

RELATIONAL ANTECEDENTS OF MULTIMARKET CONTACT

JungYun Han

INSEAD

Boulevard de Constance
77305 Fontainebleau Cedex

France

jungyun.han@insead.edu

Andrew V. Shipilov

INSEAD

Boulevard de Constance
77305 Fontainebleau Cedex

France

shipilov@insead.edu

* This paper benefitted from helpful comments from the participants of seminars at INSEAD, SDA Bocconi and the Israel Strategy Conference. Special thanks go to Javier Gimeno, Laurence Capron, Bart Vanneste and Beppe Soda. Both authors contributed equally.

RELATIONAL ANTECEDENTS OF MULTIMARKET CONTACT

Despite the wealth of research on the antecedents of multimarket contact, we know little about how it is shaped by social ties between firms. In the absence of social ties, firms increase their multimarket contact to benefit from tacit collusion. Social ties affect the firms' ability to engage in explicit collusion, deep learning as well as in giving and receiving support. These considerations affect the firms' decisions to increase or decrease the extent of their dyadic multimarket contact. We predict that strong ties between firms lead to the expansion of their dyadic multimarket contact while weak ties reduce their dyadic multimarket contact. Examining ties between owner families of Korean business groups over a 40 year period, we find support for these arguments.

High multimarket contact between firms softens their competition (e.g. Audia, Sorenson, & Hage, 2001; Baum & Korn, 1999; Bernheim & Whinston, 1990; Prince & Simon, 2009).

Multimarket contact arises for a variety of reasons, including chance, trait-based imitation or vicarious learning (Korn & Baum, 1999). Competitors are also interconnected via social relationships, such as alliances, joint ventures (Fang, Lee, & Schilling, 2010; Mitsuhashi & Greve, 2009) or even friendships between executives (Ingram & Roberts, 2000). Together, firms' multimarket contact and social relationships result in "economic multiplexity" defined as a situation when "the actors of an economic relation are also simultaneously linked to each other through other ... relations of interdependence" (Gimeno & Woo, 1996:326).

Research on competitive positioning is based on the idea that firms increase multimarket contact to benefit from tacit collusion and signaling (Bernheim & Whinston, 1990). Competitors can tacitly agree to reduce rivalry, increase prices, decrease new product launches or the rates of market entry. This happens because contact in many common markets helps firms develop mutual awareness and weigh the benefits of short term competition in one market against the long term benefits of collaboration across many markets (Gimeno, 2002). In the absence of direct social ties between rivals, such coordination happens through signaling: one firm makes a competitive move and observes the rival's reaction to it. As high multimarket contact could lead to inefficient internal resource allocation (Gimeno, 1999), firms have to be strategic in managing it and increase multimarket contact only when the added benefits of tacit collusion are greater than the costs of expanding market presence (Stephan, Murmann, Boeker, & Goodstein, 2003).

Social relationships also facilitate collusion between firms. This collusion will be explicit because social ties could enable firms to explicitly exchange information about rivalry, pricing,

product launches or market positioning (Ingram & Roberts, 2000), to engage in deep learning and to provide reciprocal support to each other (Khanna, Gulati, & Nohria, 2000; Lavie, Haunschild, & Khanna, 2012). Deep learning is characterized by firms' exchanging highly sensitive information about each other's markets, strategies and business models (Uzzi, 1996) while reciprocal support is characterized by both firm's willingness to come to each other's aid when needed. These benefits of social connectedness depend on the tie strength between firms (Rowley, Behrens, & Krackhardt, 2000). Weak ties facilitate communication between firms which enables their explicit collusion, but they don't enable deep inter-organizational learning nor do they create conditions for exchanging support. Since this communication channel can transfer more information than could be exchanged through multimarket signaling by unconnected firms, firms connected by weak ties can reduce their multimarket contact to achieve more efficient internal resource allocation, but still maintain the same levels of partner cooperativeness. In turn, strong ties not only enable explicit collusion, but they also facilitate deep learning and reciprocal support between firms (Uzzi, 1996). Since firms will reap greater benefits if they capitalize on mutual learning and reciprocal support across a large number of common markets, they will increase dyadic multimarket contact following the formation of a strong tie.

While different types of strong and weak ties can exist between firms, we focus on interpersonal relationships between individuals who are close to the firms' centers of ownership and control. Specifically, we examine how relationships between members of the owner families of Korean business groups, commonly known as chaebols (Siegel, 2007), affect the extent of multimarket contact between these groups. We capture two kinds of strong ties: a) marriage relationships between the owner families, and b) the common membership of their owner-CEOs in multiple social groups. We capture weak ties as the chaebol owner-CEOs' common

membership in a single social group. We find that the presence of marriage ties and common membership of the two chaebols' owner-CEOs in multiple groups lead to the expansion of their chaebols' dyadic multimarket contact, while their common membership in a single social group leads to the reduction of their dyadic multimarket contact.

Our focus on strong and weak ties as determinants of multimarket contact contributes to the literature on competitive positioning (e.g. Gimeno & Woo, 1996; Greve, 2006; Korn & Baum, 1999). Existing research shows that social relationships facilitate information exchange, learning and support between firms. These mechanisms influence a variety of outcomes, including firms' risk taking (Baum, Rowley, Shipilov, & Chuang, 2005), performance (Lavie, 2007; Lavie et al., 2012) and partner selection (Shipilov & Li, 2012). Despite these advances, we know little about how relationships may influence dyadic multimarket contact. This gap in our knowledge prevents us from understanding how firms' social embeddedness affects their multimarket contact over and above the influences from the other known drivers such as chance, imitative behaviors or vicarious learning. Ignoring relational antecedents leads to an "under-socialized" picture of the origins of dyadic multimarket contact, and our study aims to correct this shortcoming.

THEORY

The potential consequences of multimarket contact for firms' competitive interactions were first acknowledged by Edwards (1955:332), who observed that "a firm may possess power in a particular market not only by virtue of its place in... that market, but also by virtue of the scope and character of its activities elsewhere." A firm that competes in a single industry derives its power vis-à-vis other single industry competitors from being present in multiple markets within the same industry (Korn & Baum, 1999). In turn, a diversified conglomerate derives its

power vis-à-vis other diversified conglomerates from being present in multiple industries, viewed as separate markets by executives in its central office¹ (Edwards, 1955).

‘Tacit collusion’ refers to the way firms avoid aggressive competitive behaviors, such as price cuts, new product introduction, or market entries without explicit agreements (Bernheim & Whinston, 1990). Tacit collusion is a consequence of high multimarket contact for two reasons (Jayachandran, Gimeno, & Varadarajan, 1999). First, high multimarket contact enables firms to increase awareness of their rivals – especially of their strategies and capabilities. As awareness grows, firms consider how their competitive actions impact the rivals’ positions and what kind of a response the rivals are likely to mount. This awareness arises from sending and receiving competitive signals and without direct communication between the rivals. Second, multimarket contact secures cooperation between firms through mutual deterrence: if an aggressor attacks in one market, the rival can retaliate in other markets (Gimeno, 1999; Yu & Cannella, 2012). As a consequence of tacit collusion, firms can earn higher margins (Hughes & Oughton, 1993), charge higher prices (Kang, Bayus, & Balasubramanian, 2009), incur lower marketing costs (Shankar, 1999), and offer lower quality service (Prince & Simon, 2009).

Multimarket contact arises from a variety of sources, including chance (Scott, 1991), trait-based imitation, and vicarious learning (Greve, 2000; Korn & Baum, 1999). Increases in multimarket contact due to chance are unintentional in nature. “Firms serving many markets are more likely to exhibit multimarket contact ... because they are likely to encounter competitors in

¹ Edwards (1955) did not distinguish competition within and across industries. His use of the term “markets” was synonymous to the use of the term “industries” because he was exploring the consequences of multimarket contact for diversified conglomerates which are active in multiple industries. Later research mostly focused on competition based on access to multiple markets within the same industry (e.g. Greve, 2008; Korn and Baum, 1999). Given that our study context is diversified conglomerates, we will also equate the term “industry” with the term “market”. This way, the term “multimarket contact” for diversified conglomerates is the equivalent to their “multi-market contact based on the overlap in multiple industries”.

multiple markets, given the sheer number of markets in which they operate...” (Korn & Baum, 1999:172). Trait-based imitation is a by-product of firms imitating large and successful direct competitors. Firms do so because they assume that these competitors have grown in size and achieved superior performance due to their ability to occupy “correct” market positions (Greve, 2006; Haveman, 1993). As firms imitate their competitors’ market positions, they expand multimarket contact with them. Finally, a firm may engage in vicarious learning about others (Korn & Baum, 1999), for example by following media reports of its competitors’ actions (Haunschild & Beckman, 1998; Rindova, Petkova, & Kotha, 2007), and hence will be more likely to increase the extent of multimarket contact with firms that receive the most media coverage. Since this learning is based on publicly available information, it is rather superficial.

Firms also appear to be strategic in managing their multimarket contact (Stephan et al., 2003). When a firm has low-to-moderate multimarket contact, it will increase its rate of entry into its rivals’ markets in order to establish footholds (Gimeno, 1999), and to signal its ability to launch a counter-attack against possible aggression (Baum & Korn, 1999; Haveman & Nonnemaker, 2000). It may also be motivated to do so in order to observe its rivals’ behaviors in these markets (Stephan & Boeker, 2001). However, when a firm already has a high multimarket contact it will refrain from entering new markets because it already has an opportunity to retaliate across a range of markets and its existing market positions provide sufficient possibilities to exchange signals with rivals (Haveman & Nonnemaker, 2000).

The tendency to limit multimarket contact expansion beyond a certain level is also predicated by its costs. Establishing and maintaining multimarket contact demands scarce resources, such as managerial attention (Ocasio, 1998), productive assets or financial capital (Newbert, 2008) regardless of whether this contact is intentional (Gimeno, 2002; Korn & Rock,

2001). A firm's footholds in many markets are usually smaller than those required to generate efficient scale of operations so that not to infringe on the collaborative competitor's positions. Yet, such positions should be rapidly scalable if a firm decides to respond to an attack from this competitor in the other markets. As a result, a firm maintaining a very high multimarket contact secures rivals' cooperation at the price of the inefficient use of its resources (Gimeno, 1999).

While familiarity and cooperation between competitors allow them to engage in tacit collusion, a vast literature on inter-organizational relationships suggests that competitors are often inter-connected by social relationships (e.g. Fang et al., 2010; Gimeno, 2004), which in turn may enable their explicit collusion. For example, in 1987 Italian energy firm Enel and French energy firm EDF agreed to form an alliance for supplying EDF's electrical power to Italy. In 2009, they formed a joint venture to do research on nuclear energy. In 2000 EDF established a representative office in Rome to sell its electricity in Italy and entered the Italian renewable energy market. In 2005, Enel started supplying electrical power to French customers even though France is actually a net exporter of electricity. That same year, Enel was investigated for price fixing with EDF in Italy (Jones & Simon, 2005). Thus the alliance formed in 1987 may have enabled the two competitors to become familiar with each other, develop routines for collaboration and information sharing, which then allowed them to coordinate their subsequent entries into each other's markets. Such coordinated entries may have helped them avoid excessive competition and develop critical mass to withstand the competition from the German utility firms RWE and E.ON (Soda, Bergami, & Celli, 2012).

More generally, social relationships, such as strategic alliances, joint ventures (Lavie, 2007; Powell, Koput, & Smith-Doerr, 1996), board interlocks (Beckman, Haunschild, & Damon, 2004; Shropshire, 2010), executives' joint membership in industry associations (Dokko &

Rosenkopf, 2010; Rosenkopf & Nerkar, 2001), executive friendships (Ingram & Roberts, 2000) or even kinship (Ingram & Lifschitz, 2006) all facilitate explicit information exchange between firms (Gimeno & Woo, 1996; Gulati & Sytch, 2007). Repeated relationships lead to the development of collaborative routines, better understanding of resource availability within the partner firms, the formation of close inter-personal connections between executives, and the discovery of future collaborative opportunities (Zaheer, McEvily, & Perrone, 1998).

Inter-organizational relationships affect other outcomes as well. Alliances improve the firms' access to technological know-how available in their industries, which in turn improves firms' innovativeness (Owen-Smith & Powell, 2004). Inter-firm ties based on board interlocks facilitate the spread of practices such as mergers (Haunschild, 1993), corporate governance (Shipilov, Greve, & Rowley, 2010), or new forms of organizing (Palmer, Jennings, & Zhou, 1993), and help firms scan their competitive surroundings more effectively (Beckman et al., 2004).

Exchanging information through ties to former employees helps firms to learn from each other and augment their influence in the industry (Dokko & Rosenkopf, 2010). Friendships with competitors also facilitate information exchange between firms, make executives more aware of changing demand conditions, and reduce aggressive pricing behavior (Ingram & Lifschitz, 2006). Before the professionalization of management in 20th century Europe, kinship ties had a similar impact on information access and cooperation for competing firms (Ingram & Lifschitz, 2006) and wealthy families (Padgett & Ansell, 1993).

While much of research on social relationships has been done by organization theorists, some economists also recognize the importance of social relationships between competitors,

especially for collusive behaviors. For example, Scherer and Ross (1990: 235-274) describe many examples of collusion in the cigarettes, automotive, steel, food, energy and other industries. The common thread across these examples is that explicit collusion is facilitated by the presence of social ties between competitors. These ties could be created in a variety of ways, including attendance of regular informal dinners, industry conventions or even clandestine meetings in “smoke filled rooms” where conspirators agree on the mechanisms through which explicit collusion will occur.

Social relationships will provide benefits to firms beyond facilitating direct communication. Direct collaborative experiences will lead to trust, which in some cases can facilitate deep inter-firm learning and reciprocal support. These factors will affect whether firms view high multimarket contact a substitute or a complement to their social relationships, such that some ties might lead to an increase in the firms’ multimarket contact while the other ties might lead to a decrease. Yet existing research ignores these possibilities, focusing instead on the non-relational antecedents of multimarket contact (e.g. Korn & Baum, 1999). This leads to the development of overly simplified theoretical models in which firms are assumed to build their multimarket contact in a relational vacuum, which contradicts the available evidence (Gimeno, 2004; Soda et al., 2012)

Strong Ties, Weak Ties and Dyadic Multimarket Contact

The presence or absence of a social tie and its strength will affect the nature of the inter-firm collusive behaviors as well as the possibilities for deep learning and reciprocal support. Social ties enable explicit communication between firms which replaces the need to rely on tacit signals. Thus, firms no longer need extensive multimarket contact to understand each other’s

behaviors and to coordinate their competitive actions. However, greater tie strength also leads to possibilities of deep inter-organizational learning and reciprocal support, which become more valuable if the number of common markets between firms increases. These opposite forces give rise to the stylized curve presented on Figure 1, which shows different combinations of multimarket contact that the firms will find optimal given different types of their social connectedness.

--- Insert Figure 1 about Here---

As Figure 1 illustrates, existing research on multimarket contact examines the case where there are no social ties between firms (Markman, Gianiodis, & Buchholtz, 2009). In the absence of social ties, firms engage in tacit collusion by observing each other's behaviors, sending and receiving easily observable signals in the form of price cuts, new product introductions or the like. Clearly, deep learning about each other's resources, motives, strategic blueprints or the best practices is not possible under these conditions (Uzzi, 1996). The higher the multimarket contact between firms, the more opportunities they have to exchange tacit signals. High multimarket contact is also needed to develop mutual deterrence (e.g. D'Aveni, 2004; Gimeno, 1999; Prince & Simon, 2009). This is why firms will increase the extent of their multimarket contact with unrelated partners. However, this increase will not be indefinite and it will stop when the firms feel that the benefits of increased tacit collusion begin are offset by the costs of inefficient internal resource allocation (Gimeno, 1999).

Strong and weak ties enable information exchange between firms (Lavie, 2007; Lavie, Haunschild, & Khanna, 2012) which allows them to engage in explicit collusion. This means that firms can explicitly coordinate their decisions with respect to pricing, product introductions or

market entry/exit behaviors (Scherer & Ross, 1990:235-238). Strong and weak ties enhance firms' cooperation as the parties seek to avoid aggressive competition that could result in the loss of goodwill, development of negative reputation (both within the dyad as well as with the common third parties) or the destruction of collaborative routines (Gulati & Sytch, 2007; Li & Rowley, 2002). The expectation that a partner will behave cooperatively due to the influence of pre-existing social ties is often referred to as "familiarity based trust" (Gulati, 1995). In other words, familiarity developed in a social tie replaces the mere awareness that unrelated firms have between each other due to their multimarket contact, and this familiarity eventually leads to trust.

Since concerns for the goodwill, reputation and the stability of collaborative routines increase with tie strength, firms have higher familiarity based trust in strongly tied partners as compared to weakly tied partners. High trust in strong ties facilitates valuable knowledge sharing, related for example to the partners' resources, proprietary market intelligence, best practices or strategic blueprints (Uzzi, 1996). Strong ties also facilitate mutual support: a partner can call for help and is expected to provide help since mutual assistance and reciprocity are a part of social norms governing strong relationships (Marsden & Campbell, 2012). The more common markets the strongly tied firms serve, the greater the advantage which these firms can gain from learning and support. Exchanging trustworthy knowledge about regulation, distribution channels, sources of raw materials or qualified employees can help firms achieve efficient scale in these markets at the lower cost as compared to unrelated firms. Strongly tied firms can also join forces to fight common enemies as well as support each other, and the value of these behaviors will increase with the number of common markets in which firms encounter each other. Combined, the opportunities for deep learning and mutual support mean that firms connected through strong ties will find it advantageous to increase the extent of their dyadic multimarket contact.

Weak ties also enable firms to exchange information, but they have lower levels of familiarity based trust, as compared to strong ties. This is because the concerns for reputation, goodwill or collaborative routines are less significant in weak ties as compared to strong ties (Rowley et al., 2000). Lower familiarity based trust in weak ties will prevent the firms from deep learning in common markets and they will have low expectations of mutual support. However, information sharing properties of weak ties will still allow the firms to engage in explicit collusion. Since the explicit communication channel of a weak tie can transmit more (and better) information than can be exchanged by tacit signals across multiple markets in the absence of a social tie, weak ties can secure collusion at lower levels of multimarket contact. If its partner starts to excessively compete in the common markets, the firm can use its weak tie to understand the partner's motivations, explicitly voice its concerns and find a way to agree on the actions to settle the conflict (Gimeno and Woo, 1996). Weak ties will allow firms to reduce their multimarket contact, such that one firm can explicitly agree to leave one common market, while another firm agrees to leave another market. Such behaviors will help firms to use their resources more efficiently and not be overstretched across a large number of markets. Instead, they can concentrate their resources on a smaller number of markets to achieve and maintain efficient scale in each one of them (Gimeno, 1999). Furthermore, in the attempts to optimize their multimarket contact, weakly tied firms will be unlikely to reduce it below the threshold that would prevent them from making credible threats of retaliation, should all the relational mechanisms fail.

Kinship, Group Membership Ties and Multimarket Contact in Korea

Thus far, we have advanced general theoretical propositions linking the strength of the firms' relationships to their multimarket contact. We now use these arguments to predict the

consequences of inter-personal ties between owner families of business groups in Korea for the extent of their multimarket contact. In this section, we will advance three hypotheses and map them schematically on the curve represented in Figure 1.

Following the Korean War in the 1950s, the government's reconstruction effort resulted in the creation of diversified conglomerates, known as chaebols. They were seen as a solution to the problems arising from market failure and inadequate institutional development in the capital, labor and product markets (Encaoua & Jacquemin, 1982; Khanna & Palepu, 1997, 1999; Leff, 1976). The chaebols' ability to transfer and share financial resources, human resources and management know-how across subsidiaries (also known as "affiliates") has played a crucial role in their rapid growth (Kim, Hoskisson, & Hong, 2004).

Despite some degree of public ownership in selected affiliates, the chaebols' strategic decision making has always been concentrated in the hands of the founding families. The key person in a family is the owner-CEO, supported by a team of senior executives who are often family members (Kim, 2010). This centralization of ownership and control makes chaebols a particularly attractive setting for examining the link between social relationships and multimarket contact, since coordination of activities across different markets requires centralized decision-making (Korn & Rock, 2001).

Edwards (1955) seminal essay examined the consequences of multimarket presence for diversified conglomerates. Chaebols represent a South Korean example of such conglomerates that historically were not concerned about the risks of unrelated diversification. These entities relied heavily on social relationships to other companies and to the government for learning about opportunities in different industries and to access cheap credit.

Kinship ties are the strongest relationships between family businesses. They are a prominent driver of information exchange, coordination and trust building prior to the

professionalization of management (Granovetter, 1995). In medieval Europe, marriages between wealthy families did not happen by chance nor for love. Instead, they resulted from the calculation of gains from the pooling of assets (Molho, 1994) and from exchanging information or coordinating business decisions (Padgett & Ansell, 1993). Marriages between family businesses also help firms to profit from shared political connections (Greif, 1993; Siegel, 2007). Pre-World War II zaibatsu business groups in Japan, which closely resembled modern chaebols (Kim, 2010), also relied on kinship as a means of securing long term inter-group collaboration (Kerbo & McKinstry, 1995). In the Scottish shipbuilding industry in the 18th - 20th century, competing companies tied by marriage exchanged market information, transferred product knowledge, and coordinated bidding and pricing (Ingram & Lifschitz, 2006). Nowadays, the strength of kinship networks in China and Thailand continues to ensure the survival and growth of family enterprises because kin solidarity and trust helps reduce transaction costs (Bunkanwanicha, Fan, & Wiwattanakantang, forthcoming; Peng, 2004).

The family represents the locus of trust within Korean society, serving as the foundation of the “two-tier system of ethical values” whereby standards of behavior for relationships within the kin are higher than for those with outsiders (Fukuyama, 2000; Siegel, 2007). Kinship ties are very strong because they are durable, involve reciprocity, connect people with multiple social roles (i.e. parent, cousin, grandparent, business partner), and presuppose high emotional intensity (Granovetter, 1995). Such ties are also embedded within a large number of third-party “Simmelian” relationships through a large number of common relatives across the extended families. The higher the number of common third parties, especially related by kin, the stronger the concern for reputation of its individual members, and the greater the number of people who can arbitrate conflicts and enforce social norms (Krackhardt, Kramer, & Neale, 1998). Thus, high

intensity of interaction in a marriage tie leads to the emergence of trust and thick information exchange between the chaebol families.

Such ties will have significant business consequences because the people involved in kinship ties are the ones who make business decisions. A marriage tie between two chaebols usually involves the close relatives of the owner-CEOs, most frequently their children or grandchildren. The patriarchs are expected to approve the relationship and to treat each other as close relatives thereafter. A newly created kinship relationship between owner-CEOs will enable them to exchange business-related information, such as competitive intelligence about their respective industries and uncover opportunities for mutual support. It will also help them agree to fight enemies across their common markets (industries). This channel of communication will enable the leadership of chaebols to see the value of reciprocally increasing a dyadic multimarket contact: the chaebol-incumbent in a particular market will welcome a related chaebol into that market, help it understand the market intricacies, and provide support until the entrant can manage on its own, while expecting the favor to be returned in a different market.

Our interviews with senior managers in Korea showed that chaebols' executives, in general, prefer to work with people with whom they have either weak or strong ties. One senior executive told us *"In business, it is important to know who this guy is. If we come across a newbie in the industry, we don't want to talk to him even if he is the CEO of top company. So top executives should know top executives of competitors very well... If you are an unknown guy in the business world, you may not succeed in the market. That's why many top managers strive to build their personal relationship with others and to take advantages of the network."*

Regarding ties of different strength, one interviewee suggested that *"kinship and marriages between owner-families are the strongest relationships between chaebols one can think of"*. Marriage ties in particular have important business outcomes: *"Increasing a number of*

common markets is a consequence of intermarriage between business groups. Expansion of market contact into a market in which you have a firm related by kin is much easier than entering into a market in which you don't have a related firm." Another senior executive gave a concrete example: *"Know-how, survival tips and organizational learning are a big advantage of intermarriage. ... In the 1950s, Samsung had no experience in high tech, while LG was dominant in the radio electronics industry. By marrying into LG family, Samsung could expand competitive overlap between the two chaebols and enter into the electronics industry. Based on a persistent and strong relationship between owner families, Samsung could expect deep knowledge and intangible assets from LG. This way, Samsung could learn of the radio industry and the distribution networks easily, quickly and deeply... and use this deep knowledge to become competitive"*. Reciprocal expansion of multimarket contact also takes place. For example, two chaebols, Tae-Kwang and Lotte, established a marriage tie in 1986 (Korean Information Service, 1986). Later on, Tae-Kwang entered the sports and amusement industry, in which Lotte's was already present, while Lotte entered into the manufacturing of textiles and financial services, where Tae-Kwang was present (Korea Information Service, 1989).

Taken together, these arguments allow us to formulate our first hypothesis (labeled as H1 on Figure 1) linking the presence of a marriage tie between the firms to their dyadic multimarket contact.

Hypothesis 1: Chaebols connected by marriage ties of their owner families will increase the extent of their dyadic multimarket contact.

Common social group affiliations of owner-family members represent another type of inter-chaebol ties. Social groups in Korea are created on the basis of alumni networks and industry associations (Siegel, 2007). Alumni networks, based on attendance at the same school or

university, bring members together on a regular basis. Industry associations, such as the Federation of Korean Industries (FKI), represent another context in which business people establish repeated interactions. Created in 1961, FKI membership is open only to large chaebols and large firms that are unaffiliated to a chaebol. It is the Korean equivalent of the Business Roundtable in the U.S. or *Keidanren* (the Japan Federation of Economic Organizations) in Japan.

As compared to kinship ties, social group membership results in weaker relationships. Weak ties enable information sharing between chaebols, but trust is less substantial than in kinship relationships. Thus, executives don't expect much reciprocal learning or support from these ties. Yet, communication channels enabled by weak ties are an indispensable source of explicit collusion that replaces tacit signaling through multimarket contact. According to a senior executive *"All players are competing in the same industry with nearly the same service. So, price is critical factor which is directly linked to our profits. To survive or gain advantage, firms need to coordinate prices in advance and this coordination happens in industry associations."*

Such ties also enable business groups to agree on reducing dyadic multimarket contact. That is, owner-CEOs connected by weak ties can agree on the specific industries in which they stay, and those to exit, usually by the divestment of their affiliates. When these exits are not reciprocal, the executives can agree on exchanging favors, for example, one chaebol's exit from a given industry can be rewarded by softened competition in a different industry. One executive told us *"CEOs who meet each other in alumni clubs or Federation of Korean Industries reduce market overlap because they don't want to compete with each other."* Another executive commented: *"CEOs need to consider both economic benefits ... and their social standing in the group. This is why CEOs try to reduce competitive overlap [with fellow group members] to avoid head to head competition."* Several executives also told us that when their chaebols were

overstretched across many markets, they gave up some of their markets to other chaebols, whose CEOs they encountered in the alumni clubs or industry associations. For instance “*I decided to exit an industry X and give my contracts to a chaebol whose CEO was my high school friend ... This was better than simply opening up this industry for competitive bids from unrelated firms*” because the interviewee expected that the former high school friend will return the favor. If firms deviate from such dyadic agreements, they can be collectively sanctioned by the common third parties—the other association members—who can “*exclude violators from future cooperative syndicates*” or cease “*sharing information with the violators*”. As a concrete example of reciprocal industry exits, for which public data is available, in 1990 two chaebols – TaePyungWang and Daewoo – became both members of the FKI, but their owner-CEOs did not belong to the same alumni club. A year later, Daewoo exited the industry of chemicals manufacturing while TaePyungYang remained there. The following year, TaePyungYang left the auxiliary financial services and insurance industry while Daewoo continued operating in that industry (Korean Information Service, 1990-1992). Thus, we can advance the following hypothesis, which on Figure 1 corresponds to the lowest level of multimarket contact:

Hypothesis 2: Chaebols will reduce the extent of their dyadic multimarket contact when their owner-CEOs are both members of a single social group.

The strength of ties will increase if individuals encounter each other in multiple social groups (Feld, 1981; Feld, 1982). When two chaebol owner-CEOs are simultaneously members of both industry and alumni associations, there are more opportunities for them to develop trust as compared to owner-CEOs who meet in a single group. Overlapping in multiple social groups will also lead to the higher number of common third parties between these executives, and these can be used to arbitrate conflicts or increase concerns over the reputation, ultimately enhancing the

executives' trust in each other. Indeed, one executive told us that "*Social ties [with rivals] formed in multiple social groups are much stronger and more trustworthy than ties formed in a single group.... A "referral [with respect to entering a new industry] from school alumni who you also meet in industry associations is more powerful and trustworthy compared to other referrals."*

Chaebols react to these referrals as they expect the benefits of learning and support to outweigh the costs of increasing dyadic multimarket contact. Thus, we advance the final hypothesis corresponding to the intermediate level of multimarket contact on Figure 1:

Hypothesis 3: Chaebols will increase the extent of their dyadic multimarket contact when their owner-CEOs are simultaneously members in multiple social groups.

DATA AND METHODS

Data Collection

We collected data on intermarriages among owner families of the largest 63 Korean chaebols between 1970 and 2011. Data on intermarriage came from the book *Chaebol-Ga*, where chaebol families and their marriage networks are tracked by Seoul News Corporation. We updated, validated and supplemented this information with searches in five daily newspapers, three business magazines, and several web archives, as well as conducting interviews with journalists covering chaebols in the country. We also collected data on the chaebols' multimarket contact in the same period from the Korean Information Service (KIS), the biggest credit rating agency in Korea. We supplemented KIS data with companies' annual reports and press releases, as well as with data available from the Federation of Korean Industries.

To collect background information, we interviewed the three journalists who authored the *Chaebol-ga* book (SeoulNewsCorporation, 2005). We also did 12 interviews with 9 business

executives between 2011 and 2012². The subjects were senior managers with extensive experience of working with the owner-CEOs of the chaebols and they were familiar with social dynamics surrounding social ties between owner families and their multimarket contact. The interviews lasted on average 90 minutes and were conducted in person in Korea.

Data Structure

Our unit of analysis for all hypotheses is a dyad-year observation. We used a matched sample technique to build our dataset. That is, for every realized marriage dyad involving chaebols (h_1) and (w_1) we created ten non-realized dyads where the husband's chaebol (h_1) remained the same while the wife's chaebol ($w_{2,3,4...}$) was picked at random among all the chaebols active in that year.³ We also experimented with a different number of non-realized dyads (i.e. 9, 8, 7 or 6) and the results remained very similar.

Usually, researchers building matched samples construct realized and non-realized dyads only for the period in which they were formed (e.g. Jensen, 2003). However, if we don't observe the dyads prior to their formation, this approach cannot help us draw casual inferences about social relationships (such as marriage or owner-CEOs group membership) or a non-relational

² We did 2 interviews with 3 executives.

³ The construction of the dataset from the standpoint of the husband's chaebol is justified by peculiarities of the Confucian culture for three reasons. First, it is the future husband's family that contacts future wife's family to propose a marriage. Second, males not females inherit the father's property. It is usually the eldest son of the owner-CEOs who takes the reins of the chaebol after the father. Due to the strategic position of the eldest son in the chaebol's hierarchy, the owner-CEOs usually asks him to marry into a powerful family that includes other chaebols. If an owner-CEO has a son and a grandson, he will request the eldest son of his eldest son to establish a similar relationship, because the grandson will eventually inherit the chaebol from his father. Third, there are more daughters or granddaughters than sons or grandsons in traditional Confucian families because males are expected to take care of his parents even after marriage. If the first child is a daughter, parents will have more children until they get a son; but once they have a son, they are likely to stop having children. Thus there are many more daughters or granddaughters in every chaebol family that could be married to another chaebol than there are eldest sons to run the business in the future. The construction of the dataset from the standpoint of the husband's chaebol implies that given that a son (grandson) is ordered by an owner-CEO of a chaebol (h_1) to form a marriage tie to another chaebol (w_1), this son (grandson) could have also married a female relative of a CEO in any other chaebol ($w_{2,3,4...}$). However, if we observe that a daughter (granddaughter) from the chaebol (w_1) was married to a son (grandson) from chaebol (h_1), it doesn't mean that other chaebols ($h_{2,3,4...}$) also have sons (grandsons) of the owner-CEOs who are ordered to form a strategic marriage tie to another chaebol. Thus, constructing the dataset from the standpoint of the female chaebol would result in the inclusion of non-realized dyads that did not have "eligible" males.

outcome (such as multimarket contact) that occurs after the relationship has been formed. To control for unobserved heterogeneity we also need to use dyad level fixed effects, which requires observing the same dyad over time. Thus we constructed a dynamic matched sample by tracking our dyads for three years before the marriage event. Because the pre-marriage courtship period in Korea is one to two years (Kim & Lee, 2003), we used a three-year period prior to the formation of the marriage dyad to both accommodate the gradual build-up of trust between the two families throughout the courtship period, as well as to capture the dyad before the courtship even began.

To avoid simultaneity problems, our dependent variables were constructed based on the two year averages following the year in which independent variables were observed. For example, if a marriage took place in 1980, we constructed a set of realized and non-realized dyads for 1980, and captured the same dyads in 1979, 1978 and 1977. In this dyad-year panel, independent variables for realized and non-realized dyads in 1980 affected dependent variables in 1981-82, independent variables in 1979 affected dependent variables in 1980-81, independent variables in 1978 affected dependent variables in 1979-80, and variables in 1977 affected dependent variables in 1978-79. Since we are interested in examining the consequences of the formal marriage ties, variable *Marriage* was set to 1 for the realized dyad in the marriage year only (e.g. 1980) and 0 for the same dyad in the years prior to the marriage (e.g. 1979, 1978, 1977). This results in the creation of a balanced dyad-year panel in which each realized and unrealized dyad related to a particular marriage is observed four times, facilitating comparison across marriages regardless of when they took place within the 1970-2011 period.

Measures

Dependent variable

Our dependent variable used to test Hypotheses 1-3, *Multimarket Contact*_{*t+1, t+2*}, is the average number of common SIC codes between two chaebols over a two year period.⁴ We used the two-year window to allow for some delay in the effect that the past formation of social ties would have on the future multimarket contact of the chaebol. While Korean administrative system has been gradually changing, for the vast majority of our observation period there were many legal steps a firm needed to go through in order to create a new entity. For example, in 1996, getting a legal permit to set up a factory in Korea required 58 separate steps, while in the U.S. it required 9 legal steps, and 20 in Taiwan (MaeIlKyungJe, 1996). Even though Korean chaebols engaged in both manufacturing and non-manufacturing activities, it is reasonable to assume that expanding the extent of multimarket contact will require between one and two years following the marriage event in order to complete the formalities.

While most prior research has focused on examining product markets or geographic markets within a single industry (e.g. banks or airlines entering new geographic locations), we examined chaebols' multimarket presence across industries. This gave us insight into the behavior of diversified conglomerates. We first identified SIC codes in which affiliates of 63 chaebols did business. This gave us the information on the 2-digit SIC codes in which each chaebol was present. There are 76 2-digit SIC codes in Korea. We used 2-digit Korean SIC code system because it provides fine-grained industry information, similar to 3-digit codes in the NAICS (North American Industry Classification System) and to the older 2-digit U.S. SIC classification. The latter was shown by Porac, Wade, and Pollock (1999) to be the most

⁴ As Gimeno and Jeong (2001) argue, a simple count of the common markets provides the most robust operationalization of multimarket contact as compared to other more complex measures. Since we treat markets and industries as equivalent for the diversified conglomerates, we use a number of common SIC codes to construct this variable.

informative classification level that is widely used by executives in decision making and social comparisons.

Independent variables

Our first independent variable, *Marriage_t*, is a binary indicator capturing whether marriage between two families that owned two chaebols occurred in a given year (a value of 1 indicates the presence of a marriage tie, 0 its absence). There were 44 marriages among chaebols during our observation period.⁵ A positive coefficient of *Marriage_t* supports Hypothesis 1.

To capture common membership of owner-CEOs in the Federation of Korean Industries we constructed a variable— *Common FKI Membership_t*—coded as 1 if in a given year they both were members of FKI, and 0 otherwise. Another variable, *Common Education_t*, was coded as 1 if the owner-CEOs of two chaebols attended the same high school or university, and 0 otherwise.

Hypothesis 2 would be supported if coefficients for *Common Education_t* and *Common FKI Membership_t* were negative and significant. Hypothesis 3 would be supported if interaction of *Common Education_t* and *Common FKI Membership_t* were positive and significant.

Control variables

We computed a range of control variables to account for non-relational drivers of multimarket contact examined by the prior research. When firms are present in many different markets, they are more likely to encounter competitors because of sheer number of markets they serve (Korn & Baum, 1999). To capture this possibility of chance multimarket contact, we

⁵ Although 44 dyads seems to be a low number, given the stability of ties and the relatively small number of nodes, this number of ties yields a network with density comparable to other well-known networks. The average life expectancy in South Korea is 80 years. Assuming that people get married in their late 20-ies to late 30-ies and that divorce is difficult according to the Confucian family traditions, marriages formed in 1970s should still be active by 2011. Given that between 1970 and 2011 marriage network contained 63 maximum possible nodes, 44 marriage ties between 1970 and 2011 result in the average network density of $44/[0.5*(63-1)^2]=0.022$. This is comparable to the average density (0.03) of an investment banking new issue syndication network in the U.S between 1980 and 2001 which was extensively examined in the previous studies (e.g. Shipilov, Li and Greve, 2011, Shipilov and Li, 2011).

constructed a variable *Average SIC Codes_t* as the average of logged 1+ the number of SIC codes in which two chaebols were active in a given year. For instance, if the two chaebols were active in 10 and 20 SIC codes respectively, this measure would take the value of $[\ln(1+10)+\ln(1+20)]/2=2.72$. Since chaebols usually establish new affiliate companies when they enter new industries, this measure could also be thought of as a proxy for the number of affiliates for each chaebol.

The bigger and better performing the two chaebols, the more likely they are to increase the extent of their dyadic multimarket contact due to trait-based imitation. We computed two variables, *Average Assets_t* and *Average Revenues_t* of two chaebols based on Korean won in assets or revenues. For example, if in a given year the assets of two chaebols were 100 million and 200 million won respectively, the *Average Assets_t* was computed as $[\ln(100\text{mil})+\ln(200\text{mil})]/2=18.77$.

Firms also engage in vicarious learning about each other's presence in multiple markets. Information in the business press is a major source of such learning. We identified the four top business journals in Korea and counted the number of articles that mentioned the chaebols' names. From these we constructed a variable—*Average Press Coverage_t*—by averaging the logged values of 1+ number of press articles about two chaebols in a given year. For instance, if there were 100 articles written about one chaebol and 200 articles about another, then this variable was computed as $[\ln(1+100)+\ln(1+200)]/2=4.96$.

Interlocking directorates may also facilitate information exchange between firms (Haunschild, 1993; Haunschild & Beckman, 1998). We collected common directors' names between 2000 and 2011, and coded the variable—*Interlocks_t*—as 1 when two chaebols had the same director on their boards, and 0 otherwise. Prior to 2000, chaebols were not required to have outside directors on their boards.

Given that our study analyzes longitudinal data, we also controlled for historical time using decade dummies – *1970s*, *1980s* and *1990s* for the 1970-1979, 1980-1989, and 1990-1999 time periods respectively—with *2000s* (2000-2011) being the reference category. This allowed us to control for the time-variant dynamics, such as broad economic conditions.

Instrumental Variables

Any study positing a link between social relationships and multimarket contact is likely to suffer from two major problems. The first is omitted variable bias (Wooldridge, 2002). That is, there may be a third variable for which we find no data but which could affect both the formation of marriage ties and multimarket contact. For example, one chaebol could have commercial dealings with another as a buyer or supplier. Alternatively, the chaebols could have minority shareholdings in each other. Or chaebols may have complementary resources which can be pooled to achieve synergies in their internal value chains or economies of scope (Gimeno & Woo, 1999). However, there was no readily available and empirically validated approach to measure synergies or economies of scope across different industries using the Korean industry classification system. These factors may lead to greater familiarity between chaebols, including familiarity between their family members, both leading to a higher probability of marriage and higher dyadic multimarket contact.

The second problem is that of simultaneous causality. Given the strategic nature of marriages between owner families, it is plausible to conjecture that a family identifies another family with whom it has considerable multimarket contact and makes a marriage proposal in order to increase multimarket contact even further. Thus, the desire to expand a multimarket contact may coincide with the formation of a social relationship.

Both omitted variable bias and simultaneous causality can be interpreted as a problem with the error term of the regression equation. Strategic management research suggests that the

solution to this problem is to employ regressions with instrumental variables (Shaver, 1998). These variables would have a strong fit with the endogenous variable, but don't correlate with the error term in the equation examining the dependent variable of interest. The two-stage regression with valid instruments purges any influences due to omitted variables and simultaneous causality, and yields unbiased and efficient results (e.g. Bascle, 2008). In other words, such models provide as good as "randomly assigned" conditions for examining the relationships between all independent and dependent variables (Wooldridge, 2002).

To test Hypotheses 1-3, we need to find instruments that fit closely with the dyadic endogenous variable, i.e. marriage, that are not correlated with the error term in the regression that has multimarket contact as a dependent variable (Murray, 2006). To construct these instruments, we can exploit the fact that marriages are affected by the family composition or religious affiliation that have little to do with the firms' desire to manage multimarket contact. Our interviewees told us that cross-chaebol marriages between direct descendants of the owner-CEOs are more likely to occur. This is because owner-CEOs have the highest status in the chaebol families. Marriages between the direct descendants of the owner-CEOs link people of the same standing in the two families. The older the owner-CEOs of both chaebols, the more children or grandchildren from their direct lineage there will be to be married off. Thus, we used the average of logged ages of two chaebols' owner-CEOs as the first instrument to predict the probability of a marriage tie between the chaebols. This instrument was labeled *Average Owner-CEOs Age_t*. For example, if the owner CEO of one chaebol was 70 years old and the other was 60, this variable took the value of $(\ln(70)+\ln(60))/2=4.17$.

A common religion will also make it easier for the two families to inter-marry, although there is little reason to believe that it will affect the chaebols' multimarket contact. Thus, we

constructed a measure *Same Religion_t*, set to 1 if the two families had the same religious affiliation – Buddhist, Catholic or Protestant –and 0 otherwise.

To test Hypotheses 1-3, we used both *Average Owner-CEOs Age_t* and *Same Religion_t* as instrumental variables in the first-stage regression predicting *Marriage_t*. The second stage used predicted value of *Marriage_t* and the social group membership variables as the determinants of dyadic *Multimarket Contact_{t+1,t+2}*.

Analyses and Results

Table 1 shows descriptive statistics and correlations of the variables. Because our models contained an interaction, we computed variance inflation factors for all two-stage regression models to check for the presence of multicollinearity. In all cases maximum VIF was lower than 10, thus multicollinearity doesn't appear to be a problem.

Insert Table 1 about Here

Table 2 contains results of regression analyses examining the antecedents of dyadic multimarket contact. Model 1 is the baseline regression with dyadic fixed effects from which the endogenous variable *Marriage* is absent. This model is implemented using “xtreg, fe” command in Stata. Models 2-7 show results of the two-stage GMM models with heteroschedasticity and autocorrelation robust estimators, robust standard errors and dyad level fixed effects. These were implemented in Stata through the “xtivreg2” procedure. The need to control for heteroschedasticity and autocorrelation was indicated by the significant Pagan-Hall test ($p < 0.001$) and Arellano-Bond test ($p < 0.001$). In all of these models, including dyadic fixed-effects is the equivalent to adding a dummy variable for each dyad (Greene, 1990) controlling for all unmeasured differences across dyadic independent variables.

Insert Table 2 about Here

Model 2 introduces *Marriage_t* to the regression. Model 3 enters joint owner-CEO membership of the Federation of Korean Industries (*Common FKI Membership_t*), Model 4 enters *Common Education_t*, while Model 5 enters an interaction between *Common FKI Membership_t* and *Common Education_t*. Our dataset could have had a possible size of 1,936 dyad-year observations. This is because we had four dyad year observations for one realized, plus 10 unrealized dyads, for each of the 44 marriages. As one can see, this number is reduced to 1,746 observations in Models 1-5. One source of missing values is the time lag between dependent variable and independent variables. Another source of loss is the missing data in the *Average Owner-CEOs Age_t* variable. To see whether our results would be different, we replaced the missing values of *Average Owner-CEOs Age_t* with this variable's mean. Results are shown in Model 6. This transformation yielded more usable dyad-year observations (N=1,903), and results were the same.

We also report a range of statistical tests that allow us to evaluate the quality of the instrumental variables. For the equations to be correctly identified, *Kleibergen-Paap Wald rk F statistic* has to be significant, the *Endogeneity* test has to be significant, while *Hansen J* statistic should not be significant. This combination would suggest that endogeneity is present in the regression; the instruments are strongly correlated with the endogenous variable, while they are not correlated with the outcome variable. This was the case for all of our models, which suggests that they are correctly identified and don't suffer either from the omitted variable nor simultaneous causality issues. However, in all cases, *Kleibergen-Paap Wald rk F statistic* doesn't exceed the critical value of 10% maximal IV size Stock-Yogo weak ID test. This suggests that we need to re-estimate our models with Fuller's Limited Information Maximum Likelihood (LIML)

estimator (Basche, 2008). Model 7 performs this check using the same number of dyad-year observations as Model 5, with no change in our results.

As results in Model 7 indicate, Hypotheses 1-3 are supported. The formation of a marriage tie increases dyadic multimarket contact between two chaebols ($p < 0.01$). If two owner-CEOs meet each other in either alumni associations or the FKI, their dyadic multimarket contact gets reduced ($p < 0.05$ and $p < 0.01$ respectively). However, when they meet each other in both social groups, their dyadic multimarket contact increases ($p < 0.01$). Comparisons of the magnitude of the positive interaction coefficient with the magnitudes of negative coefficients of the main effects suggest that the positive effect of owner-CEOs meeting in multiple social groups on their MMC doesn't fully offset the negative effects of membership in a single group only. This is consistent with the placement of different hypotheses on the curve presented in Figure 1.

Control variables in Model 7 show the expected dynamics. Chaebols are more likely to increase dyadic multimarket contact based on the overlap in multiple industries if they are already jointly active in many industries ($p < 0.01$), when they jointly hold a lot of assets ($p < 0.01$), have high revenues ($p < 0.05$) and are well covered by the media ($p < 0.01$). This provides evidence of chance, trait-based imitation and vicarious learning, consistent with the findings reported in previous studies (e.g. Korn & Baum, 1999).

Additional Analyses

MMC and CEO Incomes

Multiple studies demonstrate that high multimarket contact improves firms' financial performance by softening rivalry (Yu & Cannella, 2012). Gimeno (2002) shows that firms benefit from high multimarket contact regardless of whether this contact is intentional or occurs by chance. This is because rivals consider the scope of retaliation opportunities that the focal firm has and don't discount the threat from the markets which the firm entered based on strategic

calculations. Greater multimarket contact between chaebols should have the same effect on their financial performance. If an increase in the dyadic multimarket contact provides chaebols with higher margins and the ability to charge higher prices or incur lower costs due to softened competition (e.g. Hughes & Oughton, 1993; Kang et al., 2009; Prince & Simon, 2009), their financial performance will improve. As a result, the personal income of the owner-CEO will increase. These individuals will reap the financial benefits of softened competition not only through salary increases and bonuses, but also through the dividends they receive as the majority owners of the well-performing chaebols' affiliates. Even if the chaebols' leadership shifts resources from affiliates where they have low cash flow rights to affiliates where they have high cash flow rights in order to expropriate minority shareholders (Bertrand, Mehta, & Mullainathan, 2000), the overall profits from this activity will still aggregate to the owner-CEOs. Thus, one should expect that higher dyadic multimarket contact will lead to higher average personal income of the business group's owner-CEO. Furthermore, when firms reduce their dyadic multimarket contact due to a weak tie, this reduction would not happen below the level at which firms can still pose a credible threat of multimarket retaliation if the partner violates explicit agreements and the relational mechanisms (i.e. goodwill, concern for reputation or collaborative routines) fail.

We examined this relationship in a post hoc analysis using data on the income ranking of business groups' owner-CEOs. The Korean government publishes annual lists of the top-earning business people in the country: the higher their ranking, the higher the income. This measure aggregates salary, bonus, dividend and property income reported by the business people to the tax authorities. The advantage of using this measure over profitability of individual affiliates of the chaebol is that the owner-CEOs are compensated not only from the publicly traded affiliates, but also from the privately held ones. The latter are not required to provide public accounting of their

financial results, thus data on their performance is rarely available. Since the ownership of all affiliates is concentrated in the hands of the owning family, and especially in the hands of the owner-CEOs, his income from both publicly traded and privately held affiliates would reflect the overall profitability of the conglomerate as a whole. Thus the dependent variable for this analysis (*Average Owner-CEO Income Ranks* $_{t+1, t+2}$) is computed as the average of the income ranking of two chaebols' owner-CEOs over a two year period. For example, if two chaebol owner CEOs were ranked 3 and 4 in year 1980 and 5 and 7 in year 1981, then this variable would take the value of $[(3+4)/2 + (5+7)/2]/2=4.75$. We would expect dyadic multimarket contact between two chaebols to be negatively related to the average income rankings of both of their owner-CEOs. The negative coefficient is expected because lower value of *Average Owner-CEO Income Ranks* $_{t+1, t+2}$ represents a higher income rank.

Since *Multimarket Contact* $_t$ could be endogenous, we used two year lags of *FKI Membership* $_{t-2}$ and *Average Press Coverage* $_{t-2}$ in the first-stage regression as instruments. The second stage of this regression used the predicted value of *Multimarket Contact* $_t$ as an independent variable with *Average Owner-CEO Income Ranks* $_{t+1, t+2}$ as a dependent variable. Using multiple year lags to construct instrumental variables is a common approach in econometrics (Arellano & Bond, 1991; Wooldridge, 2009). The intuition is that *FKI Membership* $_{t-2}$ and *Average Press Coverage* $_{t-2}$ impact *Multimarket Contact* $_t$ through *FKI Membership* $_{t-1}$ and *Average Press Coverage* $_{t-1}$, due to firms' exchanging information in social groups and learning from the business press about each other. However, because *FKI Membership* $_{t-2}$ and *Average Press Coverage* $_{t-2}$ are observed at least three years prior to *Average Owner-CEO Income Ranks* $_{t+1, t+2}$, they are uncorrelated with the error term in the equation with *Average Owner-CEO Income Ranks* $_{t+1, t+2}$ as a dependent variable. In other words, long time lags of *FKI Membership* $_{t-2}$ and *Average Press Coverage* $_{t-2}$ could impact *Average Owner-CEO Income Ranks*

$t+1, t+2$ only through their historic impact on *Multimarket Contact*_{*t*}. Ultimately, the appropriateness of instruments based on their fit with endogenous variables and the correlation with the error term of the second-stage equation is an empirical question which can be addressed with statistical tests.

Table 3 contains regression models examining the relationship between dyadic multimarket contact of two chaebols and the average income of their owner-CEOs. We had 981 observations because we lost data due to two year lags of the instrumental variables. Model 8 uses two-stage GMM models with heteroschedasticity and autocorrelation robust estimators, robust standard errors and dyad level fixed effects. Model 9 presents alternative specification with Fuller's LIML estimator. The results are the same. Models 8-9 indicate support for our assertion that high multimarket contact has positive spillovers for firms' performance ($p < 0.01$).

Insert Table 3 about Here

We experimented with including a squared term for *Multimarket Contact*_{*t*} in Models 8 and 9 to see if its relationship with average income of their owner-CEOs was non-linear, but we did not obtain this effect. To see whether the positive effect of multimarket contact on the average income of owner-CEOs was moderated by a) the presence of a marriage tie between them, b) common education or c) common membership in FKI, we constructed interactions between *Multimarket Contact*_{*t*} and *Marriage*_{*t*}, *Multimarket Contact*_{*t*} and *Common FKI Membership*_{*t*} as well as *Marriage*_{*t*} and *Common Education*_{*t*} respectively. When entered in the regression models in Table 3 as separate interactions, they were not significant.⁶ These results

⁶ Entering three interactions in the regression model simultaneously was not possible because multimarket contact is an endogenous variable and every interaction with an endogeneous variable is also endogenous. While we were able to construct instruments for a single interaction between multimarket contact and a social tie (either marriage or FKI membership or common education), we were not able to construct instruments to allow simultaneous entry of three interactions between multimarket contact and different kinds of social ties in the model.

suggest that firms benefit from multimarket contact regardless of whether they have a social tie. Furthermore, these results also indicate that when firms reduce their dyadic multimarket contact due to a weak tie, this reduction doesn't happen below the level at which firms can pose a credible threat of retaliation to secure partner cooperation.

Other Specification Checks

Our dependent variables based on two-year averages could be transformed into separate count variables by not computing the averages. For instance, in Models 1-7, *Multimarket Contact*_{*t+1, t+2*} can be re-computed as a sum of *Multimarket Contact*_{*t+1*} and *Multimarket Contact*_{*t+2*} without dividing by 2. In this case, our dependent variable becomes a count. To estimate these models, we ran negative binomial regression with dyad-year fixed effects and robust standard errors using the Quasi-Maximum Likelihood estimator suggested by Wooldridge (1999) and implemented by Simcoe, Graham, and Feldman (2009). Our results in these models are very similar to those obtained from OLS regressions. We also re-estimated Models 8-9 by transforming the dependent variable *Average Owner-CEO Income Ranks*_{*t+1, t+2*} into *Owner-CEO Income Ranks*_{*t+1*} and *Owner-CEO Income Ranks*_{*t+2*}. Our results with respect to the impact of *Multimarket Contact*_{*t*} on *Owner-CEO Income Ranks*_{*t+1*} and *Owner-CEO Income Ranks*_{*t+2*} were the same as in Models 8-9. The problem with this estimator is that it drops all dyad-year observations for which the dependent variable is always 0, which essentially means sampling on the dependent variable and excluding from the dataset all dyads that had no multimarket contact. Thus, we do not use this estimator in the main analysis.

DISCUSSION AND CONCLUSIONS

This study was motivated by the observation that the literature on competitive positioning offers a range of explanations for the determinants of multimarket contact between firms, yet has not explored relational antecedents of multimarket contact. This “under-socialized” view of

multimarket contact is particularly surprising given the existence of social relationships between competitors (Gimeno, 2004; Soda et al., 2012). Both social ties and multimarket contact provide firms with an opportunity to exchange information and secure cooperation, although they do so through different mechanisms. Multimarket contact enforces cooperation between socially unrelated firms through tacit collusion, using the deterrent of economic sanctions to create the “long shadow of the future” and signaling as means of information exchange (D'Aveni, 2004). Social relationships help secure cooperation through explicit collusion facilitated by familiarity based trust and direct information exchange.

Our control variables captured an increase in the firms’ multimarket contact due to chance, trait based imitation or vicarious learning. Our theoretical variables examined multimarket contact as a consequence of inter-personal relationships between owner-families of Korean chaebols. Our results support the conjecture that both traditional explanations and social relationships matter for the extent of the firms’ multimarket contact. Chance, imitation and vicarious learning all lead to an increase in the extent of the firms’ multimarket contact in the absence of social relationships. Weak ties between business groups facilitate explicit information exchange, thus coordination can be achieved with the lower number of common markets, as compared to business groups lacking a social tie. Thus, chabeols that only have weak ties between each other reduce the extent of their dyadic multimarket contact. Strong ties between business groups generated high levels of trust which enabled deep learning and mutual support, which made it attractive for them to increase multimarket contact. Ultimately, whether multimarket contact is increased or reduced depends on the strength of a tie connecting firms, in addition to “non-relational” drivers examined in prior work.

Gimeno and Woo (1996) develop a formal model of economic multiplexity. According to this model, social ties and multimarket contact represent two distinctive types of interdependence

between firms. The presence of a social tie allows firms to exchange information and engage in collusion, which unrelated firms achieve through a high level of multimarket contact. These arguments imply a substitution effect between the social ties and the extent of multimarket contact, because firms could rely on either high multimarket contact or on a social tie to ensure collaboration. Yet, our framework expands the Gimeno and Woo's model, because we examine the possibility for deep learning and mutual assistance as an additional consequence of social ties. Because learning and assistance with partners are especially beneficial when they occur across a large number of common markets, our framework implies that firms view strong ties and high multimarket contact as complementary.

Organizational network scholars have long called for the development of multi-level theoretical models to help understand how inter-personal relationships affect organizational outcomes (Dokko & Rosenkopf, 2010; Rosenkopf, Metiu, & George, 2001). Our study has shown that in addition to developing an understanding of how network factors at one level affect outcomes at another, this approach can help solve the causality problems that are beginning to surface in networks research. For example, structural holes in an inter-firm collaboration network and a firm's status can be seen both as an antecedent and an outcome of firm performance (Shipilov & Li, 2008). Similarly, past project successes affect collaborative opportunities of individuals on future projects; the existence of such opportunities affects their future structural holes, which in turn affect individuals' future success (e.g. Zaheer & Soda, 2009). Thus econometric models that seek to establish a causal link between social ties and economic outcomes need to rule out the existence of simultaneous causality. In this paper we have exploited the fact that inter-personal ties between business groups are sometimes driven by demographic influences (e.g. the availability of family members to form an inter-personal relationship across business groups) which are orthogonal to organizational outcomes. Thus we

were able to build properly identified regression models from which we were able to make casual claims between social structure and multimarket contact.

We have also demonstrated that an increase in the extent of multimarket contact between firms lead to superior financial performance, as evidenced in the increase of personal income of the owner-CEOs of the chaebols. The lack of significance of the interaction terms between multimarket contact and social ties in Models 8 or 9 suggests that regardless of the reasons for cooperation, high dyadic multimarket contact leads to firms' superior performance. In other words, dyadic multimarket contact improves the performance of firms that have no social ties, just as it improves that of firms that have strong or weak social relationships. In all cases, firms cooperate and refrain from intensive competition, but they do so for different reasons: either in response to economic deterrent from high multimarket contact with unrelated firms, or in the expectation of benefits from deep reciprocal learning and support with strongly tied firms. These results are consistent with the findings of Gimeno (2002), who showed that firms benefited from greater multimarket contact regardless of its intentionality. Such findings also suggest that even when firms reduce dyadic multimarket contact through weak ties in order to achieve more efficient internal resource allocation, they don't reduce it beyond the level that would prevent them from benefiting from explicit collusion in common markets.

Given that we have studied diversified business groups, we equate the term "market" with "industry" in our theorizing, yet every industry may comprise multiple markets within which firms fight competitive battles. Strong ties are vitally important for inter-organizational learning that enables firms to expand their multimarket contact and quickly achieve efficient scale in common markets. As the Samsung-LG example illustrates, a firm may have no experience in a particular industry, but can acquire it through a strong tie to a competitor. If a firm is considering

expanding its multimarket contact with rivals by entering different markets within the same industry, based for example on product categories or geographies, the importance of strong ties for learning how things are done in these markets may be lower because the firm already has a lot of related knowledge. Nonetheless, regardless of whether it is entering a new industry or a new market within the same industry, strong ties will still be important for establishing trust between competitors, which is needed for fighting common enemies, fine grained information transfer and joint problem solving (Uzzi, 1996).

Although our study is set in the South Korean context, its implications go well beyond that. In many industries, firms have formal relationships of varying strength. For example, the first alliance between two firms is weaker than their tenth alliance. If firms decide to strategically manage their economic multiplexity, they could use social ties to agree on the structure of their multimarket overlap. Strong ties between firms could increase the extent of their multimarket contact, while weak ties could reduce the extent of this contact. While a watchful legal system may prevent firms from engaging in outright price fixing, certain industries, such as the global airline industry for example, might lobby for the anti-trust protection to engage in some forms of collusion that are facilitated by the presence of social ties between them.

In summary, our study is the first to empirically examine how social relationships shape multimarket contact between firms. We show how and why strong and weak ties become important drivers of information exchange, reciprocal learning and support that then affect firms' multimarket contact. In so doing we hope to achieve a more comprehensive understanding of how social context affects competitive positioning, and especially how inter-personal relationships can affect organizational outcomes.

Table 1 : Descriptive Statistics

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 Multimarket Contact _{t+1, t+2}	3.166	3.570	1											
2 Average Owner-CEO Income Ranks _{t+1, t+2}	81.985	24.187	-0.307	1										
3 Marriage _t	0.022	0.146	0.049	0.025	1									
4 Common FKI Membership _t	0.744	0.437	0.295	-0.162	0.023	1								
5 Common Education _t	0.168	0.373	0.111	0.060	0.009	0.050	1							
6 Common FKI Membership _t x Common Education _t	0.133	0.339	0.160	0.004	0.025	0.229	0.873	1						
7 Average SIC Codes _t	2.143	0.567	0.758	-0.304	0.044	0.392	0.145	0.186	1					
8 Average Press Coverage _t	5.738	1.679	0.663	-0.274	0.016	0.407	0.162	0.206	0.775	1				
9 Average Revenues _t	27.547	1.953	0.577	-0.212	0.046	0.364	0.181	0.224	0.659	0.640	1			
10 Average Assets _t	27.591	1.911	0.605	-0.236	0.032	0.331	0.211	0.237	0.722	0.671	0.797	1		
11 Interlocks _t	0.001	0.034	0.042	-0.024	-0.005	0.020	-0.015	-0.013	0.047	0.055	0.052	0.052	1	
12 Average Owner-CEO Age _t	4.027	0.151	-0.043	0.041	0.050	0.152	0.071	0.092	-0.020	0.056	0.091	0.106	0.018	1
13 Religion _t	0.353	0.478	0.028	-0.115	0.025	0.006	-0.068	-0.090	0.018	0.049	0.047	0.034	0.046	0.066

Table 2: 2nd Stage Regression Results for Determinants of Multimarket Contact

VARIABLES	Model1	Model2	Model3	Model4	Model5	Model 6	Model 7
<i>Marriage_t</i>		9.386** (3.670)	9.990** (3.911)	10.140** (3.980)	10.097** (3.979)	10.614** (4.205)	7.852*** (2.949)
<i>Common FKI Membership_t</i>			-0.737* (0.427)	-0.702* (0.406)	-0.854* (0.448)	-0.809* (0.447)	-0.742** (0.354)
<i>Common Education_t</i>				-1.085 (0.721)	-2.509** (1.025)	-1.980** (0.940)	-2.255*** (0.859)
<i>Common FKI Membership_t x Common Education_t</i>					1.440*** (0.532)	0.956* (0.548)	1.303*** (0.445)
<i>Average SIC Codes_t</i>	2.068*** (0.222)	1.886*** (0.418)	1.895*** (0.428)	1.829*** (0.439)	1.818*** (0.438)	1.686*** (0.444)	1.869*** (0.380)
<i>Average Press Coverage_t</i>	0.148*** (0.048)	0.312*** (0.106)	0.316*** (0.109)	0.309*** (0.109)	0.313*** (0.109)	0.293*** (0.102)	0.276*** (0.091)
<i>Average Revenues_t</i>	0.114*** (0.031)	0.056 (0.039)	0.059 (0.040)	0.061 (0.039)	0.063 (0.040)	0.057 (0.038)	0.075** (0.036)
<i>Average Assets_t</i>	0.288*** (0.046)	0.275*** (0.071)	0.283*** (0.074)	0.276*** (0.075)	0.276*** (0.075)	0.281*** (0.077)	0.279*** (0.066)
<i>Interlocks_t</i>	-0.244 (0.914)	-0.186 (1.692)	-0.189 (1.691)	-0.191 (1.695)	-0.192 (1.696)	-3.404 (2.903)	-0.204 (1.694)
<i>1970s(1970-1979)</i>	-1.311*** (0.313)	-1.072* (0.561)	-1.196** (0.580)	-1.256** (0.591)	-1.292** (0.589)	-1.318** (0.603)	-1.322*** (0.502)
<i>1980s(1980-1989)</i>	-1.549*** (0.266)	-1.296*** (0.500)	-1.193** (0.536)	-1.232** (0.541)	-1.216** (0.541)	-1.226** (0.559)	-1.287*** (0.457)
<i>1990s(1990-1999)</i>	-0.538*** (0.179)	-0.108 (0.389)	-0.094 (0.403)	-0.058 (0.409)	-0.059 (0.407)	0.006 (0.426)	-0.162 (0.347)
Kleibergen-Paap rk Wald F		26.716***	25.177***	24.726***	24.703***	22.507***	24.703***
Hansen J		0.146	0.066	0.075	0.062	0.070	0.062
Endogeneity test		7.575***	7.867***	7.898***	7.835***	7.977***	7.835***
Number of observations	1,746	1,746	1,746	1,746	1,746	1,903	1,746

Robust standard errors in parentheses, all models include dyad-level fixed effects *** p<0.01, ** p<0.05, * p<0.1

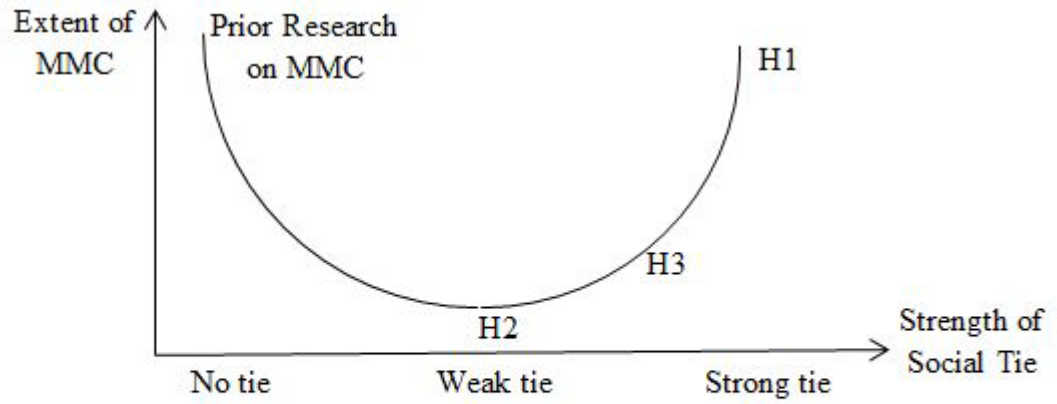
Table 3: 2nd Stage Regression Results for Determinants of Average Owner-CEOs Income Ranks

VARIABLES	Model 8	Model 9
<i>Current Multimarket Contact_t</i>	-33.466*** (12.333)	-28.851*** (10.273)
<i>Marriage_t</i>	-6.869 (8.216)	-4.839 (7.529)
<i>Common Education_t</i>	-2.961 (17.488)	-4.575 (15.677)
<i>Average SIC Codes_t</i>	194.467*** (74.931)	165.123*** (62.977)
<i>Average Revenues_t</i>	2.432 (1.730)	1.776 (1.524)
<i>Average Assets_t</i>	7.713* (4.405)	6.104 (3.786)
<i>Interlocks_t</i>	-0.292 (21.018)	-0.102 (18.951)
<i>1970s(1970-1979)</i>	-22.322 (19.529)	-27.712 (18.505)
<i>1980s(1980-1989)</i>	-29.187 (18.860)	-30.423* (17.227)
<i>1990s(1990-1999)</i>	-18.082 (18.209)	-21.856 (16.955)
Kleibergen-Paap rk Wald F	7.603***	7.603***
Hansen J	1.130	1.320
Endogeneity test	20.041***	20.041***
Number of observations	981	981

Robust standard errors in parentheses; all models include dyad level fixed effects
 *** p<0.01, ** p<0.05, * p<0.1

Figure 1:

Social Ties and the Extent of Firms' Dyadic MMC



Nature of Collusion	Tacit	Explicit	Explicit
Deep Learning and Reciprocal Support	No	No	Yes

References

- Arellano, M. & Bond, S. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2): 277-297.
- Audia, P. G., Sorenson, O., & Hage, J. 2001. Tradeoffs in the organization of production: Multiunit firms, geographic dispersion and organizational learning.
- Bascle, G. 2008. Controlling for endogeneity with instrumental variables in strategic management research. *Strategic organization*, 6(3): 285-327.
- Baum, J. A. C. & Korn, H. J. 1999. Dynamics of dyadic competitive interaction. *Strategic Management Journal*, 20(3): 251-278.
- Baum, J. A. C., Rowley, T. J., Shipilov, A. V., & Chuang, Y. T. 2005. Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly*, 50(4): 536-575.
- Beckman, C. M., Haunschild, P. R., & Damon, J. P. 2004. Friends or Strangers? Firm-Specific Uncertainty, Market Uncertainty, and Network Partner Selection. *Organization Science*, 15(3): 259-275.
- Bernheim, B. D. & Whinston, M. D. 1990. Multimarket contact and collusive behavior. *The RAND Journal of Economics*: 1-26.
- Bertrand, M., Mehta, P., & Mullainathan, S. 2000. Ferreting out tunneling: An application to Indian business groups: National Bureau of Economic Research.
- Bunkanwanicha, P., Fan, J. P. H., & Wiwattanakantang, Y. forthcoming. The Value of Marriage to Family Firms. *Journal of Financial and Quantitative Analysis*: forthcoming.
- D'Aveni, R. A. 2004. Corporate Spheres. *MIT Sloan Management Review*.
- Dokko, G. & Rosenkopf, L. 2010. Social capital for hire? Mobility of technical professionals and firm influence in wireless standards committees. *Organization Science*, 21(3): 677-695.
- Edwards, C. D. 1955. Conglomerate bigness as a source of power, *Business concentration and price policy*: 329-358: Princeton University Press.
- Encaoua, D. & Jacquemin, A. 1982. Organizational Efficiency and Monopoly Power. The Case of French Industrial Groups. *European Economic Review*, 19: 25-51.
- Fang, C., Lee, J., & Schilling, M. A. 2010. Balancing exploration and exploitation through structural design: The isolation of subgroups and organizational learning. *Organization Science*, 21(3): 625-642.
- Feld, 1981. The Focused organization of Social Ties. *American Journal of Sociology*, 86: 1015-1035.
- Feld, S. L. 1982. Social structural determinants of similarity among associates. *American Sociological Review*: 797-801.
- Fukuyama, F. 2000. *Social Capital and Civil Society*: International Monetary Fund.
- Gimeno, J. & Woo, C. Y. 1996. Economic multiplexity: The structural embeddedness of cooperation in multiple relations of interdependence. *Advances in Strategic Management*(13): 323-361.
- Gimeno, J. 1999. Reciprocal threats in multimarket rivalry: Staking out 'spheres of influence' in the US airline industry. *Strategic Management Journal*, 20(2): 101-128.
- Gimeno, J. & Woo, C. Y. 1999. Multimarket contact, economies of scope, and firm performance. *Academy of Management Journal*: 239-259.
- Gimeno, J. 2002. The performance effects of unintended and purposive multimarket contact. *Managerial and Decision Economics*, 23(4-5): 209-224.
- Gimeno, J. 2004. Competition within and Between Networks: The Contingent Effect of Competitive Embeddedness on Alliance Formation *Academy of Management Journal*, 47(6): 820-842.
- Granovetter, M. 1995. Coase Revisited: Business Groups in the Modern Economy. *Industrial Corporate Change*, 4(1): 93-129.
- Greene, H. 1990. *Econometric Analysis*: NY: Macmillan.
- Greif, A. 1993. Contract enforceability and economic institutions in early trade: The Maghribi traders' coalition. *The American economic review*: 525-548.

- Greve, H. R. 2000. Market niche entry decisions: Competition, learning, and strategy in Tokyo banking, 1894-1936. *Academy of Management Journal*: 816-836.
- Greve, H. R. 2006. The intent and extent of multimarket contact. *Strategic organization*, 4(3): 249-274.
- Gulati, R. 1995. Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances. *The Academy of Management Journal*, 38(1): 85-112.
- Gulati, R. & Sytch, M. 2007. Dependence asymmetry and joint dependence in interorganizational relationships: Effects of embeddedness on a manufacturer's performance in procurement relationships. *Administrative Science Quarterly*, 52(1): 32-69.
- Haunschild, P. R. 1993. Interorganizational imitation: The impact of interlocks on corporate acquisition activity. *Administrative Science Quarterly*: 592-592.
- Haunschild, P. R. & Beckman, C. M. 1998. When Interlocks Matter? : Alternative Source of Information and Interlock Influence. *Administrative Science Quarterly*, 43: 815-844.
- Haveman, H. A. 1993. Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly*, 38: 593-627.
- Haveman, H. A. & Nonnemaker, L. 2000. Competition in multiple geographic markets: The impact on growth and market entry. *Administrative Science Quarterly*, 45(2): 232-267.
- Hughes, K. & Oughton, C. 1993. Diversification, multi-market contact and profitability. *Economica*: 203-224.
- Ingram, P. & Roberts, P. W. 2000. Friendships among competitors in the Sydney hotel industry. *American Journal of Sociology*, 106(2): 387-423.
- Ingram, P. & Lifschitz, A. 2006. Kinship in the shadow of the corporation: The interbuilder network in Clyde River shipbuilding, 1711-1990. *American Sociological Review*, 71(2): 334-352.
- Jayachandran, S., Gimeno, J., & Varadarajan, P. R. 1999. The theory of multimarket competition: A synthesis and implications for marketing strategy. *The Journal of Marketing*: 49-66.
- Jensen, M. 2003. The role of network resources in market entry: commercial banks' entry into investment banking, 1991-1997. *Administrative Science Quarterly*, 48(3): 466-497.
- Jones & Simon. 2005. Enel faces probe over price-fixing claims. *Utility Week*, 23(13): 11-11.
- Kang, W., Bayus, B., & Balasubramanian, S. 2009. The strategic effects of multimarket contact: Mutual forbearance and competitive response in the personal computer industry. *Available at SSRN 1345497*.
- Kerbo, H. R. & McKinstry, J. A. 1995. *Who rules Japan?: the inner circles of economic and political power*: Praeger Publishers.
- Khanna, T. & Palepu, K. 1997. Why focused strategies may be wrong for emerging markets. *Harvard Business Review*, 75(4): 41-51.
- Khanna, T. & Palepu, K. 1999. The Future of Business Group in emerging Markets. Long-Run Evidence from Chile. *Academy of Management Journal*.
- Khanna, T., Gulati, R., & Nohria, N. 2000. The economic modeling of strategy process: 'Clean models' and 'dirty hands'. *Strategic Management Journal*, 21(7): 781-790.
- Kim, H. & Lee, J. 2003. MiHonNamNyeeu GyulHonJoonBiDo(The Study on Premarital Preparation of Single Men and Women). *DaeHanGaJeongHakHui (The Korean Home Economics Association)*, 41(2): 211-224.
- Kim, H., Hoskisson, R., & Hong. 2004. The Evolution and Restructuring of Diversified Business Groups in Emerging Markets: The Lessons from Chaebols in Korea. *Asia Pacific Journal of Management*, 21: 25-48.
- Kim, H. 2010. The Rise, Fall, and Reemergence of Korean Business Groups. *Oxford Handbook of Business Groups*.
- KoreaInformationService. www.kisline.com.
- Korn, H. J. & Baum, J. A. C. 1999. Chance, imitative, and strategic antecedents to multimarket contact. *Academy of Management Journal*: 171-193.
- Korn, H. J. & Rock, T. T. 2001. Beyond multimarket contact to mutual forbearance: pursuit of multimarket strategy.

- Krackhardt, D., Kramer, R. M., & Neale, M. A. 1998. Simmelian Tie: Super Strong and Sticky, *Power and Influence in Organizations: 21–38*. Thousand Oaks, CA: Sage.
- Lavie, D. 2007. Alliance Portfolios and Firm Performance: A Study of Value Creation and Appropriation in the U.S. Software Industry. *Strategic Management Journal*, 28: 1187-1212.
- Lavie, D., Haunschild, P. R., & Khanna, P. 2012. Organizational differences, relational mechanisms, and alliance performance. *Strategic Management Journal*, 33(13): 1453-1479.
- Leff, N. 1976. *Capital markets in the less developed countries: The group principle*: New York: Marcel Dekker.
- Li, S. X. & Rowley, T. J. 2002. Inertia and Evaluation Mechanisms in Interorganizational Partner Selection: Syndicate Formation among U.S. Investment Banks. *The Academy of Management Journal*, 45(6): 1104-1119.
- MaeIlKyungJe. 1996. Maekyung: KiupKyungJangRuyk JungBuKyuJe(Firm's Competitiveness and Government Regulation), *Seoul: Maeil Kyungje Shinmun*.
- Markman, G. D., Gianiodis, P. T., & Buchholtz, A. K. 2009. Factor-market rivalry. *Academy of Management Review*, 34(3): 423-441.
- Marsden, P. V. & Campbell, K. E. 2012. Reflections on Conceptualizing and Measuring Tie Strength. *Social Forces*, 91(1): 17-23.
- Mitsuhashi, H. & Greve, H. R. 2009. A matching theory of alliance formation and organizational success: Complementarity and compatibility. *Academy of Management Journal*, 52(5): 975-995.
- Molho, A. 1994. *Marriage alliance in late medieval Florence*: Cambridge, Mass.: Harvard University Press.
- Murray, M. P. 2006. Avoiding invalid instruments and coping with weak instruments. *The Journal of Economic Perspectives*, 20(4): 111-132.
- Newbert, S. L. 2008. Value, rareness, competitive advantage, and performance: a conceptual-level empirical investigation of the resource-based view of the firm. *Strategic Management Journal*, 29(7): 745-768.
- Ocasio, W. 1998. Towards an attention-based view of the firm. *Strategic Management Journal*, 18(S1): 187-206.
- Owen-Smith, J. & Powell, W. W. 2004. Knowledge networks as channels and conduits: The effects of spillovers in the Boston biotechnology community. *Organization Science*, 15(1): 5-21.
- Padgett, J. F. & Ansell, C. K. 1993. Robust Action and the Rise of the Medici, 1400-1434. *American Journal of Sociology*, 98: 1259-1319.
- Palmer, D., Jennings, P. D., & Zhou, X. 1993. Late Adoption of the Multidivisional Form by Large U.S. Corporations: Institutional, Political, and Economic Accounts. *Administrative Science Quarterly*, 38: 100-131.
- Peng, Y. 2004. Kinship networks and entrepreneurs in China's transitional economy. *American Journal of Sociology*, 109: 1045-1074.
- Porac, J. F., Wade, J. B., & Pollock, T. G. 1999. Industry categories and the politics of the comparable firm in CEO compensation. *Administrative Science Quarterly*, 44(1): 112-144.
- Powell, W. W., Koput, K. W., & Smith-Doerr, L. 1996. Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly*: 116-145.
- Prince, J. T. & Simon, D. H. 2009. Multimarket contact and service quality: Evidence from on-time performance in the US airline industry. *Academy of Management Journal*, 52(2): 336-354.
- Rindova, V. P., Petkova, A. P., & Kotha, S. 2007. Standing out: how new firms in emerging markets build reputation. *Strategic organization*, 5(1): 31-70.
- Rosenkopf, L., Metiu, A., & George, V. P. 2001. From the bottom up? Technical committee activity and alliance formation. *Administrative Science Quarterly*, 46(4): 748-772.
- Rosenkopf, L. & Nerkar, A. 2001. Beyond local search: boundary-spanning, exploration, and impact in the optical disk industry. *Strategic Management Journal*, 22(4): 287-306.

- Rowley, T., Behrens, D., & Krackhardt, D. 2000. Redundant governance structures: an analysis of structural and relational embeddedness in the steel and semiconductor industries. *Strategic Management Journal*, 21(3): 369-386.
- Scherer, F. M. & Ross, D. 1990. Industrial market structure and economic performance. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.
- Scott, J. T. 1991. Research diversity induced by rivalry. *Innovation and technological change: An international comparison, New York: Harvester Wheatsheaf*: 132-151.
- SeoulNewsCorporation. 2005. *Chaebolga Mak*. Seoul: MooHan.
- Shankar, V. 1999. New product introduction and incumbent response strategies: Their interrelationship and the role of multimarket contact. *Journal of Marketing Research*: 327-344.
- Shaver, J. M. 1998. Accounting for endogeneity when assessing strategy performance: Does entry mode choice affect FDI survival? *Management Science*, 44(4): 571-585.
- Shipilov, A. V. & Li, S. X. 2008. Can You Have Your Cake and Eat It Too? Structural Holes' Influence on Status Accumulation and Market Performance in Collaborative Networks: *Administrative Science Quarterly*.
- Shipilov, A. V., Greve, H. R., & Rowley, T. J. 2010. When Do Interlocks Matter? Institutional Logics and the Diffusion of Multiple Corporate Governance Practices. *Academy of Management Journal*, 53(4): 846-864.
- Shipilov, A. V. & Li, S. X. 2012. The missing link: The effect of customers on the formation of relationships among producers in the multiplex triads. *Organization Science*, 23(2): 472-491.
- Shropshire, C. 2010. The role of the interlocking director and board receptivity in the diffusion of practices. *Academy of Management Review*, 35(2): 246-264.
- Siegel, J. 2007. Contingent Political Capital and International Alliances: Evidence from South Korea. *Administrative Science Quarterly*, 52: 621-666.
- Simcoe, T. S., Graham, S. J. H., & Feldman, M. P. 2009. Competing on standards? Entrepreneurship, intellectual property, and platform technologies. *Journal of Economics & Management Strategy*, 18(3): 775-816.
- Soda, G., Bergami, M., & Celli, P. 2012. *National Monopoly to Successful Multinational: the case of Enel* Palgrave Macmillan.
- Stephan, J. & Boeker, W. 2001. Getting to multimarket competition: How multimarket contact affects firms' market entry decisions.
- Stephan, J., Murmann, J. P., Boeker, W., & Goodstein, J. 2003. Bringing managers into theories of multimarket competition: CEOs and the determinants of market entry. *Organization Science*, 14(4): 403-421.
- Uzzi, B. 1996. The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review*: 674-698.
- Wooldridge, J. 2002. Econometric Analysis of Cross Section and Panel Data. *The MIT Press* 5(1): 5.
- Wooldridge, J. M. 1999. Distribution-free estimation of some nonlinear panel data models. *Journal of Econometrics*, 90(1): 77-97.
- Wooldridge, J. M. 2009. *Introductory Econometrics: A Modern Approach*: South Western Publish.ISA.
- Yu, T. & Cannella, A. A. 2012. A Comprehensive Review of Multimarket Competition Research. *Journal of Management*.
- Zaheer, A., McEvily, B., & Perrone, V. 1998. Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, 9(2): 141-159.
- Zaheer, A. & Soda, G. 2009. Network evolution: The origins of structural holes. *Administrative Science Quarterly*, 54(1): 1-31.