ASYMMETRIC INTERACTIONS BETWEEN FOREIGN AND DOMESTIC BANKS: EFFECTS ON MARKET ENTRY

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An inverted U-shaped relationship is thought to exist between the number of firms entrenched in a market and the rate of new entrants. This study examined early and late entry by foreign and U.S. banks into the California market following a deregulation in the banking industry in the early 1980s. The study was designed to elucidate the competitive interactions between foreign and domestic banks. Specifically, what response did the entry of foreign banks elicit from domestic banks and what influence did the entry of domestic banks exert on the evolution of the foreign banks in the market. Data covering the period from 1979 to 1988 demonstrate that the density of foreign banks operating in the market had a U-shaped relationship with the rate of entry of U.S. banks, supporting the argument that foreign investment can encourage the expansion of domestic banks. Although foreign banks were not an obstacle to domestic bank entries, the presence of domestic banks deterred the entry of foreign banks.

INTRODUCTION

Foreign banks made significant inroads into the U.S. market in the late 1970s and the 1980s (Graham and Krugman, 1995). The assets of foreign banks’ U.S. subsidiaries, branches, and agencies grew from $27 billion in 1972 to $1.1 trillion at the end of 1998—a 40-fold increase. In contrast, the assets of domestically owned U.S. banks increased only 4.5 times, to $3.6 trillion, over the same period (Houpt, 1999). The 700 foreign bank subsidiaries and branches in the United States controlled more than 23 percent of U.S. banking assets at the end of 1998. This rapid rise in assets pushed the foreign banks’ share of business lending from 7.6 percent to 27 percent over the 1973–1997 period (Houpt, 1999). While the growth of foreign banks in the United States, particularly Japanese banks, slowed down in the 1990s, their rapid entry in the 1980s presents an interesting opportunity to explore certain theoretical and policy issues (Berger, Kashyap, and Scalise, 1995; Graham and Krugman, 1995).

The effect of foreign competition on domestic banks is usually considered to be an important concern of public policy (Berger et al., 1995; Graham and Krugman, 1995). The rapid entry of foreign banks into the U.S. market in the 1980s was at the time considered likely to disturb the existing competitive structure (Caves, 1996). Specialists even pointed out that unless major foreign acquisitions of local banks were stopped, foreigners might control an unacceptably high percentage of U.S. banking assets (e.g., Bleakley, 1992). These considerations and others led the U.S. Congress to enact the Foreign Bank Supervision Enhancement Act of 1991, which strengthened the supervisory and
regulatory roles of the Federal Reserve Board with respect to the entry and expansion of foreign banks in the United States (Berger et al., 1995; Misback, 1993).

This concern about the potential for foreign dominance of the U.S. banking industry was primarily based on the assumption that foreign and domestic banks must compete directly, and that the presence of foreign banks must jeopardize the domestic banking industry (Bleakley, 1992). However, little empirical research has been done to verify or falsify this conventional ‘competitive exclusion’ hypothesis (i.e., that the new foreign entrants and domestic banks would find themselves in direct competition). This hypothesis, mainly based on the assumption of zero-sum competition, holds that the presence or entry of one (sub)population will negatively affect the prosperity of a related one. In the U.S. banking context, the rapid growth of foreign direct investment (FDI) during the 1980s indicated intensified competition between domestic and foreign banks, which, it was assumed, could influence foreign and domestic banks’ entry patterns (Caves, 1996).

The interaction between foreign and domestic firms is an area of particular interest to strategic management scholars and practitioners. There are many strategic issues associated with intensified foreign competition and its impact on domestic firms and industry structures. For instance, researchers have been interested in examining how foreign multinational corporations (MNCs) differ from domestic competitors in terms of their competitive advantages and disadvantages (Caves, 1996; Hymer, 1960; Zaheer, 1995; Zaheer and Mosakowski, 1997), how the activities of foreign MNCs affect host country productivity and that of domestically owned firms (Aitken and Harrison, 1999; Caves, 1974; Chung, Mitchell, and Yeung, 2003), and how domestic customers and competitors shape the strategic behavior and performance of foreign MNCs in the markets they enter (Fiegenbaum, Lavie, and Shoham, 2004; Morck and Yeung, 1991; Murtha, Lenway, and Bagozzi, 1998). In fact, the concept of organizational and competitive interactions lies at the heart of strategic management (Henderson and Mitchell, 1997). Firm strategy and performance fundamentally arise from interactions between organizational and competitive factors on several levels of analysis. Therefore, a strategic management approach should be useful in exploring the coevolution of foreign and domestic banks.

This article will examine the competitive structure of the California banking industry and how variations in competitive density and interpopulation asymmetries affected the entry rates of foreign and domestic banks over the period of 1979–1988. Specifically, 1) what response did the entry of foreign banks elicit from the domestic banks; and 2) what influence did the entry of domestic banks exert on the evolution of foreign banks. The study period was chosen in order to examine new bank entries following a ‘deregulation’ of the banking industry and during the rapid growth of banking FDI in the United States in the late 1970s and early 1980s (Berger et al., 1995; Graham and Krugman, 1995).

These research questions can best be addressed by studying asymmetric interactions between foreign and domestic banks. The theoretical argument for the presence of competitive asymmetry goes beyond the conventional competition and mutualism approaches to examining the interactions between two different subpopulations. Rather, it emphasizes the role of signaling and the search for referents—a somewhat neglected area in both strategy and organizational ecology research.1 In particular, we propose, in contrast to the conventional assumption of direct competition between these two subpopulations of banks, that competition from foreign banks may initially have deterred new entries into the California market by U.S. banks, but may later have stimulated domestic bank entries through signaling effects related to the liability of foreignness. As foreign investors escalated their commitment by continuing to launch new entries, domestic firms may have perceived this as a market opportunity specifically because the large number of foreign firms might signal a more ‘munificent’ banking environment for all firms. In contrast, the established domestic banks might well constitute an obstacle for new foreign bank entries because of the persistent nature of the liability of foreignness (DeYoung and Nolle, 1996; Hasan and Hunter, 1996; Miller and Parkhe, 2002; Zaheer, 1995; Zaheer and Mosakowski, 1997). Because banks may compete in different market segments, it is necessary to classify the banks under study into

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1 We would like to thank an anonymous reviewer for highlighting this important point.
distinct strategic groups and examine the interaction between foreign and domestic banks in each group.

This study was designed to address a critical research issue that concerns policymakers and scholars in strategic management and international business: the competitive interactions between foreign and domestic firms (Caves, 1996; Graham and Krugman, 1995; Henderson and Mitchell, 1997; Hymer 1960; Zaheer and Mosakowski, 1997). It empirically assessed the effect of international competition on the formation of domestic firms and that of domestic competition on the entry of foreign investors. This study has challenged the conventional assumption of direct competition between foreign and domestic banks and explored an alternative hypothesis that the presence of foreign banks in the United States may actually stimulate the expansion of domestic banks. The results show that while the density of domestic banks has a deterrent effect on foreign bank entry, foreign bank density shows a U-shaped relationship with domestic bank entry. The results suggest that the presence of foreign banks in a particular market segment may have actually signaled favorable market opportunities for domestic banks, thus encouraging new domestic bank entries during the study period. These findings suggest that interpopulation interaction is a more complex process than the conventional assumption of ‘competitive exclusion’ asserts. The asymmetric interaction pattern between foreign and domestic banks found in this research implies that diverse mechanisms may be at work in channeling interpopulation competition. The findings also offer an alternative perspective for policy debates regarding the effect of foreign investors on domestic industries.

The next section sets out the theoretical background for examining the entry of foreign and domestic banks, as well as the interactions between them. Drawing on theories of competitive interaction, strategic groups, organizational ecology, and foreign direct investment, hypotheses are then developed that explore the effects of competitive interactions on the entry of foreign and domestic banks. The methods section discusses in detail the strategic group mapping in the California banking industry and the negative binomial and Poisson regression models used in the empirical analysis. The results of the empirical study are discussed in subsequent sections.

THEORETICAL BACKGROUND

The entry of foreign and domestic banks into the California market and their subsequent interactions can be approached from two theoretical perspectives: research on strategic groups (Dranove, Peteraf, and Shanley, 1998; Fiegenbaum and Thomas, 1995; Peteraf and Shanley, 1997; Reger and Huff, 1993; Thomas and Venkatraman, 1988) and organizational ecology (Baum and Mezias, 1992; Baum and Singh, 1994; Hannan et al., 1995; Hannan and Freeman, 1977). Research on strategic groups and organizational ecology has each examined group interactions, yet the literature so far has not paid adequate attention to the integration of these two complementary perspectives.

Several strategic group studies have explored the competitive interactions among group members as key research questions (see, e.g., Thomas and Venkatraman, 1988). They have examined group formation, dynamic movement, stable strategic time periods, cognitive groups, and the development of strategic groups as reference groups (Dranove et al., 1998; Fiegenbaum and Thomas, 1995; Peteraf and Shanley, 1997; Reger and Huff, 1993). Banks operating in different market segments were classified into distinct strategic groups in this line of research, so much of this prior work is relevant to the research questions of the present study. Similarly, organizational ecology research has explored the interactions among different market segments or subpopulations, essentially interactions among groups of firms (Hannan and Freeman, 1977, 1989). Banks classified into the same strategic group can be considered as occupying the same market niche. Occupying the same market niche indicates similar resource requirements, which may lead to intense competition, so the ecological perspective can also serve as a sound conceptual background for exploring the entry dynamics of foreign and domestic banks.

Research on strategic groups

Strategic groups are collections of firms that are similar in terms of key strategic dimensions (Caves and Porter, 1977; Hunt, 1972). An extensive body of theoretical and empirical literature has used this construct to examine different aspects of competitive strategy. The concept of strategic groups allows firms to make more sense of competition when analyzing complex industries (Hatten
and Hatten, 1987; Hatten, Schendel, and Cooper, 1978; McGee and Thomas, 1986; Porter, 1980; Schendel and Patton, 1978), in illustrating the competitive positions available within an industry (Cool, 1985; Cool and Schendel, 1987, 1988; Fiegenbaum and Thomas, 1990), and in examining the effects of competitive rivalry (Cool and Dierickx, 1993). However, the primary goal of strategic group research has usually been to identify significant performance differences among groups (Cool and Schendel, 1987; Mehra, 1996), so few studies have examined the interactions that result in strategic grouping and determine competitive structures over time (Thomas and Venkatraman, 1988).

Fiegenbaum and Thomas (1995) have proposed that a strategic group acts as a reference point for group members as they make competitive strategy decisions. Indeed, a strategic group acts as a reference group in a number of ways. First, strategic group members, through processes of interorganizational signaling and imitation (Porter, 1980), tend to adjust their strategic behavior toward an appropriate group reference point. Second, other strategic groups may act as ‘benchmarks’ for firms repositioning their strategies (Kumar, Thomas, and Fiegenbaum, 1990).

There are a number of other theoretical perspectives that provide insights into the role of a strategic group as a reference point. They include the cognitive-interpretive perspective, the strategic choice perspective, and the spatial competition perspective (Tang and Thomas, 1992). Porac, Thomas, and Baden-Fuller (1989), for instance, proposed that competitive groups can be likened to cognitive communities. They argue that the mental models used by key decision makers to interpret their organizations’ task environments form an important link between group-level and firm-level competitive phenomena. Direct and indirect imitative tendencies (Aldrich, McKelvey, and Ulrich, 1984; DiMaggio and Powell, 1983) lead, over time, to the mental models of competing strategies becoming similar, thereby creating group-level beliefs about the marketplace. The net result of both direct and indirect imitation is that strategic choices of individual firms take place within the context of many shared beliefs (reference points or benchmarks) about how and with whom to engage in transactions in the marketplace (Huff, 1982; Spender, 1989).

Also, Porter (1980) has pointed out that the interorganization signaling, adaptation, and imitation that typically occur among rival firms may lead to clusters (strategic groups) of firms within an industry. They typically share common specific assets, refer to each other’s behavior, and thus follow common strategies in making key decisions. Furthermore, mobility barriers and ideologies specific to the group tend to reinforce the group’s position over time. In the context of foreign and domestic banking, banks belonging to the same strategic group serve for each other both as competitors and as models for imitation, thus significantly affecting each other’s entry decisions.

Organizational ecology perspective

A population of organizations can often be divided into subpopulations on the basis of differences in organizational form that can have implications for resource utilization (Hannan and Freeman, 1977, 1989). The interactions between two subpopulations can be explored by examining the effect of the density of one subpopulation (defined and measured as the number of member organizations) on entry by members of the other (Hannan and Carroll, 1992).

According to the ecology perspective, the potential for competition among organizations is by and large a function of similarity in resource requirements: the more similar the resource requirements, the greater the potential for competition (Baum and Singh, 1994; Hannan and Freeman, 1989). Using the concept of the niche, as defined in terms of organizational resource requirements, two subpopulations of organizations can be said to compete if and only if their fundamental niches intersect (Baum and Singh, 1994; Hannan and Freeman, 1989). At one extreme, organizations occupying the same organizational niche (that is, organizations with the same resource requirements) are perfect competitors (niche overlap). At the other extreme, organizations with distinct resource requirements do not compete directly with each other (no niche overlap). Organizations attempt to define their relations with other organizations by staking out market niches, which may include claims about clientele served, products and services provided, and technology employed (Levine and White, 1961).

In the context of foreign participation in a domestic banking market, foreign banks’ financial
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conditions will normally differ considerably from those of domestic banks in terms of customer base and bank procedures as well as relevant regulatory and tax regimes. Because of these differences and their distinct institutional ownership forms, the foreign and domestic banks might well be considered as two distinct subpopulations competing in a single domestic banking market. The entry path of foreign banks as ‘intruders’ is likely to be significantly different from that of domestic banks, and the effect of foreign presence on the evolution of domestic banking is likely to be significantly different from the reverse effect on the evolution of foreign banks (Bogner, Thomas, and McGee, 1996).

Previous ecology studies of market entry have largely focused on entries by organizations similar to those already operating in the market (Baum and Oliver, 1996; Hannan and Carroll, 1992). This study, however, focuses on the interaction of two different subpopulations. This may provide insight not only for research on coevolution of organizational populations, but also about the dynamics of international expansion, which seems timely given the intensified international competition in many industries (Bartlett, Ghoshal, and Birkinshaw, 2004).

HYPOTHESES

Effect of foreign presence on domestic banks

Prior work on the interaction of early entries and late entries has generally confirmed that there is a legitimation effect first, followed by a competition effect later (Hannan and Freeman, 1977, 1989). Therefore, the relationship between the density of entrenched firms and the rate of new entries typically shows an inverted U-shape. Since the current study did not focus on the homogeneous population in a closed economy, which has served as the context for most previous research, the competitive interaction between foreign and domestic banks as two subpopulations operating in the host industry, might be expected to exhibit a different pattern.

According to previous research on foreign expansion in the banking industry (Grosse and Goldberg, 1991; Hultman and McGee, 1989; Khoury, 1979; Nigh, Cho, and Krishnan, 1986), though a foreign bank’s entry into a local market may initially be a consequence of simply following its clients (i.e., it may follow its home-country client firms abroad), it may progress to seeking business from domestic companies once established. Such market-seeking behavior has been the subject of several studies (Graham and Krugman, 1995; Seth and Quijano, 1991). As the resource needs and customer bases of foreign and domestic banks become more and more similar, their market niches overlap more and more, and the competition between them becomes more and more intense. As a result, at this initial stage, the gradually intensified competition from foreign banks may discourage the entry of domestic banks.

However, the situation may change after the number of foreign banks in the market exceeds some threshold. Banking environments often differ sharply between countries, both in terms of financial markets and credit risk. Therefore, foreign banks may suffer from a liability of foreignness, that initially leaves them intrinsically weaker than their domestic competitors (Hymer, 1960; Zaheer and Mosakowski, 1997). As a consequence, the presence of a large number of successful foreign banks in a market may signal a lower level of competitive intensity and favorable market opportunities, thus encouraging the entry of new domestic and foreign banks.

Most FDI theories posit that foreign subsidiaries are at a disadvantage relative to domestic firms when doing business in a given host market. That is, they suffer from a liability of foreignness arising from information asymmetries, transaction costs (Hymer, 1960), decision making impeded by distance from the head office (Kindleberger, 1969), and local biases (Vernon, 1977). The liability of foreignness is formally defined as ‘the costs of doing business abroad that result in a competitive disadvantage for an MNE subunit—have been broadly defined as all additional costs a firm operating in a market overseas incurs that a local firm would not incur’ (Zaheer, 1995: 342–343).

According to Zaheer (1995) and Zaheer and Mosakowski (1997), the liability of foreignness has been a fundamental proposition guiding theories and empirical research on MNCs (Buckley and Casson, 1976; Caves, 1996; Dunning, 1977; Hennart, 1982). The liability arises because compared to the local firms, foreign subsidiaries are hampered by relative unfamiliarity with local laws, the language, and the general competitive situation. In relations with local governments, consumers, and suppliers, foreign MNCs will tend to be at a disadvantage (Zaheer and Mosakowski, 1997).
Meanwhile, communication over long distances is often costly and inefficient, so foreign entrants are also subject to the additional cost of managing remote operations. Supporting this theory, a large number of previous studies have demonstrated the existence and persistence of a liability of foreignness in diverse industrial settings and documented the implications of these asymmetries for the relative performance of foreign and local firms competing in the same environment (Mezias, 2002; Miller and Parkhe, 2002; Shukla and van Inwegen, 1995; Zaheer, 1995; Zaheer and Mosakowski, 1997).

The liability of foreignness applies to the international banking context as well. Banks operating abroad may face environments that are dramatically different from those at home. Specifically, foreign-owned banks in the United States may be subject to higher operation costs, lower operating efficiency and profitability, and diminished competitiveness relative to local banks (Scher and Beechler, 1993). In support of these arguments, Miller and Parkhe (2002) have shown a strong influence of the liability of foreignness in the global banking industry over the 1989–1996 period. In addition, some multicountry studies have compared the efficiency of U.S. banks with that of foreign-owned banks in the United States (Chang, Hasan, and Hunter, 1998; DeYoung and Nolle, 1996; Hasan and Hunter, 1996). For instance, DeYoung and Nolle (1996) have reported that foreign-owned banks operating in the United States were less profit efficient than host country (U.S.) banks, and Hasan and Hunter (1996) have shown that Japanese-owned banks in the U.S. market were less profit efficient than their U.S. counterparts.

All these factors provide opportunities for domestic entrepreneurs planning to found a bank. In summary, there is evidence that in the banking industry, a long-term rise in the demand for banking services due to FDI can be met through the expansion of entrenched banks and/or the creation of new banks by domestic entrepreneurs. A large number of foreign banks in a market segment may provide expanded market opportunities and encourage the founding of new banks in that segment. Therefore, the competitive interaction between foreign and domestic banks may not always be negative as implied by the direct competition hypothesis. It could be a win-win game. The presence of many foreign banks in a strategic group might signal a more ‘munificent’ environment, thereby encouraging the entry of domestic banks. Therefore, we propose a U-shaped relationship between the entry of domestic banks and the density of foreign banks in the same strategic group. Formally,

**Hypothesis 1**: The entry rate of domestic banks into a particular strategic group will first decrease and then increase as the density of foreign banks in the group increases.

**Effect of domestic presence on foreign banks**

Similarly, the density of domestic banks in a given strategic group is also likely to affect the entry of foreign banks into that group. Initially, a congruent direct competition effect would be expected due to the foreign banks’ market-seeking activities (Graham and Krugman, 1995; Seth and Quijano, 1991), just as a foreign presence affects domestic banks. That is, competition deters further foreign entries as the number of domestic banks increases and the resource needs and customer bases of the foreign and domestic banks become similar.

Nevertheless, the expansion of domestic banks would not be expected to have a positive impact on the entry of foreign banks at a later stage. This again is an implication of the liability of foreignness. As noted before, foreign firms are expected to face additional costs stemming from their unfamiliarity with and lack of roots in a foreign environment (Hymer, 1960; Kindleberger, 1969). The costs arise from, for example, economic, social, legal, and cultural differences between the host country and the MNC’s home country (Buckley and Casson, 1976; Hennart, 1982), along with the foreign firm’s not being sufficiently embedded in the information networks of the host market (Zaheer and Mosakowski, 1997). These liabilities of foreignness lead to foreign firms deriving little symbiotic assistance from the presence of domestic banks.

So domestic banks constitute an obstacle to new foreign entries throughout the evolution of the market. Foreign banks suffer from the liability of foreignness and any limits that may be enforced by the domestic government (Miller and Parkhe, 2002; Zaheer and Mosakowski, 1997). When considering entry decisions, foreign banks may evaluate the competitive conditions in the host market and attempt to avoid entering strategic groups...
already crowded with a large number of domestic banks. This implies a monotonic discouraging effect of domestic bank density on the entry of foreign banks. Formally,

Hypothesis 2: The entry rate of foreign banks into a particular strategic group will decrease as the density of domestic banks in the same group increases.

Asymmetries among strategic groups

Banks may compete in different market segments, and the asymmetric interactions between foreign and domestic firms may differ between strategic groups. As has been noted above, strategic group analysis can help track industry dynamics and predict the nature of competition (Amel and Rhoades, 1988; Ketchen and Shook, 1996; Thomas and Venkatraman, 1988). For instance, some banks may compete as specialists in certain market segments such as personal loans, real estate loans, or commercial and industrial loans, while other banks might compete in most market segments as generalists. In the banking industry, the customer base is the most important mobility barrier, and this is an important consideration in determining a firm’s scope and resource commitments (Amel and Rhoades, 1988; Cool and Schendel, 1987; McNamara, Deeplhouse, and Luce, 2003; Mehra, 1996; Reger and Huff, 1993). Loan portfolio strategies require a long-term commitment to specific target customers, because switching may involve substantial costs for both lenders and borrowers. So such portfolio strategies are often used to identify market segments in the banking industry (Amel and Rhoades, 1988).

Because the purpose of classification in this study was to identify groups of banks and their strategic interactions, dimensions reflecting firm strategies were emphasized (Ketchen and Shook, 1996; Nath and Gruca, 1997). Following the lead of previous banking industry studies (Amel and Rhoades, 1988; Berger et al., 1995; McNamara et al., 2003), three major types of loans—real estate, personal, and commercial—were used as the basis for grouping. The loan specialization of each bank was measured as the proportion of each of the three types of loans in the bank’s total loan portfolio. This grouping was assumed to reflect specific managerial choices about customers and product types (Amel and Rhoades, 1988). Therefore, to further explore the dynamic interactions, the banks were classified as either specialists or generalists according to their lending patterns.

The asymmetries between foreign and domestic firms might be expected to differ across different strategic groups. The interaction of foreign and domestic banks in the commercial loan segment (where the foreign banks often start as a result of following home-country clients abroad) might well be dissimilar to foreign and domestic bank interactions in the personal and real estate loan segments, where the liability of foreignness is likely to be much greater because of the greater local knowledge required.2

For the entry of domestic banks, the pattern that we predict in Hypothesis 1 on the effect of foreign bank density should be stronger in commercial loans than in other loan sectors, such as real estate or individual loans. For instance, prior studies have found that foreign banks in the United States directed a smaller percentage of their loans to residential mortgages and consumer loans, and a larger percentage to commercial loans, the latter being the main determinant of foreign bank performance (Molyneux, Remolona, and Seth, 1998). While servicing the home country, client firms might be one of the key drivers for foreign bank expansion (Hultman and McGee, 1989), the growth of nonbank FDI in the United States might also spur domestic bank entries into the commercial loan segment. Furthermore, because of the liability of foreignness (Zaheer and Mosakowski, 1997), the large foreign bank presence in commercial loans may provide a signal of favorable market opportunities for new domestic banks in that sector (Heil and Robertson, 1991). Formally,

Hypothesis 3a: The relationship predicted by Hypothesis 1 between the density of foreign banks and the entry rate of domestic banks into a strategic group will be stronger for commercial loan specialists compared to personal and real estate loan specialists.

For the entry of foreign banks, the negative effect that we predict in Hypothesis 2 on the effect of domestic bank density should be weaker in commercial loans than in real estate or individual loans. This is so because in commercial loans,

2 We would like to thank an anonymous reviewer for this insight.
foreign banks can benefit from their home-country client relationships (Molyneux et al., 1998). In the personal and real estate loan sectors, however, more local knowledge is required and foreign banks might be at a disadvantage compared to domestic competitors. When considering entry decisions, foreign banks may avoid entering these personal and real estate strategic groups, which are already crowded with domestic banks. Therefore, the deterrence impact of domestic banks on new foreign bank entries should be stronger for personal and real estate loan specialists. Formally,

**Hypothesis 3b:** The relationship predicted by Hypothesis 2 between the density of domestic banks and the entry rate of foreign banks into a strategic group will be weaker for commercial loan specialists compared to personal and real estate loan specialists.

**METHODS**

**Data and sample**

An empirical study was designed to examine entry rates and the competitive interactions between foreign and domestic banks in California over the period 1979–1988. During this period, government regulations restricted banking operations to a single state, and each state had its own regulations about chartering, branching, and interstate banking. California had allowed full statewide branching since 1909, and was one of the largest host markets for FDI in the United States in 1979, including investment in the banking sector (Berger et al., 1995; Calomiris, 1993; Graham and Krugman, 1995).

Data was collected on all 680 banks that operated in California during the period 1979–1988. The banks’ annual financial data were obtained from data tapes of the Reports of Condition and Income (call reports) filed with federal bank regulators. The call report data tapes did not cover representative offices and agencies of foreign banks, and such entities were thus not included in the study. Among the 680 banks, 104 were further identified as subsidiaries or branches of foreign banks. Consistent with the definition used by the Federal Reserve Board, the term ‘foreign bank subsidiaries’ was adopted to refer to banks more than 25 percent owned by a foreign bank. The main data sources on foreign bank ownership were: (1) a report from the Office of the Comptroller of the Currency (Goldberg, 1981), which provided a full list of all foreign banks operating in the United States that had entered before 1980; and (2) U.S. Department of Commerce (1985–1991) announcements of FDI in the United States, which listed entries of foreign banks since 1974. These were cross-checked with annual surveys published in the American Banker magazine of foreign banks in the United States.

The entry date into California for each foreign and domestic bank in the sample was then identified. Foreign and domestic banks, as well as entrepreneurs, could enter the market either through establishing a new bank or acquiring an existing bank. An entry was defined as the establishment of a new bank, or the acquisition of an existing bank by a foreign bank or an out-of-state domestic bank. The latter case became possible in California only in July 1987 when interstate banking was allowed (Berger et al., 1995). This definition of new bank entries therefore excluded cases of mergers among California banks or the acquisition of an existing bank by a local entrepreneur. However, all banks were included in the density estimations. The first appearance of a bank in the call reports was coded as the bank’s year of entry for a new bank (identified by the call report bank ID). The number of new bank entries totalled 363 over this 10-year period. Of these, 61 were foreign entries and 302 were domestic.

**Strategic groups in the California banking industry**

The banks were classified into distinct strategic groups in this study. Beginning with Hunt’s (1972) study of the home appliance industry, early studies used various measures to find clusters of firms in the pharmaceutical, brewing, banking, and insurance industries (Amel and Rhoades, 1988; Cool and Schendel, 1987, 1988; Fiegenbaum and Thomas, 1990). Several researchers (Barney and Hoskisson, 1990; Cool, 1985; Cool and Schendel, 1988; Hatten and Hatten, 1987) have expressed concern over the different sets of variables and the diverse clustering algorithms used to identify groups. Researchers have responded to these issues in several ways. Some developed cognitive strategic groups, formed from the groupings used by managers themselves (e.g., Porac et al.,
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1989; Reger and Huff, 1993). Others improved conceptualizations of archival variables used to form strategic groups, focusing on firms’ scope and resource commitments (e.g., Cool and Schendel, 1987). However, the strategic groups formed by cognitive methods were found to be similar to those formed through cluster analysis of archival variables (McNamara et al., 2003; Nair and Kotha, 2001; Nath and Grucu, 1997).

A combination of hierarchical and nonhierarchical methods was used in the clustering analysis (Hair et al., 1992; Ketchen and Shook, 1996; Nath and Grucu, 1997). A hierarchical average linkage procedure was first applied. Examination of the industry dendrogram, changes in the clustering coefficient, and plots of the clustering coefficient versus the number of clusters suggested a four-cluster solution. A nonhierarchical cluster algorithm (Fastclus) was then applied with four-cluster solutions and the seed points identified in the hierarchical analysis (Hair et al., 1992; Ketchen and Shook, 1996; Nair and Kotha, 2001). Nonhierarchical methods allow the switching of cluster membership as the clusters evolve, thereby minimizing the problem of data ordering and outliers. Three-, four-, and five-cluster solutions were similarly tested using combinations of these methods. The results suggested a four-cluster solution (Table 1). The strategic grouping relied only on a bank’s loan portfolio and did not consider the bank’s ownership (foreign or domestic).

Each bank was classified into one of the four strategic groups for each year in which the bank had reported financial data. A total of 4,281 observations (bank-years) for the 10-year period were included in the analysis. The four strategic groups included one loan generalist category (41% of the bank-year observations) and three specialist categories: real estate loan specialists (22%), personal loan specialists (15%), and commercial loan specialists (22%). These groupings are consistent with the strategic groups used in previous studies of the banking industry (e.g., Amel and Rhoades, 1988).

### Variables

#### Dependent variables

The empirical analysis used the entry rate (the number of new bank entries each year) into each of the four strategic groups as the dependent variable. The entry rate was further refined into a foreign bank entry rate (number of foreign bank entries) and a domestic bank entry rate (number of domestic bank entries). For new banks, the loan portfolio in the first year determined its strategic group on entry. Except where noted, all variables were measured at the strategic group level.

Figure 1 shows the entry patterns for domestic and foreign banks at the strategic group level over the study period. A bank, of course, could change its loan portfolio in subsequent years. Based on the composition of its loan portfolio each year, a bank, for example, could be classified as a commercial loan specialist for the first two years, and then as a loan generalist for the next three years. This would indicate a strategic change for the bank.

#### Table 1. Means and standard deviations of the loan specification ratios associated with the strategic categories resulting from clustering analysis: California banking industry, 1979–1988

<table>
<thead>
<tr>
<th>Strategic groups</th>
<th>Real estate loans&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Personal loans&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Commercial loans&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Frequency</th>
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<td></td>
<td></td>
<td>Number&lt;sup&gt;b&lt;/sup&gt; Percentage</td>
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<tr>
<td>Real estate loan specialists</td>
<td>0.62</td>
<td>0.17</td>
<td>0.21</td>
<td>926       21.6</td>
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<td></td>
<td>(0.12)</td>
<td>(0.10)</td>
<td>(0.19)</td>
<td></td>
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<tr>
<td>Personal loan specialists</td>
<td>0.21</td>
<td>0.58</td>
<td>0.20</td>
<td>666       15.6</td>
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<td></td>
<td>(0.13)</td>
<td>(0.18)</td>
<td>(0.16)</td>
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</tr>
<tr>
<td>Commercial loan specialists</td>
<td>0.14</td>
<td>0.15</td>
<td>0.68</td>
<td>948       22.1</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.12)</td>
<td>(0.12)</td>
<td></td>
</tr>
<tr>
<td>Loan generalists</td>
<td>0.37</td>
<td>0.20</td>
<td>0.41</td>
<td>1741      40.7</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.10)</td>
<td>(0.09)</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td></td>
<td></td>
<td>4281      100.0%</td>
</tr>
</tbody>
</table>

Note: Means are shown, with standard deviations in parentheses.
<sup>a</sup>: as a percentage of the total loans
<sup>b</sup>: bank-year observations.
in the third year. While strategy change is an important research question in its own right, this study concentrated on analyzing new bank entries as a first step. Future research should examine how the interactions affect strategic changes and the performance of foreign and domestic banks. This study considered changes in strategic group membership only for the purpose of calculating the density of banks in each group.

**Independent variables**

The effect of the density of one subpopulation (foreign banks) on entries into the other subpopulation (domestic banks) was estimated. Domestic or foreign bank density was measured as the number of domestic or foreign banks in each strategic group. All the independent and control variables were time-lagged by one year.

**Control variables**

Both linear and quadratic density terms were included in the analysis to control for the density dependence effects that have been found in a large number of ecological studies on organizational entry (e.g., Hannan and Carroll, 1992; Ranger-Moore, Banaszak-Holl, and Hannan, 1991; Swaminathan, 1995). Ranger-Moore et al. (1991), for example, examined the founding of banks in Manhattan over the period 1791–1980 and identified a strong inverted U-shaped density dependence. Similar effects might be expected for the entry of foreign and domestic banks into the Californian strategic groups during this study period.

Loan market growth, competition from the savings and loan associations, foreign business presence, and dummy variables for the three loan specialists were also included in the analysis as control variables. Market growth would be expected to promote entry without necessarily displacing incumbent firms or provoking retaliation (Kogut and Chang, 1991; Porter, 1980). Loan market growth was measured by the annual growth rate of loans in each strategic group; for the loan generalists, the overall loan growth rate was used. The measures were calculated from the call report data. The number of the savings and loan associations in California was included to assess the competitive effect of nonbank financial institutions on commercial bank entries (Berger et al., 1995). Data were obtained from the *California Statistical Abstract* (California Department of Finance, 1994). Previous studies have suggested that foreign banks may follow home-country client firms abroad (Grosse and Goldberg, 1991; Hultman and McGee, 1989; Nigh et al., 1986). Thus the foreign business presence, measured as the number of foreign-owned nonbank firms in California (as reported by the U.S. Department of Commerce (1991)) was also controlled for. The three dummy variables for the loan specialists were included to compare the entry rates into these groups with that of the loan generalists.

**Analysis: Poisson and negative binomial regressions**

The entry of a foreign or domestic bank into one of the four strategic groups can be considered as an arrival process. The Poisson process thus serves as a natural baseline model for organizational entries (Hannan and Freeman, 1989; Kogut and Chang, 1991; Ranger-Moore et al., 1991). However, this process assumes that the rate of arrival does not depend on the history of previous entries. A generalized Poisson process was specified so as to include the time-varying variables. The available data on entries provided yearly counts (without the exact month or day). The basic analytical strategy was to estimate the parameters expressing the dependence with time-series data using the method of maximum likelihood (Hannan and Carroll, 1992).

The Poisson distribution assumes that the mean and variance are equal. However, it is common to find overdispersion, the situation in which the variance of the event count exceeds the mean (Baum and Oliver, 1996; Greene, 1996; Swaminathan, 1995). The presence of such overdispersion may in some cases lead to overstating the level of statistical significance. A negative binomial model was thus used to correct for overdispersion. The models were evaluated using the LIMDEP software suite (Greene, 1996). No significant overdispersion was observed, however, in the entry of foreign banks, presumably because many fewer entries took place in this subpopulation and there were not many years with exceptionally high entry counts (see Figure 1). Therefore, estimates from the Poisson regression models were used for foreign bank entries.
RESULTS

Table 2 reports descriptive statistics for the study variables. The sample included 40 observations of entry counts into the four strategic groups over the 10 years. On average, the yearly entry count for domestic banks was higher than that for foreign banks. The yearly entry count for foreign banks had a maximum of six entries into a single strategic group, while for domestic banks the maximum was 30.

The findings are reported in Tables 3 and 4, where the dependent variables are the entry rates of domestic banks and foreign banks respectively. Table 3 reports the results of negative binomial regression models for the entry rate of domestic banks. The first model includes the effects of within-subpopulation density dependence (linear and quadratic terms) and other control variables. The second and third models add the linear and quadratic cross-subpopulation density terms (number of foreign banks). Table 4 reports the results of the Poisson analysis of the entry rate of foreign banks (no overdispersion was found).

Foreign bank density in each strategic group showed a U-shaped relationship with domestic bank entry, with a negative first-order and a positive second-order effect (Model 3, Table 3). This indicates a competitive component when the number of foreign banks is small; however, when the number of foreign banks in a strategic group grows large, it will encourage the entry of domestic banks into that strategic group (commensalism). This result supports Hypothesis 1. The inflection point (from competition to commensalism) was found to be at about 34 foreign banks in a particular strategic group.

For foreign bank entry, the number of domestic banks in the same strategic group had a negative effect (Model 2, Table 4). This indicates competition and tends to confirm that competitive conditions in the host country affect the entry decisions of foreign banks. The entry of foreign banks into strategic groups crowded with a large number of domestic incumbents seems to have been discouraged. This result supports Hypothesis 2.

The results also showed an inverted U-shaped density dependence of the entry of foreign and domestic banks over the study period. The inflection point for the non-monotonic density dependence was about 140 domestic banks for domestic bank entry and 35 foreign banks for foreign bank entry.
Table 2. Descriptive statistics and correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>s.d.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Entry counts of foreign banks</td>
<td>1.53</td>
<td>1.60</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>2. Entry counts of domestic banks</td>
<td>7.55</td>
<td>7.54</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>3. Density of foreign banks</td>
<td>15.70</td>
<td>10.80</td>
<td>1</td>
<td>39</td>
</tr>
<tr>
<td>4. Density of domestic banks</td>
<td>91.40</td>
<td>51.00</td>
<td>30</td>
<td>207</td>
</tr>
<tr>
<td>5. Loan market growth</td>
<td>6.90</td>
<td>8.37</td>
<td>−9.7</td>
<td>25.5</td>
</tr>
<tr>
<td>6. Foreign business presence</td>
<td>152.80</td>
<td>39.70</td>
<td>103</td>
<td>244</td>
</tr>
<tr>
<td>7. Number of savings &amp; loan associations</td>
<td>192.80</td>
<td>17.00</td>
<td>170</td>
<td>219</td>
</tr>
<tr>
<td>8. Real estate loan specialist</td>
<td>0.25</td>
<td>0.44</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9. Personal loan specialist</td>
<td>0.25</td>
<td>0.44</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10. Commercial loan specialist</td>
<td>0.25</td>
<td>0.44</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: * Significant at the p < 0.05 level, N = 40

Table 3. Entries of domestic banks into California, 1979–1988: maximum likelihood estimates from negative binomial regression models

<table>
<thead>
<tr>
<th>Entry of domestic banks</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of foreign banks</td>
<td>−0.039*</td>
<td>−0.156*</td>
<td>(0.015)</td>
</tr>
<tr>
<td>(Density of foreign banks)^2/1000</td>
<td>2.299*</td>
<td>2.299*</td>
<td></td>
</tr>
<tr>
<td>Density of domestic banks</td>
<td>0.045***</td>
<td>0.056***</td>
<td>(0.009)</td>
</tr>
<tr>
<td>(Density of domestic banks)^2/1000</td>
<td>−0.164***</td>
<td>−0.195***</td>
<td>(0.008)</td>
</tr>
<tr>
<td>Loan market growth</td>
<td>0.016</td>
<td>0.006</td>
<td>0.005</td>
</tr>
<tr>
<td>Number of savings &amp; loan associations</td>
<td>−0.020*</td>
<td>−0.025***</td>
<td>−0.018*</td>
</tr>
<tr>
<td>Foreign business presence/100</td>
<td>−0.045</td>
<td>0.184</td>
<td>0.201</td>
</tr>
<tr>
<td>Real estate loan specialist</td>
<td>−0.351</td>
<td>−0.649</td>
<td>−1.134**</td>
</tr>
<tr>
<td>Personal loan specialist</td>
<td>0.350</td>
<td>−0.208</td>
<td>−1.233</td>
</tr>
<tr>
<td>Commercial loan specialist</td>
<td>1.243***</td>
<td>1.434***</td>
<td>1.203***</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.822*</td>
<td>3.530**</td>
<td>3.538**</td>
</tr>
<tr>
<td>Alpha</td>
<td>0.065</td>
<td>0.010</td>
<td>0.00*</td>
</tr>
<tr>
<td>Number of domestic entrants</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Number of cases</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Log-likelihood</td>
<td>−95.8</td>
<td>−91.1</td>
<td>−89.5</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Notes: * Significant at the p < 0.001; ** p < 0.01; * p < 0.05 level (two-tailed test)

Standard errors in parentheses

*: No evidence of overdispersion was found, so Poisson regression results are reported

bank entry. The non-monotonic relationship of foreign bank density with foreign bank entry is consistent with the results of previous studies of organizational entries into largely domestic populations of organizations (Hannan and Carroll, 1992). For the entry of domestic banks, a similar non-monotonic domestic bank density dependence...
Table 4. Entries of foreign banks into California, 1979–1988: maximum likelihood estimates from Poisson regression models

<table>
<thead>
<tr>
<th>Entry of foreign banks</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of domestic banks</td>
<td>$-0.008^{*}$</td>
<td>$-0.008^{*b}$</td>
</tr>
<tr>
<td>Density of foreign banks</td>
<td>0.242*</td>
<td>0.285*</td>
</tr>
<tr>
<td>(Density of foreign banks$^{2}$/1000)</td>
<td>$-3.659^{*b}$</td>
<td>$-4.052^{*b}$</td>
</tr>
<tr>
<td>Loan market growth</td>
<td>0.024</td>
<td>0.024</td>
</tr>
<tr>
<td>Foreign business presence/100</td>
<td>$-0.559$</td>
<td>$-0.517$</td>
</tr>
<tr>
<td>Real estate loan specialist</td>
<td>1.085</td>
<td>1.098</td>
</tr>
<tr>
<td>Personal loan specialist</td>
<td>1.481</td>
<td>1.566</td>
</tr>
<tr>
<td>Commercial loan specialist</td>
<td>0.772*</td>
<td>0.293</td>
</tr>
<tr>
<td>Intercept</td>
<td>$-1.691$</td>
<td>$-1.660$</td>
</tr>
<tr>
<td>Number of foreign entrants</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td>Number of cases</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>$-56.7$</td>
<td>$-55.4$</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

*** Significant at the $p < 0.001$; ** $p < 0.01$; * $p < 0.05$ level; (two-tailed test except where specified as one-tailed)
Standard errors in parentheses
* : no evidence of over-dispersion was found, so Poisson regression results are reported
b : one-tailed test

A relationship between entry into high growth markets and negative venture performance (Stuart and Abetti, 1987).

Deregulation in the 1980s also enabled non-bank financial institutions, such as savings and loan associations, to compete directly in certain market segments with commercial banks (Berger et al., 1995; Haveman, 1992). The results show that the number of savings and loan associations was related to the frequency of domestic bank entries over the study period, a result consistent with the findings of previous studies (Haveman, 1992; Rao and Neilsen, 1992). However, competition from the savings and loans did not seem to be related with foreign bank entry, and this variable was subsequently dropped from the models in Table 4.

Foreign business presence did not show any significant relationship with the entry of foreign or domestic banks. This may be due to the fact that the variable was a measure of overall foreign business presence, rather than a measure of foreign business presence at the strategic group level. Thus it may not have properly represented the variables that affected a new bank’s choice of which strategic group to enter.

The results including dummy variables for the three loan specialties show that domestic banks were most likely to enter as commercial loan specialists. Foreign banks showed no significant preference among the strategic groups.

To test for the asymmetric interactions between foreign and domestic firms proposed by Hypotheses 3a and 3b, terms were added representing the interactions among the dummy variables for the three bank loan specialties, and also the linear and squared foreign and domestic bank densities. Tables 5a and 5b report the results of regressions in which Model 3 (Table 3) and Model 2 (Table 4) were rerun with the interaction between the strategic group dummy variables and the linear and squared bank density included. Only coefficients for the main effects and interaction effects, as well as the overall model statistics, are reported in the tables to save space.

In Table 5a, the dependent variable was the entry of domestic banks. The main effects of the foreign bank density were consistent across all three models, consistent with Hypothesis 1. The coefficient on the linear interaction term was significant with a negative sign for commercial loan specialists, but not significant for personal loan
Table 5a. Effects of density by strategic group: entries of domestic banks into California, 1979–1988  

<table>
<thead>
<tr>
<th>Entry of domestic banks</th>
<th>Commercial loan specialists</th>
<th>Personal loan specialists</th>
<th>Real estate loan specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of foreign banks</td>
<td>−0.763*</td>
<td>−2.14***</td>
<td>−2.609***</td>
</tr>
<tr>
<td></td>
<td>(0.323)</td>
<td>(0.507)</td>
<td>(0.691)</td>
</tr>
<tr>
<td>(Density of foreign banks)^2/1000</td>
<td>0.021*</td>
<td>0.039***</td>
<td>0.05***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.010)</td>
<td>(0.013)</td>
</tr>
<tr>
<td>Strategic group* density of foreign banks</td>
<td>−3.606***</td>
<td>−2.441</td>
<td>1.343</td>
</tr>
<tr>
<td></td>
<td>(0.658)</td>
<td>(2.705)</td>
<td>(1.687)</td>
</tr>
<tr>
<td>Strategic group* (density of foreign banks)^2/1000</td>
<td>0.086**</td>
<td>0.547</td>
<td>−0.020</td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
<td>(0.325)</td>
<td>(0.069)</td>
</tr>
<tr>
<td>Number of domestic entrants</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Number of cases</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Log-likelihood</td>
<td>−95.2</td>
<td>−102.9</td>
<td>−105.0</td>
</tr>
</tbody>
</table>

Table 5b. Effects of density by strategic group: entries of foreign banks into California, 1979–1988  

<table>
<thead>
<tr>
<th>Entry of foreign banks</th>
<th>Commercial loan specialists</th>
<th>Personal loan specialists</th>
<th>Real estate loan specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of domestic banks</td>
<td>−0.017**</td>
<td>−0.014*</td>
<td>−0.015*</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.007)</td>
<td>(0.008)</td>
</tr>
<tr>
<td>Strategic group* density of domestic banks</td>
<td>0.053*</td>
<td>−0.012</td>
<td>−0.002</td>
</tr>
<tr>
<td></td>
<td>(0.017)</td>
<td>(0.027)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>Number of foreign entrants</td>
<td>61</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td>Number of cases</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>−58.9</td>
<td>−63.0</td>
<td>−63.1</td>
</tr>
</tbody>
</table>

** Significant at the p < 0.001; * p < 0.01; * p < 0.05 level; standard errors in parentheses

*: These regressions exactly replicated those reported as Model 2 in Table 4, except that the interaction between the strategic group dummy variables and density of domestic banks were added. Only coefficients for the main and interaction effects are shown.

Negative and consistent across all three models, consistent with Hypothesis 2. The coefficient on the linear interaction term was significant with a positive sign for commercial loan specialists, but not significant for personal loan and real estate loan specialists. This supports Hypothesis 3b, that the negative relationship predicted by Hypothesis 2 between the density of domestic banks and the entry rate of foreign banks was weaker for commercial loan specialists as compared to personal and real estate loan specialists. These results confirm that the foreign and domestic bank interactions in the commercial loan segment (where the foreign banks start by ‘following their customers’) were not similar to the foreign and domestic bank interactions in the personal and real estate loan markets, where the liability of foreignness was likely to be much higher because of the greater local knowledge required.

To gain further insights into these moderating effects, the relationships between foreign and domestic banks were plotted (Figures 2a and 2b, Copyright © 2008 John Wiley & Sons, Ltd.
respectively) to show how strategic group moderates these relationships. Figures 2a and 2b demonstrate that the moderating effects of strategic groups are largely in the direction predicted in the hypotheses. In Figure 2a, there was a U-shaped curvilinear relationship between the entry of domestic banks and the presence of foreign banks in the commercial loan sector, while the curvilinear relationship was not significant for entries into other loan sectors. In Figure 2b, the negative relationship between the presence of domestic banks and entry of foreign banks turned positive for commercial loan specialists, which proves that the negative impact of presence of domestic banks becomes weaker for commercial loan specialists. There is a notable difference, however, between the two figures. Figure 2a suggests a U-shaped relationship between the presence of foreign banks and domestic bank entry in the commercial loan sector. In contrast, Figure 2b shows a linear relationship between the presence of domestic banks and foreign bank entry. This suggests the existence of the asymmetric interaction between entry of foreign and domestic banks.

**DISCUSSION**

This study was designed to investigate whether interpopulation interaction in the international expansion context conforms to the inverted U-shaped pattern conventionally asserted. Previous research has generally found that early entries initially promote later ones due to legitimation benefits, but then deter further entries due to competition effects. Based on the strategic group and organizational ecology perspectives, as well as research on the liability of foreignness, this study explored the possibility that these interpopulation interaction patterns may be reversed. That is, early foreign entries may initially discourage domestic entries, but then encourage further domestic entries later on. Although there have been studies examining the coevolution of organizations belonging to different strategic groups or occupying different market segments, few of these studies have focused on the timing of the response that one (sub)population may elicit from the other. This study, therefore, set out to explain why the relationship between foreign bank density and domestic entries might first show a decreasing pattern and then an increasing one.

![Figure 2](https://example.com)
Because foreign and domestic banks were studied as two related subpopulations, it was possible to explore the different response patterns that one subpopulation aroused in the other. The data on foreign and domestic bank entries in California over the 1979–1988 period, demonstrate that: 1) the density of foreign banks indeed had a U-shaped relationship with the entry of domestic banks into a particular strategic group, supporting the argument that inward direct investment in foreign banking encourages the entry of domestic banks; and 2) although the presence of foreign banks did not constitute an obstacle to domestic bank entry at a later stage, domestic bank presence remained an obstacle for foreign banks throughout the evolution of the industry.

Contributions

The results of this study contribute to our understanding of strategic groups, organizational ecology, and the liability of foreignness. Previous research on strategic groups has mainly centred on whether performance differences exist among strategically different groups (e.g., Cool and Schendel, 1987; Mehra, 1996), but little attention has been paid to the mechanisms that shape the strategic interaction patterns and competitive structures over time (Thomas and Venkatraman, 1988). By investigating the coevolution of foreign and domestic banks in a host country at the strategic group level, this study has demonstrated that foreign and domestic banks act as reference points for each other as they make competitive strategy decisions. This benchmarking effect is consistent with the findings of Fiegenbaum and Thomas (1995) and Fiegenbaum et al. (2004). Moreover, moving the analysis to the level of strategic groups builds a link between research in strategic management and organizational ecology analysis (Carroll and Swaminathan, 1992; Caves and Porter, 1977; Dranove et al., 1998; Fiegenbaum and Thomas, 1995). It is also consistent with the concept of localized competition, which takes into account heterogeneities in industry structures at a more fine-grained level (Baum and Mezias, 1992; Hannan and Freeman, 1989).

Perhaps the most intriguing finding of this study is the asymmetric interaction pattern found between foreign and domestic banks. This finding indicates that the conventional assumption of ‘competitive exclusion’ only holds in the early stages of foreign expansion. Specifically, it shows that foreign bank entries in a particular strategic group initially increase the competitive pressures in an industry, leading, in this case, to an initial negative effect on the entry of domestic banks into the same group. Yet as the number of foreign banks in a particular strategic group further accumulated, foreign bank entries stimulated new domestic bank entries. This can be explained by the liability of foreignness that foreign banks face, leading domestic entrepreneurs to perceive further foreign entries as a signal of favorable market opportunities and to launch entries themselves (DeYoung and Nolle, 1996; Kostova and Zaheer, 1999; Miller and Parkhe, 2002; Zaheer, 1995). Therefore, in contrast with the standard inverted-U shaped effect of domestic density on domestic entries, a U-shaped relationship between foreign presence and domestic entries was found.

The asymmetric interactions between foreign and domestic banks found in this research imply that diverse mechanisms may be at work channeling interpopulation competitive dynamics. The ‘competition versus mutualism’ arguments common in ecology research may require modification in the international expansion context. Building on the signaling argument due to the liability of foreignness of foreign banks (Kostova and Zaheer, 1999; Nachum, 2003; Zaheer, 1995; Zaheer and Mosakowski, 1997), this study has emphasized the role of signaling and the search for referents and thus contributed to this neglected area in strategy and organizational ecology research. The signaling literature can add value to the understanding of interpopulation competition by providing more specific mechanisms of how each organizational population affects each other. Based on competitor characteristics and interpretation of signals received, the focal investors will react with different strategic moves. This study thus helps integrating research on signaling with the organizational theory literature.

Prior ecology studies of organizational entry have mainly focused on entries of homogeneous organizations in national industry contexts (e.g., Baum and Oliver, 1996; Hannan and Carroll, 1992), so the results of this study may encourage future scholarly work using the ecology perspective to examine the co-influences of foreign and domestic subpopulations in a host country context. Also, since the crowding out effect of FDI on
local entrepreneurship has been discussed primarily in the context of developing countries (Caves, 1996), this study has helped to broaden this line of research by analyzing the complementary effect of foreign presence on domestic firms in the United States, an open industrialized country.

Finally, this study also provides insights into the liability of foreignness (Kostova and Zaheer, 1999; Nachum, 2003; Zaheer, 1995; Zaheer and Mosakowski, 1997). In elaborating the processes of foreign bank expansion, this study has argued that foreign bank expansion evolves from client-following in the early stages (no interaction with domestic banks) to market-seeking in the host country later (competition with domestic banks). However, as foreign banks continue to enter and expand in a particular market segment, domestic banks may read this expansion as a sign of market opportunity due to the liability of foreignness borne by the foreign banks. Therefore, a large number of foreign entries might stimulate the entry of domestic banks (Markusen and Venables, 1999; Rodriguez-Clare, 1996). The liability of foreignness has been explored primarily at the firm level, but this study has extended the concept to the population level as a construct that affects the competitive interactions between foreign and domestic banks.

Implications and future research

As a growing number of companies compete outside their home countries in an accelerating spiral of globalization (Bartlett et al., 2004), the findings of this study have several important managerial implications. For MNC managers, it is important not to underestimate the liability of foreignness, which can present long-term challenges. For local managers facing increasing foreign competition, it would be wise to recognize a natural decay of the liability of foreignness over time, as foreign firms gradually acquire local market knowledge and as ‘the local environment becomes accustomed to the presence of the foreign firm’ (Zaheer and Mosakowski, 1997: 445–446).

By focusing on the strategic group level, this research has shown that managers’ perceptions of entry feasibility should be contingent on actions taken by other firms in the business environment. This is consistent with the existing thinking on competitive dynamics and entry timing issues (Ferrier, Smith, and Grimm, 1999; Henderson and Mitchell, 1997; Mitchell, 1989; Smith, Ferrier, and Grimm, 2001). In the international banking context, the rapid growth in FDI in the United States has created market opportunities for both foreign and domestic banks. The presence of a large number of foreign banks in a particular strategic group can be construed as a signal of favorable market opportunities for domestic entrepreneurs. Furthermore, a large number of foreign bank entries, particularly entries made through the acquisition of local banks, may disrupt existing customer relationships, which, again, creates opportunities for domestic entrepreneurs and incumbent banks.

This research suffered from data limitation arising from the relatively short period covered by the sample, thus caution is advised in generalizing the main findings. While the study period was chosen to examine new bank entries following a banking deregulation and during the rapid growth of FDI in the United States in the early 1980s, future research examining the core research issue of the study with more recent data would be most useful in deriving implications for managers and policy makers.

Future research should investigate the effect of foreign competition on new entry in different industry settings and time periods. Because this study was focused at the strategic group level, it did not examine differences in the country-of-origin of foreign firms. For example, Japanese banks accounted for more than half of the assets of foreign banks in the United States at the end of 1990 (Houpt, 1999). However, Japan’s economic problems in the 1990s led to a significant retrenchment in the international activities of its banks and to a significant contradiction of bank presence in the United States. By 1998, Japanese banks accounted for only 24 percent of foreign bank assets in the United States. Furthermore, the literature provides ample evidence that the Japanese banks were far from sophisticated in both their systems and their product/market portfolios (e.g., Scher and Beechler, 1993; Zaheer, 1995). Therefore, future research should examine how the country-of-origin of foreign firms affects their international entry decisions and competitive interactions with domestic and other foreign firms.

While this study focused on the effect of foreign competition on new entry, future research
should also examine the effect of competitive interactions between foreign and domestic firms on other dependent variables such as new venture growth, strategic change, performance, and survival. For example, in a study of the sequential entry of Japanese electronic manufacturing firms into the United States during the period 1976–1989, Chang (1995) showed that Japanese firms first entered their core businesses and those in which they had a strong competitive advantage over local firms to reduce the hazard of failure, and only later diversified into other business areas. In the context of this research, this might translate into entering in the commercial sector (following home-country clients) and only later moving into personal banking or real estate lending. How foreign banks build up their ability to operate overseas through sequential entry, and how the interactions between foreign and domestic banks affect this sequential expansion process would be interesting areas for future research. As another example, in this study relative market growth did not show any significant relationship with new bank entries into a particular market segment. This may be because incumbent banks are in a better position to take advantage of a growing market than new entrants, but further research is clearly needed to shed light on this important question.

CONCLUSION

This study has challenged the conventional assumption of direct competition between foreign and domestic banks and explored an alternative hypothesis that the presence of foreign banks in the United States may actually stimulate the expansion of domestic banks. Empirical analysis of the entry of foreign and domestic banks into the California market over the 1979–1988 period revealed the existence of asymmetric interactions between these two subpopulations of banks. While the density of domestic banks may have deterred foreign banks from entering, foreign bank density showed a U-shaped relationship with domestic bank entries. The results suggest that the presence of foreign banks in a particular market segment may have actually signaled favorable market opportunities for domestic banks, thus encouraging new domestic bank entries.

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