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## Abstract

This paper shows that family firms use marriage as a mechanism to establish long-term networks. Out of 200 marriages of the offspring of big business owners in Thailand during 1991-2006, more than two-thirds help connect the group to business or political networks. Network marriages are associated with an increase in stock prices, which indicates that such marriages are valuable to the firms. A business family has strong economic incentives to engage in a network marriage when its business depends on state concessions, operates in the property and construction industry, is diversified, and relies heavily on debt. Overall, the results suggest that network marriages may be a business strategy employed by family firms in emerging economies to overcome the drawbacks of weak legal and market institutions.

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Keywords: marriage, networks, family business group, emerging markets

JEL Classifications: G15; G32; G34; G38; K23; M13

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*"Blood is thicker than water"* –German proverb (originally: Blut ist dicker als Wasser.)

In emerging economies with weak market institutions, transactions costs impede dealings between arm's-length parties. Networks are a substitute institution for the market exchange as shown by a growing body of economic and finance literature.<sup>1</sup> For example, Khwaja, Mian, and Qamar (2008) find that in Pakistan more than 5,000 firms are connected to a single network via interlocking boards and these firms enjoy access to financing. Khanna and Thomas (forthcoming) report that in Chili the firm interlocks facilitate coordination across firms and affect capital allocation. A number of studies show that family networks dominate emerging markets (e.g., Morck, Wolfenzon, and Yeung (2005)). Burkart, Panunzi, and Shleifer (2003) argue that in poor property rights environments, family ties provide trust and therefore offer a second best solution for contract enforcement. Several studies further show that family ties shape corporate governance and performance (e.g., Perez-Gonzales (2006), Bennedsen, Nielsen, Perez-Gonzales, and Wolfenzon (2007), and Bertrand, Johnson, Samphantharak, and Schoar (2008)).

Family networks can be created by blood ties or marriages. While blood ties are determined by birth, marriages can be engineered. In the context of family firms, a controlling owner can encourage family members to choose a partner from an economically or politically powerful family. Marriage is a life-time contract that creates a credible commitment (Williamson (1983)). Therefore, marriage strengthens trust between the families. In many countries, the culture makes the networks even stronger because marriage combines not just the couple but also their extended families. The combined reputation and resources of the two extended families provide strong guarantees in business dealings with various stakeholders, hence making the transactions self-enforcing (Klein and Leffer (1981)). Arguably, a network marriage, therefore, creates a stable form of alliance, just as a merger

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<sup>1</sup>Allen and Babus (forthcoming) provide an excellent literature review on networks in finance. Research that studies social networks (e.g., via shared educational and professional experiences) in investment and asset pricing is such as Hochberg, Ljungqvist, and Lu (2007), Cohen, Frazzini, and Malloy (forthcoming).

combines the operation of two firms under the same roof.

The idea that marriage may be used by family firms to establish long-term networks has a long history. Throughout history, marriage has not been only about love (Westermarck (1891)). Rather, marriages have been strategically arranged to serve the house to maintain or raise their economic status (e.g., Balmori, Voss, and Wortman (1984) and Lomnitz and Perez-Lizaur (1987)).<sup>2</sup> The Medici in Renaissance Italy, arranged marriages that connected the family to economically powerful houses, elite politicians, and royal families— including the French royals. Many other business dynasties such as the Rothschild, Wendels, and Haniels in Europe and the Mitsui *zaibatsu* in pre-war Japan extended their business empire thanks to well-crafted marriages (Roberts (1973), James (2006), and Landes (2006)).

Even today, abundant evidence indicates that business groups are connected through marriage networks. For example, in Korea, the founding family of the largest group, Samsung, is connected through the marriage of the founder’s daughter to the families of the LG group, another top chaebol. SK, the third largest group, is also connected to former President Roh Tae Woo via the marriage of his daughter to the chairman of the SK group. Other top 30 chaebol families are also connected through marriage networks (Kim (2007)). Section I provides more evidence on marriage networks from both emerging and developed countries.

In this paper, we show empirically for the first time that firms make strategic decisions and use marriage as a mechanism for creating business and political networks. The empirical examination focuses on the top 150 business families in Thailand. This country provides a suitable research setting to study this issue for two reasons. First, prior research shows that marriage networks pervade the economy (Charumilind, Kali,

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<sup>2</sup>Malho (1994) writes about marriage alliance in late medieval Florence that “*Marriage did not happen in a haphazard fashion; certainly they were not the outcomes of whims, infatuations, or personal preferences. A complex and precise calculus was at work, most especially when marriage set up relations between families in command of capital of material.*”

and Wiwattanakantang (2006)). Figure 1 demonstrates that 56 big business and political families are intertwined by marriage and connected in a single network. Second, information on weddings, family trees, and family ownership of firms is available from public sources. Using multiple sources covering the period from 1991 to 2006, we constructed a rare dataset permitting a rich investigation of network marriages. There are 200 pairs of newlyweds in the sample. Interestingly, about 80% of the marriages appear to be related to forming networks, termed “network marriage” in the text. Specifically, in 66 cases, the marriages connect the business group to political networks; and in 93 marriages, the business group is connected to another business family. The remaining 41 offspring are married to a person from outside business or political circles. This group will be called “love marriage” and serves as the benchmark in our analysis.

Consistent with the economic theory of marriage (Becker (1973, 1974)), the results show that economic incentives play a role in marriage decisions, *ceteris paribus*. The probit analysis shows that a big business family is more likely to engage in a network marriage when its business is in the property and construction industry, based on state concessions, more diversified, or more heavily in debt. Our results provide compelling evidence that family firms respond to economic incentives—arranging network marriage when benefits to be drawn from the networked firms are high.

Having established that marriage is used to form business networks, we further investigate whether the new networks bring any real value to the firms. The event study analysis shows that the stock market reacts positively to the wedding news only when the partner is from an influential family, i.e., network marriage. A five-day cumulative abnormal return (CAR) of 1.31% is associated with network marriages that connect the firms to business networks, and the CAR of 1.88% is associated with network marriages that link the firms to political networks. Economic advancement is clearly a reason why the stock market pays attention to a family’s affairs. Overall, our results show that marriages

are engineered to set up networks that benefit the family's business.

Our findings have implications for a number of issues regarding the firm and business group organization that have arisen in the literature. We highlight the fact that marriage networks are prevalent in many emerging economies such as Thailand and Korea. Given this fact, how should firm/group boundaries be defined? Should firms owned by families connected by marriage networks be considered as one organization? Our study shows that the boundary of a firm/group is blurred by long-term relationships generated by marriages.

The rest of the paper is organized as follows. Section I provides an overview of marriage and networks practices. Section II outlines the conceptual framework. Section III describes the sample. Section IV analyzes whether family businesses are related to the offspring's marital choice. Section V investigates market reactions to wedding announcements. Section VI is the conclusion.

## **I. Background: Big business families and marriage networks**

Marriage motivated by romantic love is a relatively recent development in history and has roots in Western Europe (Westermarck (1891)). Some cultures in Asia, Africa, and Middle East continue to define the concept of marriage separately from that of romantic love. Arranged marriages, using matchmakers to ensure a good match (economically and socially) for the families of the betrothed, are common. This section presents examples of marriage among big business families from a number of different countries. In addition, we also give some background on the family relationships of big business families in Thailand, specifically attitudes regarding marriage.

### *A. Marriage and networks around the world*

There are extensive examples of marriages of big businesses that connect the families to other families that own business empires or hold positions as top bureaucrats or politicians.

In South Asia, the heir of the Chaudhary group, whose worldwide industrial empire has its headquarters in Nepal, is married to a daughter of the Mittal group which dominates the world's steel industry. This practice of marriage is not limited to Asia. In Ukraine, the country's second wealthiest tycoon, Viktor Pinchuk is connected to former president Leonid Kuchma by the marriage of his daughter. In Mexico, the heiress of one of the biggest business group owners, Maria Asuncion Aramburuzabala, is married to Tony Garza, US Ambassador to Mexico. All this evidence suggests that perhaps an accurate picture of many emerging economies is a diagram of an extended family tree connecting clans.

Family connections via marriage are also not uncommon in developed countries. In Japan, the elite families are known to have arranged their children's marriages to members of other top business families and politicians probably to progress their economic interests. Perhaps the most well crafted networks are the Toyoda family that controls the Toyota Motor group. The Toyodas are connected via marriage networks to the two top former prime ministers' families (Nakasone and Hatoyama) and seven top business families, namely Mitsui (a biggest pre-war *zaibatsu*), Shimizu (a worldwide general construction), Kajima (a worldwide general construction), Ishibashi (Bridge Stone), Uehara (Taisho Pharmaceutical), Saito (Daishowa Paper Manufacturing), and Iida (Takashimaya department store).

Marriage networks are also prevalent in Europe. One of the richest shipping tycoons of the 20th century, Aristotelis Onassis was married to Athina Livanos, who was a daughter of another shipping magnate Stavros Livanos. In Spain, a billionaire Esther Koplowitz is married to Fernando Falco, Marques de Cubas, scion of a prominent Spanish family. Crystal-heiress Fiona Swarovski wedded Austria's finance minister. More recently, Jessica Sebaoun-Darty, an heiress of a French electronics-vending empire was married to Jean Sarkozy, a son of President Nicolas Sarkozy. International marriage is also common. For

example, Chryss Goulandris (a Greek shipping heiress) is married to Tony O'Reilly who is one of Ireland's richest men.

### *B. Family relationships in Thailand*

Most big business families are of Chinese origin, whose founders migrated to Thailand during the early twentieth century. Therefore, a combination of Chinese and Thai customs and norms is often observed. Parents are involved in almost every aspect of the children's life, such as education, career, and marriage decisions, and remain involved in their life after the marriage. Like in many other Asian cultures, Thai children are raised from youth to respect and honor their parents as the most sacred people in their lives. This upbringing 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 filial duties. 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 sinful.

When a young man wishes to marry a young woman, 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 his extended family members. The same practice applies to the woman as well. A marriage without the family's blessing is likely to face enormous difficulties as the couple interacts with the extended 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 ask the woman'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 by the family's astrologer. In the Chinese-Thai tradition, one marries not just the partner but the whole extended family as well.

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 went up to 1.28 by 2003.<sup>3</sup> 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 in turn makes the relationships trustworthy.

## II. Conceptual framework

This section provides the conceptual background for analyzing the determinants of the offspring's marriage decision and the value of network marriages. We hypothesize that an individual from a business family does not choose a spouse only according to his/her own preferences, but also family and business concerns.

### A. *The economic theory of marriage*

There is a large empirical literature that demonstrates the importance of economic factors in the decision to marry. Marriage is often a matching process (Becker (1973, 1974, 1981)). Women and men meet each other and choose each other based on an observed and expected matching quality. Individuals maximize their future family income and social status by searching for what they regard as the most attractive partner. Matching may stem from individuals' preferences (or physical attractiveness) and along socioeconomic attributes such as income, ability, race, and education (e.g., Mare (1991), Burdett and Coles (1997), and Mortensen and Pissarides (1999)).

The literature shows that parents are very much involved in the process of selecting a marriage partner. Cheung (1972) argues that in traditional China, the parents, not the marrying children, participated in the marriage process. In such marriage, the family acquired property rights over another family through a marriage contract. Bisin and Verdier

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<sup>3</sup>Despite such increase, the divorce rate is much lower than 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), and the U.S. (4 per 1,000 in 2003). The data are obtained from United Nations, Demographic Yearbook (2003) and the Japanese Ministry of Health, Labor and Welfare, Demographic Statistics (2005).

(2000) and Bisin, Topa and Verdier (2004) show that parents' preference for exposing children to people of the same religious faith drives the marriage choice. Fernandez, Fogli, and Olivetti (2004) show that a man brought up by a working mother is more likely to marry a working woman.

Based on the economic of marriage literature, we hypothesize that for those who belong to big business families, their choice of who to marry is not simply an individual matter. 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 about their responsibility toward the family and the family's business. They may be involved in the actual search process. They may have them socialize with people in the same business circle. If a son's preference is not aligned with his parents', they can reduce or cut off 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 in particular are concerned with the outcome of the match. They have strong economic incentives to ensure that their offspring choose the right partner for several reasons. Family traditions and inheritance rules might drive the success of family businesses. To ensure the longevity of the family business, parents convince the best and brightest of their large extended families to take up the reins of the business. Equally important, sons and daughters can be encouraged to build strategic alliances or networks between families on a secure and long-term basis (e.g., James (2006)).

### *B. The value of family networks*

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 Simons (2002)). Family ties also ensure community enforcement of contracts (Klein and Leffer (1981), Williamson (1983)); the ties can broaden both the number of sanctioning parties and the arsenal 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 show that family connections help firms gain access to various resources such as finance and government contracts (Morck, Wolfenzon and Yeung (2005)). In some Asian economies government decision making remains opaque; laws are still passed without public hearings, and concessions continue to be granted without public scrutiny of their terms and conditions. Therefore, strong political ties are instrumental in gaining access to government favors and deals as well as capital markets.<sup>4</sup>

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, and other privileges. Family networks thus help maintain mutual interests, eliminate competition and merge firms. Business risk can also be shared by the whole extended family and the business group it controls (Khanna and Yafeh (2005)).

Abundant anecdotal evidence supports our hypothesis. For example, Ingram and

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<sup>4</sup>See, for example, Fisman (2001), Johnson and Mitton (2003), Khwaja and Mian (2005), and Bunkanwanicha and Wiwattanakantang (forthcoming).

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 U.K. This close collaboration helped them become the world's most famous shipbuilders from the nineteenth to the early twentieth century.

### **III. The marriage sample**

#### *A. Sampling procedure*

We identify 200 weddings that were performed during 1991-2006. This sample includes weddings in which the bride or groom is from 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 following the list provided in Polsiri and Wiwattanakantang (2006). Family wealth is measured by total assets of the companies that are ultimately owned by the family. To identify these companies, we focus on listed and non-listed companies that are among the 2,000 largest companies ranked by total assets as of the end of 2000. Due to resource constraints, it was not possible to identify small companies controlled by these families. The analysis, therefore, might underestimate the wealth of some families. Financial and ownership information is obtained from two sources. The first source is the Business On Line (BOL) database. The BOL has a license from the Ministry of Commerce to reproduce the accounting and ownership information of all registered companies. The second source of data is the Stock Exchange of Thailand databases, namely the I-SIM CD-ROM and the SETSMART online service.

The standard approach suggested by La Porta, Lopez-de-Silanes, and Shleifer (1999) and Claessens, Djankov, and Lang (2000) is used to identify the ultimate owners of the firms in the sample. A firm is controlled by a family if the family holds more than 20% of the voting rights, taking into account the pyramidal ownership structure. As it turns out,

there are only a few cases in which a family controls less than 20% of the voting rights. All family members as well as companies ultimately owned by the family are treated as a single shareholder. A shareholder, therefore, includes individuals with the same surname. 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 name. To measure a family's wealth, we sum up the total assets of all firms owned by the family.

The second phase consists in constructing family trees. For each family member, we collect information on his/her specific position in the family tree, gender, and birth order (defined as the rank of children within a specific marriage). This information is hand-collected from various sources. The first data 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 founders/leaders of business groups include detailed genealogical diagrams of the family and their related families. These booklets are obtained from the National Library of Thailand (which receives copies of almost all booklets published in the country).

The second data source is Brooker Group (2001) and Sappaiboon (2000, 2001). These books provide information on the family backgrounds of the top 100 families such as the names of the founder, his spouse, children, and siblings. The third data source is company annual reports (FM 56-1) of listed firms. The stock exchange requires the company to disclose not only the family relationships between major shareholders and board members but also the date of birth and education of each member.

In the third phase, we hand-collect the wedding information. The data source is the most popular local newspaper, *Thairath*, which publishes news on celebrity weddings 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 one or two days after the wedding takes place.<sup>5</sup> The newspaper collects and publishes the wedding news systematically and independently from the wedding families' interests. Therefore, our sample is not subject to selection bias. The wedding notices cover the period from January 1, 1991 to 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 newlyweds with the names of the members of the top 150 business families.

In the final phase, we collect the personal information on newlywed couples. The date of birth is obtained from 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 local business newspapers, magazines, and websites.

### *B. Event characteristics*

Table 1 presents the number of wedding events in our sample. It should be noted that 21 of the 200 pairings are counted twice when both bride and groom are from the top 150 business group families. Later, we will show that this methodology does not affect our results. These 200 pairings involve the offspring of 91 business families. The wedding events are distributed throughout the period of our study, though slightly more numerous in 2005. The year of the Asian financial crisis (1997) has the fewest (7 observations).

In Table 2, the newlyweds are classified based on the partner's background. A marriage is considered as a "network marriage" if the partner is from one of the influential families. Network marriages are further differentiated into business and political networks based on the background of the partner's family. Business families include both the top 150 business group families and other smaller business families. These smaller business families are

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<sup>5</sup>The results remain the same when the wedding date is used as the event date.

defined as families who own at least one company among the 2,000 largest companies. Political families include royal and noble families and those of politicians, high-ranking civil servants and military officers. Of the 200 pairings, about 80% are network marriages. Specifically, 93 cases are connected to business networks and 66 marriages connect the firms to political networks. The remaining 41 cases constitute our benchmark of “love marriage” because the partner is not from the business or political circles. Typically, the marriage partner is from the middle class or a foreigner.

Table 3 provides the basic statistics of offspring characteristics. Of the 200 offspring, 56.5% are male. Most are the second generation (39.5%) or the third generation (35.5%), very few are founders themselves (2%). Most offspring are a nephew/niece (50%) or son/daughter (41.5%) of the current head. Main line accounts for 42% of the total offspring sample. First son of the current head accounts for 18.5% of the sample. 41.5% of the offspring hold a board position.

[Insert Table 1, Table 2, and Table 3 here]

#### **IV. Network marriage decisions**

This section investigates the hypothesis that when deciding whom to marry, the offspring of big business families also take into account the benefits to their family business. 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 benefits, which include the future family income, among other things. In other words, marriage can be instrumental in achieving economic benefits. We estimate the probability of a business group family engaging in network marriage as a function of the family businesses.

### A. Empirical specification

Following the economic model of marriage, we use the probit regressions and control for personal and other attributes that may affect the marriage choice.<sup>6</sup> Our basic regression specification is a linear probability model of the form:

$$\text{Prob}(\text{Network marriage}) = f(\alpha + \beta_1 \text{Family business}_i + \beta_2 \text{Individual attribute}_i + \sum \beta_j \mathbf{X}_{ij} + \varepsilon_i)$$

where *Network marriage* is an indicator variable equal to one if the wedding partner is from an influential family and zero otherwise. The control variables  $\mathbf{X}_{ij}$  include the same circle effect, family size, group size, and profitability. Family business and individual attribute are defined as follow.

#### A.1. Family business

We relate a number of characteristics of a family's business to the choice of network marriage. As discussed earlier, family networks may facilitate exchanges of information and resources among networked firms. The benefits of such exchanges are greater for firms whose operations are highly dependent on proprietary information or exclusive resources, such as property development, construction and government contracting industries. In these industries, to get a business off the ground, networking is an absolute necessity. For example, in order to secure a contract (e.g., construction and supplying of materials) with the government, coordinating with other market players seems to play a prominent role. 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 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

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<sup>6</sup>In unreported results, the logit models yield qualitatively identical results.

than if there had been genuine open competition. This arrangement is difficult to detect, particularly when experienced contractors know how to pitch a bid to ensure that it is not so excessively high as to arouse suspicion.

Strong political connections are also good assets. Government officials are the people who formulate development plans, control budgets, set the rules for contractors to enter and operate in the industry, examine credentials, authorize contracts, and pay the bills for services rendered. So, close relationships with public officials facilitate receiving lucrative contracts. In addition, via such networks, big business owners can influence the government to serve their interests. The following anecdote is consistent with this argument. 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. Benefits may also simply come from having access to proprietary information on new construction projects. Then a developer would buy properties around the area before property prices rise when the information is eventually made public.<sup>7</sup>

Extensive networks may become important in a diversified business group because by nature it needs a large and diverse pool of resources (Montgomery (1994)). Diversified business groups need financing, e.g., to fund new investment, to bridge non-synchronized cash inflow and outflow, and to cushion temporary troughs in income, etc. Diversified firms need tangible assets (e.g., production facilities) and intangible assets (e.g., production knowledge and skills, marketing capabilities and superior management capabilities). Diversified firms also have a high demand for information on industry trends and market conditions. Therefore, the incentives to set up networks may come from the possibility of resource sharing with networked firms. The reputation and brand name of their networked firms can also be used to gain access to inputs and product markets.

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<sup>7</sup>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).

A number of studies show that social and political connections facilitate financing to networked firms and sometimes rescue networked firms as well (Charumilind, Kali, and Wiwattanakantang (2006), Faccio, Masulis, and McConnell (2007), Khwaja, Mian, and Qamar (2008)). Therefore, highly leveraged firms may have strong incentives to build networks to gain access to new financing or to stabilize their existing financial obligations.

We proxy the preference of a business group for contracting a network marriage by the characteristics of its business: whether the business is (1) in the property and construction industry, (2) dependent on state concessions, (3) diversified, and (4) highly leveraged. Several variables are used to capture these features. The first is a dummy variable equal to one if the business is in property or construction, and zero otherwise. The second is a dummy variable equal to one if the firm's business depends on state concessions, and zero otherwise. Thirdly, a business group is considered diversified if the group operates in more than two different SIC codes defined at a one-digit level. Leverage is measured by the ratio of total debt to total assets at the group level.

Finally, we include one more business factor as a determinant of network marriage: whether the offspring is an heir to the family business. The family's business should play a prominent role in the marital choices if he/she is a successor candidate. Successor choices in Thailand are influenced by the Chinese-Thai inheritance customs and the current trend in gender equality. Typically, the eldest son is the natural heir of the main business. Other sons inherit control over other businesses. Daughters, like sons, are highly educated and have become more involved in top management in the family business in recent years. Since it is not common among Thai firms to explicitly nominate an heir, we use the following two variables to proxy for heir candidates and allow for more than one heir successor. First, main line is a dummy variable that indicates whether or not one is from the main line of the family. The main line is defined 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 in the group. 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 the family firm in the year of the wedding.

### *A.2. Individual attributes*

Following the economic model of marriage, we control for the effect of gender, age, and age differences between the bride and groom. We did not include differences in education and race as suggested by the literature because there is no significant variation in these two individual traits between the couples in our sample. More precisely, the bachelor degree is used 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 level diploma 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.

### *A.3. Other control variables*

Several variables are included to control for the effects of the same circle, family size, group size, and profitability. First, we control for the "same circle" effect to confirm or not the argument that the rich are likely to marry the rich because they are from the same social circle. To account for this effect, we use a dummy variable, *old-money*, that takes a value of one if the business group has been in business for at least two generations, and zero otherwise. We expect that the same circle effect is stronger among old-money families than among newly arising families. Family size is the logarithm of the total number of family members. Group size is measured by the logarithm of total assets of all firms in the group. Profitability is the group return on assets, which is measured by the ratio of

earning before interest and taxes (EBIT) to total assets.

### *B. Results*

Table 4 provides descriptive statistics. The sample is classified by business characteristics and examine whether or not the business has any effect on the marriage choice. As hypothesized, there is a very strong relationship between the family business and choice of wedding partner. Of 45 offspring whose family operates in the property and construction industry, 43 entered network marriage. Similarly, for 14 out of 15 offspring of the families holding state concessions, the partner is from a powerful family. Of the 57 offspring whose families run diversified businesses, 48 chose network marriage.

In Table 5, we run univariate tests comparing firm characteristics of the business groups in which offspring engaged in network and love marriage. The results show that the groups with network marriage have a higher debt ratio. Besides debt, there is no significant difference between these two groups in terms of size, profitability, asset tangibility, offspring age, and age difference between the bride and groom.

Table 6 presents the probit regression results. From columns (1) to (3), we find a strong correlation between the family business and the marital choice. The coefficients on the three dummy variables indicating whether the family business depends on state concessions or is in the property and construction industry or is diversified, are positive and highly significant at the conventional levels. In addition, offspring from a highly leveraged group are more likely to enter network marriage. The effects of family attributes are as expected: the likelihood of a network marriage is higher if the offspring is in the main line or a board member. The coefficients on *old-money* are positive and significant at the 5% level. Lastly, we do not observe any effects from gender, family size, offspring age, age difference, group size, or profitability.

We run a robustness check here. As noted earlier, our sample includes 21 wedding events in which both the bride and groom are the offspring of the top 150 big business

group owners. Each of these events is associated with two observations, one from each side. Therefore, we may have over-emphasized these events. To check whether or not this is the case, we randomly drop one observation for each pair of observations, and rerun the regression. As reported in column (4), the results are similar to those of the full sample.

Next, we break down the network marriage into two types based on the characteristics of networks, namely business and political networks, and examine the determinant of the marriage choice separately. We employ multinomial logistic models which allow us to distinguish and derive simultaneous comparisons among the determinants of the three types of marriage: business network, political network, and love marriage. We use a categorical dependent variable to indicate these three categories. Love marriage is used as the comparison group. The results are in Table 7. Columns (1), (3) and (5) analyze the probability of political network versus love marriage. Columns (2), (4) and (6) contrast the probability of business network versus love marriage.

The empirical findings are consistent with the following notions. First, on the effect of family business, the property and construction business is positively related to marriages of both business network and political network. We observe differences in the influence of family businesses on marriage choices between the business network and political network. The probability of choosing a partner from a business network family is positively related to whether or not the family has a diversified business group. However, whether or not a subject is from a diversified business group is not correlated to the political network marriage vis-a-vis love marriage. The results also show that when the family business depends on state concessions, the political network marriages are more frequent.

Second, on the influence of being a family successor candidate, the variable *main line* is positively related to the probability of choosing a partner from either a business or political family. Third, when offspring hold a board position, he or she prefers to choose a person from a business network. Finally, offspring from an old-money family are more

likely to choose a political or business network marriage.

Again, we check whether our results are sensitive to the 21 double-counted pairings. We randomly drop one observation of each pair of the 21 events, and rerun the regressions. As reported in columns (5) and (6), the results are similar to those based on the full sample.

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

## V. Market reactions to network marriages

This section examines the stock market response to the wedding news. If the wedding of the business owner's offspring benefits the firm in that it helps establish a new business network, we should observe significant positive abnormal returns around the publication date. On the other hand, if the wedding is irrelevant to the family's business or not important for the firm's prospects, no significant change in market valuation around the event should be observed.

The event-study methodology (Brown and Warner (1985)) is employed to calculate cumulative market-model abnormal returns (CARs) around the event date. Daily stock prices and returns (dividend included) are obtained from Datastream. The event date ( $t=0$ ) is defined as the immediate trading day after the wedding news is published in the local newspaper, *Thairath*. Event-period abnormal returns are computed as a firm's equity return minus an estimated return based on the market model, and summed over the event period. To obtain OLS estimates of the market model parameters, we regress a firm's returns on market index returns during a 200 trading-day window from days -220 to -21 prior to each event date. The Stock Exchange of Thailand value-weighted market index is used as a proxy for the market index.

We employ 3- and 5-day event windows: from one trading day before to one trading day after the announcement date,  $(-1, +1)$ , and from two days before to two days after the event date,  $(-2, +2)$ . The test statistic under the null hypothesis of zero abnormal returns

is computed for each sample following 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 accounts for cross-sectional dependence in abnormal returns.

Several important points should be taken into consideration. First, the wedding date is chosen by the family's astrologer or a monk. Therefore the event is exogenous to other important firm decisions/announcements such as earnings results, mergers and acquisitions, etc. Second, the choice of the short event windows is chosen to avoid potential confounding events to which long event windows would be subject. However, there is a concern that the stock price effect of a wedding might be underestimated if the wedding news is anticipated due to prior dating or engagement news. This concern might be less serious in the Thai context because the engagement and wedding typically take place the same day. Besides, the dating news might be unreliable or even noisy information because a dating couple does not necessarily end up getting married. In other words, the marriage effect should not be fully capitalized by the stock market until the wedding ceremony actually takes place. Nevertheless, the short-window effect around the wedding news should be taken as the lower limit of the true value effect. Because we investigate stock returns, only publicly traded firms are included in the following analysis. Accordingly, we focus on 66 cases with business networks, 44 cases with political networks, and 30 other cases.

Table 8 reports the mean and median CARs of the portfolios of the firms that entered marriage networks and the firms that engaged in love marriages. The conspicuous pattern in the table occurs on the days just around the event date by the first two sets of firms that engaged in network marriages. The value being created by such marriages is statistically and economically significant. The estimated average 3-day and 5-day CARs for business network group are 0.94% and 1.31%, respectively. The value created by the political network marriages is somewhat larger. These firms on average gain 1.29% and 1.88%.

Interestingly, the market does not react to the news of the love marriages. The estimated CARs are not significant at the conventional levels. The median statistics demonstrate qualitatively similar results.

As robustness tests, we run OLS regressions using the CARs as the dependent variables. To compare the CARs of firms connected to business and political networks with those of firms that do not establish such connections, we include two dummy variables indicating the marriage types in the regressions: business network and political network. To capture the combined effect of these two types of network marriages, another dummy variable, *network marriage*, is included. A set of control variables is also included to control 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 earnings before interest and taxes (EBIT) to total assets captures the firm's profitability effect on market valuation. These control variables are measured at the end of the year when the wedding was held.<sup>8</sup> To ensure that the results are not driven predominantly by industry membership, we include 6 industry dummy variables in the regressions. Industries are defined based on classification of the Stock Exchange of Thailand. 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 returns within a cluster.

The regression results in Table 9 are qualitatively and quantitatively similar to those in the univariate tests. The estimated coefficients on the three dummies are positive and strongly significant 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 of the non-connected group, strongly support our hypothesis. Interestingly, none of the control variables significantly affects CAR around the wedding

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<sup>8</sup>The results remain unchanged when the lagged control variables are used.

announcements, suggesting that the stock market focuses on none of these factors except for the network marriages.

As an additional robustness check, we estimate CARs using the market index return instead of the return estimated from the market model. This is to account for potential bias in estimating market model coefficients. Our overall results remain qualitatively similar.

[Insert Table 8 and Table 9 here]

## VI. Conclusion

This study examines a specific method of business network creation–marriage. Using the data from Thailand, this paper shows that big business families make use of the marriage of their offspring to establish networks that would benefit the family businesses. In fact, such a practice as well as the effect of family networks on shaping the success of business has long been discussed in the literature, but empirical tests were lacking. Given the pervasiveness of family ownership around the world, a deeper understanding of the roles of families and family networks is essential for analyzing their effects on economic development.

A natural extension of our work would be to develop a dataset to explore the long-term consequences of marriage to well-connected families. In addition, an empirical analysis identifying the channels through which networks benefit the family businesses would be particularly important. Another key feature of family firms is the intensive exchanges and collaboration within a relationship network. One could draw important policy implications if one could identify the market share of an industry or an economy controlled by a single marriage network. Indeed, we are just beginning to learn how a network is formed, the role of family in network formation, and how the network creates or preserves value. We leave these to future research.

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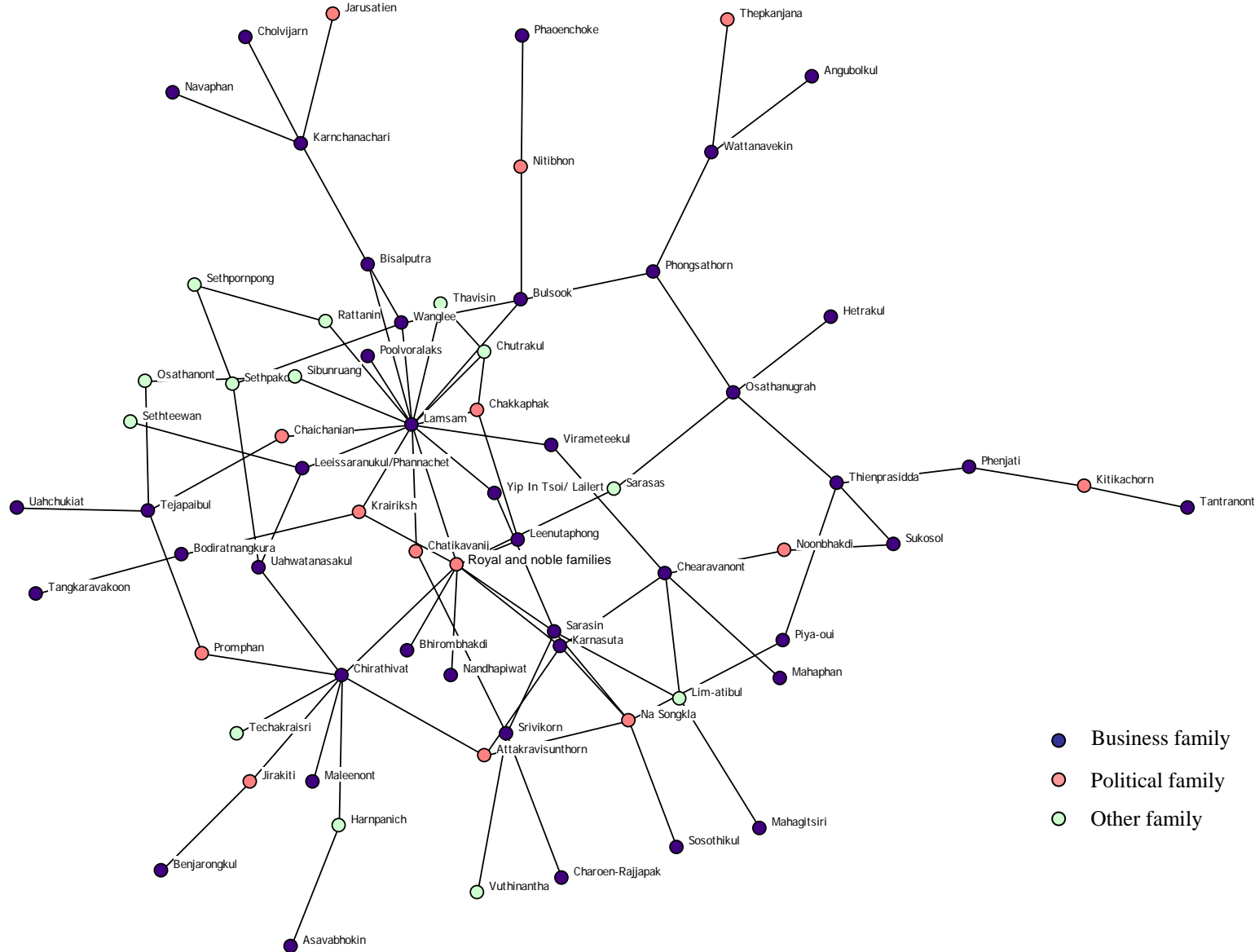
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**Figure 1: Marriage networks of big business families in Thailand**



- Business family
- Political family
- Other family

**Table 1****The wedding events**

This table reports the events classified by year. The event is defined as the wedding news of the offspring of the top 150 business group owners 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 reports the family background of the wedding partner of the offspring of the top 150 business group owners in Thailand.

		Number	Percentage
<b>A. Family background</b>			
Royal, noble	[1]	17	8.5%
Politician, military, high-ranking bureaucrat	[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>B. Type of marriage</b>			
Political network [1]+[2]	[7]	66	33.0%
Business network [3]+[4]	[8]	93	46.5%
Love marriage [5]+[6]	[9]	41	20.5%
Total		200	100.0%
<b>C. Network vs. Love marriages</b>			
Network marriage [7]+[8]	[10]	159	79.5%
Love marriage [9]	[11]	41	20.5%
Total		200	100.0%

**Table 3****Characteristics of the offspring**

This table reports characteristics of the offspring of the top 150 business group owners in Thailand.

	Number	Percentage
<b>A. Gender</b>		
Male	113	56.5%
Female	87	43.5%
Total	200	100.0%
<b>B. Generation to founder</b>		
One	4	2.0%
Two	79	39.5%
Three	71	35.5%
Four	31	15.5%
Five	15	7.5%
Total	200	100.0%
<b>C. Relationship to current head</b>		
Current head	1	0.5%
Sibling	12	6.0%
Son/Daughter	83	41.5%
Nephew/Niece	100	50.0%
Grand-son/Grand-daughter	3	1.5%
Grand-nephew/Grand-niece	1	0.5%
Total	200	100.0%
<b>D. Offspring is from the main line</b>		
Yes	84	42.0%
No	116	58.0%
Total	200	100.0%
<b>E. Offspring is the first son of current head</b>		
Yes	37	18.5%
No	163	81.5%
Total	200	100.0%
<b>F. Offspring holds a board position</b>		
Yes	83	41.5%
No	117	58.5%
Total	200	100.0%

**Table 4****The offspring's family business**

This table reports the distribution of the offspring's family business by industry. In Panel A, industries are defined based on the classification of the Stock Exchange of Thailand. In Panel B, the family business is classified as to whether the business is based on state concessions. In Panel C, the family business is classified as to whether the business is in the property and construction industry. In Panel D, the family business is classified as to whether the business is diversified.

	Total	Network marriages		Love marriages	
	Number	Number	Percentage	Number	Percentage
<b>A. Industry classification</b>					
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 and 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>B. Family business is based on state concessions</b>					
Yes	15	14	93.3%	1	6.7%
No	185	145	78.4%	40	21.6%
Total	200	159	79.5%	41	20.5%
<b>C. Family business is in the property and construction industry</b>					
Yes	45	43	95.6%	2	4.4%
No	155	116	74.8%	39	25.2%
Total	200	159	79.5%	41	20.5%
<b>D. Family business is diversified</b>					
Yes	57	48	84.2%	9	15.8%
No	143	111	77.6%	32	22.4%
Total	200	159	79.5%	41	20.5%

**Table 5****Summary statistics**

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

		Total sample ( <i>N</i> =200)	Network marriages ( <i>N</i> =159)	Love marriages ( <i>N</i> =41)	<i>t</i> -statistics ( <i>t</i> -test)	<i>z</i> -statistics (Wilcoxon test)
<b>A. Financial characteristics</b>						
Group total assets (million USD)	Mean	3,524	3,181	4,853	-1.15	-0.34
	[Median]	[397]	[402]	[277]		
Log (group total assets)	Mean	4.198	4.176	4.281	-0.68	-0.41
	[Median]	[4.081]	[4.090]	[4.048]		
Log (group 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>B. Age of the newlyweds</b>						
Offspring age	Mean	30.15	30.30	29.51	1.11	0.79
	[Median]	[30.00]	[30.00]	[30.00]		
		( <i>N</i> =186)	( <i>N</i> =149)	( <i>N</i> =37)		
Age difference	Mean	3.30	3.21	3.75	-0.75	-0.47
	[Median]	[2.00]	[2.00]	[2.50]		
		( <i>N</i> =165)	( <i>N</i> =137)	( <i>N</i> =28)		

**Table 6**  
**Probit regressions of marital choice**

This table reports probit estimates of the offspring's marital choice. The dependent variable is a dummy variable that takes a value of one if the partner is from a well-connected family, and zero otherwise. Column (4) reports the results from the random sample when both the bride and groom are from the top 150 business group families. *Concession* is a dummy variable that takes a value of one if the family business is based on state concessions, and zero otherwise. *Property and construction* is a dummy variable that takes a value of one if the family business is in the property and construction industry, and zero otherwise. *Diversified business* is a dummy variable that takes a value of one if the family business is diversified, 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 holds a board position, and zero otherwise. *Old-money* 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. *Log (family members)* is the logarithm of the total number of family members. *Log (total assets)* is the logarithm of total assets. *EBIT/total assets* is the ratio of earnings before interest and taxes to total assets. *Log (age)* is the logarithm of the offspring age. Age difference is the age difference in a couple. Numbers in parentheses are  $z$  statistics from heteroskedasticity-robust standard errors with clustering at the family level. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Full sample			Random sample
	(1)	(2)	(3)	(4)
<b>A. Family business</b>				
Concession	1.043*** (3.04)	1.173*** (3.51)	0.930** (2.48)	1.176*** (3.58)
Property and construction	1.195*** (3.31)	1.170*** (3.15)	0.917** (2.21)	1.259*** (3.22)
Diversified business	0.489* (1.92)	0.775*** (2.88)	1.013*** (2.86)	0.741*** (2.63)
Leverage	0.772* (1.80)	0.899** (1.98)	0.772 (1.56)	0.919** (1.98)
Main line	0.724** (2.30)	0.696** (2.29)	0.514* (1.67)	0.621 (2.05)
Board member	0.523* (1.65)	0.442 (1.38)	0.499 (1.62)	0.539 (1.59)
<b>B. Control variables</b>				
Old-money	0.624** (2.50)	0.676** (2.54)	0.603** (2.30)	0.665** (2.34)
Male	-0.011 (-0.05)	-0.011 (-0.04)	-0.163 (-0.53)	0.111 (0.43)
Log (family members)	-0.184 (-0.94)	-0.175 (-1.00)	-0.195 (-0.97)	-0.172 (-0.96)
Log (total assets)		-0.224 (-1.38)	-0.086 (-0.53)	-0.169 (-0.97)
EBIT/total assets		0.321 (0.22)	0.801 (0.54)	0.332 (0.22)
Log (age)			1.331 (1.27)	
Age difference			-0.032 (-0.81)	
Constant	0.080 (0.13)	0.879 (1.02)	-3.817 (-1.06)	0.478 (0.49)
Number of observations	200	200	165	179
Pseudo R <sup>2</sup>	0.220	0.230	0.228	0.234
Log pseudo-likelihood	-79.098	-78.111	-58.026	-73.741

**Table 7****Multinomial logit regressions of marital choice**

This table reports multinomial logit estimates of the offspring's marital choice. The dependent variable is a categorical variable that indicates the type of marriages: Political network, Business network and Other marriages. Columns (5) and (6) report the results from the random sample when both the bride and groom are from the top 150 business group families. *Concession* is a dummy variable that takes a value of one if the family business is based on state concessions, and zero otherwise. *Property and construction* is a dummy variable that takes a value of one if the family business is in the property and construction industry, and zero otherwise. *Diversified business* is a dummy variable that takes a value of one if the family business is diversified, 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 holds a board position, and zero otherwise. *Old-money* 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. *Log (family members)* is the logarithm of total number of family members. *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 *z*-statistics from heteroskedasticity-robust standard errors with clustering at the family level. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Full sample				Random sample	
	Political network vs. Other	Business network vs. Other	Political network vs. Other	Business network vs. Other	Political network vs. Other	Business network vs. Other
	(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Family business</b>						
Concession	2.279*** (3.99)	1.487 (1.60)	2.389*** (3.96)	1.688** (1.97)	2.315*** (3.90)	1.637** (1.97)
Property and construction	2.468*** (3.17)	2.026*** (2.68)	2.440*** (3.04)	2.011** (2.52)	2.536*** (3.14)	2.097** (2.56)
Diversified business	0.139 (0.32)	1.244** (2.35)	0.458 (0.89)	1.856*** (3.83)	0.418 (0.75)	1.906*** (3.78)
Leverage	1.729* (1.90)	1.083 (1.36)	1.853** (1.96)	1.358 (1.61)	1.811* (1.93)	1.340 (1.53)
Main line	1.281** (2.23)	1.218* (1.94)	1.257** (2.20)	1.212* (1.95)	1.157** (2.08)	0.989 (1.56)
Board member	0.681 (1.07)	1.247** (2.04)	0.598 (0.92)	1.064* (1.68)	0.813 (1.23)	1.218* (1.81)
<b>B. Control variables</b>						
Old-money	1.019*** (2.58)	1.182** (2.26)	1.066** (2.52)	1.283** (2.34)	1.099** (2.41)	1.225** (2.05)
Male	0.234 (0.49)	-0.237 (-0.51)	0.266 (0.54)	-0.233 (-0.47)	0.306 (0.61)	0.072 (0.14)
Log (family members)	-0.198 (-0.57)	-0.374 (-0.83)	-0.174 (-0.50)	-0.325 (-0.85)	-0.269 (-0.77)	-0.292 (-0.76)
Log (total assets)			-0.238 (-0.76)	-0.474 (-1.45)	-0.122 (-0.37)	-0.420 (-1.19)
EBIT/total assets			0.506 (0.17)	1.321 (0.46)	0.935 (0.32)	0.974 (0.33)
Constant	-1.201 (-1.00)	-0.273 (-0.21)	-0.400 (-0.22)	1.278 (0.78)	-0.709 (-0.37)	0.579 (0.30)
Number of observations	200		200		179	
Pseudo R <sup>2</sup>	0.149		0.157		0.165	
Log pseudo-likelihood	-178.193		-176.541		-160.169	

**Table 8****The value of network marriage**

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

	CAR (-1,+1)	CAR (-2,+2)	CAR (-1,+1)	CAR (-2,+2)
A. Full sample				
	Network marriages		Love marriages	
Mean	1.08%***	1.54%***	-0.02%	0.03%
<i>p-value (clustered by family)</i>	(0.00)	(0.00)	(0.95)	(0.92)
Median	0.71%***	0.91%***	0.00%	0.21%
<i>Sign-test p-value</i>	(0.00)	(0.00)	(0.57)	(0.11)
Positive CAR (%)	72%	71%	50%	63%
Number of observations	110	110	30	30
B. Political vs. business network marriages				
	Political network marriages		Business network marriages	
Mean	1.29%***	1.88%***	0.94%***	1.31%***
<i>p-value (clustered by family)</i>	(0.00)	(0.00)	(0.00)	(0.00)
Median	0.74%**	1.22%**	0.65%***	0.85%***
<i>Sign-test p-value</i>	(0.01)	(0.01)	(0.00)	(0.00)
Positive CAR (%)	68%	68%	74%	73%
Number of observations	44	44	66	66

**Table 9****The value of network marriage: regression analysis**

This table reports coefficient estimates of OLS regressions. The dependent variable is the 3-day and 5-day cumulative market-adjusted abnormal returns (CARs) around the wedding news of the offspring of the top 150 business group owners in Thailand. This analysis includes only publicly traded firms. The event date is defined as the first trading day after the news is published in the *Thairath* newspaper. *Network marriage* is a dummy variable that takes a value of one if the partner is from a family connected to business or political networks, and zero otherwise. *Business network* is a dummy variable that take a value of one if the partner is from (i) the top 150 big-business families or (ii) smaller business families, and zero otherwise. *Political network* is a dummy variable that takes a value of one if the partner is from (i) a royal or noble family or (ii) the family of politician, high-ranking military officer or civil servant, 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% levels, respectively.

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

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