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# A multilevel model of multimarket contact: competence depletion and punctuated forbearance hypotheses

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**Abstract**

Multimarket contact (MMC) research establishes a positive relationship between MMC and firm-in-market level prices and margins, supporting the mutual forbearance hypothesis that firms confronting one another in multiple markets tacitly collude. This article proposes that the MMC dynamics generating short-term firm-in-market level advantages paradoxically undermine firm-level performance over the long term. Examining recursive relationships traversing levels of analysis, I integrate a distinctive competencies perspective with the prevailing positional advantage perspective on MMC. At the firm level, I contend that MMC undermines competence development. At the population level, I propose that MMC attenuates the concentration stability upon which forbearance rests, such that flurries of intense rivalry punctuate extended periods of mutual forbearance. For firms exposed to the competence depleting influences of MMC, punctuated forbearance threatens performance. The competence depletion and punctuated forbearance hypotheses here advanced promise to sensitize future research efforts to MMC's adverse strategic implications.

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**Keywords:** strategic management; competitive dynamics; multimarket contact (MMC)



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## Introduction

Firms are in multimarket contact (MMC) when they confront one another simultaneously in multiple geographic or product markets. Edwards (1955) provided theoretical insight into the dynamics and consequences of MMC over half a century ago with his mutual forbearance hypothesis. Firms with numerous multimarket rivals, argued Edwards, recognize that a competitive action taken in one market might invite punitive counter-attacks not only in that market, but in other markets as well. A firm considering a price decrease in one of its products must weigh the potential for price war contagion across numerous product lines. The prospect of escalating rivalry encourages firms with high levels of MMC to treat one another with competitive restraint. Edwards termed this inter-firm competitive restraint "mutual forbearance." Empirical work in MMC lends strong support to the mutual forbearance hypothesis. Studies suggest that MMC dampens inter-firm rivalry in a wide range of contexts, including the banking (Heggstad and



Rhoades, 1978; Barnett *et al.*, 1994; Fuentelsaz and Gomez, 2006; Coccorese and Pellicchia, 2009), savings and loan (Haveman and Nonnemaker, 2000), software (Young *et al.*, 2000), personal computer (Kang *et al.*, 2010), cement (Jans and Rosenbaum, 1997; Ghemawat and Thomas, 2008), hotel (Fernandez and Marin, 1998), hospital (Boeker *et al.*, 1997), insurance (Greve, 2008), cellular telephone (Parker and Roller, 1997; Busse, 2000) and newspaper (Fu, 2003) industries. No line of business, however, has been the focus of more MMC research than the airline industry, where researchers identify forbearance effects in the form of higher prices (Evans and Kessides, 1994), increased revenue per passenger seat mile (Gimeno and Woo, 1996; Gimeno, 1999), wider price-cost margins (Singal, 1996; Gimeno and Woo, 1999), and lower entry and exit rates (Baum and Korn, 1996, 1999).

The preponderance of the MMC literature highlights tactically desirable forbearance effects – like higher prices and margins – accruing to markets occupied by rivals that meet each other in numerous other markets. However, a recent study uncovers forbearance effects that hint at a more complicated picture of MMC's strategic implications. In a 2009 *Academy of Management Journal* piece, Jeffrey Prince and Daniel Simon find a negative relationship between MMC and service quality in the form of airline on-time performance. This finding begs a very fundamental – yet currently unaddressed – question: how does MMC affect long-term firm performance? If MMC affects behaviors along nonprice competitive dimensions such as service quality, it may not be warranted simply to assume that collusion in short-term pricing in particular markets necessarily translates into stronger long-term, firm-level performance.

To clarify why not, let us consider a hypothetical example involving two firms operating in contexts with different degrees of MMC. Firm A operates in geographic market X against competitors that it *does not* meet in multiple other geographic markets. Firm B operates in geographic market Y against competitors that it *does* confront in multiple other geographic markets. All other things being equal, Firm B operates in a context that is more favorable to short-term financial performance. Whereas competition compels Firm A to keep prices low and product/service quality high, mutual forbearance enables Firm B to charge higher prices and, in line with the recent Prince and Simon (2009) findings, cut costs related to the delivery

of product/service quality. In the short term, therefore, we can expect Firm B to enjoy greater profitability than firm A. Over an extended time period, however, the context in which Firm B operates may undermine that firm's competitiveness relative to Firm A. Subjected to less competitive pressure to deliver high-quality products and services, Firm B will gradually lose the *ability* to deliver quality, relative to Firm A. Confronted by highly competitive rivals, Firm A experiences greater pressure than Firm B to search for and to learn new and better ways of satisfying customers. Additionally, because Firm A is not constrained by the interconnectedness and interdependencies that develop between Firm B and its multimarket rivals, Firm A is more likely than Firm B to innovate new and unique competencies, products, and services. The atrophying of Firm B's search, learning, and innovation capabilities will not undermine the firm's financial performance as long as it confronts only mutually forbearing multimarket rivals. The munificent conditions created by tacit collusion in market Y are likely to invite new entrants eventually, however, either in the form of newly founded firms or in the form of existing firms entering from different markets. Should a new entrant or entrants indeed venture into market Y, bringing customer-satisfying capabilities and competitive intent sharper than those honed by existing multimarket rivals, Firm B's atrophied competencies will be exposed. In terms of financial performance, Firm B will fare poorly in its newly competitive environment relative to Firm A, which has been steadily exposed to and hardened against competition in market X.

The purpose of this article is to explore in depth the dynamics sketched out in this hypothetical example. Relationships are examined between MMC and performance at levels of analysis above (e.g., at the population level) and below (e.g., at the firm level) the inter-firm level focused on by existing work. At the firm level, I propose that MMC undermines competence development in two ways. First, MMC affects firm learning processes by dampening inter-firm rivalry. Firms are less likely to perceive problems, to search for solutions, or to learn by doing where inter-firm rivalry is of relatively low intensity. Second, MMC affects firm learning processes by heightening inter-firm connectedness. MMC has a homogenizing influence on constituent firms' structures, strategies, routines, values, frames of reference, norms, and expectations. Mimicry, myopia, and insularity

develop within tight MMC cohorts, curtailing attention to external innovative trends and decreasing the likelihood that cohort members will forge unique organizational competencies.

At the population level, I contend that the inherently and uniquely tenuous nature of MMC collusion exposes firm-level competence depletion in the long run. Membership in MMC cohorts, I explain, is much less stable than is membership in single-market oligopolies. Because mutual forbearance is contingent upon the existence of stable market concentration levels, the entrance of new rivals into MMC cohorts entails variance in levels of collusion. I argue that in populations of multimarket competitors, flurries of new entry and intense rivalry might be expected to emerge in – or punctuate – extended periods of mutual forbearance. Firms sound in competence maintenance and development might deftly weather these patterns of punctuated forbearance. For firms exposed at length to the competence depleting influences of MMC, however, punctuated forbearance poses an acute threat to firm performance. In other words, firm performance suffers when the firm-level consequences of MMC (e.g., competence depletion) converge with the population-level consequences of MMC (e.g., punctuated forbearance). Figure 1 illustrates how MMC relates to firm performance across time and levels of analysis.

I begin by tracing MMC theory’s focus on short-term, market-specific benefits to its roots in oligopoly theory. As accurate as the prevailing perspective

may be in its particulars, its narrow scope threatens to obscure MMC’s comprehensive impact. A fuller appreciation of the phenomenon’s strategic importance calls for a dynamic, multilevel model of MMC. To this end, I broaden the scope of investigation along each of three dimensions: time, causality, and level of analysis. The bulk of this article explores linkages between short- and long-term consequences, between constructs exogenous and endogenous to extant models, and between constructs occupying firm, firm-in-market, and population levels of analysis. In order to promote future research, I highlight the need for an empirically measurable construct reflecting firm-level MMC. Research capturing long-term firm performance effects depends upon a measurable antecedent construct reflecting the extent to which multimarket relationships pervade a firm’s strategic posture. Finally, I conclude by discussing practical implications of the expanded theoretical model developed throughout the article.

### The MMC literature

The MMC literature bears traces of the oligopoly research domain from which it emerged. Oligopoly research examines conditions promoting mutual recognition of competitive interdependence – and hence tacit collusion – among firms in a single market. The precondition to collusive outcomes most focused on by oligopoly research is concentration level, or the proportion of market share claimed by a market’s largest firms. A high

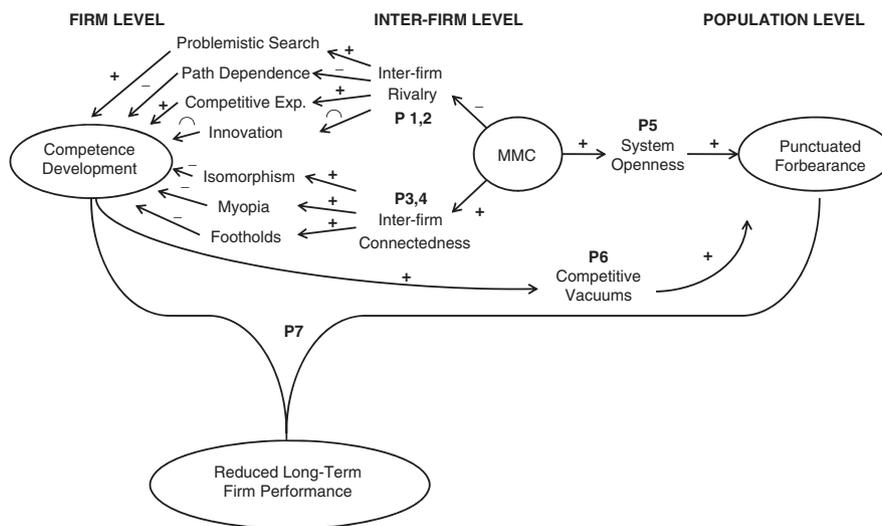


Figure 1 Convergence of MMC’s firm, inter-firm, and population-level effects.



concentration level facilitates mutual recognition of competitive interdependence (Adams, 1974), which in turn fosters tacit collusion and dampens rivalry. MMC theory and research emerged as scholars began to consider causes of collusion beyond single-market settings. From the start, the research question motivating this literature has been whether inter-firm relationships spanning multiple markets promote mutual recognition of extended interdependence (Areeda and Turner, 1979). The research model's prevailing outcome of interest – tacit collusion – is the *raison d'être* of the antecedent construct lending the MMC literature its name. Rather than ask, “what firm, inter-firm, and population level outcomes derive from multimarket contact?” scholars began by asking, and for the most part have continued to ask, the more limited question, “does multimarket contact facilitate tacit collusion?”

While narrow in scope, the latter question is theoretically grounded. Edwards (1955) specified the theoretical basis for expecting MMC to foster collusion. Edwards noted that firms confronting one another across multiple markets recognize the potential for a competitive attack to draw a retaliatory response, not only in the attacked market, but also at other points of contact. MMC thereby magnifies the expected retaliatory costs of initiating an attack, providing firms a strong incentive to withhold first-mover competitive actions (Karnani and Wernerfelt, 1985). As a result, firms recognizing their extended interdependence should tend to “mutually forbear” (Edwards, 1955), or tacitly collude in the pursuit of rivalry reduction.

Empirical studies generally support Edward's mutual forbearance hypothesis. Extant research proceeds along three distinct levels of analysis (Gimeno and Jeong, 2001). First, I/O economics scholars conceptualize MMC as a market characteristic, measuring the overall degree of MMC among firms serving a focal market. Feinberg (1985), for example, finds a positive relationship between industry-wide measures of MMC and industry-wide price-cost margins. Evans and Kessides (1994) and Singal (1996) conclude that the average number of external contacts between airlines in a given route positively affects fare levels in that route. Jans and Rosenbaum (1997) find that cement prices correlate with geographic market MMC levels.

While I/O economics researchers conceptualize and measure MMC as a market characteristic, management scholars approach MMC directly as a

characteristic of the relationships among firms (Gimeno and Jeong, 2001). Within the management literature, in turn, MMC is treated at two distinct levels of analysis. Most research approaches MMC at the firm-in-market level of analysis, measuring the level of cross-market contact that a firm has with incumbents in a focal market. For example, Boeker *et al.* (1997) find a negative relationship between the extent to which a hospital meets focal market competitors in other markets and that hospital's likelihood of exiting the focal market. Gimeno and Woo (1996, 1999) show that an airline's MMC with incumbents in a given route tends to increase the prices charged by that airline in that route, while Prince and Simon (2009) find that airline-in-route MMC levels relate negatively with on-time performance. Baum and Korn (1996) also find that airline-in-route MMC levels tend to mute rivalry, but the authors use market entry and exit as dependent variables reflecting levels of collusion. Other management scholars conceptualize and measure the construct at the dyadic level of analysis. Rather than measure MMC between all firms in a given market (market level), or measure MMC between a focal firm and all incumbents in a focal market (firm-in-market level), dyadic research seeks to capture an overall level of MMC between two firms across all of the markets in which the two meet. Baum and Korn (1999), for example, find that the MMC between two airlines across all of the markets in which they meet bears an inverted “U-shaped” relationship with market entry and exit, while Korn and Baum (1999) examine antecedents to dyadic MMC.

Cumulatively, empirical work in MMC sheds considerable light on the extent to which cross-market contact between firms affects their competitive behavior toward one another. However, existing MMC theory and research skirt perhaps the central question pertinent to any topic in the strategy field: *how does the phenomenon under investigation contribute to firm failure or to firm success?* (Porter, 1991). Grasping the relationship between MMC and firm performance entails consideration of interactions between multiple outcomes over an extended period. Existing studies of the MMC-rivalry relationship assume fixed firm competencies along with stable and high market concentration levels. Is it safe to assume, however, that multimarket relationships between firms do not systematically affect firm and population attributes? A multilevel model of MMC must explore how MMC influences competencies and

concentration levels over time, while considering feedback loops crossing levels of analysis (Porter, 1991). The remainder of this article lays the groundwork for such a multilevel model of MMC.

### **Firm-level effects of MMC: competence depletion**

This section examines firm-level effects of MMC. I first analyze ways in which dampened inter-firm rivalry – an established outcome of MMC – might undermine competency development by affecting firm learning processes. Analysis here integrates content from the literatures on problemistic search, Red Queen evolution, path dependence, the exploration-exploitation trade-off, and competitive experience. Subsequently, I explore how heightened inter-firm connectedness constrains firm learning processes. Drawing on the institutional and macrocultural literatures, I argue that close inter-firm familiarity fosters debilitating tendencies toward mimicry, myopia, and insularity. Finally, drawing on opportunity cost logic, I consider how the pursuit and maintenance of MMC may encourage firms to make resource commitments that compromise the quality and variety of their competencies.

#### **Dampened inter-firm rivalry**

Former Quaker Oats CEO Bill Smithburg quipped in 1995, “Competition is a way of life. If you don’t have a really tough competitor, you ought to invent one” (Sellers, 1995). Smithburg’s comment reflects the widespread belief that competition promotes excellence. The “vague suspicion that competition is the enemy of sloth” (Caves, 1980: 64) is cardinal to economic theory. Viable competitors motivate firms to reduce costs, improve products, and stay abreast of technological change (Porter, 1985: 206; 1991). Porter’s extensive study of national competitive advantage indicates a strong relationship between the vigor of domestic rivalry and the persistence of competitive advantage in an industry (Porter, 1990: 117–122). Numerous I/O economics studies report positive relationships between competitive intensity and such competency-related outcomes as efficiency, total factor productivity, product/service quality, marketing spending, and R&D intensity. For example, high levels of concentration (and thus low levels of competitive intensity) correlate with reduced technical efficiency (Caves and Barton, 1990; Caves, 1992), diminished total factor productivity (Nickell *et al.*, 1992), lower total factor productivity growth (Nickell, 1996),

decreased service quality (Mazzeo, 2003), and decreased product quality (Banker *et al.*, 1998).

If rivalry reduction deriving from high concentration depletes competencies, then it is reasonable to ask whether rivalry reduction deriving from MMC depletes competencies as well. Indeed, evidence suggests that MMC decreases the resources firms devote to marketing functions such as advertising, promotion, and sales force deployment when introducing new products (Shankar, 1999). Relationships between MMC and firm decisions to allocate resources toward competency enhancement in other functional realms remain unexplored. Theoretical grounds exist, however, for proposing negative relationships between MMC and a broad range of competencies related to efficiency, differentiation, learning, and innovation. The behavioral approach to the firm expounds upon organizational decision-making tendencies that help explain the link between inter-firm competition and intra-firm excellence. Degree of market competitiveness has powerful implications for firm search, choice, and learning. The competitive environment affects stimuli to *problemistic search* (Cyert and March, 1963: 169–171); it shapes interpretations and outcomes of past routines and actions, upon which present actions are *path dependent* (Levinthal and March, 1993); and it influences the extent to which firms undertake competitive actions and thus *learn by doing* (Levitt and March, 1988). The dampening of inter-firm rivalry, therefore, affects firm competencies through the mediating processes of problemistic search, path dependence, and competitive experience.

**Problemistic search.** Problemistic search is search stimulated by a problem and directed toward finding a solution to the problem (March and Simon, 1958: 194; Cyert and March, 1963: 169). Work in both evolutionary economic theory (Nelson and Winter, 1982: 173) and organizational evolution (Tushman and Romanelli, 1985) echoes the behaviorist observation that firm search tends to be problem-oriented or failure-induced. Kim (1998) and Winter (2000) show how organizational performance crises, termed “internal activation triggers” by Zahra and George (2002), intensify firm efforts to achieve and learn new skills. Inter-firm competition induces performance crises, because the more intensely an organization competes with others to achieve its objectives, the more likely results are to fall short of expectations



(Barnett *et al.*, 1994). Given that competition stimulates problemistic search (March, 1988), and problemistic search enhances firm competencies, it follows that competition enhances firm competencies. Over time, this evolutionary adjustment of the firm and its referent rivals develops into a self-reinforcing process that has been termed “Red Queen” evolution (Barnett and Hansen, 1996; Barnett and Pontikes, 2008; Derfus *et al.*, 2008). Inter-firm competition triggers learning, which increases an organization’s competitive strength, which in turn triggers learning in its rivals and thus stronger competitors, and reciprocally so on.

Dampened rivalry, however, blunts the cycle of Red Queen evolution. To the extent that MMC dampens rivalry, it serves as a positional advantage shielding the firm in the short-term from performance failure. Dampened rivalry conceals problems and thus curtails the search for answers. Organizational success may make managers complacent with the *status quo* (Miller and Friesen, 1984) and blind them to the need for action (Lant *et al.*, 1992; Miller and Chen, 1994). In sum, performance pressures and crises are less prevalent in the absence of intense competition; problemistic search is less operative in the absence of performance pressures; and organizational learning and competence enhancement are less prevalent in the absence of problemistic search.

**Path dependence.** Path dependence, like problemistic search, helps explain how dampened inter-firm rivalry mediates a negative relationship between MMC and competence development. Whereas the concept of problemistic search addresses firm search proclivities, the concept of path dependence emphasizes response behaviors, building on the observation that organization actions are history-dependent (Levitt and March, 1988). Path dependence emerges in the extended absence of problemistic search. Organizations give preferential treatment to alternatives that represent continuation of present programs over those that represent change, so they do not search for or consider alternatives to the present course of action unless that present course is deemed unsatisfactory (March and Simon, 1958: 194). In other words, when an organization meets with success, its managers tend to replicate and perpetuate routines and actions they perceive as responsible for that success. The organization’s dependence on a historically successful, reliable path becomes

evident when its response to challenges proves conditioned and constrained by that path (Arthur, 1989, 1994; Levinthal and March, 1993).

The potentially dysfunctional consequences of path dependence manifest in a number of “traps” jeopardizing competence development. A competency trap occurs when favorable performance with a procedure leads an organization to accumulate more experience with it, thus keeping experience with alternate, potentially superior procedures inadequate to make them rewarding to use (Levitt and March, 1988: 322). The organization’s success with learned competencies “traps” it into continued reliance on those competencies at the expense of developing or adopting more optimal competencies. Firms caught in competency traps become increasingly removed from other bases of experience and knowledge, exacerbating their vulnerability to environmental change (Levinthal and March, 1993: 102). Ahuja and Lampert (2001) specify several types of competency traps. Familiarity traps occur when the mutual positive feedback between experience and competence renders the refinement of familiar technologies and procedures preferable to the exploration of new ones, and propinquity traps result from the organization’s predisposition to look for new solutions near old solutions when exploration is pursued (Ahuja and Lampert, 2001).

Competency traps can emerge regardless of environmental competitive intensity. Returns from exploiting existing competencies are typically more certain and less remote in time than are returns from exploring new alternatives (March, 1991). However, environments characterized by dampened inter-firm rivalry increase the likelihood of competency traps. Where competition with rivals is intense, a firm is more likely to accept the uncertainty associated with exploration of new competencies in order to achieve primacy in the market. On the other hand, where tacit collusion dampens the competition for primacy, firms are more likely to opt for the reliability of exploitation over the performance variance associated with exploration (March, 1991). Additionally, in shielding the firm from performance failure feedback, dampened rivalry promotes path dependence. Managers attribute organizational success to existing routines and technologies, decreasing their propensity to learn or even consider alternate procedures. If and when performance failure confronts the firm, path dependence constrains managerial responses to “doing more of the same.” Levinthal and March (1993: 102) link market power

to path dependence, noting the tendency among firms with strong market positions to “impose their policies, products, and strategies on others, rather than learn to adapt to an exogenous environment.” Environmental change beyond the firm’s control exposes underdeveloped adaptive skills (Levinthal and March, 1993: 102).

Path dependence may be exacerbated further by the incentives that MMC creates for firms to develop and maintain spheres of influence. As Bernheim and Whinston (1990) explain by means of formal economic modeling, MMC does not facilitate collusive behavior where markets are identical, firms are identical, and technology is constant returns to scale. However, MMC does facilitate collusive behavior where firms have different production costs. Therefore, firms in MMC have an incentive to specialize in – in other words, to develop and maintain relative cost advantages in – some subset of the markets in which they operate. Where participants within an MMC cohort claim such distinct and recognized spheres of influence, collusive arrangements are more readily facilitated (Bernheim and Whinston, 1990). This incentive toward specialization has implications for firm competence development. The positive feedback dynamics of path dependence are likely to orient firms strategically and tactically toward markets and activities in which they have excelled historically. Locked in to their spheres of influence, they become less and less likely over time to explore new competencies outside their traditional specialties, and less and less capable of adapting to new environmental conditions arising exogenously.

**Learning by doing.** Dampened rivalry affects competitive experience as well as search and response. A critical element of organizational learning is “learning by doing” (Levitt and March, 1988: 321–322). Firms develop expertise in those activities that they perform repeatedly over time. The more competitive actions a firm has taken in the past, the wider its knowledge base will be, and the more skilled, tactile, and efficient it will become at taking future competitive action (D’Aveni, 1994). A firm’s competitive repertoire is affected by the range of its own past competitive actions (Miller and Chen, 1994). Young *et al.* (1996: 247) explain why the maintenance and enhancement of a productive asset base requires undertaking activities: “In building on asset strengths, the cost of taking action is lower for

the firm that has efficiencies derived from a rich history of prior activity. Importantly, the firm with a rich history of activity-derived learning not only has lower costs of supporting superior performance, but also is capable of undertaking more activities in a given time period.” By definition, firms engaged in dampened rivalry pursue fewer competitive actions than do firms experiencing intense rivalry. Indeed, studies show that as MMC increases, firms prove less likely to initiate tactical competitive attacks such as price changes (Young *et al.*, 1996; 2000) or new product introductions (Kang *et al.*, 2010). Dampened rivalry reduces a firm’s competitive experience and skill along such dimensions as differentiation, cost efficiency, and launching competitive assaults. Over time, the firm suffers not only in terms of operational capabilities that help sustain technical fitness, but as well in terms of the dynamic capabilities critical to sensing and seizing opportunities and to shaping marketplace competition (Teece, 2007).

As a consequence of the relationships explored thus far between MMC, inter-firm rivalry, problemistic search, path dependence, competitive experience, and firm competence development, I propose the following:

**Proposition 1:** MMC decreases inter-firm rivalry. Decreased inter-firm rivalry, in turn, negatively affects organizational learning by decreasing problemistic search, increasing path dependence, and decreasing competitive experience. Organizational learning is positively related to competence development. Thus, inter-firm rivalry, problemistic search, path dependence, and competitive experience mediate a negative relationship between firm-level MMC and firm-level competence development.

**Rate of innovation.** The preceding discussion of problemistic search, path dependence, and competitive experience as behavioral dynamics mediating the relationship between dampened rivalry and competence development pertains to a potentially broad range of competencies, including skills forming the basis of differentiation strategies, cost leadership strategies, absorptive capacity, and product and process innovation in general. Innovative competencies merit further elaboration, however. In particular, where distinct pre- and post-innovation markets exist, competing lines of



thought pervading extant theory complexify the relationship between muted rivalry and innovative competencies. Propositions are needed resolving the countervailing tendencies toward competition-induced innovation on the one hand and Schumpeterian innovation on the other.

The managerial propensity toward problemistic search informs the general expectation that weak competition reduces the spur to innovative activity (March and Simon, 1958: 203–207; Cyert and March, 1963: 188–190). This view of competition as a stimulant to innovation, argued over four decades ago by Arrow (1962), finds support in subsequent empirical studies. Geroski (1990) and Blundell *et al.* (1995), for example, find that concentration dampens innovative activity, while Boone (2001) shows that innovation confers more value to the firm when competition is intense. Delbono and Denicolo (1990) show that incentives to introduce cost-reducing innovations are greater where firm decision variables are prices rather than output levels. Since price competition typically leads to higher output and lower prices than output-level competition, the former can be thought of as a more intense form of competition (Bonanno and Haworth, 1998). Thus, the Delbono and Denicolo study (1990) supports the position that the incentive to innovate is greater under more intense competition.

An alternate line of reasoning, associated with Schumpeter (1942), maintains that concentration rather than competition serves as a stimulus to innovation. The Schumpeterian argument rests on two points of logic. On the one hand, *ex ante* market power possessed by a firm facing little competition provides the firm with the financial wherewithal to invest in risky innovation. Stable cash flows render the firm capable of pursuing innovation. The behavioralist approach reflects this point of argument with the notion that “slack innovation” may occur in firms with ample resources (Cyert and March, 1963: 189). On the other hand, *ex post* market power provides a firm facing little competition powerful incentive to make innovative investments. The firm does not anticipate rents being competed away on the post-innovation market (Schumpeter, 1942: 82–88).

The Schumpeterian perspective on innovation and the view of innovation as competition-induced represent countervailing logics, but the two are not mutually exclusive. The influence of the opposing dynamics on the overall relationship between rivalry and rate of innovation is best captured by

disaggregating that relationship into the effect that rivalry in the pre-innovation market has on innovation and the effect that rivalry in the post-innovation market has on innovation. Numerous studies linking seller concentration to R&D intensity find an “inverted-U” shaped relationship (Scott, 1993: 136). This pattern emerges because of the ease with which price coordination is achieved in post-innovation markets relative to the difficulty with which coordination for R&D is achieved in pre-innovation markets. Low levels of concentration mute rivalry in neither market. Thus, competitive incentives in pre-innovation markets are counterbalanced by the likelihood of post-innovation rents being competed away. As a result, innovation is relatively low. As concentration levels rise, coordination is more easily obtained in post-innovation markets than in pre-innovation markets (Scott, 1993). At moderate concentration levels, therefore, intense competition in pre-innovation markets continues to stimulate innovation while dampened rivalry in post-innovation markets also induces innovation. As a result, innovation rates are highest at moderate levels of concentration. Finally, as concentration levels further increase, rivalry is dampened in pre-innovations markets as well as post-innovation markets, removing one innovation stimulant while perpetuating the other. As a result, at high concentration levels, innovation levels dip downward again.

The above logic supports the existence of an “inverted-U” shaped relationship between MMC and innovation in extended oligopolies similar to the one found between concentration and innovation in single-market oligopolies. The allocation of resources to innovation is greatest when tacit collusion is powerful enough to dampen rivalry on the post-innovation market, but not powerful enough to dampen rivalry on the pre-innovation market. Consequently, I propose the following:

**Proposition 2:** Firm-level MMC bears an inverted U-shaped relationship with rate of innovation, and consequently with firm-level competence development.

#### **Heightened inter-firm connectedness**

MMC heightens the connectedness as well as dampens the rivalry between firms. The inter-firm familiarity and dependence fostered by MMC have important implications for firm learning processes.

Integrating theory and research on *mimetic isomorphism* and *macrocultures*, I explore how MMC inclines firms toward mimicry, insularity, and myopia, to the detriment of long-term competence development. Invoking the economic concept of opportunity costs, I then contend that the extended interdependence of firms in MMC orients deployment of resources toward *foothold commitments* that potentially limit resource sharing opportunities, again with negative consequences for competence development.

**Mimetic isomorphism and macrocultures.** The psychological concept of social proof and the sociological concept of information cascades (Surowiecki, 2004) suggest that individuals base decisions about their own behavior in part on observed referent group behavior. Mimicry of this stamp reflects not a conformist need for social acceptance, but rather the rationale that “if others are doing it, it must have value.” The institutional literature captures this dynamic at the organizational level with the concept of mimetic isomorphism, or firms’ tendency to respond to uncertainty by modeling referent others (DiMaggio and Powell, 1983). When firms face problems with ambiguous causes or unclear solutions – which they frequently do – they seek solutions in the actions and organizing routines of other firms they perceive dealing successfully with similar problems. Mimetic isomorphic pressures are strongest where the interconnectedness (Oliver, 1991) and interdependence (DiMaggio and Powell, 1983) between firms is highest. Firms confronting one another across multiple markets share a high degree of interconnectedness, extended interdependence, and familiarity, such that they should be strongly affected by the homogenizing influence of mimetic isomorphism. While institutional isomorphism can enhance firm legitimacy and thus, in certain contexts, firm success, mimetic isomorphism nevertheless works counter to the development of unique organizational strategies, routines, and technologies (Oliver, 1997).

The concept of macroculture, like the concept of isomorphism, pertains broadly to the issue of similarity between firms. Whereas institutional theory examines the sources of homogenization in structures and activities, however, the macroculture literature explores the existence and outcomes of managerial perceptions of inter-organizational similarities. Perceived similarities

between firms derive from common values, frames of reference, norms, and expectations (Cassidy and Loree, 2001). A macroculture consists of “the relatively idiosyncratic, organization-related beliefs that are shared among top managers across organizations” (Abrahamson and Fombrun, 1994: 730). A macroculture’s influence reflects the extent to which organizations’ top managers share a mutual perception of one another as close competitors (Abrahamson and Fombrun, 1994). MMC fosters macrocultures (Cassidy and Loree, 2001) because the more firms confront one another across multiple markets, the more likely they are to perceive one another as close competitors. The familiarity that facilitates mutual forbearance among MMC cohorts promotes, as well, managerial perceptions of intra-group similarity in strategic priorities and beliefs about competitive boundaries.

Strong macrocultures affect member firms’ strategic vision and decision making. Where a set of competing firms confront one another repeatedly in multiple domains, top managers tend to focus on one another to the exclusion of firms, technologies, and modes of operating outside the group. Thus, macrocultures are inertial in their tendency to blind members to competitive opportunities and threats originating beyond perceived competitive boundaries (Abrahamson and Fombrun, 1994). This strategic myopia weakens member firms’ adaptive competencies. The learning literature strikes a like note in its discussion of spatial myopia (Levinthal and March, 1993), while the strategic group literature similarly recognizes the tendency of highly interconnected competitors to overly focus attention on one another and away from outside competitors (Peteraf and Shanley, 1997).

Macroculures tend to blind members to knowledge sources beyond perceived competitive boundaries (Abrahamson and Fombrun, 1994). Firms defining their competitive environment narrowly operate in a sterile and homogeneous learning environment (Miller and Chen, 1994). In curtailing organizational attention to external innovative trends, this strategic myopia decreases innovation. Myopic effects of MMC with regard to innovation are particularly significant in light of the emerging literature on knowledge transfer effects of MMC. Several studies find a positive correlation between MMC and cross-citation of patents, suggesting that MMC promotes knowledge transfer between participant firms (Cassidy and Loree, 2001; Scott, 2001; Greve and Mitsuhashi, 2004). Myopic influences on innovative rates and diversity, currently



unexplored empirically, may offset or outweigh *within* group positive effects on knowledge transfer with *between* group negative effects on knowledge exploration and acquisition.

The preceding discussion of institutional isomorphism and macrocultures informs the following:

**Proposition 3:** MMC increases inter-firm connectedness. Increased inter-firm connectedness, in turn, negatively affects organizational learning by increasing mimetic isomorphism and macrocultural myopia. Firm learning is positively related to competence development. Thus, inter-firm connectedness, mimetic isomorphism, and macrocultural myopia mediate a negative relationship between firm-level MMC and firm-level competence development.

**Foothold commitments.** While isomorphic and macrocultural processes reflect social dynamics associated with inter-organizational connectedness, foothold commitments represent a form of mimicry rooted in economic logic. I define foothold commitment as the presence that a firm maintains in a particular market at least partly for the purpose of inducing or perpetuating mutual forbearance. The mutual forbearance hypothesis specifies the rivalry-muting consequences of the retaliatory potential possessed by firms in MMC. Both logic and empirical evidence suggest that firms value the short-term benefits of muted rivalry and, as a result, base market entry and exit decisions at least in part on their desire to establish or preserve mutual forbearance arrangements. Both Haveman and Nonnemaker (2000) and Fuentelsaz and Gomez (2006), for example, find that propensity to enter a given focal market first increases, then decreases, as the firm's level of contact in other markets with incumbents in the focal market increases. In other words, firms low in MMC with incumbents are highly likely to enter the incumbents' focal market because they are not yet highly exposed to retaliation, and because they seek to raise their level of MMC to the point that mutual forbearance can be established with rivals. Once a firm establishes a high level of MMC with incumbents, that firm then proves less likely to enter the incumbents' focal market because it is highly exposed to retaliation. Additionally, several studies have found that firms with high levels of MMC in a given market are less likely to exit that market than

are firms with low levels of MMC (Barnett, 1993; Baum and Korn, 1996; Boeker *et al.*, 1997). These results indicate that firms with high levels of MMC value the rivalry-muting effects of mutual forbearance and consequently hesitate to relinquish those benefits. Forbearance considerations, therefore, entice firms to enter some markets they would not otherwise enter, and to stay in some markets they would otherwise exit (Stephan and Boeker, 2001).

The pursuit of mutual forbearance may act as an incentive for firms to carefully consider specific market attributes when making entry and exit decisions. MMC does not facilitate collusive behavior where markets are identical, firms are identical, and technology is constant returns to scale (Bernheim and Whinston, 1990). Where differences between markets cause firms to attach more weight to future outcomes in some markets than in others, however, MMC serves as a device for shifting punishment power across markets. The future seems more important than the present where market growth is rapid (in comparison to where market growth is slow) and where market demand is low (in comparison to where market demand is high). Where the future seems more important, the consequences of punishment (which are felt in the future) are high relative to the immediate gains of defecting and breaking a collusive arrangement. MMC facilitates the transfer of enforcement power from rapidly to slowly growing markets and from periods of low demand to periods of high demand. Therefore, one of the ways in which firms can enhance their ability to sustain collusive outcomes in contexts of MMC is by occupying counter-cyclical markets or markets with different growth rates (Bernheim and Whinston, 1990). Consequently, firms may establish and maintain foothold commitments in rapidly growing markets or in markets with poorly correlated demand cycles partly for the purpose of sustaining mutual forbearance.

The tendency of firms in MMC to base market entry and exit decisions at least partly on their desire to establish and preserve forbearance arrangements may detract from their capacity to locate and pursue internal resource sharing opportunities. Devoting resources and managerial attention to foothold commitments diverts resources and attention away from potential resource-sharing opportunities in other markets. This is not to suggest that foothold commitments entirely replace or preclude firm pursuit of scope



economies or other synergies; rather, I suggest that at the margins, forbearance objectives may dilute resource-sharing objectives. In short, forbearance considerations may crowd out resource-sharing considerations in scope decisions. A substantive body of literature, in turn, supports the importance of resource-sharing to competence development (Pralhad and Hamel, 1990; Lengnick-Hall and Wolff, 1999). Consequently, I propose the following:

**Proposition 4:** The more managerial attention is devoted to establishing and preserving forbearance benefits deriving from MMC, the less focused managerial attention is on entering and remaining in markets with strong resource-sharing opportunities. Thus, foothold commitments mediate a negative relationship between firm-level MMC and firm-level competence development.

#### **Population-level effects of MMC: punctuated forbearance**

MMC affects characteristics of firm populations as well as attributes of member organizations. In particular, the extent of MMC within a population may influence concentration stability. Extended oligopolies are more *open systems* and thus more accessible to new entrants than are single-market oligopolies, I contend. Additionally, firm-level variety reduction and competence depletion deriving from MMC aggregates to the population level, creating *competitive vacuums* that induce new entry. The confluence of system openness and competitive vacuums may de-stabilize concentration levels in MMC contexts, generating patterns of *punctuated forbearance* in which convergent periods of dampened rivalry are periodically interrupted by rivalrous reorientations.

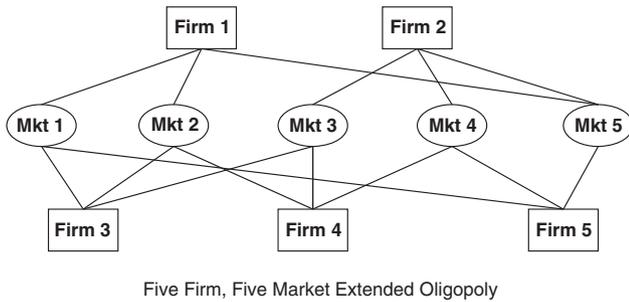
Semi-stability in concentration levels has powerful implications for the preservation of mutual forbearance. The MMC literature's focus on the MMC-forbearance relationship should not obscure the importance of concentration to the development of tacit collusion, in multimarket contexts just as in single-market contexts. While oligopoly studies explicitly operationalize market concentration far more often than do MMC studies, Scott (1982, 1993) has shown that multimarket theory collapses in the absence of high concentration levels. In fact, in markets with low levels of concentration, MMC is *negatively* associated with firm profitability (Scott, 1982). The greater the

number of firms confronting each other across multiple markets, the more familiarity declines, the more unwieldy coordination becomes, the more difficult and costly monitoring defection becomes, and the more mutual recognition of competitive interdependence fades. Absent mutual recognition of interdependence, tacit collusion collapses and rivalry ensues. Persistently high concentration levels, in sum, represent the foundation upon which the entire edifice of current MMC theory rests. A potential causal relationship between MMC and concentration destabilization at the population level, therefore, is a matter of critical importance to multimarket theory.

#### **System openness**

The persistence of high concentration in a single-market oligopoly is contingent upon sustained barriers to entry in that market alone. Extended oligopolies, on the other hand, are more open to entry by virtue of their greater structural complexity. Each market occupied by a cohort of firms engaged in multimarket competition must remain highly concentrated in order for incumbents to mutually recognize interdependence and monitor/enforce coordination. Contact in one market affects intensity of rivalry in another market (and vice versa) if and only if concentration is – and remains – high in *both* markets. A simple example illustrates the greater system openness in extended oligopolies relative to single-market oligopolies. Consider two scenarios: a five-firm single-market oligopoly, and a five-firm extended oligopoly in which each of the five firms confronts each of the other four firms in each of three markets. All other things being equal, the probability of new entry is three times higher in the MMC scenario than in the single-market scenario, simply because three markets are vulnerable to entry as opposed to one.

The extent of MMC system openness is often even greater than suggested by the simple five-firm, three-market extended oligopoly example introduced above. A firm in MMC typically meets one competitor in a certain set of markets, another competitor in another set of markets that partially but not fully overlap with the first, a third firm in another set of markets that partially but not fully overlap with the first and second, and so forth. Partial overlap of market contact destabilizes concentration levels even further than full overlap. Under conditions of partial overlap, entry into a market in which a firm does not even operate can



**Figure 2** Partial overlap in extended oligopolies.

initiate a series of rivalrous actions and reactions that reverberate to affect collusive arrangements in markets in which the firm does operate. Consider, for example, five firms that operate in three markets each, confronting each other across five markets such that each firm is in MMC with at least two others. Figure 2 represents such a scenario.

Entry and subsequent decreases in concentration in one market can undermine forbearance arrangements in a chain reaction down the line, potentially engulfing all five firms. In this scenario, fully five markets are vulnerable to entry, or five times the amount in a single-market oligopoly. Consequently, I propose the following:

**Proposition 5:** The large number of entry points in extended oligopolies relative to single-market oligopolies entails a higher probability of new entry in the former than the latter. Thus, mutual forbearance deriving from MMC is less stable and enduring than tacit collusion in single-market oligopolies.

### Competitive vacuums

Firm-level effects of MMC express themselves aggregately at the population level. As previously discussed, muted rivalry, mimicry, and myopia mediate reductions in the quality and variety of organizational competencies. Over time, the affected population of firms comprising a given MMC cohort will begin to suffer from a fixed and narrow capacity to meet customer wants. This group condition might remain unnoticed in the absence of new entrants. Ironically, however, the homogeneity and atrophy characterizing the population's competencies *induce* the very new entrants that expose the state of those competencies. While MMC may dampen rivalry between

involved firms, competition and competency development are certain to proceed outside the bounds of the MMC cohort. A portion of competency development outside the MMC cohort is likely, eventually, to bear relevance to serving the needs of customers of the firms in MMC. Profitable discrepancies between the knowledge and competencies possessed by those within MMC networks and those outside MMC networks are likely to be seized upon by entrepreneurs. Competitive vacuums do not remain unfilled in perpetuity. Consequently, I propose the following:

**Proposition 6:** MMC reduces the quality and variety of competencies possessed by a population of firms, creating competitive vacuums that ultimately induce market entry by new firms.

### Punctuated forbearance

System openness and competitive vacuums combine to generate patterns of forbearance and rivalry I term punctuated forbearance, borrowing from the concepts of convergent periods and reorientations enumerated in Tushman and Romanelli's (1985) punctuated equilibrium model of organizational evolution. The punctuated equilibrium model maintains that "organizations progress through convergent periods punctuated by reorientations which demark and set bearings for the next convergent period" (Tushman and Romanelli, 1985: 173). Convergent periods consist of relatively long time spans of incremental change and adaptation during which organizational structures, systems, controls, and resources are increasingly co-aligned. Reorientations are relatively short periods of discontinuous change during which organizational attributes are fundamentally transformed toward a new basis of alignment (Tushman and Romanelli, 1985). The framework embodied by the punctuated equilibrium model of organizational evolution captures the dynamics I propose among populations of firms in MMC. Prolonged convergent periods witness increasingly collusive and myopic co-alignment between firms, as repeated interaction over time entrenches familiarity, interdependence, and forbearance norms. Co-alignment within an MMC cohort slowly builds competency gaps between the cohort and external firms/entrepreneurs. Competitive vacuums operate in conjunction with system openness to induce reorientations – the "punctuation" in punctuated forbearance. While convergent periods represent

the forestalling of competition, reorientations reflect its inexorability. Brief and infrequent, reorientations consist of new entry of sufficient scale to undermine existing forbearance arrangements, thus transforming the competitive landscape. The frequency and magnitude of reorientations are likely inversely related.

**Joint firm- and population-level effects of MMC: consequences for performance**

The framework advanced in this article encompasses and reconciles, in the context of MMC, two competing views on the source of above average firm performance. One view, rooted in the structure-conduct-performance paradigm of industrial organization, emphasizes the actions firms take to create defensible positions against competitive forces (Caves and Porter, 1977; Porter, 1980; Teece *et al.*, 1997). This “positional advantage” view is countered by a second major approach that regards superior performance as the result of idiosyncratic organizational attributes (Barnett *et al.*, 1994). This “distinctive competencies” or “resource-based” perspective emphasizes the development of rare, valuable, non-substitutable, and inimitable firm capabilities and assets (Wernerfelt, 1984; Barney, 1991). Both perspectives, I contend, are necessary to a dynamic, multilevel model of MMC. The positional advantage view accounts for performance outcomes in the short-term, while the distinctive competencies view is critical to understanding long-term firm performance.

The mutual forbearance hypothesis captures the positional advantage conferred upon firms by MMC. Mutually recognized interdependence fosters tacit collusion, which shields member firms from competitive pressures. Empirical studies of MMC reflect this positional advantage in findings of higher prices (Evans and Kessides, 1994; Jans and Rosenbaum, 1997) and fatter price-cost margins (Hughes and Oughton, 1993; Singal, 1996; Parker and Roller, 1997; Gimeno and Woo, 1999) at the firm-in-market level. My framework recognizes short-term positional advantages with propositions one and two.

I depart from extant theory by integrating the distinctive competencies perspective into consideration of performance outcomes. The distinctive competencies view inherently orients attention toward the long term. The processes mediating reduction in competence quality and variety do not generate immediate effects. Organizational decision-making tendencies reflected in the

concepts of problemistic search, path dependence, experience, isomorphism, macroculture, and footholds are gradual, cumulative affairs. Additionally, in the MMC context, positional advantage disguises competency effects. Indeed, competence depletion largely *derives from* the blunting of competitive forces. Firm performance does not reflect competence depletion as long as mutual forbearance persists. I have argued, however, that positional advantage affects competencies, which recursively affect positional advantage. The dissolution of mutual forbearance exposes the competence depletion that it in part drove and from which it in part died. The full cycle is not evident in the short term. Competitive vacuums result from slowly developing competence gaps between firms internal and external to the MMC network, and entrepreneurial gap recognition and subsequent entry entail additional time. In sum, positional advantage in MMC contexts contains the seed of its own destruction, but time is necessary for the seed to bear fruit. Consequently, I propose the following:

**Proposition 7:** Firm-level MMC is positively related to short-term financial performance and negatively related to long-term financial performance.

**Implications and conclusion**

**Implications for theory**

The dynamic, multilevel perspective advocated in this article has important implications for MMC theory. By extending consideration of multimarket issues outward in time and across levels of analysis, my approach invites reevaluation of the bounds of endogeneity in MMC theory. Excessively narrow formulations dominate current research. Short-term focus goes hand-in-hand with defining as fixed and exogenous certain variables that might well belong within MMC models. Future theoretical efforts might build on my framework to explore additional causal pathways involved in MMC dynamics. One theoretical avenue in need of further exploration is the integration of positional advantage and distinctive competencies perspectives. Nuanced analyses informed by both views promise to substantially enhance our understanding of cross-level, long-term recursive relationships between market position and competencies. In a more detailed sense, the potential exists for theoretical refinement of particular relationships



introduced in this article. For example, might network theory or NK modeling shed additional light on the “system openness” concept I discuss? Might additional insights from behavioral or economic theory, or from elsewhere, be applied to analysis of the relationship between MMC and firm-level competencies?

### Implications for research

A multilevel model of MMC has numerous research implications. Moving research forward entails developing a firm-level MMC construct against which firm performance may be examined. Therefore, the need exists for operationalizing a construct reflecting a firm’s overall orientation toward MMC throughout its portfolio. The construct might, for example, be composed of three dimensions: aggregate *number* of multimarket competitors that the focal firm confronts in a given market; *proportion* of the focal firm’s competitors in a given market that are multimarket competitors; and *degree* of MMC that the focal firm has with multimarket competitors. Measurement might be indexed, such that a market-level MMC value (based on the above categories—*number*, *proportion*, *degree*) is assessed for the firm in each market in which it operates, and then aggregated to the firm level by scaling each market-level MMC value according to the proportion of total firm revenues (or profits) derived from the market in question.

Many other research opportunities arise from the multilevel model proposed here. The competence depletion and punctuated forbearance hypotheses are in need of empirical testing. For example, empirical work might test for relationships between firm-level MMC and competence quality/variety along such dimensions as rate/diversity of innovation, product/service quality, cost efficiency and absorptive capacity. Another research opportunity pertains to the relationship between firm-level MMC and the existence of particular mediators. For example, does evidence support the relationships I suggest between firm-level MMC and isomorphism, path dependence, macrocultures, or resource-sharing? At the population level, the need exists for empirical studies pertaining to the relationship between MMC, concentration, and mutual forbearance. Is high concentration really necessary, in every market occupied by an MMC cohort, for mutual forbearance to hold? Are there discernible patterns in concentration and collusion over time approximating the convergent periods and reorientations comprising

punctuated forbearance? Finally, the role of moderators remains conspicuously unaddressed. What firm attributes (such as age or size) and what industry/environmental characteristics (such as dynamism or complexity) accelerate or decelerate competence depletion, and how do moderators affect ease of entry and thus patterns of forbearance punctuation?

### Implications for practice

MMC is framed one-dimensionally by the current literature as a positional advantage positively associated with profit margins. This article paints a very different picture. The principal implication for top executives is that MMC should be approached warily, as something of a poisoned fruit. MMC does confer market power, but it should not be regarded as a factor contributing to sustainable competitive advantage. Managers of firms with postures high in MMC must be on guard against the numerous tendencies toward competence depletion associated with MMC. When making scope decisions, executives should consciously avoid pursuing forbearance benefits at the expense of resource-sharing opportunities. Firms with a multimarket orientation must stay attuned to the potential for strategic myopia, and should scan their environments beyond the bounds of their MMC cohort for competitors, knowledge sources, novel routines, and emerging technologies. Finally, managers must avoid falling prey to the path-dependent tendencies arising from a multimarket orientation, and where problemistic search is curtailed, search should be routinized.

### Conclusion

In this article I seek to expand MMC theory beyond the relatively narrow temporal and causal focus it currently possesses. I draw insights from behavioral and economic theory to elaborate an approach integrating positional advantage and distinctive competencies perspectives on competitive advantage. The framework introduced here does not contradict the mutual forbearance hypothesis, but offers instead that collusive arrangements represent but one stage in a broader, dynamic MMC cycle. MMC forestalls rivalry, but competition is inexorable. Causal chains and feedback loops traverse levels of analysis, such that market power influences competence development and competence development recursively affects market power.

My attentiveness to part-whole relationships in the form of firm-population dynamics, along with



my argument that MMC market power contains the seeds of its own destruction, evinces the dialectical sensibilities motivating my approach. The framework I advance should not be interpreted as deterministic, however. While I identify behaviorally and economically grounded tendencies that, if unaddressed, are likely to surface in firms with strong MMC orientations, my analysis remains strategic in spirit. Managerial choice plays a critical

role in shaping the relationships between variables that I propose. Indeed, my ultimate purpose is to inform theory and research that better equips managers to navigate multimarket contexts. Considerable room remains for theoretical and empirical contributions to multilevel MMC theory. The propositions forwarded in this article are designed to provide a foundation on which future endeavors may build.

## References

- Abrahamson, E. & Fombrun, C. (1994). Macrocultures: Determinants and consequences. *Academy of Management Review*, 19: 728–755.
- Adams, W.J. (1974). Market structure and corporate power: The horizontal dominance hypothesis reconsidered. *Columbia Law Review*, 74: 1276–1297.
- Ahuja, G. & Lampert, C.M. (2001). Entrepreneurship in the large corporation: A longitudinal study of how established firms create breakthrough inventions. *Strategic Management Journal*, 22: 521–543.
- Areed, P. & Turner, D. (1979). Conglomerate mergers: Extended interdependence and effects on interindustry competition as grounds for condemnation. *University of Pennsylvania Law Review*, 127: 1082–1103.
- Arrow, K. (1962). Economic welfare and the allocation of resources for inventions. In R. Nelson (Ed), *The rate and direction of inventive activity*. Princeton, NJ: Princeton University Press.
- Arthur, W.B. (1989). Competing technologies, increasing returns, and lock in by historical events. *Economic Journal*, 99: 116–131.
- Arthur, W.B. (1994). *Increasing returns and path dependence in the economy*. Ann Arbor, MI: University of Michigan Press.
- Banker, R.D., Khosla, I. & Sinha, K.K. (1998). Quality and competition. *Management Science*, 44: 1179–1192.
- Barnett, W.P. (1993). Strategic deterrence among multipoint competitors. *Industrial and Corporate Change*, 2: 249–278.
- Barnett, W.P., Greve, H.R. & Park, D.Y. (1994). An evolutionary model of organizational performance. *Strategic Management Journal*, 15: 11–28.
- Barnett, W.P. & Hansen, M.T. (1996). The red queen in organizational evolution. *Strategic Management Journal*, 17: 139–157.
- Barnett, W.P. & Pontikes, E.G. (2008). The red queen, success bias, and organizational inertia. *Management Science*, 54: 1237–1251.
- Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99–120.
- Baum, J.A.C. & Korn, H.J. (1996). Competitive dynamics of inter-firm rivalry. *Academy of Management Journal*, 39: 255–291.
- Baum, J.A.C. & Korn, H.J. (1999). Dynamics of dyadic competitive interaction. *Strategic Management Journal*, 20: 251–278.
- Bernheim, D. & Whinston, M.D. (1990). Multimarket contact and collusive behavior. *RAND Journal of Economics*, 21: 1–26.
- Blundell, R., Griffith, R. & Van Reenen, J. (1995). Dynamic count data models of technological innovation. *The Economic Journal*, 105: 333–344.
- Boeker, W., Goodstein, J., Stephan, J. & Murmann, J.P. (1997). Competition in a multimarket environment: The case of market exit. *Organization Science*, 8: 126–142.
- Bonanno, G. & Haworth, B. (1998). Intensity of competition and the choice between product and process innovation. *International Journal of Industrial Organization*, 16: 495–510.
- Boone, J. (2001). Intensity of competition and the incentive to innovate. *International Journal of Industrial Organization*, 19: 705–726.
- Busse, M.R. (2000). Multimarket contact and price coordination in the cellular telephone industry. *Journal of Economics & Management Strategy*, 9: 287–320.
- Cassidy, C.M. & Loree, D. (2001). Dynamics of knowledge transfer among multimarket competitors. In J.A.C. Baum and H.R. Greve (Eds), *Advances in strategic management: Multiunit organization and multimarket strategy*, Vol. 18: 141–174. Stamford, CT: JAI Press.
- Caves, R.E. (1980). Industrial organization, corporate strategy, and structure. *Journal of Economic Literature*, 18: 64–92.
- Caves, R.E. (Ed), (1992). *Industrial efficiency in six nations*. Cambridge, MA: MIT Press.
- Caves, R.E. & Barton, D.R. (1990). *Efficiency in U.S. manufacturing industries*. Cambridge, MA: MIT Press.
- Caves, R.E. & Porter, M.E. (1977). From entry barriers to mobility barriers. *Quarterly Journal of Economics*, 91: 241–261.
- Coccorese, P. & Pellicchia, A. (2009). Multimarket contact and profitability in banking: Evidence from Italy. *Journal of Financial Services Research*, 35: 245–271.
- Cyert, R.M. & March, J.G. (1963). *A behavioral theory of the firm*, 2nd edn. Malden, MA: Blackwell Publishers.
- D'Aveni, R.A. (1994). *Hypercompetition: Managing the dynamics of strategic maneuvering*. New York: Free Press.
- Delbono, F. & Denicolo, V. (1990). R&D investment in a symmetric and homogeneous oligopoly. *International Journal of Industrial Organization*, 8: 297–313.
- Derfus, P.J., Maggitti, P.G., Grimm, C.M. & Smith, K.G. (2008). The red queen effect: Competitive actions and firm performance. *Academy of Management Journal*, 51: 61–80.
- DiMaggio, P.J. & Powell, W.W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48: 147–160.
- Edwards, C.D. (1955). Conglomerate bigness as a source of power. In G. Stigler (Ed), *Business concentration and price policy*, 331–359. Princeton, NJ: Princeton University Press.
- Evans, W.N. & Kessides, I.N. (1994). Living by the “golden rule”: Multimarket contact in the U.S. airline industry. *Quarterly Journal of Economics*, 109: 341–366.
- Feinberg, R.M. (1985). Sales-at-risk: A test of the mutual forbearance theory of conglomerate behavior. *Journal of Business*, 58: 225–241.
- Fernandez, N. & Marin, P.L. (1998). Market power and multimarket contact: Some evidence from the Spanish hotel industry. *The Journal of Industrial Economics*, 46: 301–315.
- Fu, W.W. (2003). Multimarket contact of U.S. newspaper chains: Circulation competition and market coordination. *Information Economics and Policy*, 15: 501–519.
- Fuentelsaz, L. & Gomez, J. (2006). Multipoint competition, strategic similarity and entry into geographic markets. *Strategic Management Journal*, 27: 477–499.



- Geroski, P.A. (1990). Innovation, technological opportunity, and market structure. *Oxford Economic Papers*, 42: 586–602.
- Ghemawat, P. & Thomas, C. (2008). Strategic interaction across countries and multinational agglomeration: An application to the cement industry. *Management Science*, 54: 1980–1996.
- Jimeno, J. (1999). Reciprocal threats in multimarket rivalry: Staking out “spheres of influence” in the U.S. airline industry. *Strategic Management Journal*, 20: 101–128.
- Jimeno, J. & Jeong, E. (2001). Multimarket contact: Meaning and measurement at multiple levels of analysis. In J.A.C. Baum and H.R. Greve (Eds), *Advances in strategic management: Multiunit organization and multimarket strategy*, Vol. 18: 357–408. Stamford, CT: JAI Press.
- Jimeno, J. & Woo, C.Y. (1996). Hypercompetition in a multimarket environment: The role of strategic similarity and multimarket contact in competitive de-escalation. *Organization Science*, 7: 322–341.
- Jimeno, J. & Woo, C.Y. (1999). Multimarket contact, economies of scope, and firm performance. *Academy of Management Journal*, 42: 239–259.
- Greve, H.R. (2008). Multimarket contact and sales growth: Evidence from insurance. *Strategic Management Journal*, 29: 229–249.
- Greve, H.R. & Mitsuhashi, H. (2004). Multiunit organization and multimarket strategy: The dynamics of market entry and commitment. *Scandinavian Journal of Management*, 20: 9–30.
- Haveman, H.A. & Nonnemaker, L. (2000). Competition in multiple geographic markets: The impact on growth and market entry. *Administrative Science Quarterly*, 45: 232–267.
- Heggstad, A. & Rhoades, S. (1978). Multi-market interdependence and local market competition in banking. *The Review of Economics and Statistics*, 4: 523–532.
- Hughes, K. & Oughton, C. (1993). Diversification, multimarket contact, and profitability. *Economica*, 60: 203–224.
- Jans, I. & Rosenbaum, D.I. (1997). Multimarket contact and pricing: Evidence from the U.S. cement industry. *International Journal of Industrial Organization*, 15: 391–412.
- Kang, W., Bayus, B.L. & Barasubramanian, S. (2010). The strategic effects of multimarket contact: Mutual forbearance and competitive response in the personal computer industry. *Journal of Marketing Research*, 47: 415–427.
- Karnani, A. & Wernerfelt, B. (1985). Multiple point competition. *Strategic Management Journal*, 6: 87–96.
- Kim, L. (1998). Crisis construction and organizational learning: Capability building in catching-up at Hyundai Motor. *Organization Science*, 9: 506–521.
- Korn, H.J. & Baum, J.A. (1999). Chance, imitative, and strategic antecedents to multimarket contact. *Academy of Management Journal*, 42: 171–193.
- Lant, T.K., Milliken, F.J. & Batra, B. (1992). The role of managerial learning and interpretation in strategic persistence and reorientation. *Strategic Management Journal*, 13: 585–608.
- Lengnick-Hall, C.A. & Wolff, J.A. (1999). Similarities and contradictions in the core logic of three strategy research streams. *Strategic Management Journal*, 20: 1109–1132.
- Levinthal, D.A. & March, J.G. (1993). The myopia of learning. *Strategic Management Journal*, 14(Winter Special Issue): 95–112.
- Levitt, B. & March, J.G. (1988). Organizational learning. *Annual Review of Sociology*, 14: 319–340.
- March, J.G. (1988). *Decisions and organizations*. Cambridge, MA: Basil Blackwell.
- March, J.G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2: 71–87.
- March, J.G. & Simon, H.A. (1958). *Organizations*, 2nd edn. Cambridge, MA: Blackwell.
- Mazzeo, M.J. (2003). Competition and service quality in the U.S. airline industry. *Review of Industrial Organization*, 22: 275–296.
- Miller, D. & Chen, M. (1994). Sources and consequences of competitive inertia: A study of the U.S. airline industry. *Administrative Science Quarterly*, 39: 1–23.
- Miller, D. & Friesen, P. (1984). *Organizations: A quantum view*. Englewood Cliffs, NJ: Prentice-Hall.
- Nelson, R.R. & Winter, S.G. (1982). *An evolutionary theory of economic change*. Cambridge, MA: Harvard University Press.
- Nickell, S.J. (1996). Competition and corporate performance. *Journal of Political Economy*, 104: 724–746.
- Nickell, S.J., Wadhvani, S.B. & Wall, M. (1992). Productivity growth in U.K. companies, 1975–1986. *European Economic Review*, 36: 1055–1085.
- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16: 145–179.
- Oliver, C. (1997). Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal*, 18: 697–713.
- Parker, P.M. & Roller, L.H. (1997). Collusive conduct in duopolies: Multimarket contact and cross-ownership in the mobile telephone industry. *RAND Journal of Economics*, 28: 304–322.
- Peteraf, M. & Shanley, M. (1997). Getting to know you: A theory of strategic group identity. *Strategic Management Journal*, 18(Summer special issue): 165–186.
- Porter, M.E. (1980). *Competitive strategy*. New York: Free Press.
- Porter, M.E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York: The Free Press.
- Porter, M.E. (1990). *The competitive advantage of nations*. London: Macmillan.
- Porter, M.E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal*, 12(Special Issue): 95–117.
- Prahalad, C.K. & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3): 79–93.
- Prince, J.T. & Simon, D.H. (2009). Multimarket contact and service quality: Evidence from on-time performance in the U.S. airline industry. *Academy of Management Journal*, 52: 336–354.
- Schumpeter, J. (1942). *Capitalism, socialism, and democracy*, 3rd edn. New York: Harper and Row.
- Scott, J.T. (1982). Multimarket contact and economic performance. *Review of Economics and Statistics*, 64: 368–375.
- Scott, J.T. (1993). *Purposive diversification and economic performance*. Cambridge, UK: Cambridge University Press.
- Scott, J.T. (2001). Designing multimarket-contact hypothesis tests: Patent citations and multimarket contact in the product and innovation markets of the chemicals industry. In J.A.C. Baum and H.R. Greve (Eds), *Advances in strategic management: Multiunit organization and multimarket strategy*, Vol. 18: 175–202. Stamford, CT: JAI Press.
- Sellers, P. (1995). Can Coke and Pepsi make Quaker sweat? *Fortune*, 132(issue 1, July 10, 1995): 20.
- Shankar, V. (1999). New product introduction and incumbent response strategies: Their interrelationship and the role of multimarket contact. *Journal of Marketing Research*, 36: 327–344.
- Singal, V. (1996). Airline mergers and multimarket contact. *Managerial and Decision Economics*, 17: 559–574.
- Stephan, J. & Boeker, W. (2001). Getting to multimarket competition: How multimarket contact affects firms’ market entry decisions. In J.A.C. Baum and H.R. Greve (Eds), *Advances in strategic management: Multiunit organization and multimarket strategy*, Vol. 18: 229–261. Stamford, CT: JAI Press.
- Surowiecki, J. (2004). *The wisdom of crowds*. New York: Doubleday.
- Teece, D.J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28: 1319–1350.
- Teece, D.J., Pisano, G. & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18: 509–533.
- Tushman, M. & Romanelli, E. (1985). Organizational evolution: A metamorphosis model of convergence and reorientation. In L. Cummings and B. Staw (Eds), *Research in organizational behavior*, Vol. 7: 171–222. Stamford, CT: JAI Press.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5: 171–180.



- Winter, N. (2000). The satisficing principle in capability learning. *Strategic Management Journal*, 21: 981–996.
- Young, G., Smith, K.G. & Grimm, C.M. (1996). Austrian" and industrial organization perspectives on firm-level competitive activity and performance. *Organization Science*, 7: 243–254.
- Young, G., Smith, K.G., Grimm, C.M. & Simon, D. (2000). Multimarket contact and resource dissimilarity: A competitive dynamics perspective. *Journal of Management*, 26: 1217–1236.
- Zahra, S. & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27: 185–203.

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