reports coefficient estimates of OLS regressions. The dependent variable is the three-day and five-day cumulative market-adjusted abnormal returns (CARs) around the wedding announcement dates of the offspring who are members of the top 150 big-business families in Thailand. This analysis includes only publicly traded firms. The event date is defined as the first trading day after the news published in the *Thairath* newspaper. *Network marriages* is a dummy variable that takes a value of one if the partner is a member of the family related to political or business networks, and zero otherwise. *Business networks* is a dummy variable that take a value of one if the partner is a member of (i) the top 150 big-business families, or (ii) other smaller business families, and zero otherwise. *Political networks* is a dummy variable that takes a value of one if the partner is a member of (i) royal or noble family, or (ii) politician, high-ranking military officer or civil servant family, and zero otherwise. *Log (total assets)* is the logarithm of total assets. *Leverage* is the ratio of total debt to total assets. *EBIT/total assets* is the ratio of earnings before interest and taxes to total assets. Numbers in parentheses are *t*-statistics from heteroskedasticity-robust standard errors with clustering at the family level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Network marriages		By type of networks	
	CAR(-1,+1)	*CAR(-2,+2)*	*CAR(-1,+1)*	*CAR(-2,+2)*
	(1)	(2)	(3)	(4)
Network marriage	0.898***	1.157***		
	(3.14)	(3.13)		
Business networks			0.775**	1.038**
			(2.61)	(2.53)
Political networks			1.119***	1.370***
			(2.90)	(2.74)
Log (total assets)	-0.017	-0.236	-0.014	-0.233
	(-0.10)	(-1.00)	(-0.09)	(-1.01)
Leverage	-0.198	0.272	-0.291	0.182
	(-0.34)	(0.36)	(-0.48)	(0.22)
EBIT/total assets	-0.403	-0.053	-0.461	-0.109
	(-0.19)	(-0.02)	(-0.22)	(-0.04)
Constant	0.265	1.141	0.278	1.153
	(0.32)	(0.88)	(0.35)	(0.89)
Industry dummies	Yes	Yes	Yes	Yes
Number of observations	140	140	140	140
Adjusted R^2	0.145	0.183	0.153	0.186

Table 4
Characteristics of the offspring

This table reports characteristics of the offspring who are members of the top 150 big-business families in Thailand.

	Number	Percentage
A. Gender		
Male	113	56.5%
Female	87	43.5%
Total	200	100.0%
B. Generation to founder		
One	4	2.0%
Two	79	39.5%
Three	71	35.5%
Four	31	15.5%
Five	15	7.5%
Total	200	100.0%
C. Relationship to current head		
Current head	1	0.5%
Sibling	12	6.0%
Son/Daughter	83	41.5%
Nephew/Niece	100	50.0%
Grandson/Granddaughter	3	1.5%
Grandnephew/Grandniece	1	0.5%
Total	200	100.0%
D. Offspring is from the main line		
Main line	84	42.0%
Others	116	58.0%
Total	200	100.0%
E. Offspring is the first son of current head		
First son of current head	37	18.5%
Others	163	81.5%
Total	200	100.0%
F. Offspring holds a board position		
Holding a board position	83	41.5%
Not holding a board position	117	58.5%
Total	200	100.0%

Table 5
The offspring's family business

This table reports the distribution of the offspring's family business by industry. In Panel A, the industries are defined based on the industry classification of the Stock Exchange of Thailand (SET). In Panel B, the family business is classified as to whether the business is related to government concession contracts. In Panel C, the family business is classified as to whether the business is related to property and construction. In Panel D, the family business is classified as to whether the business is a diversified business group.

	Total sample	Network marriages		Others	
	Number	Number	Percentage	Number	Percentage
A. SET Industry classification					
Agro & food	38	29	76.3%	9	23.7%
Consumer products	8	7	87.5%	1	12.5%
Financials	50	39	78.0%	11	22.0%
Industrials	26	19	73.1%	7	26.9%
Property & construction	45	43	95.6%	2	4.4%
Services	26	16	61.5%	10	38.5%
Telecommunications	7	6	85.7%	1	14.3%
Total	200	159	79.5%	41	20.5%
B. Family business is related to government concessions					
Concession	15	14	93.3%	1	6.7%
Others	185	145	78.4%	40	21.6%
Total	200	159	79.5%	41	20.5%
C. Family business is related to property and construction					
Property and construction	45	43	95.6%	2	4.4%
Others	155	116	74.8%	39	25.2%
Total	200	159	79.5%	41	20.5%
D. Family business is a diversified business group					
Diversified business group	57	48	84.2%	9	15.8%
Others	143	111	77.6%	32	22.4%
Total	200	159	79.5%	41	20.5%

Table 6
Summary statistics

This table reports summary statistics of the financial and other control variables. Panel A presents the financial characteristics of the offspring's family business. Panel B presents the offspring's age and the age difference of a couple.

		Total sample	Network marriages	Others	*t*-statistics (*t*-test)	*z*-statistics (Wilcoxon test)
		(N=200)	*(N=159)*	*(N=41)*		
A. Financial characteristics of the offspring's family business						
Total assets (million USD)	Mean	3,524	3,181	4,853	-1.15	-0.34
	[Median]	[397]	[402]	[277]		
Log (total assets)	Mean	4.198	4.176	4.281	-0.68	-0.41
	[Median]	[4.081]	[4.090]	[4.048]		
Log (total equity)	Mean	3.308	3.331	3.217	0.55	0.13
	[Median]	[3.461]	[3.465]	[3.428]		
Leverage	Mean	0.338	0.354	0.274	1.90*	2.00**
	[Median]	[0.305]	[0.363]	[0.176]		
EBIT/total assets	Mean	0.052	0.055	0.043	0.74	1.12
	[Median]	[0.037]	[0.037]	[0.030]		
Fixed assets/total assets	Mean	0.356	0.369	0.307	1.38	1.34
	[Median]	[0.361]	[0.375]	[0.222]		
B. Age of the couples						
Offspring's age	Mean	30.15	30.30	29.51	1.11	0.79
	[Median]	[30.00]	[30.00]	[30.00]		
		(N=186)	*(N=149)*	*(N=37)*		
Age difference	Mean	3.30	3.21	3.75	-0.75	-0.47
	[Median]	[2.00]	[2.00]	[2.50]		
		(N=165)	*(N=137)*	*(N=28)*		

Table 7
Probit regressions of the offspring's marital choice

This table reports probit estimates of the offspring's marital choice of whether to marry to a person from a well-connected family. The dependent variable is a dummy variable that takes a value of one if the partner is a member of the family related to political or business networks, and zero otherwise. *Concession* is a dummy variable that takes a value of one if the family business is related to government concessions, and zero otherwise. *Property and construction* is a dummy variable that takes a value of one if the family business is related to property and construction, and zero otherwise. *Diversified business group* is a dummy variable that takes a value of one if the family business is a diversified business group, and zero otherwise. *Leverage* is the ratio of total debt to total assets. *Main line* is a dummy variable that takes a value of one if the offspring is from the main line of the current head, and zero otherwise. *Board member* is a dummy variable that takes a value of one if the offspring is a board member of the family firms, and zero otherwise. *Business dynasty* is a dummy variable that takes a value of one if the family has been in business for more than two generations, and zero otherwise. *Male* is a dummy variable that takes a value of one if the offspring is male, and zero otherwise. *Age difference* is the age difference of a couple. *Log (total assets)* is the logarithm of total assets. *EBIT/total assets* is the ratio of earnings before interest and taxes to total assets. Numbers in parentheses are *t*-statistics from heteroskedasticity-robust standard errors with clustering at the family level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
A. Family business			
Concession	0.929***	1.004***	0.712***
	(3.03)	(3.27)	(2.94)
Property and construction	1.224***	1.192***	0.917***
	(3.68)	(3.51)	(2.64)
Diversified business group	0.426**	0.732***	0.868***
	(2.11)	(2.67)	(2.95)
Leverage	0.801*	0.952**	0.873*
	(1.82)	(2.06)	(1.83)
B. Family structure			
Main line	0.786***	0.753***	0.669**
	(2.76)	(2.65)	(2.23)
Board member	0.584*	0.505	0.510
	(1.77)	(1.57)	(1.49)
Business dynasty	0.785***	0.828***	1.432***
	(3.34)	(3.66)	(3.50)
C. Individual attributes and other control variables			
Male	-0.010	-0.009	-0.053
	(-0.04)	(-0.04)	(-0.16)
Age difference			-0.025
			(-0.62)
Log (total assets)		-0.192	-0.060
		(-1.35)	(-0.45)
EBIT/total assets		0.909	1.305
		(0.61)	(0.86)
Constant	-0.373	0.289	-0.073
	(-1.32)	(0.43)	(-0.11)
Number of observations	200	200	165
Pseudo R^2	0.227	0.237	0.268
Log pseudo-likelihood	-78.441	-77.386	-54.985

Table 8
Multinomial logit regressions of marital choice

This table reports multinomial logit estimates of the offspring's marital choice of whether to marry to a person from a well-connected family. The dependent variable is a dummy variable that takes a value of one if the partner is a member of the family related to political or business networks, and zero otherwise. *Concession* is a dummy variable that takes a value of one if the family business is related to government concessions, and zero otherwise. *Property and construction* is a dummy variable that takes a value of one if the family business is related to property and construction, and zero otherwise. *Diversified business group* is a dummy variable that takes a value of one if the family business is a diversified business group, and zero otherwise. *Leverage* is the ratio of total debt to total assets. *Main line* is a dummy variable that takes a value of one if the offspring is from the main line of the current head, and zero otherwise. *Board member* is a dummy variable that takes a value of one if the offspring is a board member of the family firms, and zero otherwise. *Business dynasty* is a dummy variable that takes a value of one if the family has been in business for more than two generations, and zero otherwise. *Male* is a dummy variable that takes a value of one if the offspring is male, and zero otherwise. *Age difference* is the age difference of a couple. *Log (total assets)* is the logarithm of total assets. *EBIT/total assets* is the ratio of earnings before interest and taxes to total assets. Numbers in parentheses are *t*-statistics from heteroskedasticity-robust standard errors with clustering at the family level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Business networks vs. Others	Political networks vs. Others	Business networks vs. Others	Political networks vs. Others
	(1)	(2)	(3)	(4)
A. Family business				
Concession	1.350	2.075***	1.423	2.097***
	(1.52)	(4.27)	(1.56)	(3.85)
Property and construction	2.029***	2.485***	2.015***	2.453***
	(2.92)	(3.46)	(2.74)	(3.26)
Diversified business group	1.107***	0.062	1.784***	0.457
	(2.98)	(0.15)	(3.51)	(0.85)
Leverage	1.141	1.785**	1.460*	1.983**
	(1.45)	(1.96)	(1.78)	(2.13)
B. Family structure				
Main line	1.337**	1.347***	1.295**	1.299**
	(2.45)	(2.62)	(2.35)	(2.52)
Board member	1.294**	0.765	1.146*	0.695
	(2.16)	(1.16)	(1.91)	(1.05)
Business dynasty	1.262***	1.356***	1.358***	1.374***
	(2.61)	(3.26)	(2.96)	(3.33)
C. Individual attributes and other control variables				
Male	-0.258	0.222	-0.285	0.228
	(-0.55)	(0.47)	(-0.58)	(0.47)
Log (total assets)			-0.390	-0.184
			(-1.51)	(-0.59)
EBIT/total assets			2.566	1.635
			(0.91)	(0.57)
Constant	-1.131**	-1.675***	0.155	-1.096
	(-2.27)	(-2.73)	(0.12)	(-0.78)
Number of observations	200		200	
Pseudo R^2	0.149		0.158	
Log pseudo-likelihood	-178.093		-176.365	