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Why Do Shareholders Value Marriage?

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Abstract

This paper studies the role of marriage in family firms using a rare dataset from Thailand during 1991-2006. Interestingly, the stock prices of the family firms react positively to the weddings which connect the family to other business leaders and politicians. Abnormal returns are higher in particular for the firms whose operations depend on state concessions or on having extensive networks for obtaining reliable information such as in the real estate sector. The results also show that horizontal and vertical integration can be another potential source of value gains from these "network" marriages. Our evidence does not support the argument that marriages are motivated by succession concerns.

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

Keywords: family firm, marriage, networks, emerging markets

Then we will give our daughters unto you, and we will take your daughters to us, and we will dwell with you, and we will become one people. [Genesis 34:16]

1 Introduction

Marriage is an event of great economic significance (see Becker 1973 1974). In business families, marriage has long been deemed an important family and business decision. Scholars in business history have noted that families have typically been involved in the matching process to ensure suitable matches that would serve the house.¹ James (2006) writes that "families looked to dynastic marriage strategies to find greater wealth and power" (p. 39). Landes (2006), who studies 11 business dynasties in Europe, Japan, and America from the 17th century to the present, goes so far as to suggest that marriage, among other family affairs, determines the growth, direction, and survival of the family's business.

While marriage has been widely cited as vital to business success, little empirical evidence has been examined beyond anecdotes and case studies. Moreover, the fact that family firms are a prevalent organizational structure worldwide² emphasizes the need to conduct an economic analysis on the role of marriage in family firms. This paper examines several potential reasons why marriage is important to family firms and how it might affect firm value.

Establishment of business networks. Marriage connects a son of one family with a daughter of another. Marriage, therefore, cements existing relationships or creates new alliances. Today, even though love marriage is the norm; a union with a person from a "distinguished" family usually pleases the patriarch. A good example is the Lee family

¹For example, Molho (1994) writing about marriages in late medieval Florence states 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.*"

²Family firms account for about 45% of publicly traded firms around the world (La Porta, Lopez-de-Silanes, and Shleifer 1999). Even in the U.S. family firms account for about 37% of Fortune 500 (Anderson and Reeb 2003) and a majority of *Computstat* firms (Villalonga and Amit 2009).

behind the Samsung group, the biggest chaebol (business group) in Korea. Via multiple marriages of sons and daughters, the chaebol has connected with the country's inner circles, namely the other four *chaebols* (LG, Hyundai, Kolon, and Poosan) and many high ranking politicians, including former presidents, a number of ruling party leaders, and provincial governors (Kim 1996). Big business marriages that connect families to other influential families are also observed worldwide (see Appendix 1). Family alliances may entail some distribution of capital (Balmori, Voss, Wortman 1984), information (McMillan and Woodruff 1999), know-how (Ingram and Simons 2002), and access to state contracts (Morck, Wolfenzon, and Yeung 2005).

Succession and inheritance. A twentieth-century Hambros Bank Chairman once said "our job is to breed wisely" (Chernow 2001, p.20). Marriage plays an important role in ensuring that wealth is handed down to the next generations. Marriage brings in "talented new sons (-in-law)" when families lack capable heirs – a strategy pursued by the Japanese for a thousand years. Marriage can also help to discipline apparent successors. In other words, marriage can cause young men to settle down and take their responsibilities more seriously. Finally, cousin marriage is preferred as one can "keep the money inside the family" as did the Rothschilds and the Du Ponts (Ferguson 1999; Winkler 1935).

Thailand is the empirical setting for our examination of the value of marriage to business. As in many Asian countries, a striking feature of Thailand is strong family relationships bound by blood and marriages. Figure 1 shows the web of the biggest networks centered on the Lamsam family, a business dynasty. These wide networks connected by multiple marriages comprise 56 families including big businesses, royals and high-ranking officials. Marriage ties appear to provide important networks for running business.³

The unique research setting of Thailand also meets the basic requirements of the standard event study approach. First, high society weddings are public information available

³In Korea, around 33.1% of the *chaebol* families are connected with top politicians via marriages of the founders' daughters (Feenstra and Hamilton 2006; Han 2008).

in a daily column of *Thairat*, which is the national newspaper ranked first by circulation – at least one million copies sold across the country. Second, its reporting policy reduces any concerns about the sample selection. It collects and publishes wedding news systematically and independently of the families' interests. Its coverage is also comprehensive. Third, the wedding information is timely. Typically wedding news is published a day or so after the reception. Fourth, Thai traditional values make the wedding the "real" event of marriage as cohabiting couples are regarded as a taboo. The common practice of having the engagement and the wedding take place on the same day should also reduce the concern of news leakages. Finally, the wedding date is typically chosen by the family's astrologer, which makes the event date exogenous to other important corporate decisions such as earnings results.

We focus on 131 weddings related to Thai big business families during 1991-2006. We examine the reaction of investors to the wedding news. Interestingly, the families' publicly traded stocks react positively to the weddings if the partner is from a business or political family. These "network" marriages are associated with a 11-day cumulative abnormal return (CAR) 2.3% higher than that of "non-network" marriages. Strikingly, 49 of the 52 families involved in industries where operations depend on networks and connections such as the concession, property and construction businesses, engaged in network marriages. These marriages earned a premium as measured by an 11-day CAR of about 3%. Finally, investors reacted positively to the marriages that may lead to horizontal and vertical integration among the firms owned by the two connected families. Overall, these results suggest that networks may provide insightful and reliable information on potential supply and demand, state lobbying, and political rents. These results are consistent with the network hypothesis. We do not find evidence that supports the succession and inheritance reasons, however.

Our findings, that marriage can help family firms in Thailand set up networks, support the arguments of La Porta et al. (1999) and Burkart, Panunzi, and Shleifer (2003). As

the marriage contract binds a couple for their lifetime, marriage creates relationships of trust between the related families (e.g., Becker, Landes, and Michael 1977). Similar to blood ties which are determined by birth, marriage connections may substitute for missing institutions and serve to guarantee economic transactions in developing economies.

This paper is also part of the growing literature on family firms which examines the role of family norms in shaping corporate organization, governance and performance. In particular, Bennedsen, Nielson, Perez-Gonzales, and Wolfenzon (2007) report that marital status can affect the choice of CEOs: family succession is less likely when departing CEOs have multiple marriages, presumably to avoid family feuding. Several papers report that family structures and incentives affect family firms' policies and performance. Bertrand, Johnson, Samphantharak, and Schoar (2008) find that the scope of a business group is positively related to the number of sons in the controlling family. They also find that the health conditions of family members matter to CEO performance. Several other studies report that family firm policy and performance are related to family decisions such as inheritance (Ellul, Pagano, and Panunzi 2010) and successor choices (Morck, Strangeland, and Yeung 2000; Perez-Gonzales 2006; Bertrand and Schoar 2006; Bloom and van Reenen 2007).

The rest of this paper is organized as follows. Section 2 provides the institutional background of marriage and family in Thailand. Section 3 outlines the conceptual framework. Section 4 describes the data and methodology. Section 5 reports the empirical results. Section 6 investigates the sources of value gains. Section 7 concludes.

2 Marriage and family in Thailand

The Thais have close family ties. Families' mutual support and influence are enormous. Parents are involved in almost every aspect of their children's life, such as education, career

and marriage decisions, and remain involved in their life after the marriage. As 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 children 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.

A wedding is a very important event for a family in Thailand. When a young man wishes to marry a young woman, he has to become well acquainted with the entire family of the bride-to-be and get their approval. His family often includes not only his parents and siblings but also 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 will be fixed. As the Thais are generally superstitious on important matters such as weddings; the wedding cannot take place just any month of the year or even any day or time. Astrologers or monks whom the families respect are consulted to select an auspicious time and date usually in even-numbered lunar calendar months.

The groom's family usually hosts most of the ceremonies and pays for all the arrangements for large numbers of guests, including feasting, decorations, and gifts for the groom's party. These arrangements are often extremely elaborate and expensive and are intended to enhance the status of the families. After the bride and groom are united in sacred rites attended by their families, the couple can then live together.

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. Despite this increase, the divorce rate is much lower than that of most other countries.⁴ The low divorce rate indicates a continuation of strong family values. In addition, it shows that a Thai marriage creates a long-lasting bond between the two families.

3 The value of marriage in family firms

In this section, we discuss the following two reasons why marriage might affect the family's business.

3.1 Establishment of networks

As in many Asian countries, marriage is not only the union of the two individuals but represents a merging of the two families (and extended families). So via the marriage of a son and a daughter, the two families are connected. By design, marriage is a life-long contract so it binds the two individuals and their families together for their lifetime. Marriage contracts often make divorce a difficult option as they can only be broken in extreme circumstances. The couple, therefore, are locked into this relationship for their lifetime. The presence of children further reinforces and stabilizes the gains from maintaining the relationship (Pollak 1985). Thus, marriage creates a life-long commitment (Becker et al. 1977). In addition, the families have incentives to trust each other as their sons/daughters and their grandchildren are regarded as "hostages" in a marriage (Williamson 1983). Thus,

⁴The divorce rate is 2.08 per 1,000 in Japan in 2004, 2.9 per 1,000 in South Korea in 2004, 2.36 per 1,000 in Sweden in 2003, 2.8 per 1,000 in the U.K. in 2003, and 4 per 1,000 in the U.S. in 2003. The data are obtained from United Nations, Demographic Yearbook (2003) and the Japanese Ministry of Health, Labor and Welfare, Demographic Statistics (2005).

marriage creates a relationship of trust between the two families on a secure and long-term basis. Arguably, marriage creates a stronger form of connections than those created via friendship, partnership, or directorship of a corporate board.

The characteristics of family ties

More generally, marriage and other close family relationships 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). Family ties facilitate effective monitoring due to their frequent and intimate interaction. Families also have a number of sanctioning parties and an arsenal of penalties for improper practices. Therefore, family ties ensure community enforcement of contracts and are associated with a higher level of cooperation. Due to these unique characteristics, economists argue that family relationships in business can be regarded as the next-best solution to imperfections in financial markets and corporate governance (Burkart et al. 2003; Caselli and Gennaioli 2005).

The value of family networks

As discussed above, marriage creates a stable form of alliance, just as a merger combines the operation of two firms under the same roof. Family networks, including those built by marriages, can be valuable to the firms for several reasons. First, they provide high-quality and reliable information, knowledge, and technology (McMillan and Woodruff 1999; Ingram and Simons 2002). Second, specific family members are an important source of reputation capital in product, input, and political markets (Granovetter 1985; Greif 1993). Third, via family networks, a family fortune can be enlarged and transferred (Balmori et al. 1984; Lomnitz and Perez-Lizaur 1987; Grassby 2000). Family members may share the family's pool of financing, human resources, and other privileges.

In summary, the combined reputation and resources of the connected families provide credible guarantees in business dealings with stakeholders (such as regulators, suppliers and customers), hence making the transactions self-enforcing (Klein and Leffer 1981). Family networks thus help maintain mutual interests and even eliminate competition.

Abundant anecdotal evidence supports this hypothesis. The Medici, the wealthiest house in Renaissance Italy, provide the finest example from European history. The Medici were connected through several marriages with almost all the influential families of the time including merchant houses, aristocracies, and royals namely the Habsburg, Toledo, and French royals. Such well-crafted networks were regarded as instrumental in their rise to power (Padgett and Ansell 1993). In the U.K., 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. This close collaboration helped them become the world's most famous shipbuilders from the nineteenth to the early twentieth century.

3.2 Succession and inheritance

To ensure the longevity of the family business, the patriarch must select the best and brightest of their families to take up the reins of the business. Marriage plays several potential roles in the succession task. As the most important qualities that characterize effective leaders include integrity, maturity, business acumen and social skills (Charan and Colvin 1999), having capable heirs depends a lot on having a "good" partner for his/her genes and the ability to educate the next generation heirs. Moreover, whenever the family lacks talented biological heirs, marriage can help bring in the needed talent, i.e., sons-in-law. An aggressive version of engaging sons-in-law is adopting a son-in-law as a new son – a strategy commonly used in Japanese firms for more than a century (Mehrotra , Morck, Shim, and Wiwattanakantang 2010) namely pre-war Sumitomo, Mitsubishi, and Yasuda zaibatsu, Toyota Motors, Kajima Construction (one of the world's largest general

construction companies) and Suzuki Motors.

Marriage can also be a means to discipline successors. In many cultures, marriage is thought of as the great watershed in life, marking the transition to adulthood or maturity (Arnett 2004). It is a rite of passage that marks the beginning of an individual's separation from the parental family unit. Marriage forces young sons to establish their own family and become fathers. Thus, marriage cuts off the opportunities to enjoy personal freedom. As shown by a number of anecdotes, after getting married the heir apparent gives up a life of leisure to work hard.

Finally, cousin marriages have been carried out to keep wealth in the family in many dynasties. The Rothchilds arranged marriages over a few generations between cousins, cross-cousins, and even between uncles and nieces (Ferguson 1999). Other families that favored cousin marriages are the Haniels, Wendels, Du Ponts, and the Mitsui and Sumitomo *zaibatsu* in pre-war Japan (Winkler 1935; Roberts 1973; James 2006). Even today, marriage between close-kin is preferred in many societies such as Muslims and the Southern community in India.

4 Data and Methodology

4.1 Data

We construct databases to investigate the value of marriages. Since our analysis requires stock prices to examine the stock market reaction, the sample has to include publicly listed firms. Our focuses, therefore, are on the weddings that are engaged by the families that own at least one listed firm (henceforth, big businesses). The period of study covers the years from 1991 to 2006. The financial and stock price data are taken from the SETSMART online service and *Datastream*. All remaining data are hand-collected described below.

4.1.1 Ownership

In the first phase, we identify the ultimate owners of listed firms using several data sources. The main databases are the I-SIM CD-ROM and the SETSMART online service which are produced by the Stock Exchange of Thailand (SET). These two datasets contain the information from the company annual reports (FM 56-1) of all publicly traded companies in Thailand. For a given company, we obtain ownership data including (1) shareholders with stakes of at least 0.5% and (2) a list of the company's affiliated companies and its shareholdings in these companies. We supplement the ownership data of non-listed companies using the Business On Line (BOL) database produced by Business On Line. The BOL database contains the accounting and ownership information of all registered companies which were submitted to the Ministry of Commerce. The company had a license from the Ministry to reproduce and commercialize such information.

We trace the ultimate owners using the standard approach suggested by the literature (La Porta et al. 1999; Claessens, Djankov, and Lang 2000; Faccio and Lang 2002). An ultimate owner is defined as the largest shareholder who owns more than 10% of the firm. Our results are similar when we increase this cut-off to 20%. As it turns out, there are only a few ultimate shareholders who own less than 20%. As our focuses are on family firms, our sample firms include the firms where the ultimate controlling shareholder is an individual or a family. In determining the controlling shareholder, we treat the following shareholders as one single shareholder: (1) individuals who are the members of the founding family and (2) companies that have the founding family as the ultimate shareholder. The members of the founding family are treated as a single shareholder because of strong family ties in Thailand. The founding family includes the founder, his wife, children and their spouse(s), and grandchildren and their spouse(s) as well as the founder's siblings, their spouse(s), and children.

4.1.2 Family trees

In the second phase, we trace the members of the founding family from various sources. First, we use surnames. Surnames in Thailand are unique by law and only individuals belonging to a given family can use that particular name. Then, 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 main data source is the cremation volumes that are published and distributed as gifts on the occasion of cremation ceremonies. The data from these booklets includes 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 company annual reports (FM 56-1) of listed firms. As one of the stock exchange's requirements, all listed firms disclose the family relationships between major shareholders and board members. In addition, the dates of birth of the board members are collected from this data source.

Additional information is obtained from other sources. Brooker Group (2001) and Sappaiboon (2000, 2001) provide the family backgrounds of the top 100 families such as the names of the founder, his spouse, children and siblings. Polsiri and Wiwattanakantang (2006) provide the information on the families-in-law of top business groups.

4.1.3 Weddings

In the third phase, we hand-collect the wedding information. The main data source is the country's most widely-circulated newspaper, *Thairath*, which has a long history of publishing a daily column on high society weddings on page 4. This well-established column

publishes at least one wedding a day. It provides a color picture taken at the wedding reception which is often held at a luxury hotel. The photo typically shows the couple, their parents, and the most distinguished guests (e.g., royals and top business and political leaders). From this column, we collect the names of the bride, groom, their parents, the date of the wedding reception and the date when the news was published in this column.

We gather the wedding news from January 1, 1991 to December 31, 2006 from the newspaper microfilm collections available 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 founding families of the listed firms in the sample.

4.2 Methodology

We examine the stock market responses to the wedding news. If the marriage of the business owner's offspring benefits the firm, for example if it helps establish a new business network, we should observe significant positive abnormal returns around the wedding event. On the other hand, if the marriage 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.

Event-study methodology (Brown and Warner 1985) is employed to calculate cumulative market-model abnormal returns (CARs) around the event date. The event date ($t=0$) is defined as the immediate trading day after the wedding news is published in the newspaper, *Thairath*. This is the day when the wedding information becomes public. The results are similar when the wedding reception date is used as the event date, however.

Daily stock returns (dividend adjusted) are employed for the calculation of CARs. For a given event period, CAR is 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 -230 to -31 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 several event windows to account for the possibility that stock prices react to wedding well before the event date. Basically, the event windows are several sub-periods between 30 trading days before to 30 trading days after the event date. The 30 trading days prior to the event date is chosen based on the invitation custom in Thailand. An invitation card is typically sent out to the guests less than one month before the wedding reception.

There may be some concerns that the stock price effect of a wedding might be underestimated if the wedding news is anticipated. Wedding anticipation can be formed from news about dating and engagement. While dating indicates a close relationship, a dating couple does not necessarily end up getting married. Dating news, therefore, is not totally reliable and can even be noisy information. An engagement, if held far in advance of the wedding, could probably cause the news leakage problem and hence would bias our estimation results. Fortunately, this is not the case in Thailand. These days, the engagement and wedding typically take place on the same day.

The test statistic under the null hypothesis of zero CARs 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. Abnormal returns relating to a wedding are calculated at the family level.

5 Results

We begin the analysis by examining who the marriage partner is in each wedding. Then we investigate the market reactions to the weddings.

5.1 Do marriages add value to family firms?

5.1.1 The weddings

Table 1 presents the number of wedding events in our sample over the 15 years from 1991 to 2006. There are 131 weddings, involving 91 big business families controlling publicly traded companies. Our sampling criteria dictate that at least one side of the wedding couple is from a big business family. Among the weddings, 9 are cases where both the bride and groom are from big business families. The wedding events are smoothly distributed throughout the period of our study, though slightly more numerous in 2005. The year of the Asian financial crisis (1997) has the fewest (3 observations).

[Insert Table 1 here]

5.1.2 Who are the wedding partners?

For each marrying business family member, we classify his/her partner in one of the following categories: (1) royals and nobles, (2) politicians, high-ranking civil servants and military officers, (3) big businesses, (4) other business, (5) foreigners, (6) others. Other business families (4) are defined as the families who own at least one company in the list of the 2,000 largest companies but are not "big businesses." In other words, these families do not own any listed firms.

We consider that a marriage contributes to a family's business in terms of network formation when the marriage partner is from an influential family. These "network marriages" are further classified into business networks and political networks. Networks are deemed political when the partner is from a royal or politician family, i.e., categories (1) and (2). Business networks are when the partner is from one of the business families (categories (3) and (4)). Non-network marriages are defined as the marriages in which the partner is not from a political or business family (categories (5) and (6)). These marriages will not result

in the family and their firms being connected to new business or political circles.

There are nine weddings in which the bride and the groom are both from big business families (category (3)). Because our sampling scheme only requires one side to be big business, we effectively count each of these weddings twice, which means that we have 18 observations for these 9 marriages.

Astonishingly, about 78.6% of the 140 pairings are network marriages (Table 2). Specifically, 66 marriages connect family firms to business networks and 44 marriages connect firms to political networks. The remaining 30 cases constitute our benchmark of non-network marriages because the partner is not from either business or political circles. Such partners include actresses, singers, television newscasters, former beauty contest winners, and university professors.

[Insert Table 2 here]

5.1.3 Market reaction to wedding news

We address the question of whether marriages add value to family firms by examining market investors' reactions to the weddings. The firms are classified into two groups based on the wedding partner's background as described in Section 5.1.2. More specifically, these two groups are marriages that are associated with influential families (network marriages) and those that are not (non-network marriages). Figure 2 presents the CARs from 30 days prior to the event date (-30) to 30 days immediately after the event date (+30). Interestingly, investors respond positively to the wedding news only in the network marriages; but are not interested in non-network marriages. The conspicuous pattern occurs from about five days before the event date (-5), to the set of firms associated with network marriages. Their average CAR continues rising throughout the 30 days after the event date. For non-network marriages, however, the evidence of positive abnormal returns is strikingly absent. As shown in Table 3, the estimated average 7-day (from -3 to +3), 11-day (-5 to +5), and

61-day (-30 to +30) CARs for these firms are even negative but statistically insignificant. The patterns of the CARs indicate that the stock market reacts positively to wedding news of network marriages, providing initial support to the argument that networks create value for family firms.

Note that the two groups of firms have a similar pattern of abnormal returns until around five days before the event date (-5). Then, the firms associated with network marriages outperform the firms associated with non-network marriages throughout the rest of the observation period. The persistent difference in CAR between the two sub-samples suggests that the stock outperformance subsequent to the wedding events is not primarily due to the mean-reversion in long horizon returns on individual stocks (DeBondt and Thaler (1985, 1987)), otherwise stock return reversal of the network marriage sub-sample should be observed subsequent to the wedding events.

[Insert Figure 2]

5.2 Does marriage create networks?

Table 3 reports the results of a series of univariate tests of the statistical significance of CARs within and between sub-samples. First, network marriages are associated with positive abnormal returns. The average 7-day, 11-day and 61-day CARs for the firms that belonged to the families are about 1.40%, 2.04%, and 3.77% respectively⁵, all significantly different from zero at the 1% level. In addition, network marriage generates a premium when compared with non-network marriage. The univariate tests show that on average, the family's firms earned about 1.25%, 2.17%, and 3.72% in 7-day, 11-day and 61-day CAR, respectively, more than the firms that are associated with non-network marriages.

⁵For example, Faccio (2006) studies the value of political connections using the events when large shareholders or officers enter politics and the appointment of politicians to the board. The results based on 157 observations from 47 countries indicate that these firms gain an average 5-day CARs of 1.43%.

The results are similar when we break down the networks into business and political networks. Both types of networks bring a premium to their connected firms. Political network marriages generate 7-day 11-day, and 61-day abnormal returns that are 1.70%, 2.73%, and 5.38%, respectively, higher than non-network marriages. Similarly, firms that are associated with business network marriages earn an average premium as measured by the 7-day 11-day, and 61-day CARs of 0.95%, 1.79%, and 2.60%, respectively. The value created by the political network marriages appears to be somewhat larger than business network marriages, but the difference is not statistically significant. The median statistics in Table 3 demonstrate results similar to the mean statistics, suggesting that these findings are not driven by extreme values.

5.3 Is marriage related to succession?

Thus far we have mostly focused on the networking effects of marriages. In this section we test the alternative hypothesis that the marriages of business family members are affected by succession concerns.

5.3.1 Disciplining successors

If marriage can help discipline a male successor as argued in Section 3.2, we should observe more positive CARs for the firms owned by the families where the grooms are potential successors than for other families whose grooms are non-successors. Successor choices in Thailand are influenced by Chinese-Thai inheritance customs and the current trend in gender equality. Typically, the eldest son is the natural heir to the main business. So, we focus on the first son of the current head (henceforth, *first sons of the current head*). 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.

Panel A of Table 4 presents a set of univariate comparisons of the 11-day CARs among

several sub-groups of firms. The marriages of the sons are associated with positive CARs. Specifically, the marriages of the first sons and other sons are associated with CARs of 1.58% and 1.80%, respectively. Such positive abnormal returns, however, are driven by network marriages. Investors react positively (CARs of 1.76%) only when the first sons are married to women from other business or political families. Similarly, the marriages of other sons to a partner from business or political families are associated with CARs of 2.38%. Non-network marriages, whether involving first sons or other sons, earn zero abnormal returns. Overall, these results refute the successor-disciplining hypothesis while lending support to the network hypothesis.

5.3.2 Recruiting successors

To examine whether marriages can be a means to bring in "new sons" as successors, we look at marriages of daughters of the current head (henceforth, *daughters of the current head*) and other daughters. The CARs results from Panel B of Table 4 show that daughters marrying men from other business or political families are associated with positive CARs. Eighteen out of 19 daughters of the current head wed a person from an influential family and hence their marriages are considered network marriages. The stock prices of the firms belonging to her family went up, with an average 11-day CAR of 2.34%. In contrast, in one case where the daughter's partner was selected from a non-influential family, the stock price of the family's firm went down dramatically (-7.98%). Results based on marriages of other daughters are similar.

These results are inconsistent with the view that marriage is used to bring in potential successors. Rather, the results strongly suggest the network effects: marriages of daughters often connect the families and their firms to other powerful families.

5.3.3 The same circle effects

"*Old money*" are established families who have inherited wealth over generations. In addition to wealth and the economic status, old money have inherited valuable "old family ties" or "elite connections" that have been accumulated over multiple generations. In contrast, *nouveau riche* refers to a newcomer who has acquired considerable wealth within the entrepreneur's generation. As traditional claims to status are not found among the *nouveaux riches*, one would expect that the value from network marriage gained by the *nouveau riche* family would be greater than for an old money family. In other words, such a marriage may provide the means to acquire close ties or networks that were previously unavailable or unobtainable. To account for this effect, we define a family as old money if the family has been in business for at least two generations; otherwise a family is defined as *nouveau riche*.

Interestingly, the results in Panel C of Table 4 show that both old money and *nouveau riche* actively engaged in network marriages. Consistent with previous results, investors responded positively only when the partner was chosen from a powerful family. The premium generated by network marriages is not significantly different for these two groups. The results indicate that old money and *nouveau riche* alike consider marriage as an important means to establish business networks.

[Insert Table 4 here]

5.4 Regression analysis

As robustness tests, we run OLS regressions using the 11-day (from 5 days before to 5 days after the event date) 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 marriage* and *political network marriage*. To capture the combined effect of these two types of network marriages, another dummy variable, *network marriage*, is included. Three main variables related to succession hypothesis are included. First sons of the current head is a dummy variable as the proxy of disciplining a successor. Daughters of the current head is a dummy variable to capture the possibility of recruiting a successor. *Old money* is used as a proxy of the same circle effect. We also control for firm characteristics including firm size (log of total assets), leverage, and EBIT over total assets, all measured at the end of the year in which the wedding was held.⁶

Table 5 presents the regression results. To account for potential correlation of stock effects of marriages within the same family, standard errors are clustered at the family level. Consistent with the results of the univariate tests, the estimated coefficients on the three network variables are positive and strongly significant in all regressions. Stocks of the firms associated with network marriages experience significantly higher CARs than do the stocks of the firms associated with non-network marriages. The estimated coefficients on the network dummies suggest that, measured by the 11-day CARs, political-network-creating marriages are on average associated with a 3.30% stock return premium, and business-network-creating marriages are typically associated with a 2.20% stock premium.

By contrast, the three variables used to capture succession effects, *First sons of the current head*, *Daughters of the current head*, and *Old money*, are statistically insignificant. These results do not support the hypothesis that stock price reactions around the weddings reflect the marriages' benefits to family firm succession. None of the remaining control variables significantly affects CARs around the wedding events.

We alternatively use the shorter (-3 to +3) and the longer (-30 to +30) event window CARs as the dependent variable and re-run the regressions. The results are similar and therefore not separately reported. As an additional diagnostic check, we estimate CARs

⁶The results remain unchanged when the lagged control variables are used.

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 5 here]

6 Sources of value gains

This section explores the stock abnormal returns further. We test whether the positive abnormal returns observed in Section 5 indeed reflect future economic benefits that the firms would derive from being connected to new networks. This is done by comparing the business characteristics of the families engaging in network marriages with those of other families associated with non-network marriages. 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, political connections, and exclusive resources. In the following paragraphs we discuss such benefits and formulate our empirical tests.

6.1 The information and political connection effect

6.1.1 The information effect

Due to the nature of the business, networking is an absolute necessity in some industries to get a business off the ground. For example, in the real estate sector, the product is unique, in terms of its location, the building, and the financing. Transactions with a high content of specific knowledge are subject to information asymmetries (Arrow 1971; Williamson 1986). This problem makes pricing difficult (Olsen 1971). In many emerging economies, weak institutional arrangements may magnify information asymmetries which make the pricing

more volatile and the property market less liquid. Consequently, firms need to spend more resources searching for information prior to the exchange. Networks provide a means to access valuable information on supply, demand, industry trends, and market conditions.

Coordinating with other market players appears to play a prominent role in securing a contract with the government which typically owns or regulates land-use rights. Close relationships among market players facilitate such coordination. It is not uncommon in a developing economy for contractors to coordinate their bids in a series of projects so that each of them in turn is the winning bidder. In order to ensure that maximum benefit is derived from this coordination, the bids are structured so that the winning bid, although the lowest among all the submitted bids for that project, is still significantly higher than if there had been no such coordination. This sort of coordination is typically quite opaque, as experienced contractors know how to pitch their bids without arousing suspicion. Moreover, the contractors build strong relationships to avoid any disloyal behavior.

6.1.2 The political connection effect

In businesses requiring the government's approval and concession, close connections with high ranking officials are a necessity to achieve competitive advantages. In a highly regulated environment, government officials formulate development plans, control budgets, set the rules for contractors to enter and operate in the business, examine credentials, authorize contracts and pay the bills for services rendered. Hence corporate performance is highly dependent on the ability to "mold" the rules to fit the firm's needs. Close relationships with public officials also facilitate lucrative contracts. As shown by Bunkanwanicha and Wiwattanakantang (2009), firms in the satellite cable television and telecommunication industries were able to obtain concessions in Thailand via such connections. In addition, the incumbent telecoms firms were protected from competition when the state implemented a new regulation to block new entries to the market.

Abundant anecdotes indicate that big business leaders often manage to influence government officials on the selection of a new road to be built, the route it follows, 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.⁷

6.1.3 Empirical evidence

The above discussion leads us to consider two sets of industries subject to the information and political effects of networks. We focus on the families that own at least one firm in (1) the property and construction industries or (2) concession industries including telecommunications, television, alcoholic drinks, and energy.

As reported in Panels A and B of Table 6, the marriages of family members in these industries are almost always network marriages. In the property and construction industries, 35 out of 37 cases are network marriages. In the concession industries, 14 out of 15 cases are network marriages. This striking evidence of network marriage practice lends initial support to the notion that business and political networks are critical to these industries and firms.

For publicly-traded firms in these industries, we calculate the 11-day CARs around the controlling families' wedding events. If a family owns multiple publicly traded firms in different industries, we include only those in the property and construction and concession industries. If a family own multiple publicly traded firms in the these industries, we calculate the average 11-day CARs of the firms. In other words, our analysis is at the family level instead of the firm level. Although we are unable to run regressions because of the small number of non-network marriages in these industries, we conduct univariate

⁷There 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).

comparisons of the average CARs of families engaging network marriages with those of the few remaining families associated with non-network marriages, separately for the two sets of industries where networking is important.

Consistent with our previous findings, network marriages in the property and construction and concession industries are good news for those who invest in the family firms. In particular, network marriages are associated with average 11-day CARs of 2.78%, 2.22% for firms in the property/construction industries and concessions, respectively. In contrast, for non-network marriages, none of the firms in these two groups is associated with positive abnormal returns. The premium generated by network marriage is 3.01% for the firms in the real estate and construction industries, and 2.26% for the firms in concession industries. These results indicate that it is the network effect rather than the industry effect *per se* that drives the positive abnormal stock returns.

[Insert Table 6 here]

6.2 The business synergy effect

Marriage may create beneficial effects for the connecting family firms just as mergers create synergies for merging firms. We investigate horizontal and vertical integration as potential sources of value gains from network marriages. The literature provides abundant theories and evidence on the benefits of both types of business combination. These benefits include cost reduction through scale economy and/or complementarity, monopolizing resources and markets, mitigating market transaction costs, and so on (Coase 1937; Williamson 1978; Klein, Crawford, and Alchian 1979; Grossman and Hart 1988).

In the context of marriage, opportunities for horizontal integration may occur when the families of the bride and the groom each own at least one firm that operates in the same industry. For example, a son of a textile manufacturer is married to a daughter of another

textile manufacturer. Opportunities for vertical integration may occur when the couple's family firms are potential supplier and/or customer of each other. For example, the bride's family owns an automobile company and the groom's family owns a tire company.

There are 13 pairings in which the businesses of the two families are related. To identify business relatedness of the two families, we classify each of the families' businesses using 2-digit SIC codes, and compare the sets of 2-digit SIC codes of the bride's family's businesses with those of the groom's family's businesses. A marriage creates an opportunity for horizontal integration if the two families have at least one common business defined at the 2-digit SIC code level. A marriage creates an opportunity for vertical integration if one family has at least one firm that is upstream or downstream from another firm owned by the other family. For a given business associated with a 2-digit SIC code, its upstream/downstream businesses are defined as its top-3 supplying/consuming industries as in the input-output table (Fan and Lang 2000).

Table 7 reports the information of the 13 marriages where the businesses of the two families are related, including the name, the 2-digit SIC codes of the firms owned by the bride and the groom's families, the business integration created by the marriages. The details of each business integration are reported in Appendix 2. Most of the marriages are associated with significant positive stock price reactions, measured by the 11-day CARs around the wedding events. The average CAR is 3.56% for the network marriages associated with horizontal integration and 3.78% for those associated with vertical integration. These numbers are significantly different from zero and significantly larger than the average CAR (-0.13%) of the non-network marriages in our sample. Note that there are two cases of horizontal integration and four cases of vertical integration where the families on both sides owned listed firms.

The above results are not driven by specific industries such as property and construction, and concession industries. The significant positive abnormal stock returns remain even if

these network intensive industries are excluded.

[Insert Table 7 here]

7 Conclusion

We have used evidence from Thailand, a typical developing country, to demonstrate the prevalence of business and political networks created by marriage. Among the 140 newly-weds of offspring from the top 150 business families during 1991-2006, in almost 80% of the cases the partner is from either a business or a politician family. Network marriages are particularly popular among families whose businesses are dependent on state concessions or which are in the property and construction industries. Strikingly, the stock prices of their family firms react positively to the marriage news. Positive abnormal returns are driven by marriages that create business or political networks for the family businesses. This evidence strongly supports the hypothesis that family firms can benefit from the marriage of the owners' offspring. Via marriage, the controlling family can be connected closely to other influential families including business leaders, politicians and bureaucrats. By contrast, our evidence lends little support to the argument that marriages are motivated by succession concerns.

In fact, the role of marriage in forming networks for the interests of the family's firms has long been discussed in the literature, but empirical tests have been lacking. A primary barrier is data difficulties and endogeneity problems. In particular, data on the family tree of the company owners is often not available. In this study, we are able to fill this gap by assembling the rare dataset from Thailand. The event study on these weddings mitigates typical endogeneity problems in cross-sectional studies. Specifically, the weddings and in particular the wedding dates are primarily determined by custom and tradition which is exogenous to company policies. Therefore the stock price effects of the wedding events are

likely to be the effects of the marriages rather than other business factors. Moreover, we have used various sub-sample tests to identify the channel through which marriages are beneficial to family firms.

A natural extension of our work would be to explore the long-term consequences of marriage to well-connected families. 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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Figure 1: Marriage networks of big business families in Thailand

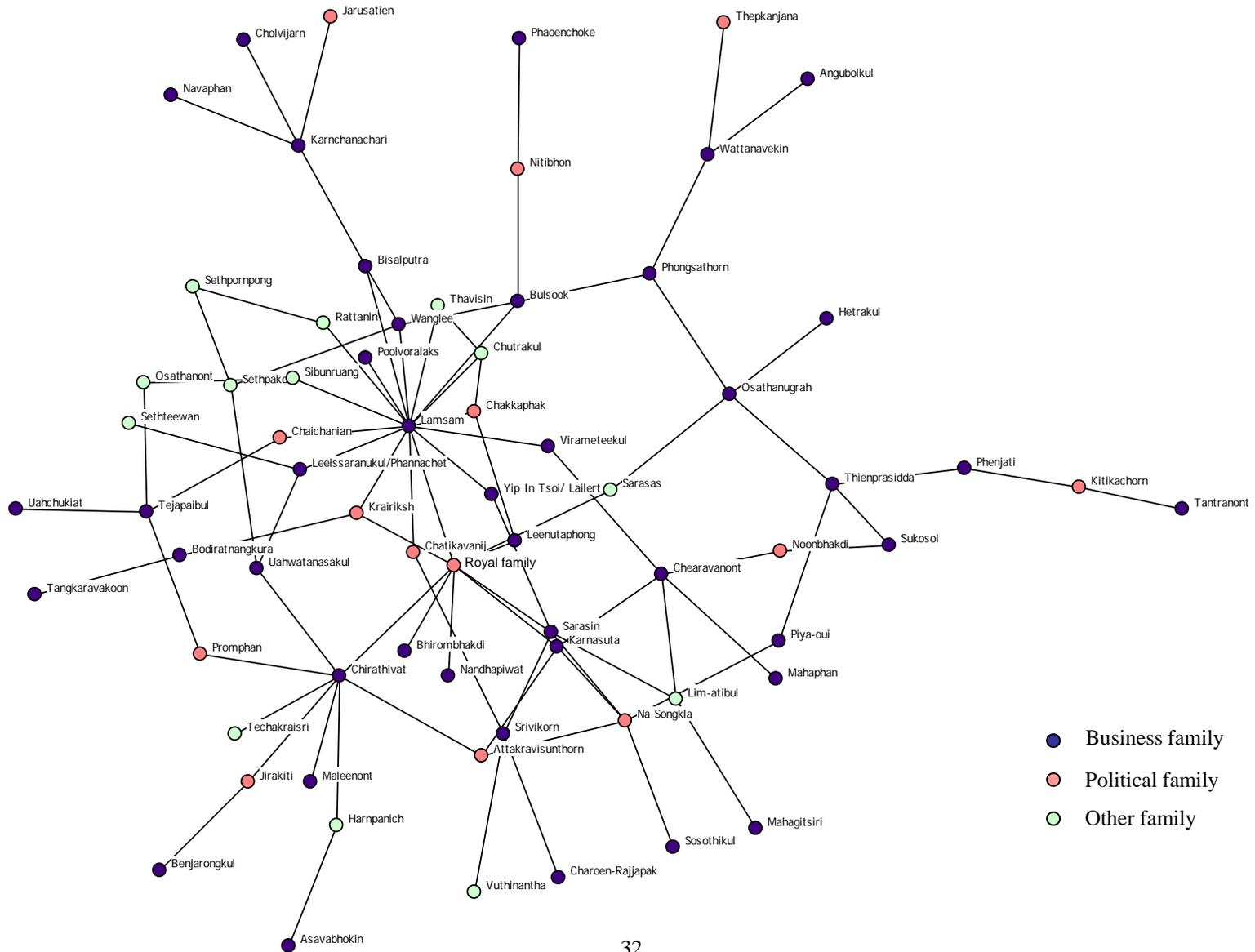


Figure 2: Cumulative abnormal returns around the wedding news

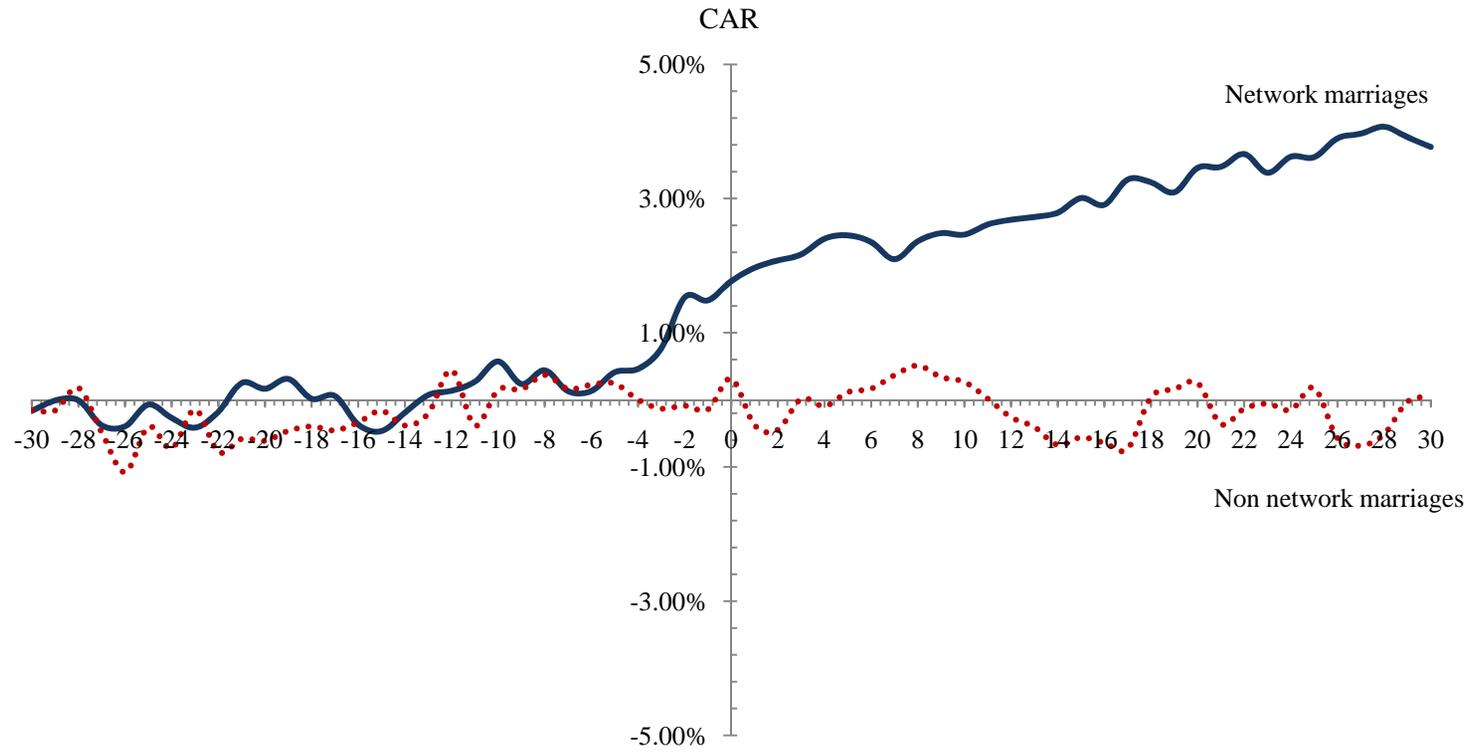


Table 1
The wedding events

This table reports the distribution of the wedding events.

Year	Number of wedding events	Percentage
1991	5	3.8%
1992	7	5.3%
1993	4	3.1%
1994	9	6.9%
1995	8	6.1%
1996	12	9.2%
1997	3	2.3%
1998	10	7.6%
1999	9	6.9%
2000	7	5.3%
2001	12	9.2%
2002	7	5.3%
2003	7	5.3%
2004	6	4.6%
2005	18	13.7%
2006	7	5.3%
Total	131	100.0%

Table 2**The family background of the wedding partner**

This table reports the family background of the wedding partner.

	Number of observations	Percentage
A. Family background		
1 Royal, noble	9	6.4%
2 Politician, military, high-ranking bureaucrat	35	25.0%
3 Business with listed firms (9 couples)	18	12.9%
4 Other business	48	34.3%
5 Foreigner	9	6.4%
6 Others	21	15.0%
Total	140	100.0%
B. Type of family background		
Political (1+2)	44	31.4%
Business (3+4)	66	47.1%
Other (5+6)	30	21.4%
Total	140	100.0%
C. Network vs. Non network		
Network (1+2+3+4)	110	78.6%
Non network (5+6)	30	21.4%
Total	140	100.0%

Table 3**The value of network marriage**

This table reports the statistics of the cumulative abnormal returns (CARs) around the wedding news of the bride/groom who is from the big business families controlling publicly traded companies in Thailand. 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. Political network marriages are the weddings in which the partners are from political families. Business network marriages are the weddings in which the partners are from business families. Non-network marriages are the weddings in which the partners are not from the business or political families. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	CAR (-3,+3)			CAR (-5,+5)			CAR (-30,+30)		
A. Full sample									
	Network	Non-network	Difference	Network	Non-network	Difference	Network	Non-network	Difference
Mean	1.40%***	0.15%	1.25%**	2.04%***	-0.13%	2.17%**	3.77%***	0.05%	3.72%**
<i>p-value (clustered by family)</i>	(0.00)	(0.83)	(0.04)	(0.00)	(0.84)	(0.02)	(0.00)	(0.98)	(0.04)
Median	0.67%***	-0.11%	0.78%*	1.01%**	-0.05%	1.06%**	2.79%***	-0.89%	3.68%**
<i>p-value of the sign-test</i>	(0.00)	(0.58)	(0.09)	(0.04)	(0.58)	(0.04)	(0.00)	(0.58)	(0.02)
Number of observations	110	30	140	110	30	140	110	30	140
B. By type of network									
	Political	Non-network	Difference	Political	Non-network	Difference	Political	Non-network	Difference
Mean	1.85%**	0.15%	1.70%**	2.60%**	-0.13%	2.73%**	5.43%***	0.05%	5.38%**
<i>p-value (clustered by family)</i>	(0.01)	(0.83)	(0.05)	(0.02)	(0.84)	(0.04)	(0.00)	(0.98)	(0.03)
Median	0.89%***	-0.11%	1.00%*	1.27%**	-0.05%	1.32%**	5.43%***	-0.89%	6.32%***
<i>p-value (sign test)</i>	(0.00)	(0.58)	(0.09)	(0.04)	(0.58)	(0.04)	(0.00)	(0.58)	(0.00)
Number of observations	44	30	74	44	30	74	44	30	74
	Business	Non-network	Difference	Business	Non-network	Difference	Business	Non-network	Difference
Mean	1.10%**	0.15%	0.95%*	1.66%**	-0.13%	1.79%**	2.66%**	0.05%	2.60%*
<i>p-value (clustered by family)</i>	(0.04)	(0.83)	(0.09)	(0.01)	(0.84)	(0.04)	(0.05)	(0.98)	(0.08)
Median	0.50%*	-0.11%	0.61%*	0.87%*	-0.05%	0.92%*	1.97%**	-0.89%	2.86%*
<i>p-value (sign test)</i>	(0.10)	(0.58)	(0.10)	(0.09)	(0.58)	(0.09)	(0.03)	(0.58)	(0.07)
Number of observations	66	30	96	66	30	96	66	30	96
Difference of mean (Political vs. Business)	0.75%			0.94%			2.78%		
<i>p-value (clustered by family)</i>	(0.38)			(0.44)			(0.13)		
Difference of median (Political vs. Business)	0.30%			0.40%			3.46%		
<i>p-value (Wilcoxon test)</i>	(0.26)			(0.54)			(0.11)		

Table 4**Is marriage related to succession?**

This table reports the statistics of the cumulative abnormal returns (CARs) around the wedding news of the bride/groom who is from the big business families controlling publicly traded companies in Thailand. 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. Political network marriages are the weddings in which the partners are from political families. Business network marriages are the weddings in which the partners are from business families. Non-network marriages are the weddings in which the partners are not from the business or political families. Old money is defined as the business group has been in business for at least two generations. Nouveau riche is not an old money family. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Number of observations	CAR (-5,+5)
A. Disciplining successors		
First sons of the current head	26	1.58%*
Network marriage	23	1.76%*
Non-network marriage	3	0.14%
Other sons	55	1.80%*
Network marriage	39	2.38%*
Non-network marriage	16	0.37%
Difference (First sons of the current head vs. Other sons)	81	-0.22%
<i>p-value (clustered by family)</i>		(0.88)
B. Recruiting successors		
Daughters of the current head	19	1.79%*
Network marriage	18	2.34%***
Non-network marriage	1	-7.98%
Other daughters	40	1.16%
Network marriage	30	1.63%*
Non-network marriage	10	-0.22%
Difference (Daughters of the current head vs. Other daughters)	59	0.63%
<i>p-value (clustered by family)</i>		(0.60)
C. The same circle effect		
Old money	74	1.26%**
Network marriage	63	1.50%**
Non-network marriage	11	-0.14%
Nouveau riche	66	1.92%**
Network marriage	47	2.75%***
Non-network marriage	19	-0.12%
Difference (Old money vs. Nouveau riche)	140	-0.66%
<i>p-value (clustered by family)</i>		(-0.73)

Table 5**The value of marriage: regression analysis**

This table reports coefficient estimates of OLS regressions. The dependent variable is the cumulative market-adjusted abnormal returns (CARs) around the wedding news of the bride/groom who is from the big business families controlling publicly traded companies in Thailand. 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. *Political network marriage* 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. *Business network marriage* is a dummy variable that take a value of one if the partner is from the business families, and zero otherwise. *First sons of the current head* is a dummy variable that takes a value of one if the groom is the eldest son of the current CEO or chairman of the largest firm in the group. *Daughters of the current head* is a dummy variable that takes a value of one if the bride is the daughter of the current CEO or chairman of the largest firm in the group. *Old money* is a dummy variable that takes a value of one if the family has been in business for at least two generations, 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(-5,+5)	CAR(-5,+5)	CAR(-5,+5)	CAR(-5,+5)
	(1)	(2)	(3)	(4)
Network marriage	0.023** (2.30)	0.027** (2.26)		
Political network marriage			0.029** (1.98)	0.033** (2.04)
Business network marriage			0.018** (2.04)	0.022** (2.09)
First sons of the current head		-0.006 (-0.41)		-0.005 (-0.35)
Daughters of the current head		-0.003 (-0.24)		-0.002 (-0.15)
Old money		-0.015 (-1.24)		-0.015 (-1.23)
Log (total assets)	-0.003 (-0.39)	-0.001 (-0.08)	-0.002 (-0.34)	-0.000 (-0.01)
Leverage	-0.033 (-1.00)	-0.036 (-1.08)	-0.035 (-1.04)	-0.038 (-1.12)
EBIT/total assets	-0.044 (-0.41)	-0.050 (-0.46)	-0.043 (-0.41)	-0.050 (-0.46)
Constant	0.025 (0.53)	0.022 (0.45)	0.023 (0.51)	0.020 (0.43)
Number of observations	140	140	140	140
Adjusted R ²	0.040	0.052	0.046	0.059

Table 6**The information and political connection effects**

This table reports the statistics of the cumulative abnormal returns (CARs) around the wedding news of the bride/groom who is from the big business families controlling publicly traded companies in Thailand. 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. Non-network marriages are the weddings in which the partners are not from the business or political families. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Number of observations	CAR (-5,+5)
A. The information effect: <i>Property and construction industries</i>		
Network marriage	35	2.78%**
Non network marriage	2	-0.23%
Difference (Network vs. Non network)	37	3.01%*
<i>p-value (clustered by family)</i>		(0.07)
B. The political connection effect: <i>Businesses operating under state concessions</i>		
Network marriage	14	2.22%**
Non network marriage	1	-0.04%
Difference (Network vs. Non network)	15	2.26%**
<i>p-value (clustered by family)</i>		(0.04)

Table 7
The business synergy effect

This table reports the business relatedness of the bride and groom families. SIC codes represent the 2-digit SIC codes of the firms controlled by the family. Horizontal integration is the marriage where the two families have at least one common business at the 2-digit SIC code level. Vertical integration is the marriage where one family have at least one firm that is the upstream or downstream of another firm owned by another family. The upstream and downstream industries are defined as its top 3 supplying/consuming industries in Fan and Lang (2000). *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Event year	Bride's family		Groom's family		SIC matching pairs	Business integration	
	Family name	SIC codes	Family name	SIC codes		Horizontal	Vertical
1991	Wattanavekin	42, 60	Angubolkul	30	42-30		Yes
1991	Tejavibul	26	Asvinvichit	26	26-26	Yes	
1992	Sophonpanich	28, 33, 35, 60, 62, 63, 80	Leeswadtrakul	34, 50	28-50, 33-34, 35-34, 60-34, 62-34, 80-50		Yes
1992	Lamsam	20, 28, 48, 60, 63, 73, 80	Leeissaranukul	35, 36, 37	48-35, 48-37, 73-35, 80-35		Yes
1994	Chearavanont	02, 20, 28, 36, 54, 51	Virameteekul	28, 65	28-28	Yes	
1995	Poolvaraluck	65, 78	Lamsam	20, 28, 48, 60, 63, 73, 80	65-60, 65-63, 78-48, 78-73		Yes
1996	Chirathivat	20, 27, 53, 65, 70	Techakraisri	37, 65	65-65, 53-37	Yes	Yes
1996	Krairiksh	60	Lamsam	20, 28, 48, 60, 63, 73, 80	60-60, 60-73	Yes	Yes
1999	Srivikorn	22, 32, 60, 65	Teepsuwan	32	32-32, 65-32	Yes	Yes
2001	Vutinantha	32	Assakul	32	32-32	Yes	
2002	Bhirombhakdi	20, 34	Teepsuwan	32	34-32		Yes
2003	Srifuengfung	22, 28, 30, 60	Hetrakul	28, 65	22-28, 28-28, 30-28, 60-65	Yes	Yes
2006	Krairiksh	60	Bhirombhakdi	20, 34	60-34		Yes
						CAR(-5,+5)	CAR(-5,+5)
Network marriage						3.56%*	3.78%**
<i>p-value (clustered by family)</i>						(0.09)	(0.01)
No. of observations						9	14
No. of wedding events						7	10

Appendix 1

The network marriages around the world

Country	Network marriage
South Korea	The Chey of SK group, the third largest chaebol, is connected by marriage to former President Roh Tae Woo.
Singapore	The Didwania, a singapore-based owner of a worldwide steel supply chain, is connected to a Calcutta-based tycoon, the Gabodia
India	The hier 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.
Russia	Oleg Deripaska, one of the wealthiest tycoons, who owns the world's biggest producer of aluminium, is married to a granddaughter of the late former Soviet president Boris Yeltsin.
Ukraine	The country's second wealthiest tycoon, Viktor Pinchuk is connected to former president Leonid Kuchma by the marriage of his daughter.
Mexico	The heiress of one of the biggest business group owners, Maria Asuncion Aramburuzabala, is married to Tony Garza, US Ambassador to Mexico.
Japan	The Toyodas (Toyota Motors) are connected via marriage networks to the two former prime ministers (Nakasone and Hatoyama) and seven top business families, namely Mitsui (the biggest pre-war zaibatsu), Shimizu (a worldwide general construction group), Kajima (a worldwide general construction group), Ishibashi (Bridgestone), Uehara (Taisho Pharmaceutical), Saito (Daishowa Paper Manufacturing), and Iida (Takashimaya department store).
Canada	Paul Desmarais, the 6th richest person in Canada who owns Power Corporation and extensive companies, is connected to former PM Jean Chretien by the marriage of Andre Desmarais and France Chretien.
Italy	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.
Spain	A billionaire Esther Koplowitz is married to Fernando Falco, Marques de Cubas, scion of a prominent Spanish family.
Austria	Crystal-heiress Fiona Swarovski wedded Austria's finance minister.
France	Jessica Sebaoun-Darty, an hieress of a French electronics-vending empire was married to Jean Sarkozy, a son of President Nicolas Sarkozy.
Greek/Ireland	Chryss Goulandris, a Greek shipping heiress, is married to Tony O'Reilly who is one of Ireland's richest men.
France/Italy	Delphine Arnault, the daughter of Bernard Arnault who is France's richest person and owns the LVMH (Louis Vitton Moet Hennessy) luxury goods conglomerate, is married to Alessandro Vallarino Gancia, hier to an Italian wine dynasty.

Appendix 2

The business synergy effect: industry description

Event year	Bride's family	Groom's family	Type of business integration	SIC matching pairs	SIC of the bride's family business	SIC of the groom's family business
1991	Wattanavekin	Angubolkul	Vertical	42-30	42: Motor Freight Transportation And Warehousing	30: Rubber And Miscellaneous Plastics Products
1991	Tejavibul	Asvinvichit	Horizontal	26-26	26: Paper And Allied Products	26: Paper And Allied Products
1992	Sophonpanich	Leeswadtrakul	Vertical	28-50	28: Chemicals And Allied Products	50: Wholesale Trade-durable Goods
			Vertical	33-34	33: Primary Metal Industries	34: Fabricated Metal Products, Except Machinery And Transportation Equipment
			Vertical	35-34	35: Industrial And Commercial Machinery And Computer Equipment	34: Fabricated Metal Products, Except Machinery And Transportation Equipment
			Vertical	60-34	60: Depository Institutions	34: Fabricated Metal Products, Except Machinery And Transportation Equipment
			Vertical	62-34	62: Security And Commodity Brokers, Dealers, Exchanges, And Services	34: Fabricated Metal Products, Except Machinery And Transportation Equipment
			Vertical	80-50	80: Health Services	50: Wholesale Trade-durable Goods
1992	Lamsam	Leeissaranukul	Vertical	48-35	48: Communications	35: Industrial And Commercial Machinery And Computer Equipment
			Vertical	48-37	48: Communications	37: Transportation Equipment
			Vertical	73-35	73: Business Services	35: Industrial And Commercial Machinery And Computer Equipment
			Vertical	80-35	80: Health Services	35: Industrial And Commercial Machinery And Computer Equipment
1994	Chearavanont	Virameteekul	Horizontal	28-28	28: Chemicals And Allied Products	28: Chemicals And Allied Products
1995	Poolvaraluck	Lamsam	Vertical	65-60	65: Real Estate	60: Depository Institutions
			Vertical	65-63	65: Real Estate	63: Insurance Carriers
			Vertical	78-48	78: Motion Pictures	48: Communications
			Vertical	78-73	78: Motion Pictures	73: Business Services
1996	Chirathivat	Techakraisri	Horizontal	65-65	65: Real Estate	65: Real Estate
			Vertical	53-37	53: General Merchandise Stores	37: Transportation Equipment
1996	Krairiksh	Lamsam	Horizontal	60-60	60: Depository Institutions	60: Depository Institutions
			Vertical	60-73	60: Depository Institutions	73: Business Services
1999	Srivikorn	Teepsuwan	Horizontal	32-32	32: Stone, Clay, Glass, And Concrete Products	32: Stone, Clay, Glass, And Concrete Products
			Vertical	65-32	65: Real Estate	32: Stone, Clay, Glass, And Concrete Products
2001	Vutinantha	Assakul	Horizontal	32-32	32: Stone, Clay, Glass, And Concrete Products	32: Stone, Clay, Glass, And Concrete Products
2002	Bhirombhakdi	Teepsuwan	Vertical	34-32	34: Fabricated Metal Products, Except Machinery And Transportation Equipment	32: Stone, Clay, Glass, And Concrete Products
2003	Srifuengfung	Hetrakul	Horizontal	28-28	28: Chemicals And Allied Products	28: Chemicals And Allied Products
			Vertical	22-28	22: Textile Mill Products	28: Chemicals And Allied Products
			Vertical	30-28	30: Rubber And Miscellaneous Plastics Products	28: Chemicals And Allied Products
			Vertical	60-65	60: Depository Institutions	65: Real Estate
2006	Krairiksh	Bhirombhakdi	Vertical	60-34	60: Depository Institutions	34: Fabricated Metal Products, Except Machinery And Transportation Equipment