Bringing Managers into Theories of Multimarket Competition: CEOs and the Determinants of Market Entry

John Stephan • Johann Peter Murmann • Warren Boeker • Jerry Goodstein

Florida Atlantic University, 777 Glades Road, P.O. Box 3091, Boca Raton, Florida 33431
Kellogg School of Management, Northwestern University, 2001 Sheridon Road, Evanston, Illinois 60208
University of Washington, Seattle, Box 353200, Management and Organizations Department, Seattle, WA 98195
Washington State University, 14204 NE Salmon Creek Avenue, Vancouver, Washington 98686-9600
jstephan@fau.edu • jpm@northwestern.edu • wboeker@u.washington.edu • goodstei@vancouver.wsu.edu

Abstract

Multimarket (or multipoint) contact has been shown to deter aggressive actions by rivals toward each other, producing a situation of mutual forbearance among firms. To create this deterrent capability, however, firms must enter each others' markets, which is just the kind of action that the deterrent is supposed to limit. This study explores the questions: Under what conditions are firms likely to behave aggressively toward their multimarket rivals by entering their markets and when will they engage in mutual forbearance? We describe how the effect of multimarket contact on the market-entry moves of a firm changes as the level of contact a firm has with its rivals increases. We draw on competitive intelligence and decision-making theory to argue that the competitive advantages associated with multimarket contact are supplemented by the fact that a firm's multimarket competitors serve as a readily available model to reduce the uncertainty associated with market-entry decisions. We hypothesize that these factors lead firms to prefer, up to the point where forbearance concerns become paramount, to enter the markets in which their multipoint rivals already compete. We also argue that once multimarket contact levels reach the point where forbearance begins to operate, these levels also serve to stabilize the structure through better competitive intelligence, with the result that the propensity of a firm to enter into additional markets of its multimarket rivals declines. We then extend multimarket theory by focusing on the role of the CEO. Specifically, we argue that newer and longer-tenured CEOs are likely to face different influences on their preferences for particular competitive actions. We test hypotheses that link the likelihood that CEOs will abide by the mutual interdependencies that their firm's multimarket ties represent to their tenure in the CEO position. Our findings produce support for an inverted-U-shaped relationship between multipoint contact and market entry. We also find evidence that longer-tenured CEOs are guided by their firm's multimarket relationships. Newer CEOs, however, do not seem to adopt a forbearance approach toward their firm's multimarket competitors.

Our findings have important implications for multimarket theory. This study is among the first to examine the role of managers within a multimarket context. We show that it is not enough for a firm to be embedded within a multimarket structure, but that for a firm to benefit from its multimarket position, its managers must be aware of this positioning and free of other influences that could cause them to behave in ways that are inconsistent with it. Because our findings show that newer CEOs can direct their firms to act in ways that are inconsistent with their firm's multimarket position, we identify an area of potential competitive vulnerability for the firm.
(*Multimarket Competition*; *Chief Executive Officers*; *Market Entry*; *Hospitals*)

A primary goal of business strategy is to create defensible positions against the competitive forces facing the firm in the marketplace (Porter 1980). Firms that can do this by limiting competitive pressures are typically able to earn higher rates of return than those that cannot. Recent work in the strategy field has combined a concern for both structural characteristics and management strategies to empirically examine whether contact by competitors across several markets (termed "multipoint" or "multimarket" contact) reduces the level of competitive intensity in individual markets by inducing multimarket competitors to refrain from attacking each other (a "forbearance effect"). Studies have shown that less competition across shared markets can yield more defensible positions for the firms involved in multipoint relationships (Barnett 1993, Barnett et al. 1994, Gimeno and Woo 1996). In describing the effects of multimarket contact, multipoint research has developed a finer-grained approach to competitive interaction between firms than that traditionally found in the work of industrial organi-

zation (I/O) economists (Oster 1994). This has offered managers a more realistic and detailed description of the competitive environments their firms occupy, the possible actions available to them, and the types of responses they might face (Chen 1996).

Early work on multipoint contact took the level of contact a firm has with its rivals across markets as a given (e.g., Barnett 1993, Gimeno and Woo 1996). From the strategist's point of view, however, the importance of multipoint contact lies in the fact that it is amenable to at least some degree of managerial control. Firms, and their managers, not only find themselves in multimarket structures, but must construct them as well. As a result, market entry becomes a critical action in defining a firm's competitive position vis-à-vis actual and potential rivals. Recent work has depicted the relationship between multipoint contact and market entry as a nonlinear, inverted-U (Baum and Korn 1999, Haveman and Nonnemaker 2000). The theoretical logic in this work has been primarily built on the forbearance effect that is created once multimarket contact levels are high (e.g., Baum and Korn 1999).

This paper extends this recent work by further developing theoretical explanations to account for the curvilinear relationship between the extent of multimarket contact a firm has with its rivals and the probability that it will enter markets these rivals are already in. We draw on the decision-making and competitive intelligence literatures to more fully describe how multimarket contact affects the behavior of multipoint rivals across the entire range of multimarket contact levels. Up to a point, managers will prefer to enter markets already populated by their firm's current rivals in other markets. Eventually, however, the deterrent effect of fully elaborated multipoint structures becomes operative (Karnani and Wernerfelt 1985). This deterrent effect, coupled with diminishing returns to further increases in multimarket contact, limits additional entry into the markets a firm's multipoint rivals already occupy.

We also explore how a firm's competitive relationships affect, and are affected by, the choices made by key organizational actors under certain conditions, which is a topic of increasing interest (e.g., Gnyawali and Madhavan 2001). Specifically, we investigate the role of the CEO and the way in which a firm's level of multimarket contact influences the actions he or she is likely to undertake. Since much prior work has described how newer CEOs are catalysts for instituting significant strategic changes (Boeker and Goodstein 1991, Miller and Shamsie 2001), we examine how CEO tenure influences whether the CEO will respect existing competitive arrangements or engage the firm's rivals head-on.

Our paper advances multipoint theory and its empirical foundation in several key areas. First, we explicitly recognize that the multipoint effect may not be monotonic across the entire range of multimarket contact levels. Our paper extends recent studies that have found a nonlinear relationship between market entry and multimarket contact (Baum and Korn 1999, Haveman and Nonnemaker 2000) to a multiproduct/service environment. With very few exceptions (e.g., Boeker et al. 1997), prior multipoint studies have investigated geographically based multimarket environments. In addition, because multimarket concerns influence multipoint structures via the entry and exit decisions of firms embedded in these structures, they also play a role in setting the boundaries of multipoint firms. For this reason, our paper has implications for organizational theorists who are interested in determining the factors that affect firm boundaries. Rather than utilizing a markets-versus-hierarchy dichotomy based on a transaction cost economic logic, we argue that managers' concerns over the positioning of their firm within its environment also affect the manner in which a firm's boundaries are established. Finally, we expand the research frontier on competitive positioning by investigating how key members of the firm perceive multipoint environments. If creating multipoint structures yields positive payoffs to firms, managers need to recognize the nature of the competitive environment and respond to it in a purposeful way so that these benefits are realized. Without evidence that real managers understand the competitive environment surrounding their firms, the processes that increase multipoint contact to forbearance levels may well be ones of chance (Korn and Baum 1999). Our focus on the CEO and the conditions under which this key individual is likely to recognize and abide by competitive relationships represents a critical step in establishing some intentionality behind the emergence of multimarket contact.

In the following section we develop theoretical arguments that link the position of competitors in other markets to market entry. Next we examine the role of the CEO in assessing and responding to the firm's competitive environment. We test our hypotheses using data on 395 hospitals in California over a six-year time period. The hospital industry in California during this period is especially conducive for examining market entry in a competitive environment. First, market entry constitutes a particularly important competitive behavior available to hospitals (Shortell et al. 1987, 1990; Zajac and Shortell 1989). Second, the hospital industry in California was ahead of most other areas in the United States regarding the introduction of competition into the

health care sector. This trend started in the late 1970s as competition increased for patients in HMOs and other forms of managed care. The fact that our time period covers the early years of competition within the hospital industry enables us to examine factors that influenced the emerging competitive landscape. As a result, we are likely to capture the competitive dynamics between firms as they unfold, before the industry settles into relatively stable patterns of multimarket contact.

Multipoint Contact, Deterrence, and Market Entry

According to Karnani and Wernerfelt (1985), multimarket contact reduces the level competitive intensity firms exhibit toward each other by increasing the repertoire of competitive responses available to a firm. Competitors who meet their rivals in only one market are limited in their response to the market where the aggression took place. Multimarket rivals, however, can also respond in a different shared market, where the damage inflicted on the aggressor is likely to be higher than in the market where the aggression initially took place and where the responder's own costs may be lower (a "cross-parry" approach, Porter 1980). Alternatively, multimarket rivals can respond across several shared markets. Because these response options raise the potential costs of aggressive actions, the multimarket structure that gives rise to them serves as a deterrent to such moves that limits aggressive action across all shared markets (called "mutual forbearance") through a tacit acknowledgment of the costs involved. Among the benefits that have been shown to result are the ability to charge higher prices (Evans and Kessides 1994, Feinberg 1985, Gimeno and Woo 1996) and greater stability in market shares (Heggestad and Rhoades 1978). In short, establishing multimarket relationships produces a set of conditions across the markets involved that can improve firm performance as competitive intensity lessens.

The notion that the presence of a deterrent capability reduces competitive intensity in markets populated by multipoint rivals is supported by studies of market exit in a multimarket environment. Multipoint competitors have been shown to be reluctant to exit such markets (Barnett 1993, Baum and Korn 1996, Boeker et al. 1997), which has been taken as evidence of this lower level of competition. The lower incidence of exit also suggests that firms are aware of the relatively more attractive nature of these markets and act on this knowledge. The fact that firms are more reluctant to exit from markets in which they meet their multipoint rivals may also indicate that maintaining a certain level of multimarket ties is necessary for firms to retain the deterrent capability that helps to reduce aggressive competitive behavior.

Because firms maintain a presence in the markets of their multipoint rivals, understanding the circumstances under which multimarket contacts are established is critically important. Put simply, to create multipoint ties, managers must undertake entry moves into the markets occupied by their firm's existing rivals. When managers increase their firms' multipoint contact with rival firms by entering additional markets where their multimarket competitors already compete, they have to do so either *in spite of the deterrent effect present as a function of the existing level of multimarket contact or because the deterrent is not yet strong enough to be effective.* As we argue in more detail in the next section, we feel that the latter alternative is more likely to accurately describe the situation, especially considering the high levels of multimarket contact that sometimes exist between real-world firms.

Multimarket-Based Drivers of Entry Decisions

The Influence of Lower Levels of Multimarket Contact. Creating deterrence is a strong incentive for firms to increase the degree of multimarket contact they have with their rivals, at least over some range of multipoint-contact levels (Greve 2000). Recent empirical studies of multimarket firms that found a nonlinear relationship between market entry and multimarket contact (Baum and Korn 1999, Haveman and Nonnemaker 2000) have tended to cite factors that are related to establishing this deterrent to explain why firms are initially more likely to enter a market when they already share some market overlap with the incumbent firms in this market. Baum and Korn (1999) reason that the improvement in a firm's ability to signal its intentions to rivals and the potential deterrent that is being built outweigh the competitive engagement that results from entry moves as firms seek to increase their multimarket contact. Building on the logic developed by Karnani and Wernerfelt (1985), Haveman and Nonnemaker (2000) emphasize the ability of a firm to construct a deterrent to future competition by establishing footholds in its rivals' markets. They also observe that because entry into markets where a firm's multipoint rivals already compete improves a firm's predictive power regarding future actions by these rivals it also enhances the firm's ability to manage its multimarket relationships more effectively. Stephan and Boeker (2001) describe how multimarket contact can influence firm behavior in other ways. Drawing on work in several different areas (e.g., competitive intelligence: Porac et al. 1995; institutional: DiMaggio and Powell 1983; strategic decision making: Schwenk 1984), they describe how multimarket rivals are likely to serve as models for each

others' behavior, especially when contemplated actions have highly uncertain outcomes. Because of the salience of their market commonality (Chen 1996, Porac and Thomas 1990), firms that meet particular rivals in several markets are more likely to mimic each other's behavior than that of firms they meet in only one market. Knickerbocker (1973) and Tsurumi (1976) both suggested that in the context of entry decisions firms "follow the leader" and imitate the actions of their rivals. Similarly, Vernon et al. (1996) note that when the outcomes of competitors' entry moves are uncertain, often the best strategy for a firm is to imitate these moves to avoid eventually finding themselves in a lagging competitive position.

Imitation also reduces the uncertainty associated with entry moves by taking advantage of the best information managers have at hand while enhancing that information at the same time. Entering the market of known competitors allows managers to draw on their past experience regarding the competitive responses that might greet their firm and the competitive behavior that these better-known rivals will exhibit over time (Caves and Porter 1977). Once entry has been accomplished, information relevant to rivals' behavior in this new market can be added to the record of its past behavior to build a more comprehensive database of competitive intelligence, which enhances the firm's future strategic decision making. Multipoint concerns are thus likely to exert a strong influence on managers' market-entry decisions. Entry into rivals' existing markets builds a deterrent while at the same time leveraging relatively better-known competitive information, improving it over time. This reasoning leads to the following hypothesis:

HYPOTHESIS 1. *When a firm's level of multipoint contact with incumbents in a market is in the low to moderate range, the probability of entry into a market by the firm increases as its level of multipoint contact with current competitors in that market increases.*

The Influence of Higher Levels of Multimarket Contact. When the extent of a firm's multimarket contacts reaches higher levels, the motivation to enter more markets that its competitors are already in is likely to decline, leading to a reduction in the incidence of entry into such markets. First, the deterrent effect begins to operate effectively (Baum and Korn 1999, Haveman and Nonnemaker 2000). With a deterrent established, multipoint competitors can divide up their shared markets into so-called "spheres of influence" where particular firms are granted primacy in certain markets in exchange for similar status being given to their multipoint rivals in others (McGrath et al. 1998). This is the standard forbearance argument.

In addition, there are also competitive intelligence and positioning factors that come into play once multipoint contact reaches higher levels. Eventually, deterrence will prove effective *and* the network of ties between firms will furnish a sufficient amount of reliable intelligence to aid in maintaining the established spheres of influence (Haveman and Nonnemaker 2000). This reduces the need to add additional points of contact because the existing level of interconnectedness is sufficient to maintain the tacit collusion and normative agreements that produce less competitive environments (DiMaggio and Powell 1983, Oliver 1991). High levels of contact ensure that signaling and competitive information is more accurately interpreted by market participants (Haunschild 1993), enabling multipoint competitors to better coordinate their behavior. Misinterpretations of competitors' actions will be less likely, which decreases the incidence of competitive responses to actions that were not intended to be aggressive and stabilizes the competitive structure. Edwards (1955) has described this outcome as a "live and let live" policy, where coordination leads to a reduction of competition across multiple markets for the mutual benefit of all parties involved. The above arguments lead to the following hypothesis:

HYPOTHESIS 2. *When a firm's level of multipoint contact with incumbents in a market is in the moderate to high range, the probability of entry into a market by a firm decreases as its level of multipoint contact with current competitors in that market increases.*

Taken together, Hypotheses 1 and 2 depict the effect of multimarket contact on market-entry changes as a nonlinear, inverted-U-shaped relationship.

The Role of the CEO

The role of the Chief Executive Officer (CEO) in fostering (or hindering) strategic change in an organization has received much attention (Pitcher et al. 2000). While the entire top management team has been studied for its effect on strategic actions, the CEO has the primary responsibility for initiating and implementing strategic changes in an organization (Tushman and Romanelli 1985, Murmann and Tushman 1997). Stephan and Boeker (2001) observe that attention to multimarket concerns is likely to change over a CEO's tenure in the job. Consequently, we focus on the CEO's tenure, which has also been linked by other work to the firm's propensity for undertaking strategic changes, including entering new markets (Miller 1993, Miller and Shamsie 2001, Virany et al. 1992).

Longer-Tenured CEOs. Long-tenured CEOs are likely to operate in an environment of reduced managerial discretion. This lack of flexibility stems from personal, organizational, and environmental sources (Hambrick and Finkelstein 1987) and is likely to result in their taking actions that are highly consistent with their firm's existing competitive position. First, longer-tenured CEOs tend to rely on what worked for them in the past rather than do things that represent major changes (Miller 1991). For example, firms with longer-tenured CEOs have been shown to remain in existing product lines rather than add new products or services through diversification (Boeker 1997, Miller and Shamsie 2001). Second, organizational commitments stemming from past actions can reduce the flexibility available to longer-tenured CEOs. To the extent that their actions and leadership have brought the firm to its current position, these CEOs are likely to have a greater sense of commitment to the firm's situation and reject strategic alternatives that could jeopardize this position (Staw and Ross 1980). This tendency would restrict the acceptable alternatives to only those that are consistent with the firm's current position. Most importantly, longer-tenured CEOs are likely to be very aware of the competitive constraints (or opportunities) associated with their firm's position in its environment. Being at least partly responsible for building and maintaining their firm's current network of multimarket ties, these CEOs are more likely to appreciate the way in which the firm's competitive relationships influence the current status of their firm. In part this stems from their familiarity with information exchanged through signaling activity among multimarket rivals.

The above suggests that longer-tenured CEOs will understand their firm's competitive relationships and, given the consistency of their past actions with these relationships, their future actions should continue to reflect their firm's competitive position. If their firm's multimarket contact levels are relatively low, they are more likely to understand the advantages of entering into additional markets of current competitors, including moving the firm closer to possessing a functioning deterrent capability. In this case, longer-tenured CEOs will seek to build additional multimarket ties. Alternatively, if the firm already has established a deterrent capability, such CEOs are likely to be aware of the negative consequences should their firm's actions violate the tacit collusion implicit in these relationships and refrain from doing so. Thus, longer-tenured CEOs are apt to be very sensitive to the implications of multimarket contacts at the level that exists for their firm and institute organizational actions that are consistent with these levels.

HYPOTHESIS 3. *For longer-tenured CEOs, firm-entry decisions will be related to the firm's level of multi-market contact with its rivals in an inverted-U-shaped relationship.*

Newer CEOs. Newer CEOs, on the other hand, are likely to experience much higher levels of managerial discretion than longer-tenured CEOs. For this reason, they are likely to interpret and deal with competitive relationships very differently. New CEOs come into the job bringing new ideas and perspectives that are essential for crafting and implementing strategic changes in the firm (Boeker 1992, Fredrickson et al. 1988). Consequently, they are less likely to be bound by the mindset of previous management. Organizationally, new CEOs often begin their tenure with a least an implicit mandate to be a catalyst for change (Miller 1993), which gives them a strong incentive to do things differently than the previous CEO. In addition to having a mandate for change, newer CEOs typically experience a so-called "honeymoon" period (Hambrick and Fukutomi 1991), during which they are free to be more experimental with less second guessing and resistance from others in the organization or from the board of directors. As a result, the options a new CEO perceives as available and appropriate are likely to be much more varied and numerous than those of longer-tenured CEOs. This should lead to greater variation in firm actions as well.

In contrast to longer-tenured CEOs, newer CEOs are less likely to be involved in the firm's formalized external networks. Shorter-tenured CEOs are thus less likely to conform to external norms (Finkelstein and Hambrick 1990, Geletkanycz and Hambrick 1997), which reduces the likelihood that they will act in ways consistent with the level of interdependence their firm has with its rivals. Newer CEOs, less attentive to the firm's structured-market relationships and operating from a different perspective than past management, may perceive advantages to market entry independently of how competitors are likely to respond.

Having greater discretion, newer CEOs are likely to undertake actions that are sharply at odds with those of the former CEO. Rather than assume that rivals will behave exactly as they have in the past, newer CEOs may challenge preconceived notions of their competition's capabilities and tendencies and have their firms engage their competitors more directly than they had in the past. Conversely, they may see forbearance behavior of the firm under the former CEO as indicative of a risk-averse approach to the firm's environment that is inappropriate and unnecessarily conservative. Looking to distinguish themselves from the former CEO, they may

conclude that their firm is capable of engaging the competition more aggressively with positive results. From a multimarket perspective, this would make newer CEOs less likely to "live and let live" if their contact levels with multimarket rivals were high. If contact levels were lower, they should be less likely to imitate multimarket rivals (by entering into markets they already compete in) to build a deterrent or improve competitive intelligence about these rivals.

Newer CEOs may face an additional internal challenge that can limit their ability to follow the prescriptions of the firm's multimarket relationships, even if they desire to do so. It has been noted that newer CEOs come to the position without the well-established power bases that longer-tenured CEOs typically possess (Hambrick and Fukutomi 1991, Miller 1993, Ocasio 1994). Lacking a strong network of internal support, a newer CEO may not be able to enforce the organizationwide cooperation and joint decision making necessary to limit their firm's competitive intensity across its shared markets. The above arguments lead to the following hypothesis:

HYPOTHESIS 4. *For newer CEOs, firm-entry decisions will be unrelated to the firm's level of multimarket contact with its rivals.*

Methods

Tests of our hypotheses were conducted using data on 395 hospitals in California from the period 1980–1986. Our sample included every for-profit and not-for-profit hospital in California located within Standard Metropolitan Statistical Areas (SMSAs) excluding 17 hospitals that were either government hospitals or specialized in long-term care or psychiatric services. Because the latter hospitals were either very highly specialized and served a restricted clientele or were significantly constrained by governmental mandates, they were removed from the analysis.

The hospital industry in California during this period provides a rich context for examining issues of multipoint competition. First, detailed data exist that track entries made by all firms in the industry into services over a number of years, something which is unavailable for many other industries. Having a complete inventory of hospital entries by all firms during this period allows us to more accurately assess the role that contact across markets played in influencing subsequent strategic decisions. In addition, this dataset provides information on organizational characteristics such as governance, performance, and environmental factors that potentially influence competitive actions such as market entry.

The service markets examined in this study represent a broad spectrum of medical services, covering the following areas: acute care services (e.g., surgical intensive care), partial day care (e.g., psychiatric day care), home care services (e.g., home nursing care), emergency services (e.g., emergency room services), ancillary services (e.g., x-ray), clinic services (e.g., dermatology) and other services (e.g., dietetic counseling). Similar sets of services have been used in many prior studies of strategic behavior by hospitals (e.g., Ketchen et al. 1993, Shortell et al. 1990, Thomas et al. 1993). Zajac and Shortell (1989) and Boeker et al. (1997) used the same inventory of services that we employed. The fact that the range of services hospitals could compete in over the period of this study remained consistent and was fairly well established increases the validity of our inferences regarding responses to competition as well as the appropriateness of generalizing across services and over time in our sample.

Most of our measures were obtained from data collected via an annual survey of California hospitals conducted by the California Health Facilities Commission (CHFC). Nevertheless, we feel the chance of bias in these measures is small. First, the process of collecting and recording data on the survey (usually done by a manager in financial administration within the hospital), integrates information from a variety of different sources and departments. The data does not represent one person's responses, but rather the consolidation of numerous respondents across multiple departments in the hospital, and thus is unlikely to be skewed by one person's biases. Furthermore, the accuracy of many of the items can be readily ascertained (e.g., whether a hospital is in a particular service market or not, the name of the CEO, whether the hospital is for-profit or not, hospital size, etc.). Survey responses are also examined for factual accuracy by the California Office of Statewide Health Planning and Development (COSHPD). COSHPD looks for consistency between the data reported on the inventory of hospital services and financial data reported elsewhere. Finally, completion of the survey represents a statutory requirement of the hospital by the CHFC, which creates a strong incentive for accurate reporting. The statutory requirements for completing the survey and the relatively straightforward nature of most of our measures reduce the likelihood of biased responses considerably.

Definition of Competitive Environment

For this study, the county in which a hospital is located represented our measure of its environmental boundary.

County boundaries have been used in many prior studies and hospital antitrust cases (e.g., Coelen and Sullivan 1981, Pauly 1980). Other options exist (see Garnick et al. 1987 for a review), but we felt county boundaries were a superior measure because Alexander et al. (1986) observed that these boundaries have been found to yield market areas close to those using a patient-origin methodology.

Dependent Variable

Market Entry. The dependent variable, market entry, was measured as a dichotomous variable. For each market a hospital could potentially enter in each year, a value of one represented the event of entry into the service market by that hospital in that year. A value of zero indicated that no entry was made by the hospital into the particular service during the year.

Definition of the Risk Set. Studies of entry activity note the importance of clearly identifying which firms are at risk for entering a particular market (e.g., Baum and Korn 1996). To consider every hospital not currently in a market to be a potential entrant might not accurately reflect their actual propensity to undertake entry into each service market. Baum and Korn (1996) address this issue in their study by assuming that a focal airline would be at risk for entering a particular route if it currently did not fly that route but the route had been flown previously by any airline in their sample. We were unable to employ a similar definition of the risk set for hospital entry because we did not have access to a full history of all services a hospital had previously offered.

Consequently, because we had no a priori way of determining which services a hospital was at risk of entering, we adopted the most basic assumption: Each hospital could potentially enter any of the services it was not currently competing in. To control for the fact that a hospital may, in fact, be more likely to enter a service that is similar to one it already offers, we included a measure to capture this service similarity (see the description of this control variable below). The results we present are based on the use of this risk-set definition. To minimize the possibility that our results were strictly a function of the risk-set we used, we also tested our models using two other risk-set definitions. For example, we kept observations representing potential entries if the service was one that was similar to those already offered by the hospital. (This was determined in the same way as our service similarity measure.) We also ran our models keeping observations that represented potential entry into similar services or potential entry into service markets where a focal hospital's multimarket rivals

were already competing. In all cases, the results were the same as those we report. As Gulati (1995) notes, obtaining similar results from different risk-set definitions minimizes the possibility that the choice of risk set was a major factor and helps ensure the robustness of the results. Once a hospital entered a specific market (and consequently could no longer do so), it was removed from the risk set on which the analysis was done. All later observations for that hospital in that particular service market were excluded from the analysis. Hospitals could offer up to 163 different services.[1]

Independent Variables

Multimarket Contact. The degree to which a firm's rivals are multipoint competitors can vary from market to market simply because the firm can meet a different set of competitors in each different market. Thus, the extent to which multipoint competition is important for a particular firm will vary from market to market, depending on the firm's multimarket relationships with competitors serving that market. Our multipoint measure is, therefore, a firm-in-market construct (Gimeno and Jeong 2001), which means it could vary for each service market a firm could potentially enter. Specifically, multipoint contact was calculated as the average percentage of markets (out of the total number of markets in which the firm competes) that a focal hospital shares with the firms already competing in a market that it could potentially enter. This scaling permitted us to distinguish, for example, between a hospital with 5 markets shared with rivals out of a possible total of 5 and one that shares 5 markets out of a total of, say, 50 in which it currently competes. Because we also controlled for the number of services a hospital offered (our diversification measure), we were able to differentiate between a hospital with one service and 100% of its markets shared with its rivals in other markets and another with 100 services and 100% of markets shared. The Appendix provides a detailed example of how our multipoint measure was constructed.

Our multipoint measure ranged from a low of zero to a maximum of one (or 100%). Values of zero applied to cases where no hospital in the county provides a particular service that the focal hospital is considering entering (e.g., dialysis), or where all other hospitals currently offering that service offer no other services in common with the focal hospital. Maximum possible values could occur only in cases where, for a particular service a focal hospital could enter, all hospitals in the county currently providing that service also offered every service that the focal hospital did (these rivals might have offered

additional services not offered by the focal hospital). Because Hypotheses 1 and 2, taken together, argue for a nonlinear effect of multipoint contact on market entry, we also calculated the squared value of our multipoint measure to capture this nonlinearity.

We rejected the use of market-level and firm-level measures for multimarket contact (e.g., see Singal 1996) because our focus was on the influence of multimarket contact within each market and a firm-in-market measure is more easily associated with competitive actions taken within specific markets (Gimeno and Jeong 2001). We also opted against a count-based measure. Gimeno and Jeong (2001) note that relative measures, such as the one we use, which are scaled to the relative size and/or scope of the firms involved, are also better at capturing managerial perceptions of market overlap. We also rejected measuring multimarket contact at the dyad (or firm-pair) level (see, e.g., Baum and Korn 1999)—primarily because this approach is appropriate only when it is possible to determine the specific competitor(s) toward whom a specific action is aimed (Gimeno and Jeong 2001), and we were unable to make this determination from our data.

New CEO. We considered a CEO to be new if he or she had been on the job for less than three years. A binary variable represents this measure. It is set to one if the CEO had been in the position for less than three calendar years and zero otherwise. Virany et al. (1992) note that in examining the impact of a management change, it is necessary to adopt a window long enough to permit organizational changes to occur as a result of the management switch. Miller (1993) used a window of at least four years, while Kesner and Dalton (1994) looked for effects of a CEO change on performance for the three years following the change. Our use of a three-year window is consistent with these studies.

Controls

The control variables we employed are organized by the three theoretical literatures from which they arise: (1) general environmental conditions associated with the organizational ecology literature, (2) service-level variations typically found in I/O economics research, and (3) firm-level characteristics that strategic management researchers have identified as influencing market entry. The definition for each of these appears in Table 1, with

Table 1 Control Variables

Variable	How Measured
Environmental Controls	
Density	This was calculated as the number of firms offering a particular service in a particular county in a given year (Hannan and Freeman 1989, Scherer and Ross 1990).
$Density^2$	Measured by the squared value of density (Haveman 1993)
Resource Availability	This measure represented potential patients and revenue and was calculated as the number of people per hospital bed in a county in a given year (Alexander and Morrisey 1988, Shortell 1989).
Carrying Capacity	Dummy variables represented each county and year in our sample (Gimeno and Woo 1996, Zajac and Shortell 1989).
Market-Level Controls	
Concentration Ratio	Measured by the total number of beds in the four largest hospitals operating within a county in a given year
Historic Entry Rate	The number of entries into a service in a given year was divided by the number of hospitals who *could* have entered the service that year. Each successive year in our sample averages in the value for that year with those for the earlier years.
Firm-Level Controls	
Similarity of Service	See discussion in the text.
Performance	Financial performance was measured by the ratio of net income to operating revenue in a given year. Occupancy was calculated as the average percentage of occupied beds within a hospital in a given year (Zucker 1987).
Ownership	For-profit hospitals were coded as a 1, and not-for-profits were coded 0.
Diversification	Calculated as the number of services the hospital offered in a given year (Amburgey and Miner 1992)
Membership in Multihospital System	Members of a multihospital system were coded as a 1, while 0 indicated no membership in such a system. We consulted the AHA's *Directory of Multi-hospital Systems* to ascertain membership.
Size	Calculated as the average number of beds available in a hospital in a given year

the exception of *similarity of service*, which is described below.

Similarity of Service. The degree to which a service is similar, or related to, services already offered by the hospital is likely to affect a hospital's propensity to enter that service market and represents another firm-level control variable. To determine which services a hospital would be likely to enter based on its current service portfolio (i.e., how similar the service markets in the CHFC's inventory are to each other), we contacted four experts in the hospital industry. Working from the CHFC's inventory of services, we asked them to determine what service markets a hospital would be most likely to enter, given the services it was already offering. These experts included key hospital personnel, such as managers of new product development, directors of medical economics and statistics, and those involved in research on hospital innovation. They grouped the services into 16 clusters that, in their judgment, represented categories of services that hospitals are likely to offer in combination. Examples of these clusters are: intensive care (including coronary, surgical, and pulmonary intensive care), pediatric medicine (including acute care, nursery, and clinic services), radiation therapy (including x-ray, cobalt, and radium therapies), and blood services (including serology and hematology). On average, each cluster contained 10 services.

For each potential entry a hospital could make, we constructed a binary variable that was set to one if a hospital already competed in any of the service markets within the cluster that contained the service that the hospital might enter. The variable was set to zero if the hospital did not currently compete in any of the other services within the cluster containing the service the hospital was at risk of entering.

Model Specification

To assess the effect of our independent variables on market entry, we used a lagged structure and logistic regression using maximum likelihood estimation. Continuous time models have been used in much multipoint research (e.g., Barnett 1993, Haveman and Nonnemaker 2000). However, because we were unable to determine exactly when during a given year entry occurred, a lagged structure and logistic regression is the appropriate method for assessing this type of dynamic model (Allison 1984). Allison (1984) notes that this method yields parameter estimates consistent with those of continuous models and that discrete models converge to the results produced by continuous time models. This technique has been used in some prior multipoint studies (e.g., Gimeno and Woo 1996).

Each of the explanatory and control variables was measured in the current period (t), while the dependent variable (market entry) was measured as indicating an entry (or not) occurring from the current period to the next period (t to $t + 1$). Each period represented one year, and our logistic model estimates the probability that a hospital will enter a service in a particular year as a function of the independent variables measured in the prior year. Specifically, our model of market entry enables us to calculate the probability of adding a service i, where i represents a specific service that was not offered by the hospital in the current period that was offered in the next period. Each of the models presented in Tables 3 and 4 contain the year and county dummy variables capturing the unobserved carrying capacity of each market environment. However, to keep the tables readable, we have omitted the parameter estimates for these measures. Our basic model is represented by the following equation:

$$\text{Pr(market entry)}_{t,\,t+1}$$
$$= f(\text{Multipoint, Multipoint}^2, \text{New CEO, Density,}$$
$$\text{Density}^2, \text{Resource Availability, Carrying}$$
$$\text{Capacity, Concentration Ratio, Historic}$$
$$\text{Entrance Rate, Similarity of Service,}$$
$$\text{Performance, Ownership, Diversification,}$$
$$\text{Multihospital System Membership, Size)}_t.$$

Multipoint Data Characteristics. Data used in multipoint studies are likely to violate the independence assumption of regression. This is because multipoint effects are based on coordinated decision making across markets and the data reflecting this includes multiple observations for each firm within each time period. Hence, multimarket firms could be considered oversampled within the dataset and this may cause parameter estimates to be biased (Barnett 1993, Baum and Korn 1996). We used the technique developed by Barnett (1993) to address this issue. Observations in the data set were inversely weighted based on their degree of over-representation as a function of the multimarket ties of a particular firm. For example, if a particular firm could enter m markets in a given year, the weighting scheme would give each such observation a weight of $1/m$ to account for its over-representation in the data set. Although this technique does not correct for the lack of independence (Barnett 1993), it does minimize the biasing effect due to the oversampling of multimarket firms in the data and has been used by many studies of multimarket behavior.

Tests of Interactions Between CEO Tenure and Multimarket Contact. To test Hypotheses 3 and 4, we divided our sample into two subsamples based on the tenure status of the firm's CEO. The first subsample contained those observations where the CEO had been in place for three or more years and the second contained observations where the CEO had been in place for fewer than three years. We reran our model (omitting the new CEO measure) using each of the subsamples separately. This approach permits the coefficients for all variables in our models to vary as a function of the newness of the CEO. Because Hypotheses 3 and 4 argue that the influence of multimarket contact depends on this factor, permitting the coefficients of our multipoint terms to vary across subsamples enables us to capture this change in influence directly. Presenting the results showing the coefficients for our multimarket terms for each subsample also represents the most straightforward way to illustrate the nature of these effects. The subsample containing observations where the CEO was relatively new constituted 46% of the total sample, while that of the longer-tenured group represented 54%. The fact that the subsamples are relatively similar in size helps ensure that differences in (sub)sample size did not account for our results.

To determine if the coefficients from the two subsamples for each variable are statistically different from each other (especially for the multimarket measures), we employed a method described by Jaccard (2001) that sequentially adds a term representing the interaction of each of the variables in our model and our CEO measure and tests for whether this interaction is significant and whether it significantly improves the predictive power of the model (i.e., whether the change in the log likelihood ratio is significant). If both tests prove significant, the individual parameters generated through the use of the separate subsamples are also significantly different. A similar procedure was used by Boeker et al. (1997). Significantly different coefficients between subsamples are indicated by boldface in Table 4.

Results

Means, standard deviations, ranges, and zero-order correlations for the main variables in the study are presented in Table 2. Hospitals in our sample competed in an average of 57 service markets. Over the entire period of study, the total number of entries into services by hospitals in the sample was 4,968. Of these entries, 3,571 were included in our analysis (the others were eliminated due to the lagged nature of models, especially our new CEO variable, which looked back three years). This translates into an average rate of 2.3 service entries per

hospital per year. To determine if the entries eliminated due to our new CEO measure affected our results, we reran our basic model without this variable. The significance, magnitude, and signs of all other variables remained the same.

The results of the logistic regression analyses for the full sample are presented in Table 3. We employed a hierarchical approach to enter the variables into the analysis. Model 1 contained our controls, including the year and county dummies and our new CEO measure. Model 2 adds the measures for multimarket contact (the linear and quadratic terms). A base case (not shown) consisted of year and county dummies only.

Effects of Multipoint Contact on Market Entry

Hypothesis 1 stated that over the range of low to moderate levels of multipoint contact, the level of multipoint contact a firm has with incumbents in a market would be positively related to the probability of its entering that market. Model 2 of Table 3, shows that the linear term for the multipoint coefficient is significant and has a positive sign ($b = 6.13$, $p < 0.03$), indicating that at lower levels increasing multipoint contact encourages entry into a service. Hypothesis 2 predicted that over the range of moderate to high levels of multimarket contact, the level of multipoint contact a firm has with market incumbents would be negatively related to the probability of its entering that market. Model 2 reveals that the quadratic term is negative and significant ($b = -3.95$, $p < 0.03$), indicating that at higher levels of multipoint contact mutual forbearance occurs as contact increases. Taken together, these results provide support for the predicted inverted-U-shaped relationship between multipoint contact and market entry.

Overall, the chi-squared statistic for Model 1 was 812.90 ($p < 0.001$). The increase from the base-case model (not shown in the table) that contained only year and county dummies was significant ($\chi^2 = 705.60$, with 13 additional degrees of freedom; $p < 0.001$), indicating that, as a group, our controls exerted a strong influence on the likelihood market entry. Model 2, which added the linear and quadratic multipoint measures, was significant ($\chi^2 = 823.63$; $p < 0.001$) and showed a significant increase over the Model 1 ($\chi^2 = 10.726$ with two additional degrees of freedom; $p < 0.01$).

Pfeffer and Langton (1993) note that in large sample studies such as this, the substantive importance of the results needs to be addressed as well as statistical significance. The relative strength of the individual coefficients can be assessed by examining the standardized coefficients (shown in the right-hand columns under each model in Table 3). We found that multipoint con-

Table 2   Means, Standard Deviations, and Correlations—Market Entry Model

	Mean	Std. Dev.	Range	Correlation Coefficients*														
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
(1) Market Entry	0.04	0.19	0–1															
(2) Multimarket Contact	0.76	0.14	0–1	−0.011														
(3) Multimarket Contact²	0.59	0.19	0–1	−0.017	0.985													
(4) New CEO	0.46	0.50	0–1	0.005	0.074	0.086												
(5) Density	17.79	0.34	1–137	0.068	−0.073	−0.075	0.048											
(6) Density²	920.71	2,350.00	1–18,769	0.071	−0.102	−0.100	0.024	0.940										
(7) Resource Availability	453.79	732.24	3.6–6,680	−0.022	0.073	0.095	0.128	0.418	0.344									
(8) Concentration Ratio	0.66	0.31	0–230	−0.053	0.003	0.020	−0.098	−0.790	−0.578	−0.423								
(9) Historic Entry Rate	10.18	12.96	0–230	0.047	0.024	0.017	−0.051	0.092	0.064	−0.015	−0.113							
(10) Service Similarity	0.49	0.50	0–1	0.064	−0.036	−0.031	−0.020	0.024	0.044	−0.079	0.030	0.016						
(11) Financial Performance	0.03	0.33	−3.60–9.0	0.000	−0.068	−0.078	−0.076	0.002	0.001	−0.163	0.006	0.006	0.027					
(12) Occupancy	0.62	0.21	0–1.6	0.014	−0.158	−0.181	−0.255	−0.156	−0.120	−0.339	0.173	0.000	0.053	0.255				
(13) For-Profit Ownership	0.66	0.47	0–1	−0.028	0.144	0.153	0.064	0.102	0.083	0.210	−0.087	0.000	−0.033	−0.085	−0.244			
(14) Diversification	57.39	23.77	1–162	0.049	−0.106	−0.137	−0.007	−0.216	−0.222	−0.402	0.168	−0.027	0.161	0.094	0.268	−0.279		
(15) In Multihospital System	0.42	0.49	0–1	0.013	0.080	0.075	0.211	0.072	0.034	−0.022	−0.108	−0.018	0.009	0.014	−0.061	0.289	0.123	
(16) Size	138.56	107.07	6–1,015	0.045	−0.157	−0.182	−0.025	−0.074	−0.093	−0.350	0.020	−0.034	0.098	0.092	0.302	−0.298	0.710	0.098

Note. *All coefficients greater than 0.007 are significant at the 0.01 level.

Table 3   Maximum Likelihood Estimates of Logistic Regressions—Analysis Using Entire Sample[1] Dependent Variable = Market Entry $(t, t+1)$

Independent Variables (t)	Model 1		Model 2	
	Unstandardized Coefficients	Standardized Coefficients	Unstandardized Coefficients	Standardized Coefficients
Density	0.011 (0.010)	0.130	0.010 (0.010)	0.116
Density^2	0.000 (0.0001)	0.000	0.000 (0.000)	0.062
Resource Availability	0.000 (0.000)	0.000	0.000 (0.000)	0.017
Concentration Ratio	−2.818*** (0.0352)	−0.406	−2.826*** (0.357)	−0.407
Historic Entry Rate	0.010*** (0.002)	0.061	0.010*** (0.002)	0.061
Similarity of Service	0.782*** (0.085)	0.182	0.778*** (0.085)	0.181
Financial Performance	0.069 (0.187)	0.006	0.057 (0.191)	0.005
Occupancy	0.031 (0.237)	0.003	0.099 (0.240)	0.009
For-Profit Ownership	−0.127 (0.092)	−0.028	−0.135 (0.092)	−0.029
Diversification	0.019*** (0.002)	0.209	0.019*** (0.002)	0.214
In Multihospital System	0.019 (0.042)	0.009	0.017 (0.042)	0.008
Size	0.001* (0.0005)	0.046	0.001* (0.0005)	0.049
New CEO	−0.604*** (0.124)	−0.140	−0.603*** (0.124)	−0.139
Multimarket Contact			6.126* (2.459)	0.408
Multimarket Contact^2			−3.948* (1.765)	−0.358
Log Likelihood	−3822.48		−3817.12	
χ^2 Statistic for Covariates	812.90***		823.63***	
Degrees of Freedom	43		45	

Note. [1]395 hospitals 1980–1986. Standard errors are in parentheses. Year and county dummies are included in Models 1 and 2, but are omitted from the table for readability. $^\dagger p < 0.10$; $^* p < 0.05$; $^{**} p < 0.01$; $^{***} p < 0.001$.

tact and its squared term had the largest standardized coefficient of any of the variables in Model 2 except for concentration ratio (standardized coefficients = 0.408 and −0.358 for multimarket contact and and multimarket contact,^{2} respectively). Thus, our multipoint measures were among the strongest variables influencing market-entry decisions. In addition, none of the standardized coefficients for the carrying capacity measures

(the year and county dummies, which are not shown in Table 3) were greater than those of our two multipoint measures. Given the nonlinearity of the relationship between multimarket contact and market entry, the location of the inflection point (i.e., the level of multimarket contact where the deterrent effect associated with contact between firms across multiple markets begins to take effect) is of considerable importance. Mathemati-

Figure 1   Multimarket Contact Inflection Point
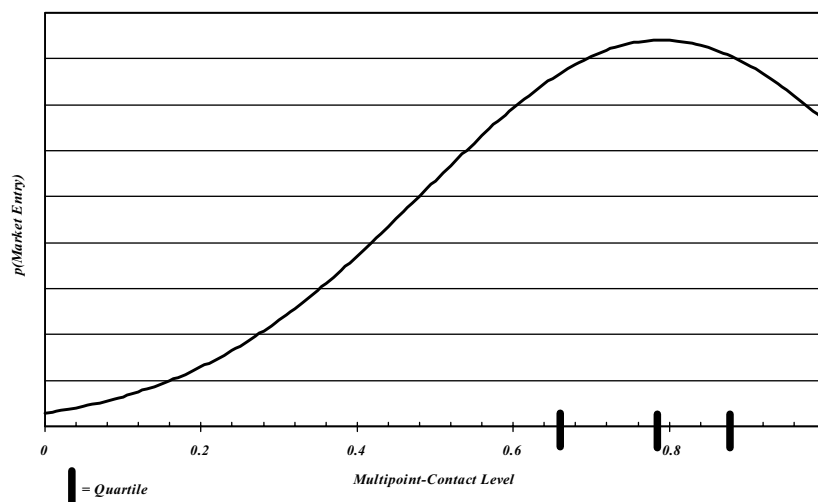
cally, this point is where the first partial derivative of the regression equation with respect to our multipoint measures is equal to zero. Although we use a logistic transformation of our data to avoid the problems that are inherent when the dependent variable takes on only a limited number of values (in our case, only two possible values existed), the logistic transformation is a monotonic mapping of the original data. It therefore reaches its maximum at the same point as the standard regression equation, and finding the maximum does not need to consider the logistic transformation.

To locate the inflection point, we set the partial derivative (with respect to the multipoint variable) of the regression equation of our full model equal to zero. For Model 2 in Table 3, the inflection point is located at a level of multimarket contact equal to 0.78. The nature of the effect is illustrated in Figure 1. Figure 1 depicts the relative probability of market entry compared to the probability at the inflection point (i.e., at the maximum) over the full range of multipoint values in our data (that is from zero to one) based on the parameter values generated by the logistic regression. The figure suggests that the influence of multipoint contact is about five times greater at the inflection point than at multipoint levels of say 10%. The deterrent effect can be seen in that the probability of entry at maximum multipoint-contact levels declines by over one-third, compared to that at the inflection point.

Effects of CEO Tenure on Market Entry in a Multimarket Context

Table 3 shows that, overall, firms with relatively new CEOs were *less* likely to enter new services (in both Models 1 and 2: $b = -0.6$, $p < 0.001$). Table 4 shows

the results for the analyses done for the two subsamples based on CEO tenure. The results reveal that, as expected, longer-tenured CEOs direct their firms to act in ways that are consistent with the firm's level of multimarket with its rivals. The nonlinear effect of multimarket contact on the probability of market entry is clearly evident in Model 3 (linear term $b = 6.95$, $p < 0.02$; quadratic term $b = -5.09$, $p < 0.02$. These results provided support for Hypothesis 3.

For newer CEOs, the situation is different. We expected that because of higher levels of managerial discretion and less familiarity with the firm's competitive environment, newer CEOs would be less constrained by the firm's multimarket ties. The results are somewhat inconsistent with this expectation. For newer CEOs, the quadratic term is not significant (see Model 4; $b = -3.27$, $p > 0.17$). However, the linear term for multimarket contact was significant for the subsample composed of firms with newer CEOs. A separate analysis for the newer-CEO subsample (not shown) revealed that the linear term remained significant when the quadratic term was omitted from the model ($b = 1.23$, $p < 0.02$). The sign on the term was positive, which indicates that the probability of entry into a market increased as the firm's levels of multimarket contact with market incumbents increased. As Table 4 shows, the parameter estimates for the quadratic multimarket term are significantly different between the two subsamples.

The fact that firms with newer CEOs exhibited only a linear relationship between multimarket contact levels and market entry means that newer CEOs appeared to model their firm's entry decisions on the prior actions of the firm's multipoint rivals, but they did not seem to recognize the point at which forbearance should

Table 4   Maximum Likelihood Estimates of Logistic Regressions—Analysis by CEO Tenure[1] Dependent Variable = Market Entry $(t, t+1)$

Independent Variables (t)	Longer-Tenured CEOs Model 3	Shorter-Tenured CEOs Model 4
Density	−0.017	0.019
	(0.012)	(0.014)
Density^2	0.0002*	0.000
	(0.0001)	(0.0001)
Resource Availability	**−0.0001**	**−0.0003**
	(0.0001)	(0.0001)
Concentration Ratio	**−3.307*****	**−1.531****
	(0.431)	(0.534)
Historic Entry Rate	**0.008*****	**0.027*****
	(0.002)	(0.004)
Similarity of Service	0.815***	0.842***
	(0.107)	(0.128)
Financial Performance	0.201	−0.262
	(0.128)	(0.302)
Occupancy	0.007	0.189
	(0.307)	(0.366)
For-Profit Ownership	−0.170	−0.072
	(0.111)	(0.153)
Diversification	**0.019*****	**0.017*****
	(0.003)	(0.004)
In Multihospital System	0.041	−0.042
	(0.053)	(0.065)
Size	−0.0002	0.001
	(0.001)	(0.0008)
Multimarket Contact	6.949*	6.259†
	(2.889)	(3.804)
Multimarket Contact^2	**−5.090***	**−3.270**
	(2.094)	(2.705)
Log Likelihood	−2,388.45	−1,699.58
χ^2 Statistic for Covariates	649.79***	350.19***
Degrees of Freedom	40	40

Note. [1]395 hospitals 1980–1986. Unstandardized coefficients reported. Standard errors are in parentheses. Year and county dummies are included in all models but are omitted from the table for readability. Pairs of boldfaced coefficients are significantly different between subsamples at the $p < 0.01$ level or better. †$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

have occurred. That is, they did not refrain from market entry once their firm's level of multimarket contact with its rivals exceeded the threshold where deterrence should have begun to operate. These findings, which show that new CEOs do take their firm's multimarket relationships into account (albeit only in an imitative

sense) as they guide their new organizations, contradict Hypothesis 4, which predicted that the actions of newer CEOs would be unrelated to their firm's level of multimarket contact. Their nature provides an illuminating glimpse into the challenges facing new CEOs in a multimarket environment. We will return to this point shortly.

Discussion

Our paper extended earlier findings (e.g., Baum and Korn 1999) by testing multipoint theory in a multiservice environment. It joins Boeker et al.'s (1997) study as one of the few to show that multimarket effects appear across markets defined by product and/or service differences. Both studies also demonstrate that multimarket effects are present in deregulating environments as we tested our hypotheses on the hospital industry in California. We went beyond Boeker et al.'s approach, however, by developing arguments that represent the finer grain of more recent multipoint studies that view multimarket contact as having nonlinear effects on firm actions.

Top Managers and Multipoint Competition. In examining the role of the CEO, we broadened the range of factors that have an influence on whether and how multimarket relationships operate. We provide some of the first evidence to show that real-world managers are sensitive to multimarket-contact levels. The longer-tenured CEOs in our sample responded to the competitive prescriptions implicit in the level of their firm's multimarket ties. Newer CEOs, however, seemed to use their firm's multimarket rivals only as models for their own firm's entry decisions. They appeared not to be sensitive to the reduction in aggressive competitive behavior that is supposed to accompany higher levels of multimarket contact between firms. Because the quadratic effect was not present, the positive linear term indicates that these newer CEOs persisted in entering the market of their firm's multimarket rivals, even at high levels of multimarket contact. This persistence in imitative action at higher levels of multimarket contact has potentially costly consequences for the organization, however. Entry by a firm with a newer CEO into a market populated by multipoint rivals with whom the firm has a high degree of contact will violate tacit "live and let live" agreements among multimarket firms and is almost certain to draw a swift and substantial response (Chen 1996) to the detriment of the entering firm.

There seem to be three possible explanations for why newer CEOs failed to act in a way that is consistent with mutual forbearance once multipoint contact reached

higher levels. First, a newer CEO may be unaware of the benefits that stem from engaging in mutual forbearance when the firm has high levels of market overlap with its rivals. Another, somewhat related, possibility is that the new CEO may misperceive his or her firm's position in its competitive network. Viewing the environment from a firm-centered perspective, a new CEO may see his or her firm as being more centrally located in the structure of multimarket ties than it in fact is. If so, they may conclude that the likelihood of a competitor responding to an aggressive act by their firm is lower than it in fact is (Gnyawali and Madhavan 2001).

Finally, and perhaps most troubling, is the possibility that the failure may be an example of executive hubris in action. Hayward and Hambrick (1997) note that hubris, or an unrealistic perception of one's own capabilities, can develop from several sources, including the media attention newer CEOs are likely to receive at having attained the position and the effects of the previous successes they were a part of (which helped them to secure the CEO positions). This, coupled with the fact that they were hired to bring change to their organizations, may lead newer CEOs to reject the premise that violating the tacit interfirm agreement of mutual forbearance inevitably results in costly competitive retaliation. If newer CEOs feel that, under their direction, their firm is in fact capable of engaging these rivals more directly with beneficial results in the long term (regardless of their initial responses), they may move into markets that had been ceded to their multimarket rivals, but are now considered to offer untapped potential. While our data do not permit us to determine which of the above possibilities is most accurate, in all cases the firm is exposing itself to competitive escalation with potentially serious consequences. Because we considered CEOs as "new" if they had been on the job for a relatively short three years or less, it is worthwhile to note that this period of risk is rather short lived. Nevertheless, this period creates a potential window of vulnerability for the firm that warrants further investigation. Our results indicate that when investigating the impact of top management teams on organizational actions and outcomes, it is essential to take into account not only the nature of the environment surrounding the firm, but also the ways in which these key organizational actors interpret and respond to that environment.

The Importance of the Inflection Point. There are both practical and theoretical implications stemming from the nonlinear nature of the relationship between multipoint contact and market entry. Particularly interesting is the point at which the deterrent effect of

multipoint contact begins to operate. This inflection point on the inverted-U-shaped curve represents the "competitive cusp" referred to by Porac et al. (1989). Here strategic decision makers must balance the desire for legitimacy—obtained through organizational isomorphism with competitors—against the need for differentiating the firm to achieve competitive advantage (Deephouse 1999). For our sample of hospitals, the inflection point (i.e., the point at which the relationship between multipoint-contact levels and the probability of market-entry switches from a positive one to a negative one) seems high. Deterrence did not become effective until a firm's average multimarket-contact levels with its rivals reached approximately 78% of those markets in which the focal firm competed. It appears that in our sample the demands for legitimacy were reasonably strong, with competitive differentiation coming into play later. We caution that inflection points are likely to be unique to each industry (or even particular groups of multimarket rivals when their contact spans different industries) rather than a fixed point that is the same for all groups of firms. Different industries and different collections of multipoint competitors will display variation in the balance struck on their respective competitive cusps. The factors responsible for the relative position of this point represent an important area for additional attention in both strategy and organizational research.

Organizational Boundaries. Our investigation of market entry within a multipoint environment also has implications for theories that attempt to explain how firms determine their boundaries. Make-or-buy questions have typically been addressed by transaction cost theories that point to characteristics such as asset specificity to determine when firms should undertake certain activities inhouse or utilize market mechanisms (Williamson 1975). Recently some researchers have questioned whether transaction cost explanations are sufficient to adequately explain the location of firm boundaries (e.g., Madhok 1997), while others have noted that there may be circumstances where unique (i.e., asset-specific) resources can be exploited through market mechanisms (Silverman 1999). Our study demonstrates that managers take into account the competitive relationships their firms have with their rivals as they alter organizational boundaries through market entry. Consequently, multimarket concerns need to be incorporated into theories that describe how firm boundaries are established.

A key question in this regard is whether multimarket relationships constitute a unique type of organizational

"asset" or whether they are similar to resources that are subject to market failure due to the specificity of the underlying assets. Because legal impediments exist to limit interorganizational cooperation (or collusion) and cooperation, when it does exist in a tacit form, is rarely directly compensated, markets where multimarket relationships can be "exchanged" may not even exist in the strictest sense. If so, multimarket relationships would then constitute a distinct category of factors that affect firm boundaries. This is a provocative issue that calls for additional theory development.

Future Research. Although we included a large number of control variables to isolate and determine the effects of multipoint competition, future tests of multipoint theory could include additional factors that we could not incorporate into the current study. Future work should incorporate an indicator of the strategic importance of individual services (for example, by the proportion of revenue derived from each service). Including this measure would make it possible to investigate the extent to which firms need to establish only token presences in each others' markets (so called "mutual footholds") to build an effective deterrent against future aggression. Perhaps "mutual-foothold equilibriums" (Karnani and Wernerfelt 1985) are not effective in all types of markets or with all groups of firms.

Future studies should expand the range of markets and industries in which multipoint theory is tested. It would be especially interesting to move multipoint studies into areas where the market overlap between firms spans a more heterogeneous collection of products and/or services (and, consequently, may include markets in completely different industries). Given the wide-ranging examples of multimarket contact between real-world firms (e.g., Colgate-Palmolive and Procter & Gamble), extending multipoint studies to encompass product markets as different as tooth care, detergents, and makeup should shed light on whether such heterogeneity presents additional difficulties that can hinder efforts to achieve the level of intrafirm coordination necessary to make multimarket contact a rivalry-reducing agent.

It is also possible that managers of multimarket firms can rely on imitating the moves of their multimarket rivals to provide external legitimacy for inherently risky and uncertain moves like market entry. By noting that their competitors have already made such moves, managers can justify their own actions to key constituencies. This offers yet another motivation for action within a multimarket context, one that is not ruled out by our analysis. In addition, it would be very informative to ascertain under what conditions the construction of a

deterrent serves at the primary motive for entering the markets of the firm's multipoint rivals and when competitive intelligence and uncertainty reduction are more important. Along these same lines, future studies should seek to determine if the tendency of a newer CEO to violate "live and let live" arrangements stems more from a lack of an internal power base from which to coordinate actions across multiple markets or from a lack of familiarity with the implications of the firm's current competitive position. These questions offer intriguing opportunities for understanding multimarket behavior more fully.

Multipoint contact may also affect the way in which market entry is achieved by firms once deterrence has been established. When multipoint levels between a firm and its rivals in a potential market are high, a firm that desires to enter a market where its multipoint rivals already compete may prefer to do so via contracting or acquisition (Stephan and Boeker 2001). These forms of entry may be seen as altering the competitive arrangements within that market in a less significant way (e.g., the overall number of competitors will not increase). Conducting such detailed empirical studies represents a key opportunity to more fully understand how multimarket contact affects firm actions.

By extending multipoint theory, this research offers a unique and arguably more realistic way of exploring the effects of competition at a service level on market entry. Multipoint competition was found to have important curvilinear effects on a firm's likelihood of entering specific markets and to be readily recognized by firm managers. That these managers are sensitive to such issues suggests that chance alone (Korn and Baum 1999) does not explain how a firm's level of multimarket contact with its rivals changes. Strategy researchers should now begin to look at additional situations that are likely to affect whether managers attend to their firm's multipoint relationships and how this influences the actions their firms take (or refrain from taking) as multipoint-contact levels vary. Such studies offer promising avenues for understanding the circumstances under which firms will engage their competitors directly and those under which forbearance will predominate.

Appendix
Measurement of Multipoint Competition

Measures of multipoint competition capture the extent to which a firm's product-market scope, outside of a focal market, is similar to other firms already participating in that market. We employed the following procedure for determining the degree of multipoint competition among hospitals in a given geographic region. Take a county with four hospitals that

are capable of offering any combination of three services. Suppose their current service configuration is the following.

Services Offered

Hospital A	1	2	
Hospital B		2	3
Hospital C	1	2	3
Hospital D	1		

In this example, the market for Service 3 may be entered by Hospitals A and D (assuming it passes our tests for inclusion in the risk set for both hospitals). For these two hospitals, we calculate the degree of service overlap they have with those hospitals already competing in the market for Service 3 (Hospitals B and C). This is shown below, with the rows representing the focal hospital and columns their overlap with hospitals already offering Service 3. Note that the overlap of Hospital A with D is not calculated because neither of these hospitals are currently in the Service 3 market. Overlap with oneself is also not calculated.

Overlap for Hospitals Able to Enter Service 3 Market

	A	B	C	D	AVG
A	—	50%	100%	NA	75%
B		—			
C			—		
D	NA	0%	100%	—	50%

The average multimarket overlap for these two hospitals (A and D) is calculated by dividing the sum of the individual overlap percentages by the total number of hospitals offering Service 3 in their county. A similar process is carried out for each service that a particular hospital can possibly add. When the process is completed, we obtain data similar to the following, which characterizes the overlap a hospital has with its rivals in each service it may add. Note that Hospital C has no figures calculated for it because it currently offers all services and is thus unable to add any services.

Service	1	2	3
Hospital A	—	—	75%
Hospital B	50%	—	—
Hospital C	—	—	—
Hospital D	—	66.67%	50%

Endnote

[1]The complete inventory of hospital services reported to CHFC totals 177. We omitted 14 items related to training programs associated with residencies and internships for students completing their medical education. These are not services provided to patients/customers and are not subject to the types of competitive forces we were examining.

References

Alexander, J., M. Morrisey. 1988. Hospital physician integration and hospital costs. *Inquiry* **25** 388–401.

——, ——, S. M. Shortell. 1986. Effects of competition, regulation, and corporatization on hospital-physician relationships. *J. Health and Soc. Behavior* **27** 220–235.

Allison, P. D. 1984. *Event History Analysis: Regression for Longitudinal Event Data.* Sage, Newbury Park, CA.

Amburgey, T. L., A. S. Miner. 1992. Strategic momentum: The effects of repetitive, positional, and contextual momentum on merger activity. *Strategic Management J.* **13** 355–348.

Barnett, W. P. 1993. Strategic deterrence among multipoint competition. *Industrial and Corporate Change* **2** 249–278.

——, H. R. Greve, D. Y. Park. 1994. An evolutionary model of organizational performance. *Strategic Management J.* **15** 11–28.

Baum, J. A. C., H. J. Korn. 1996. Competitive dynamics of interfirm rivalry. *Acad. Management J.* **39** 255–291.

——, ——. 1999. Dynamics of dyadic competitive interaction. *Strategic Management J.* **20** 251–278.

Boeker, W. 1992. Power and managerial dismissal: Scapegoating at the top. *Admin. Sci. Quart.* **37** 400–421.

——. 1997. Strategic change: The influence of managerial characteristics and organizational growth. *Acad. Management J.* **40** 152–170.

——, J. Goodstein. 1991. Organizational performance and adaptation: Effects of environment and performance on changes in board composition. *Acad. Management J.* **34** 805–826.

——, ——, J. Stephan, J. P. Murmann. 1997. Competition in a multimarket environment: The case of market exit. *Organ. Sci.* **8** 126–142.

Caves, R. E., M. E. Porter. 1977. From entry barriers to mobility barriers: Conjectural decisions and contrived deterrence to new competition. *Quart. J. Econom.* **91** 241–261.

Chen, M. J. 1996. Competitor analysis and inter-firm rivalry: Toward a theoretical integration. *Acad. Management Rev.* **21** 100–134.

Coelen, C., D. Sullivan. 1981. An analysis of the effects of prospective reimbursement programs on hospital expenditures. *Health Care Financing Rev.* **2** 1–40.

Deephouse, D. L. 1999. To be different or the same? It's a question (and theory) of strategic balance. *Strategic Management J.* **20** 147–166.

DiMaggio, P. J., W. W. Powell. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *Amer. Sociological Rev.* **48**(April) 147–160.

Edwards, C. 1955. Conglomerate bigness as a source of power. *The NBER Report: Business Concentration and Price Policy.* Princeton University Press, 331–359.

Evans, W. N., I. N. Kessides. 1994. Living by the "golden rule": Multimarket contact in the U.S. airline industry. *Quart. J. Econom.* **109** 341–366.

Feinberg, R. M. 1985. Sales at risk: A test of the mutual forbearance theory of conglomerate behavior. *J. Bus.* **58** 225–241.

Finkelstein, S., D. C. Hambrick. 1990. Top-Management team tenure and organizational outcomes: The moderating role of managerial discretion. *Admin. Sci. Quart.* **35** 484–503.

Fredrickson, J., D. C. Hambrick, S. Baumrin. 1988. A model of CEO dismissal. *Acad. Management Rev.* **13** 255–270.

Garnick, D., H. Luft, J. Robinson. 1987. Appropriate measures of hospital market areas. *Health Service Res.* **22** 69–90.

Geletkanycz, M. A., D. C. Hambrick. 1997. The external ties of top executives: Implications for strategic choice and performance. *Admin. Sci. Quart.* **42** 654–681.

Gimeno, J., C. Y. Woo. 1996. Hypercompetition in a multi-market environment: The role of strategic similarity and multi-market contact in competitive De-Escalation. *Organ. Sci.* **7** 322–341.

——, E. Jeong. 2001. Multimarket contact: Meaning and measurement at multiple levles of analysis. J. A. C. Baum, H. R. Greve, eds. *Multiunit Organization and Multimarket Strategy; Advances in Strategic Management*, Vol. 18. JAI Press, Oxford, U.K., 357–408.

Gnyawali, D. R., R. Madhavan. 2001. Cooperative networks and competitive dynamics: A structural embeddedness perspective. *Acad. Management Rev.* **26** 431–445.

Greve, H. 2000. Market niche entry decisions: Competition, learning, and strategy in Tokyo banking, 1894–1936. *Acad. Management J.* **43** 816–836.

Gulati, R. 1995. Social structure and alliance formation patterns: A longitudinal analysis. *Admin. Sci. Quart.* **40** 619–652.

Hambrick, D. C., S. Finkelstein. 1987. Managerial discretion: A bridge between polar views on organizations. L. L. Cummings, B. M. Staw, eds. *Research in Organizational Behavior*, Vol. 9. JAI Press, Greenwich, CT, 369–406.

——, G. D. S. Fukutomi. 1991. The seasons of a CEO's tenure. *Acad. Management Rev.* **16** 719–742.

Hannan, M., J. Freeman. 1989. *Organizational Ecology*. Harvard University Press, Cambridge, MA.

Haunschild, P. R. 1993. Interorganizational imitation: The impact of interlocks on corporate acquisition activity. *Admin. Sci. Quart.* **38** 564–592.

Haveman, H. A. 1993. Follow the leader: Mimetic isomorphism and entry into new markets. *Admin. Sci. Quart.* **38** 593–627.

——, L. Nonnemaker. 2000. Competition in multiple geographic markets: The impact on growth and market entry. *Admin. Sci. Quart.* **45** 232–267.

Hayward, M. L. A., D. C. Hambrick. 1997. Explaining the premium paid for large acquisitions: Evidence of CEO hubris. *Admin. Sci. Quart.* **42** 103–127.

Heggestad, A. A., S. A. Rhoades. 1978. Multi-market interdependence and local market competition in banking. *Rev. Econom. Statistics* **60** 523–532.

Jaccard, J. 2001. *Interaction Effects in Logistic Regression*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07–135. Sage Publications, Thousand Oaks, CA.

Karnani, A., B. Wernerfelt. 1985. Multipoint competition. *Strategic Management J.* **6** 87–96.

Kesner, I. F., D. R. Dalton. 1994. Top management turnover and CEO succession: An investigation of the effects of turnover on performance. *J. Management Stud.* **31** 701–713.

Ketchen, D. J., J. B. Thomas, C. C. Snow. 1993. Organizational configurations and performance: A comparison of theoretical approaches. *Acad. Management J.* **36** 1278–1313.

Knickerbocker, F. T. 1973. *Oligopolistic Reaction and Multinational Enterprise.* Harvard University Press.

Korn, H. J., J. A. C. Baum. 1999. Chance, imitative, and strategic antecedent to multimarket contact. *Acad. Management J.* **42** 171–193.

Madhok, A. 1997. Cost, value and foreign market entry mode: The transaction and the firm. *Strategic Management J.* **18** 39–61.

McGrath, R. G., M. Chen, I. C. MacMillan. 1998. Multi-market maneuvering in uncertain spheres of influence: Resource diversion strategies. *Acad. Management Rev.* **23** 724–740.

Miller, D. 1991. Stale in the saddle: CEO tenure and the match between organization and environment. *Management Sci.* **37** 34–52.

——. 1993. Some organizational consequences of CEO succession. *Acad. Management J.* **36** 644–659.

——, J. Shamsie. 2001. Learning across the life cycle: Experimentation and performance among the Hollywood studio heads. *Strategic Management J.* **22** 725–745.

Murmann, J. P., M. L. Tushman. 1997. Organization responsiveness to environmental shock as an indicator of organizational foresight and oversight: The Role of executive team characteristics and organization context. R. Garud, P. Nayyar, Z. Shapira, eds. *Technological Innovation: Foresights and Oversights*. Cambridge University Press, New York, 261–278.

Ocasio, W. 1994. Political dynamics and the circulation of power: CEO succession in U.S. industrial corporations, 1960–1990. *Admin. Sci. Quart.* **39** 285–312.

Oliver, C. 1991. Strategic responses to institutional processes. *Acad. Management Rev.* **16** 145–179.

Oster, S. M. 1994. *Modern Competitive Analysis*. Oxford University Press, New York.

Pauly, M. V. 1980. *Doctors and Their Workshops*. University of Chicago Press, Chicago, IL.

Pfeffer, J., N. Langton. 1993. The effect of wage dispersion on satisfaction, productivity, and working collaboratively: Evidence from college and university faculty. *Admin. Sci. Quart.* **38** 382–407.

Pitcher, P., S. Chreim, V. Kisfalvi. 2000. CEO succession research: Methodological bridges over troubled waters. *Strategic Management J.* **21** 625–648.

Porac, J. F., H. Thomas. 1990. Taxonomic mental models in competitor definition. *Acad. Management Rev.* **15** 224–240.

——, ——, C. Baden-Fuller. 1989. Competitive groups as cognitive communities: The case of scottish knitwear manufacturers. *J. Management Stud.* **26** 397–416.

——, ——, F. Wilson, D. Paton, A. Kanfer. 1995. Rivalry and the industry model of Scottish knitwear producers. *Admin. Sci. Quart.* **40** 203–227.

Porter, M. 1980. *Competitive Strategy*. Free Press, New York.

Scherer, F. M., D. Ross. 1990. *Industrial Market Structure and Economic Performance*. Houghton Mifflin Company, Boston, MA.

Schwenk, C. R. 1984. Cognitive simplification processes in strategic decision-making. *Strategic Management J.* **5** 11–128.

Shortell, S. 1989. New directions in hospital governance. *Hospital and Health Service Admin.* **34**(1) 7–23.

——, E. M. Morrison, B. S. Friedman. 1990. *Strategic Choices for America's Hospitals: Managing Change in Turbulent Times*. Jossey-Bass, San Francisco, CA.

——, ——, S. L. Hughes, B. S. Friedman, J. L. Vitek. 1987. Diversification of health care services: The effects of ownership, environment, and strategy. *Adv. Health Econom. Health*

Care Services. R. Schefler, ed. JAI Press, Greenwich, CT, 76–94.

Silverman, B. S. 1999. Technological resources and the direction of corporate diversification: Toward an integration of the resource-based view and transaction cost economics. *Management Sci.* **45** 1109–1124.

Singal, V. 1996. Airline mergers and multi-market contact. *Managerial and Decision Econom.* **17** 559–574.

Staw, B. M., J. Ross. 1980. Commitment in an experimenting society: An experiment on the attribution of leadership from administrative scenarios. *J. Appl. Psych.* **65** 249–260.

Stephan, John, Warren Boeker. 2001. Getting to multimarket competition: How multimarket contact affects firms = Market entry decisions. J. A. C. Baum, H. R. Greve, eds. *Multiunit Organization and Multimarket Strategy; Advances in Strategic Management*, Vol. 18. JAI Press, Oxford, U.K., 229–262.

Thomas, J. B., S. M. Clark, D. A. Gioia. 1993. Strategic sensemaking and organizational performance: Linkages among scanning, interpretation, action and outcomes. *Acad. Management J.* **36** 239–270.

Tsurumi, Y. 1976. *The Japanese Are Coming: A Multinational Interaction of Firms and Politics*. Ballinger Publishing Company, Cambridge, MA.

Tushman, M. L., E. Romanelli. 1985. Organizational evolution: A metamorphosis model of convergence and reorientation. B. M. Staw, L. Cummings eds. *Res. Organ. Behavior*. JAI Press, Greenwich, CT, 171–222.

Vernon, R., L. T. Wells, Jr., S. Rangan. 1996. *The Manager in the International Economy*. Prentice-Hall, Upper Saddle River, NJ.

Virany, B., M. L. Tushman, E. Romanelli. 1992. Executive succession and organization outcomes in turbulent environments: An organization learning approach. *Organ. Sci.* **3** 72–92.

Williamson, O. 1975. *Markets and Hierarchies*. Free Press, New York.

Zajac, E. J., S. M. Shortell. 1989. Changing generic strategies: Likelihood, direction and performance. *Strategic Management J.* **10** 413–430.

Zucker, L. 1987. Normal change or risky business: Institutional effects on the 'hazard' of change in hospital organizations, 1959–1979. *J. Management Stud.* **24** 671–700.