

'An Eye for an Eye' or 'Live and Let Live': Reciprocal Competition, Mutual Forbearance and Organizational Learning in the Hospital Industry of Korea*

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This study examines how competition between organizations is coordinated and where such coordinated market order comes from. Specifically, drawing on the mutual forbearance hypothesis and social exchange perspective, the study analyzes the effect of multimarket contact on the rates of market entry and exit in the hospital industry of Korea from 1980 to 2008. Results support the notion that multimarket competitors are likely to coordinate their competitive activities and mutually forbear from competing with one another. For example, a hospital tends to be reluctant to enter the market in which its multimarket competitors are present, because such aggressive entry might provoke the rivals' retaliatory responses not only in that market, but also in other multiple markets they jointly contest. In addition, this study aims to refine the mutual forbearance theory by putting another focus on where such golden rule of mutual forbearance comes from. In line with organizational learning theory, we argue that organizational memories or prior experiences accumulated over the organization's history provide an incentive to abide by the golden rule. This argument is supported by empirical analyses, which show that retaliatory responses to aggression and compensatory responses to cooperation are widely practiced in the industry and that organizational tenure in the industry increases the probability of living by the coordinated system of mutual forbearance. These results imply that market order can be constructed and sustained by organizational learning.

Keywords: mutual forbearance, multimarket contact, organizational learning, market entry and market exit, hospital industry

* I would like to thank three anonymous reviewers of KJS for their helpful comments on the earlier version of this paper. Direct all correspondence to Dong-Il Jung, Department of Sociology, Hallym University, Chuncheon, Gangwon-Do, 200-702, Korea (dijung@hallym.ac.kr; 82-33-248-1744).

INTRODUCTION

Recently, interests in the processes and consequences of changes in market positions have blossomed, providing an important polemic for organizational sociologists as well as strategic management theorists (Boeker 1997; Greve 1996; Jensen 2003; Haveman 1993; Khessian and Carroll 2008). New institutional scholars attend to mimetic behaviors of organizations, suggesting that a manager, as a bounded rational actor cognitively limited by uncertainty, is willing to “follow the leaders” in entering and exiting product and service markets (Haveman 1993). Organizational ecologists, adopting the adaptation perspective, have begun to delve into market entries and exits, proposing that organizations respond to increasing competition by changing their market positions rather than by simply dying out (Dobrev and Kim 2006; Baum and Singh 1997): competitive intensity in the current product or service market provides a need for organizations to exit that market and to move into a new, more or less under-crowded market. As the number of competitors sharing the markets (termed “market overlap” or “niche overlap”) increases, according to this view, organizations tend to be mobile across markets.

Recent development in organization theory and strategic management field offers a more sophisticated account of why organizations *do* or *do not* move across markets as the extent of market overlap actually increases. Drawing on Edward’s classic work (1955) and social exchange perspective (Simmel 1950; Homans 1958; But 1980), some organizational scholars began to challenge the notion that greater market overlap invariably translates into higher competitive intensity, inducing organizations to exit the current market and enter a new market. Rather, they argue that intensity of competition between two firms with a large number of jointly contested markets may be reduced because of the phenomenon widely referred to as “mutual forbearance” (Evans and Kessides 1994; Porter 1980; Scott 1982). The rationale underlying the mutual forbearance argument is that organizations that compete in multiple markets are less likely to act aggressively toward each other because they recognize that rivals can counterattack not only in the market in which the initial attack has been made, but also in all other markets in which both organizations compete. As Edward (1955: 335) put it, thus, multimarket contact provides “an incentive to live and let live, to cultivate a cooperative spirit, and to recognize priorities of interest in the hope of reciprocal recognition,” developing the tacit collusion among firms with a large number of markets overlapped. The mutual forbearance hypothesis has been tested in a wide variety of settings such as collusive behaviors in pricing in the Spanish hotel industry, the U.S. cement industry, the global mobile phone service industry, and the California airline industry (Fernandez and Marin 1998; Jans and Rosenbaum 1996; Parker and Roller 1997; Busse 2000; Gimeno and Woo 1996), and in service quality in the U.S. airline industry (Prince and Simon 2009).

A number of studies have applied the hypothesis to the research on changes in market

positions in the domestic airline industry (Baum and Korn 1999), the insurance industry (Li and Greenwood 2004), chain nursing homes (Baum 1999), the hospital industry (Boeker et al. 1997; Stephan et al. 2003), and the biopharmaceutical industry (Anand, Mesquita, and Vassolo 2008), finding mutual forbearance operative: multimarket contact provides organizations with competitive advantages created by mutual forbearance, discouraging them from moving across markets. Multimarket organizations are unwilling to depart from current markets and to enter rivals' markets because they enjoy collusive benefits from current market domains and because the entry into rivals' markets can signal an intention to attack the rivals, hence to invoke retaliation in current markets.

Although the mutual forbearance logic is based on plausible theoretical considerations and tested in a variety of industry contexts, there is also a caveat. The mutual forbearance argument is grounded on the behavioral assumption that an organization actually punishes an aggressive rival organization (especially one that violates tacit collusion), and rewards a cooperative competitor that shows good will (Golden and Ma 2003). However, a concern lies in the fact that previous empirical research has barely tested this assumption, leaving the empirical results subject to alternative interpretations.¹ Put differently, rendering this assumption unquestionable, previous studies argue that the fear of mutual retaliation and the psychological need to avoid intense competition naturally give rise to the equilibrium state of mutual forbearance. However, little research has tested this assumption directly. To make mutual forbearance argument stronger and to lay a firm theoretical foundation for empirical research, we believe, it should be examined how an organization actually responds once the equilibrium breaks down, in other words, once the organization comes under attack or alternatively once it is given greater "sphere of influence."

By drawing on the longitudinal data of the population of hospitals in Korea, this paper examines a specific type of retaliatory action as a response to rival organizations' strategic moves; retaliatory entries and compensatory exits (for some anecdotal examples, see Karnani and Wernerfelt 1983). Specifically, we examine whether a hospital actually responds to a rival hospital's entry into its own market by engaging in retaliatory entries into the markets that the rival stakes out. We also explore whether a hospital attempts to abide by the reciprocal "golden rule" of mutual forbearance when the rival signals good will by exiting one or a few of jointly contested markets.

Underlying this endeavor is the reasoning that mutual forbearance does not emerge only from *a priori fear* of mutual retaliation. If an organization is a deliberate and informed agency

¹ One might argue that individualized strategic responses to the varying degree of competitive intensity can create the negative relationship between the degree of multimarket contact and the likelihood of market entry and exit. For example, As competitive intensity grows with the increasing degree of market overlap, organizations likely concentrate on refining and fine-tuning existing competencies in the current markets instead of engaging in extensive risk-taking activities in novel market environments, mainly because of constraints of resources available for exploratory activities that are usually demanding, time-consuming, and often hazardous (see Porter 2008; March 1991).

that acts upon experiential and vicarious learning (Levitt and March 1988), and if the choice of markets is part of *actual* social interaction (Uzzi 1999), then the golden rule arguably comes from organizational experiences and observations that reciprocal retaliation actually takes place in the industry: for example, a violator must be punished in a way or another. Also, the intention to abide by the golden rule does not come only from *a priori hope* for mutual forbearance, but also from organizations' own experience and observation of other organizations. Therefore, if the observed patterns of the relationship between changes in market positions and multimarket contact should result from the mutual forbearance concerns, we believe, retaliatory entries and compensatory exits must be established as predominant modes of competitive interaction. This reasoning leads to a research question: does the effect of multimarket contact on the rates of market entry and exit grow as the organization's experience in the industry increases? Following organizational learning theory, we expect that if mutual forbearance is firmly established as a golden rule of game in the industry, organizations that have long history of competitive interaction are familiar with this rule of game, and aware of how to act to reach the state of mutual forbearance and how to punish or reward those rivals that violate or abide by this rule, respectively. To empirically investigate theoretical speculations described above, this paper analyzes changes in clinical service markets in the hospital industry of Korea during the period from 1980 to 2008.

THEORETICAL ARGUMENTS AND HYPOTHESES

Multimarket Contact and Mutual Forbearance

One of the increasingly popular research streams in inter-organizational competition is centered around the concept of multimarket contact and its consequence, termed mutual forbearance. Multimarket contact refers to the extent to which an organization's market position corresponds to that of other organizations (Edwards 1955; Bernheim and Whinston 1990). The central premise underlying the concept of multimarket contact is that competitive behaviors of multimarket rivals (rivals that are encountered in multiple markets) may qualitatively differ from those of single market rivals (Karnaini and Wenerfelt 1985; Porter 1980). The conventional view of market competition suggests that multimarket rivals tend to be the stronger competitors because competitive pressures come from all shared markets (Popielarz and McPherson 1995).

However, the mutual forbearance hypothesis expects that multimarket contact often reduces the level of competitive intensity and increases the possibility for coordinated or cooperative behaviors among multimarket rivals. The reason for this is that multimarket contact increases the potential repertoire of competitive responses to aggressive actions undertaken by multimarket competitors. If an organization encounters an aggressive move by a single-market

rival (e.g. price reduction in that single market), then only possible retaliatory strategic option would be to counterattack the rival in the very same market (for example, further price reduction in that market). However, multimarket rivals have multiple options of responding in different shared markets (e.g. price reduction in all other shared markets), which would inflict much greater damage on the initial aggressor. As Porter notes, “retaliation involving simultaneous attacks in a number of markets can be much more severe than retaliation within a single market (1980: 473).” Put differently, ‘the shadow of the future’ retaliation not only in the market where the initial threat was made, but also in all other jointly contested markets, prevents organizations from initiating aggressive actions. Because of such common recognition that aggressive actions toward multimarket rivals could incur unnecessary costs that outweigh benefits obtained from the initial attack, multimarket rivals tend to develop tacit collusion such as charging higher prices (Evans and Kessides 1994; Feinberg 1985; Gimeno and Woo 1996), lowering service quality (Anand et al. 2009), and greater stability in market shares (Heggstad and Rhoades 1978; Chen 1996).

The mutual forbearance hypothesis echoes Simmel’s concept of reciprocal subordination and superordination (Simmel 1950). Writing about social relations in general, Simmel argued that rivals may be willing to develop cooperation when they interact in multiple domains of action, since they recognize that they are interdependent and that each can benefit by allowing the other to be superordinate in some domains in exchange for similar treatments in other domains in which it aims to stake out a “sphere of influence.” In this way, norms of competitive reciprocity can emerge among multipoint competitors in the form of reciprocal subordination. Simmel’s idea implies that common participation in multiple market domains tempers the intensity of realized competition, serving as a deterrent against reciprocal retaliation.

This deterrence effect may be enhanced by increasing familiarity between multimarket competitors. According to network theory, organizations are better able to achieve coordination when they can monitor each other’s activities through participating in similar sets of markets (Burt 1980, 1992; Granovetter 1985). The more point of contact an organization has with its rivals, the more easily it can obtain information about the rivals’ behavior, which reduces uncertainty about the rivals’ responses to the focal organization’s initial moves. Organizations that are present in several markets in which other rival organizations also participate can become familiar with strategies, capabilities, competitive characteristics, and behavioral patterns of the rivals, which may enhance the possibility of tacit coordination and mutual understanding of each other’s ability and willingness to retaliate (Baum and Korn 1996; Scott 1993; Jayachandran, Gimeno, and Varadarajan 1999). The forgoing discussion leads to the “golden rule” of mutual forbearance—hypothesis that each of multimarket competitors tends to “stake out certain markets and then mutually forbear from competing with one another” (Baum 1999: 555; Evans and Kessidies 1994).

While most of early research on multimarket contact focused on firm performance, product or service quality, and price, it was only recently that researchers began to investigate organizations' entries into rivals' markets and exits from markets jointly contested with rival organizations. Empirical studies of multimarket contact have found an inverted U-shaped relationship between market entry and the degree of multimarket contact: the likelihood of an organization's entry into rivals' markets initially increases with the growing level of multimarket contact, and then gradually declines (Baum and Korn 1999, Haveman and Nonnemaker 2000). At low levels of multimarket contact, each organization has an incentive to enter rivals' markets in order to establish footholds for retaliatory responses to the likely attack by the rivals. Such footholds can serve as a deterrent to future competition by signaling the organization's ability and intention to engage effectively in multimarket retaliation should it come under attack. In addition, entry into the rivals' markets can help build familiarity with their intentions, ability, and behavioral patterns of competitive interaction (Boeker et al. 1997; Scott 1993). As mutual footholds are firmly established and organizations recognize the 'live and let live' nature of their interdependence, however, mutual forbearance becomes in operation. "With a deterrent established, multicontact competitors can divide up their shared markets into so-called spheres of influence, where particular firms are granted primacy in exchange for similar status being given to their multipoint rivals in other markets" (Stephan et al. 2003: 405). Therefore, organizations tend to refrain from entering the rivals' markets, because such action may be viewed as a threat to the multimarket rival's sphere of influence that would invoke the rival's counterattack upon the focal organization's own sphere of influence.²

The similar logic can be applied to the relationship between multimarket contact and market exit. Higher level of multimarket contact creates less competitive environments in all other markets which the organization stakes out, providing an incentive to remain in markets where it occupies jointly with multimarket rivals. While some empirical studies found a negative relationship (Boeker 1997; Anand et al. 2009), Baum and Korn's study (1999) of California airlines' exits from competitors' routes showed that multimarket contact had an inverted-U shaped relationship with the likelihood of exit from competitor's markets. With the rise of multimarket contact from low to moderate levels, competitive interactions increase, as

² This is actually what did happen in the global tyre industry. Michelin, the largest tyre manufacturer in Europe entered the North America tyre market and captured 8% of the market share in the early 1970s. As a response to Michelin's move, Goodyear, the largest manufacturer in the North America but the small presence in Europe, increased its market share in Europe in order to establish a stronghold. Goodyear increased the share from far less than 8% to 12%. This was seen as a threat to Michelin's predominance in Europe and Michelin punished Goodyear by cutting price in North American market, which triggered the global price war against each other. In the mean time, the Japanese tyre manufacturer, Bridgestone, that could make heavy investment to research and development during the price war period, emerged as an equally strong competitor in both North America and Europe. While this is an intriguing example against mutual forbearance hypothesis, researchers believe that this is an exceptional case and that in most cases mutual forbearance would be reached.

rivals jockey for favorable competitive market position vis-à-vis one another. Such intensification of competition can push some of weaker organizations to exit one another's markets. According to Baum and Korn, growing multimarket contact provides competitors with more opportunities to signal their intentions of reciprocal subordination, increasing exits from some markets to obtain similar treatments in other markets in which they seek to dominate competition. As multimarket contact further grows, however, market exit is likely to decline: once cross-footholds are firmly established, organizations are unwilling to abandon them, because doing so would decrease the number of options for treating its rivals.

H1a: An organization's likelihood of entry into a market has an inverted-U shaped relationship with the level of multimarket contact with the competitors which occupy that market

H1b: An organization's likelihood of exit from a market has an inverted-U shaped relationship with the level of multimarket contact with the competitors which occupy that market

Retaliatory Entries, Compensatory Exits and Organizational Learning

While the argument that multimarket contact between competitors leads to reduced rivalry has been supported in many empirical studies, this argument may be subject to significant caveats and challenges. To the question why organizations competing in several markets tend to mutually forbear, scholars have almost invariably answered that the *fear* of retaliatory responses (conversely, *hope* for cooperative responses) by multimarket rivals plays a mediating role linking multimarket contact and reduced rivalry. For example, Haveman and Nonnemaker (2000: 233-234) argued that "the *fear* of great reciprocal harm induces opponents who meet in multiple domains to refrain from using their strongest weapons against each other." In a bit metaphoric language, Gimeno (1999: 102-103) maintained that "as the rival *recognizes* the firm's ability to retaliate across multiple markets and develops expectations of cross-market retaliation or *conjectural* variation, the *specter* of retaliation will influence the decision-making process of the rival, reducing its motivation to act aggressively." To repeat the quote from Edward (1950), multimarket contact provides "an incentive to live and let live... in the *hope* of reciprocal recognition."

Then, the question that follows is where such fear, hope, recognition, conjecture, and specter come from. One possible answer rests on the rational actor model, in which an organization, as a rational entity, is capable of garnering all information about the behavioral patterns of competitors and making accurate judgments—how competitors will respond to the focal organization's deviation from the golden rule of mutual forbearance, for example, and acts upon such judgments. Given the fact that complex and uncertain environment

characterizes most markets and that organizations are at best bounded rational actors, however, this argument is far from the reality of organizational world (March and Simon 1993). The Korean hospital industry studied here is not an exception. In a study of hospital foundings and failures in Korea, Jung (2008) showed that hospitals' decision-makers often attended to a few salient pieces of information including the average organizational size and age of potential competitors, and reached biased conclusions in evaluating entrepreneurial opportunities.

This critical perspective leads to the second line of argument that takes uncertainty and bounded rationality seriously as a precondition for the formation of organizational emotions such as the fear of retaliation and the hope for cooperation (Meyer and Rowan 1977; DiMaggio and Powell 1983). According to neoinstitutionalists, uncertainty creates mimetic behaviors because organizations with cognitive limitation and bounded rationality tend to follow other organizations for fear that they would lose the race (Park and Jung 2005; Haveman 1993). In the similar vein, organizational scholars argue that cognitive limitations and inability to accurately anticipate the likely responses of competitors bring about the desire to mutually forbear (Clark and Montgomery 1999; Porac, Thomas, and Baden-Fuller 1989; Golden and Ma 2003). However, this line of accounts seems to take boundedness of rationality into extremes, discounting the role of rationality, though bounded, in organizational decision-makings.

The third explanation draws on organizational learning theory (Levitt and March 1988), according to which organizations are not only bounded rational actors, but also learning entities that can base critical decisions on their past experiences and information gathered from interactions with other organizations (March and Simon 1993; Cyert and March 1963). Despite the fact that uncertainty limits organizations' ability to accurately assess other organizations' intentions and ability, organizations are apt to search for some cues stored in organizational memories and floating around the industry, and to utilize them to construct imperfect versions of the external competitive reality (Berger and Luckmann 1967). And these socially constructed versions of competition including evaluation of other organizations' behavioral patterns of competitive interaction may guide decisions and strategies of organizations (Jung 2008; Porac and Rosa 1996).³ As an organization accumulates more reliable cues (for example, observation that certain behavioral patterns are repeated in certain situations), organizational action based on such cues becomes crystallized into a structure of organizational routines and subject to inertial pressures (Levitt and March 1988; Hannan and Freeman 1984).

The notion that an organization learns from its past experience (experiential learning) and from other organizations' experience (vicarious learning) suggests that for the fear of

³ Here we do not mean that uncertainty plays only a trivial role in shaping organizational actions. What we mean is that in the case of significant and risky organizational change such as market entry and exit, organizations may want to stand on rather concrete ground for decision making. Entry into a new clinical service market and exit from an existing service market constitute critical organizational changes in hospitals, because then necessitate the restructuration of medical and administrative routine tasks and the reconfiguration of complex relationships with other organizations such as National Health Insurance Corporation (NHIC) and private insurance companies.

retaliation and the hope for cooperation to arise, retaliatory and cooperative responses are to be widely observable behavioral patterns within the visible scope of “neighborhood” (Cyert and March 1963). Therefore, if mutual forbearance is to affect the likelihood of changes in market positions, then organizations must have prior knowledge that market entries into a rival organization’s market have been punished by retaliatory entries and that exits from markets shared with rivals have been rewarded by compensatory exits. Put simply, the entrenchment of retaliatory entries and compensatory exits as widely observed patterns of competitive interaction is one of important preconditions for mutual forbearance to work. This reasoning leads to the second set of hypotheses.

H2a: An organization’s likelihood of retaliatory entry into rivals’ market increases as more rivals enter one or a few of that organization’s markets.

H2b: An organization’s likelihood of compensatory exit from rivals’ market increases as more rivals exit one or a few of jointly contested markets.

One would argue that prior knowledge accumulated from organizational learning varies with organizational tenure in the industry. Older organizations have more experience about the patterns of competitive interaction, are more aware of the industry-wide rule of game, and are more likely to develop consistent repertoires of competitive tactics and strategies than younger organizations. Organizations with long history of competitive interaction in the industry will understand that mutual forbearance is the golden rule to abide by, so that their future action should reflect such recognition (Axelrod 1984). For example, if the levels of multimarket contact are low, an older organization tends to understand the advantages of entering the rivals’ markets because it could establish its footholds in the rivals’ territory. Alternatively, once mutual footholds are firmly established, the organization may be aware of the negative consequences should its action violate the tacit collusion implicit in these relationships so that it tends to refrain from additional entries. To younger organizations that do not possess prior related knowledge about industry-wide competitive practices, however, the tacit nature of mutual forbearance practices is less noticeable. So the likelihood of such organizations to abide by the golden rule of mutual forbearance may be relatively low.

In a series of longitudinal studies of the hospital industry in California, Boeker and his colleagues (Boeker et al. 1997; Stephan et al. 2003) found a significant role of prior knowledge in the patterns of competitive interaction, though they focused on CEOs rather than organizations themselves: longer-tenured CEOs are guided by the rule of mutual forbearance, while newer CEOs do not adopt a forbearance approach toward their firm’s multimarket competitors. The similar logic can be found in a game theoretic formulation of the emergence of cooperation. For example, Axelrod (1984: 79) attributed the emergence and sustenance of

the live-and-let-live system in trench warfare in World War I to familiarity formed for “longer hours.” One of the critical reasons why such cooperative system broke down was due to the rotation of troops: new comers did not understand such rule of game. These examples suggest that if experiential and vicarious learning really matters as discussed above, organizational age will play a moderating role in differentiating norm-abiding organizations and norm-violating organizations.

H3a: The effect of multimarket contact with a rival on the likelihood of the organization’s entry into this rival’s markets becomes greater as the organization’s age increases.

H3b: The effect of multimarket contact with a rival on the likelihood of the organization’s exit from this rival’s markets becomes greater as the organization’s age increases.

DATA AND METHODOLOGY

The Industry Context and Data⁴

Our research setting is the hospital industry of Korea during the period between 1980 and 2008, inclusive. The industry during this period provides a rich context for exploring the relationships between multimarket contact and the rates of market entry and exit. Prior studies of multimarket contact suggest that the conditions contributing to the rise of mutual forbearance include: (1) organizations compete with each other in multiple markets; (2) competition is intense enough to give rise to the fear of retaliation; and (3) organizations are located proximately in social space enough to monitor each other’s behaviors (Baum and Korn 1999; Chen 1996). We believe all three conditions are met for the hospital industry of Korea.

First, hospitals compete with one another in multiple clinical service markets, which is an ideal context for testing ideas about mutual forbearance. Second, the historical depiction of the Korean hospital industry shows that competition for patients has gradually increased since the implementation of the compulsory health insurance program in the late 1970s, so that the competitive interaction has been one of the most important driving forces for market changes (Cho 1997; Jung 2009). Third, previous studies of the industry reveal that the interorganizational influence in this industry is geographically localized, meaning that collusive or competitive behaviors can readily occur among locally populated hospitals that are salient to each other. In the hospital industry, patients come from geographically contiguous areas at a higher rate than from distance places, so that the market for medical services is arguably partitioned into

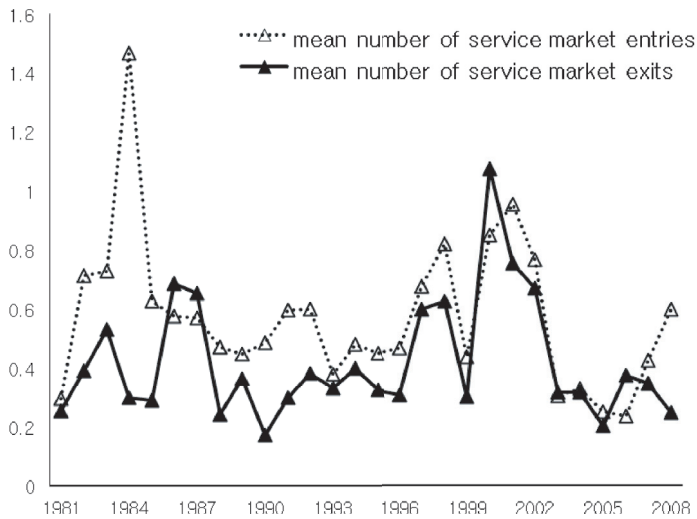
⁴ For a historical review of the hospital industry of Korea and a detailed description of the data studied here, see Jung (2009).

numerous geographical segments. Only a skimming reading of Korean Hospital Newsletters substantiates the notion of geographically localized interdependence: many hospital directors showed an intention to establish a cooperative system with other local hospitals, while others considered them to be the strongest competitors.

In addition to above three conditions, the hospital industry of Korea has a unique characteristic that makes market entries and exits become the most important competitive strategies. While there are a variety of repertoires of possible competitive moves ranging from such tactical activities as price cuts, service improvements, and promotions, to large scale strategic responses including introductions of new medical equipments and resource reallocations across service departments, the changes in market positions constitute a particularly important strategic choice available to Korean hospitals. There are a number of reasons: for-profit activities of hospitals are legally prohibited in Korea; service fees have been strongly regulated by law since the introduction of compulsory insurance program; medical service activities are under intense surveillance by the third party payers (i.e. NHIC); and service quality is relatively indistinguishable from the eyes of clients. These characteristics of the hospital industry of Korea considerably limit the range of strategic or tactical choices available to hospitals. While hospitals have often relied on overtreatment of out-patients and excessive drug selling (before the implementation of prescription-dispensary separation policy) as well as high-priced uninsured medical care services to secure important income sources (Jung 2008), we believe that entries into new markets and exits from (unprofitable) markets constitute the most important strategic choices to achieve competitive advantages. Conversely, market entries and exits by rival hospitals are arguably seen as the most critical threats or the most credible signals for cooperation.

In effect, market entries and exits were frequently observed in the industry during the study period. Our data show that a typical hospital made 0.52 market entries and 0.41 exits per year, on average. The temporal variation of the average number of market entries and exits presented in Figure 1 reveals that changes in market positions seemed to be important part of strategic responses to external threats and opportunities: the incidence of market entry and exit was higher during the periods of fundamental institutional change (expansion of national insurance coverage and the implementation of separation policy). In the author's e-mail correspondence with a former administrative manager of a middle-sized hospital in Seoul, he said, "we have nothing other than cultivating a new service area, because all other ways [for raising revenue] are virtually blocked (2008. 11. 18)." He continued to say, "all hospitals, like mine, might feel that is the only and the most convenient way [to achieve competitiveness]."

The data cover 2607 hospitals operating for at least a year during our study period. We exclude clinics from our sample, because multimarket contact is virtually meaningless to clinics that are specialized in one or a few medical services. The data were drawn from *The Directory of Membership Hospitals* published annually since 1980 by Korean Hospital

Figure 1. Mean Number of Service Market Entries and Exits, 1981-2008.

Association. The annual directory contains extensive information about each hospital, including name, address, contact number, permitted number of beds, founding date, type of ownership, director's name, and the list of clinical service offerings, and so on. The service markets examined in this study include 24 clinical service markets, including internal medicine, pediatrics, neuropsychiatry, dermatology, surgery, breast and endocrine surgery, neurosurgery, plastic surgery, obstetrics, ophthalmology, otorhinolaryngology, urology, tuberculosis, rehabilitation medicine, anesthesiology, radiology, pathology, family medicine, nuclear medicine, first aid, industrial medicine, dentistry, and preventive medicine.

For this study, we use two-digit zip code area to delineate a boundary in which competitive interaction takes place. The same criterion was used in previous studies of the hospital industry and found to be an acceptable option (Jung 2008, 2009). The whole national market was divided into 57 local market segments. Out of 2607 hospitals under study, 326 were already in operation in 1980, and 1981 were still alive in 2008. During the study period, the total of 9,560 market entries and 7,748 exits were made. The annual percentage of hospitals that experienced at least one market entry was 27%, and the counterpart percentage for market exit was 22%.

Dependent Variables and Model Specification

This study models two events: market entry and market exit. We break down the pooled cross-sectional time series data into hospital-market-year spells in order to analyze the patterns of entry into and exit from each clinical service market. So, each observation represents one service market for each hospital for a given year. For the analysis of market entry, the risk set for a specific service market for a specific year is defined as all hospitals that were not

operative in that market in the prior year. For market exit, the risk set for a service market for a given year is defined as all hospitals that offered medical services in that market a year before. These definitions of the risk set yield 284,284 hospital-market-year spells for market entry analysis and 157,214 spells for market exit analysis, after excluding missing cases. Finally, out of those spells, 16,629 spells for market entry and 7,371 spells for market exit belonging to the period between 1980 and 1982 are excluded for regression analysis, because some covariates are constructed by using information on past two years before the current observation time point.

Market entry is measured as a dichotomous variable coded as 1 if the hospital in the risk set enters the market of interest (service was not offered in the previous year but offered in the current year) and as 0 otherwise. Similarly, market exit is coded as 1 if the hospital in the risk set exits the market of interest and as 0 otherwise. Since the dependent variables are dichotomous variables and the data are structured in a cross-sectional time series format, we use logistic regression with random-effect specification to model the rates of market entry and market exit. We used a lagged structure to ensure causality as much as possible: in other words, whether a hospital enters (or exits) a given market in a given year is explained by independent variables measured in the prior year.

One of the concerns in analyzing the organization-market level data is that the assumption of independence is hardly defensible. For example, the mutual forbearance hypothesis maintains that organizations are likely to coordinate their actions across several markets, so that they can enter some of a rival's markets simultaneously. Conversely, given the restriction of available resources, the organization that decides to enter a market may not be able to enter another market. The lack of statistical independence violates one of the key assumptions of maximum likelihood estimation. To address this issue, this study employs two strategies. One is to include dummy variables representing each of 24 service markets to account for non-independence. This strategy is exactly the same as what is done in conditional logistic regression with fixed-effect specification. Second, employing the approach proposed by Barnett (1993), we treat the problem of multiple observations within each hospital as simple sampling problem: some hospitals are over-represented in the data set. We give a weight to each hospital in a given year as an inverse function of the degree of over-representation: for example, if a hospital is at risk of entering 10 markets (operating in 14 markets), each of 10 hospital-market spells is given a weight of 1/10 to account for its over-representation in the data. Although Barnett (1993) acknowledged that this technique does not deal directly with the problem of the lack of independence, this approach could minimize the biasing effect due to the oversampling.

Independent and Control Variables

Multimarket Contact

To test the first and third sets of hypotheses, we construct a measure of multimarket contact. In general, there are three major ways of measuring multimarket contact. First, there are market-level measures that reflect the extent of multimarket contact among the organizations serving a focal market (Evans and Kessides 1994). Second, some studies constructed dyad-level measures to capture the degree of multimarket contact between two organizations in all markets in which both of them are present (Baum and Korn 1999). Third, organization-in-market-level measures capture the overall degree of multimarket contact between a specific organization and its competitors that also compete in the specific market of interest (Baum and Korn 1996; Li and Greenwood 2004). Since our interest is in the influence of the levels of multimarket contact across all clinical service markets on the patterns of a focal hospital's market entry and exit, we take the third approach. For example, suppose that there are three hospitals A, B, and C within a certain geographical boundary, and that A is at the risk of entering market m in which B and C are present. Further suppose that A and B meet in 10 service markets, that A and C meet in 5 service markets, and that B and C meet in 3 service markets including market m . The simplest measure of multimarket contact for market m for hospital A is the sum of the number of markets in which A meets B and the number of markets in which A meets C ($10 + 5 = 15$). Similarly, the multimarket measure for analysis of hospital B's exit from market m is the number of markets in which B meets C outside the market m ($0 + 2 = 2$: note that A and B do not share the market m). To exploit the relationship between multimarket contact and recognition of competitive dependence appropriately, we scaled the count measure of multimarket contact by the number of competitors (Gimeno and Woo 1996). In the previous example, average multimarket contact for hospital A in market m is 7.5 ($= 15/2$). In general mathematical expression, we define multimarket contact for hospital i in market m at time t as follows:

$$\text{Average MMC}_{imt} = \frac{\sum_{j \neq i} \sum_m (D_{imt} \times D_{jmt})}{\sum_m D_{imt} \times N_{MMCt}}$$

where N_{MMCt} is the number of multimarket competitors that are present in market m . and D_{imt} is a dummy variable that equals 1 if organization i is active in market m at time t and 0 otherwise, and D_{jmt} is a dummy variable set equal to 1 for firm j present in market m at time t and 0 otherwise. Our measure of multimarket contact ranges from a low of 0, when there is no multimarket contact between hospital i and all other hospitals that are active in market m to M ,

the total number of hospital i 's markets, when hospital i engages all other hospitals in market m in all M of its own markets.

Aggressive Entry and Cooperative Exit

The hypothesis 2a expects that the likelihood of a hospital to enter a market (retaliatory entry) increases as more hospitals that are active in that market enter one or more of the focal hospital's markets (aggressive entry). Similarly, the hypothesis 2b proposes that the rate of a hospital's exit from a market (compensatory exit) increases as more hospitals that offer services in that market exit one or more of the focal hospital's markets (cooperative exit). The level of aggressive entry for a focal hospital i that is at risk of entering market m is defined as the number of entries into the hospital i 's markets made by other hospitals for the past two years that were active in market m . Likewise, the level of cooperative exit for a focal hospital i that is at risk of exiting market m is the number of exits from the hospital i 's markets made by other hospitals for the past two years that were active in market m . We expect that the rate of entry into a market and the rate of exit from a market are positively related to the level of aggressive entry and the level of cooperative exit, respectively. Setting the maximum time interval between initial action and response to two years is somewhat arbitrary but theoretically acceptable. For reciprocal responses to be perceived so, they should be made as soon as initial actions are made: for example, a retaliatory response that is made three or four years after the initial action may not be perceived to be retaliatory. At the same time, since market entries and exits accompany some core changes in organizational structure, it may take more than a year to complete all the processes such as hiring new personnel, purchasing clinical equipments, reallocating physical and administrative resources, and so forth.

Control Variables

To rule out possible alternative explanations for hospitals' rates of market entry and exit, we include several control variables. As noted above, we include 23 clinical service dummies to control for the differential rates of market entry and exit across clinical service markets. Organization-level control variables include size, age, type of ownership, and the number of clinical service markets served. Age is defined as the time elapsed since organizational founding. Organizational size is measured by the logged number of permitted beds. Broadly speaking, there are three types of ownership in the hospital industry of Korea: (1) public hospitals including national university hospitals, national hospitals, municipal hospitals, and regional public hospitals; (2) hospitals owned by corporate body such as medical foundation, medical school, company, medical corporate, corporate aggregate, and social welfare foundation; (3) private hospitals owned and run by individuals. Since the three types of hospitals have different organizational structure, managerial orientation and external linkage, they are expected to behave differently in terms of market entry and exit (Jung 2009). We

include two dummy variables to control for the effects of ownership type on market entry and exit. Many organizational scholars argue that the niche width is an important factor associated with organizational behaviors (Dobrev et al. 2001; Freeman and Hannan 1983). We measure the niche width by the number of clinical service markets.

We also control for several environmental variables. First, we use local population to take into account the demand side of the local market. Second, we also control for the number of medical doctors per capita in the local area because competition for physicians may have an important effect on market entry and exit (Fennel 1980; Boecker et al. 1997). Extending the density dependence theory of legitimation and competition (Hannan and Carroll 1992), many prior studies (Haveman 1993) argued that market density (the number of organizations that are operative in the market) has a non-monotonic effect on market entry and exit. For example, at the low to medium level of market density, legitimation effect works to increase the rates of market entry and to reduce the rates of market exit. However, as market density further grows, competition between incumbent organizations intensifies so that the rates of market entry decline and the rates of market exit go up. To take this possibility into account, we control for market density and market density squared.

Finally, to control for the effect of institutional changes on hospitals' competitive behaviors, we include three period-effect dummy variables, each of which refers to the specific period associated with change in health care policy. In a study of the effect of institutional turbulence on hospital's niche expansion and growth, Jung (2009) divided the whole study period into 4 subsets: (1) the first period covers 1980 to 1989, when the coverage of compulsory health insurance program gradually expanded; (2) the second period spans from 1990 to 1997; (3) the third period is from 1997, when drug prescription-dispensary separation policy began to public attention, to 2000, when it was finally implemented; (4) the remaining years constitute the fourth period. We adopt this scheme and extend each of the first and third periods by 2 years forward to accommodate the lagged effects of institutional changes. Therefore, the first dummy variable takes a value of 1 for the period from the beginning of observation through 1991, and a value of 0 otherwise. The second dummy variable takes 1 for the period from 1992 through 1996, and 0 otherwise. The third dummy refers to the period between 1997 and 2002.

RESULTS

Market Entry

Table 1 shows maximum likelihood estimates for the analysis of market entry. We employ a hierarchical approach to enter the variables. Model 1 provides a baseline model that includes control variables only; hospital characteristics, market characteristics, and institutional

Table 1. Maximum Likelihood Estimates for Market Entry in the Hospital Industry of Korea

Variables	Model 1	Model 2	Model 3	Model 4
logged # of beds	.274 *** (.015)	.326 *** (.016)	.322 *** (.016)	.323 *** (.016)
age / 10	.018 * (.009)	.018 * (.009)	.025 * (.012)	.025 * (.012)
corporate owned	-.017 (.050)	-.017 (.050)	-.015 (.050)	-.004 (.052)
personally owned	-.052 (.054)	-.079 (.055)	-.077 (.055)	-.058 (.056)
# of service market participations	.178 *** (.004)	.146 *** (.005)	.141 *** (.006)	.148 *** (.006)
local population (1,000,000)	-.007 ** (.002)	-.012 *** (.003)	-.016 *** (.003)	-.017 *** (.002)
# of MD's per capital (1,000)	-.154 *** (.032)	-.170 *** (.032)	-.174 *** (.033)	-.157 *** (.033)
market density	.034 *** (.005)	.021 *** (.005)	.022 *** (.005)	.021 *** (.005)
market density squared / 100	-.036 *** (.007)	-.014 * (.006)	-.014 * (.006)	-.016 ** (.006)
period 1: insurance expansion (1983~1991)	.350 *** (.034)	.439 *** (.035)	.466 *** (.035)	.475 *** (.035)
period 2: post insurance (1992~1996)	.201 *** (.032)	.209 *** (.033)	.235 *** (.032)	.242 *** (.032)
period 3: separation policy (1997~2002)	.488 *** (.037)	.468 *** (.037)	.494 *** (.037)	.502 *** (.037)
avg. multimarket contact		.173 *** (.016)	.176 *** (.016)	.138 *** (.019)
avg. multimarket contact squared /10		-.089 *** (.014)	-.093 *** (.014)	-.071 *** (.019)
# of aggressive entries			.118 *** (.026)	.100 *** (.021)
avg. MMC * age / 10				.017 ** (.006)
avg. MMC squared * age / 100				-.010 * (.005)
constant	-4.329 *** (.126)	-4.539 *** (.132)	-4.472 *** (.133)	-4.4354 *** (.134)
Log-Likelihood	-38435.145	-38192.036	-38132.437	-38116.962

Note | 1) 267,655 organization-market-year spells are used and standard errors are in parentheses.

2) Each model contains dummy variables for each service market. But we do not report the associated parameter estimates to improve the readability of the tables.

3) * p < 0.05; ** p < 0.01 *** p < 0.001

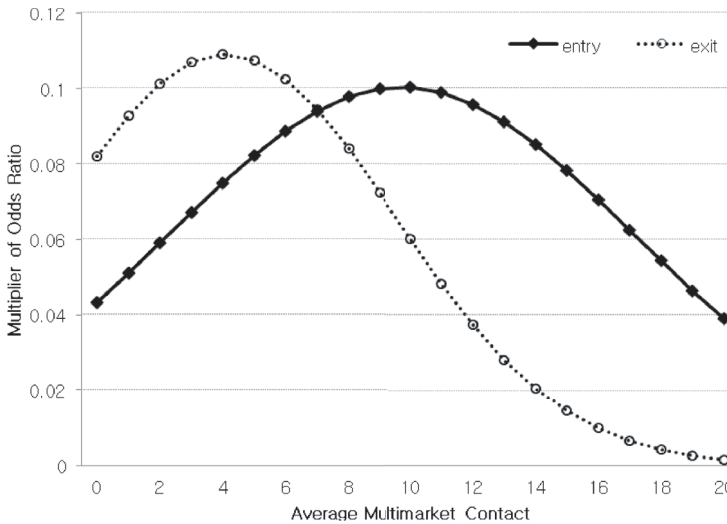
environmental characteristics. Organizational size measured by the logged number of permitted beds has a significant positive effect on the rates of market entry. Organizational age shows a similar pattern of relationship. Big and old organizations tend to possess oligopolistic power in the local market and have slack resources enough to cultivate new organizational activities, which is consistent with previous studies (Haveman and Noonemaker 2000). It appears that the type of ownership does not make significant difference in hospitals' market entry decisions. The number of clinical service markets, as expected, has a significant and positive effect. Like big and old hospitals, hospitals with broad niche width possess more power, capacity, and resources to control the local market. Unexpectedly, demand and supply side variables (population and the number of medical doctors in the local market) appear to be negatively correlated with the rates of market entry. These odd findings need theoretical accounts, but this is beyond our purpose here. Market density and density squared are entered to control for rivalry in markets, and they show the expected inverted U-shaped relationship with the rates of market entry. Initially, the increase in density of a certain market creates the perception that the market is profitable, facilitating hospitals to enter that market. As density further increases, an additional increase in market density generates competition effect outweighing legitimization effect, suppressing entries into that market. All three period dummies compared to post separation period (2003~2008) have significant and positive coefficients. Especially, period 1 (insurance coverage expansion) and period 3 (implementation of separation policy) are associated with higher rates of market entry (42% and 63% higher than period 4, respectively), meaning that fundamental institutional changes broke down organization's structural inertia and reallocated critical resources across markets, creating opportunities to explore previously unoccupied markets (Jung 2009).

Model 2 adds average multimarket contact and its quadratic term. The model improves significantly on the fit of Model 1 ($\chi^2 = 486.218$, $d.f. = 2$, $p < .001$), and the significant positive linear term and negative squared term estimates for multimarket contact support that multimarket contact is related to market entry in an inverted U-shaped manner, as is predicted by Hypothesis 1a. Thus, initial increases in multimarket contact with other hospitals present in market m raise the probability of the focal hospital to enter that market, but further increases in multimarket contact lower the focal hospital's rate of entry into the multimarket competitors' market, indicating that mutual forbearance is at work.⁵ To locate the inflection point, we set the partial derivative of the regression equation to zero, and find that the point is 9.7. Figure 2 presents the implications of Model 2 graphically.

The number of other hospitals' entries into the focal hospital's markets (aggressive entry) is

⁵ The negative relationship between the rates of market entry and multimarket contact squared could be expected simply because there is an upper limit to the maximum number of service markets: The greater the number of service markets, the higher the level of multimarket contact, and the harder the entry into an additional market. To exclude this possibility, we control for the number of service markets served.

Figure 2. Average Multimarket Contact Inflection Points for Market Entry and Exit.



introduced to test Hypothesis 2a, which predicts that the levels of aggressive entry into the focal organization’s markets give rise to its retaliatory entries into aggressors’ markets. As predicted, the coefficient for the number of aggressive entries is significant and has a positive sign, indicating that “an eye for an eye” type of retaliation is operative in the hospital industry of Korea. The model fit significantly improves ($\chi^2 = 119.198, df = 1, p < .001$). This finding supports the idea that the equilibrium of mutual forbearance may arrive between certain rivals, because they learn from their own experiences or observations of others that the violation of the golden rule could be punished. Finally, to test if organizational learning works in shaping competitive behaviors associated with mutual forbearance (Hypothesis 3a), we include in Model 4 the interactions between age and linear and quadratic terms for average multimarket contact, finding strong support for the hypothesis ($\chi^2 = 30.95, df = 2, p < .001$). Multimarket contact is related to the rates of market entry in an inverted U-shaped manner for older hospitals more than for younger hospitals. This indicates that hospitals with longer history of competitive interaction in the industry are more likely to abide by the collusive rule of mutual forbearance.

Market Exit

Table 2 presents maximum likelihood estimates from the weighted logistic regression analysis of market exit. Model 1 shows coefficients for all control variables, most of which have opposite signs compared to counterparts in market entry analysis. Hospitals that are large and old, and have broad niche width are less likely to exit their current markets, indicating that organizational power, legitimacy and resourcefulness reduce the rate of market exit. Also, the

Table 2. Maximum Likelihood Estimates for Market Exit in the Hospital Industry of Korea

Variables	Model 1	Model 2	Model 3	Model 4
logged # of beds	-.315 *** (.031)	-.280 *** (.031)	-.280 *** (.031)	-.283 *** (.031)
age / 10	-.052 *** (.011)	-.045 *** (.011)	-.045 *** (.011)	-.005 (.031)
corporate owned	-.110 (.066)	-.104 (.068)	-.104 * (.068)	-.097 (.068)
personally owned	.049 (.068)	.039 (.070)	.038 (.069)	.046 (.070)
# of service market participations	-.055 *** (.006)	-.038 *** (.007)	-.038 *** (.007)	-.039 *** (.007)
local population (1,000,000)	.009 ** (.003)	.015 *** (.003)	.014 *** (.003)	.014 *** (.003)
# of MD's per capital (1,000)	-.053 (.034)	.014 (.035)	.015 (.034)	.015 (.035)
market density	-.022 *** (.006)	-.025 *** (.006)	-.025 *** (.006)	-.025 *** (.006)
market density squared / 100	.028 *** (.007)	.027 *** (.007)	.025 ** (.007)	.025 *** (.007)
period 1: insurance expansion (1983~1991)	.020 (.044)	.056 (.045)	.066 (.045)	.060 (.045)
period 2: post insurance (1992~1996)	.232 *** (.042)	.253 *** (.042)	.262 *** (.043)	.260 *** (.043)
period 3: separation policy (1997~2002)	.719 *** (.040)	.731 *** (.041)	.740 *** (.041)	.739 *** (.041)
avg. multimarket contact		.139 *** (.021)	.141 *** (.021)	.144 *** (.029)
avg. multimarket contact squared / 10		-.170 *** (.016)	-.173 *** (.016)	-.161 *** (.023)
# of cooperative exits			.080 ** (.028)	.081 ** (.028)
avg. MMC * age / 10				.000 (.001)
avg. MMC squared * age / 100				-.072 (.096)
constant	1.057 *** (.270)	.425 (.283)	.419 (.283)	.388 (.285)
Log-Likelihood	-28608.452	-28512.654	-28507.600	-28502.125

Notes | 1) 149,843 organization-market-year spells are used and standard errors are in parentheses.

2) Each model contains dummy variables for each service market. But we do not report the associated parameter estimates to improve the readability of the tables.

3) * p < 0.05; ** p < 0.01 *** p < 0.001

effect of market density on market exit shows a mirror image of its effect on market entry. At the low to medium level of market density, legitimation mechanism overruns competition mechanism, reducing the rates of market exit. As the market becomes overcrowded, however, competition begins to work to push some weak competitors out of the market. The period effect is one that needs additional words, since it has the similar direction of relationship that the period effect has in entry analysis: all three dummies have positive coefficients, two of which are statistically significant. The period associated with the separation policy change was the highest in the rates of market exit as well as market entry. This is probably because prescription-separation policy caused a great transformation of the industry's market structure in relatively short time.

Model 2 adds average multimarket contact and its squared term, to test Hypothesis 1b. The model improves significantly over Model 1 ($\chi^2 = 191.60$, $d.f. = 2$, $p < .001$). The linear term for multimarket contact has a significant and positive coefficient, indicating that at lower levels, increasing multimarket contact encourages exit from current markets. The quadratic term is negative and significant, indicating that at higher levels of multimarket contact mutual forbearance works to discourage hospitals from exiting the markets jointly contested with rivals. Hence, parallel to the entry model estimates, the coefficients for multimarket contact and multimarket contact squared support the inverted U-shaped relationship between multimarket contact and the market exit rate. However, here the inflection point is much lower, as is shown in Figure 2: the market exit rate increases up to the point where multimarket contact reaches 4.1, and then declines. Its implications will be discussed in the next section.

Model 3, which introduces one additional variable, the number of cooperative exit, improves significantly over Model 2 ($\chi^2 = 10.108$, $d.f. = 1$, $p < .01$). In support of Hypothesis 2b, the significant and positive coefficient for this variable indicates that a hospital is likely to exit a rival's market, when the rival exited at least one of the focal hospital's markets. In other words, consistent with the exchange perspective, a hospital tends to signal compensatory intention to other hospitals that have initiated cooperative actions. This result suggests that the presence and prevalence of such rule of reciprocal cooperation may be an antecedent for the entrenchment of the golden rule of mutual forbearance. To delve deeper into the adequacy of the organizational learning theory, we include two interaction terms in Model 4, multimarket contact and its quadratic term multiplied by organizational age that measures the level of prior knowledge about the patterns of competitive interaction in the industry. Although the coefficients are in the expected direction, they are not significant, failing to support Hypothesis 3b. This suggests that with regard to market exit, the degree of industry experience measured by organizational age does not play a significant role in forming familiarity with and acquiescence to the golden rule of mutual forbearance.

CONCLUSION AND DISCUSSION

Market entry analysis and exit analysis taken together, the empirical findings support the idea that multimarket contact has a significant impact on the patterns of competitive interaction among hospitals in Korea. Consistent with prior studies of market entry and exit, empirical analysis finds an inverted U-shaped relationship between the levels of multimarket contact and the rates of organizational changes in market position (both entry and exit). At the low to moderate level of multimarket contact, hospitals tend to develop two types of competitive strategies. One strategy is to further increase the level of multimarket contact by making additional entries into the rival's markets, since doing so is likely to decrease the intention and ability of the rivals to behave aggressively in the already shared markets (mutual footholds). The other strategy to reduce potential costs associated with multimarket contact is to minimize the level of market contact with the rivals by withdrawing from some or all of the markets in which the focal hospital competes with the rivals. Our data analysis shows that the second strategy seems to be often adopted, especially when the market contact level is relatively low (Note that the inflection point for exit analysis is 9.7, which is much lower than the inflection point for entry analysis, 4.1).

Why do the inflection points differ dramatically across the two strategies? One interpretation is that this is probably because eliminating contact altogether or minimizing contact level as much as possible is much easier and more viable when the number of multipoint markets is very small: sunk costs are smaller for exit from one market than for exit from several markets. For example, when an organization shares only one market with a rival, the organization may choose to exit that market to eliminate any possibility to compete with the rival. However, when an organization meets a rival in several markets simultaneously, it is unlikely to withdraw from all or most of those markets to eliminate intense competition with the rival. Rather, the organization may opt to make an additional entry into the rival's markets to enhance its capability to deter the rival's aggressive actions.

The analyses show that the high level of multimarket contact is associated with decreasing probability of market entry and exit. When an organization competes with a rival in many markets, an entry into the rival's market could provoke the rival's retaliation in several markets they share. Also, the high level of multimarket contact means decreasing return on an additional exit as a signal for cooperation, because the rule of mutual forbearance has been already established. Therefore, the rates of both market entry and market exit decline as multimarket contact continues to increase beyond a certain point. To sum, empirical analyses suggest that mutual forbearance seems to be established as a golden rule of competitive interaction in the hospital industry of Korea. Of course, these findings are not new since the mutual forbearance hypothesis has been empirically supported in a wide variety of industry

settings, including the hospital industry of the United States.

Although these findings can make a contribution to strengthening the mutual forbearance theory's generalizability, our unique contribution is somewhere else. To the best of our knowledge, this research is among the first to call for the theoretical and empirical investigation of the organizational basis of mutual forbearance. Existing research on mutual forbearance assumes that the fear of retaliation and the hope for cooperation are given, and argues that the collusive order of mutual forbearance naturally arises among multimarket competitors. However, it is hardly believable that such organizational "emotion" belongs to organizational "instinct." Rather, we would argue that the fear of retaliation and the hope for cooperation come from organizational "memories" or prior knowledge accumulated through experiential and vicarious learning over the organizational history. For example, if organizations recognized through their observation of the industry that an aggressive action was never punished, then they would lose an incentive to live by the rule of mutual forbearance. Therefore, we believe that the establishment of "an eye for an eye" type of reciprocal competitive interaction (i.e. retaliatory entries and compensatory exits) must be a precondition for the "live and let live" system of mutual forbearance to arise. Otherwise, the observed U-shaped curves could be subject to a variety of alternative explanations, mostly because the measure of multimarket contact is part of niche overlap that measures competitive intensity between organizations (for details, see footnote 1). Our empirical analysis reveals that retaliatory entries and compensatory exits are widely observed in the hospital industry of Korea: a hospital that has made an aggressive entry into another's market is likely to be punished by a retaliatory entry by the attacked hospital, while one that has made a cooperative exit tends to be rewarded by a compensatory exit by the rival. In support of this speculation, we find that the likelihood of collusive patterns of competitive interaction increases as a hospital ages, indicating that mutual forbearance is accepted more thoroughly by older hospitals that have more experience with competitive interaction in the industry than younger hospitals. While we do not find a significant moderating role of age in the relationship between multimarket contact and market exit, our results generally confirm that organizational learning is an important cornerstone on which organizations' market behaviors are constructed.

These results also provide a thought-provoking extension to current understandings of social construction of market. Social network theories view a market as a web of interorganizational networks (White 2004), while organizational ecology holds that a market is constructed via competition between organizations as well as between populations (Hannan and Freeman 1977). New institutionalists argue that market construction is accompanied by cognitive, normative, and coercive processes occurring at the field level (DiMaggio and Powell 1983), while some scholars seek for psychological foundations for market construction (Weick 1995; Jung 2008). This article proposes another mechanism; organizational learning. Organizational learning theorists have traditionally maintained a narrow focus on individual

organizations' strategic behaviors, paying little attention to how organizational learning could contribute to the creation, modification, and maintenance of market order. However, our findings imply that organizational learning would be an intra-organizational foundation for the wide acceptance of the industry-wide rules of game governing organizational behaviors. Without organizational learning, at the risk of some exaggeration, organizations might not be able to socialize themselves to such rules of game, and consequently the markets would be in totally different shape than what is observed today.

This study has several limitations that offer fruitful avenues for future research. Although organization-market approach is superior to market or organization level approaches, more precise measures of competitive interaction may come from organization-market pairs, i.e. direct hospital-to-hospital relations. The relationship between multimarket contact and mutual forbearance varies systematically across competitor dyads in ways not captured by aggregate measures constructed at the organization-market level (i.e. the average multimarket contact with all rivals that are present in the market of interest). Despite its superiority in general, the dyadic approach may not be a desirable option for the hospital industry as a whole, because the data contain too many hospitals and too many markets they can potentially participate in. Prior studies that have employed a dyadic approach have utilized a small sample of organizations such as the California airline industry (Korn and Baum 1999), providing more fine-grained measures for multimarket contact. One way to reduce complexity associated with data management might be to isolate a single or a few geographic markets with the manageable number of hospitals. With some sacrifice of generalizability, future research should go in this direction in order to obtain deeper understandings of the mutual forbearance hypothesis and to clarify the role of organizational learning in competitive interaction.

Second, this study assumes that competitive interaction occurs in a symmetric manner, regardless of an organization's relative size and power vis-à-vis competitors in the market. This assumption is hardly defensible given that relatively large and powerful organizations have more degrees of freedom than small and less powerful organizations in forming, maintaining, and rearranging interorganizational relations. Specifically, an organization's intentions, incentives, and ability to keep the rules of game may vary with its relative position with regard to its rivals as well as its absolute position in the market. In addition, the effect of organizational age on the relationship between multimarket contact and competitive moves may vary across organizations with different positions, because better positioned organizations tend to have more other sources of information than organizational learning. Therefore, future research should deal directly with the possibility of asymmetric relationship.

Third, future studies must move beyond an exclusive focus on the specific form of competitive interaction (market moves). Although tight regulations in the hospital industry have remarkably limited the range of strategic options available to hospitals, there are still a few other avenues than market entry and exit, through which competitive interactions take

place. For example, expansion of service capability for a specific market, i.e. recruitment of more physicians and installment of advanced medical technology, could serve as a signal for a threat or a retaliatory action to hospitals that are present in that market. While unavailability of such information in our current dataset puts a severe restriction on our ability to carry out this line of research, interested researchers should gather more detailed information about a variety of competitive moves practiced in the hospital industry.

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[Submitted April 15, 2010; Accepted May 21, 2010]

