Behemoths at the Gate: How Incumbents Take on Acquisitive Entrants (and Why Some Do Better Than Others)

Corporate acquisitions are a ubiquitous feature of today’s business landscape and a widely used means by which large firms enter new markets. As large acquirers swoop in to acquire firms in new markets, they are almost inevitably met with a chorus of concerns about the potential effects of their actions on the markets they enter. What is the actual impact of acquisitive entry by large firms on the strategies and performance of incumbents? How do incumbents reconfigure the way they compete after a behemoth enters their market? The authors focus on an important facet of firms’ competitive positions—their product mix—and propose a framework that explains incumbent firms’ reaction to acquisitive entry by large firms, as well as the performance implications of these reactions. They test the hypotheses that result from this framework by examining the impact of acquisitive entry across a large number of firms and consumer markets over time: The data cover 839 acquisitions in 538 metropolitan statistical areas in the U.S. banking industry. The results indicate that incumbents are more likely to align their product mix strategy with that of the acquisitive entrant if (1) the incumbent is large, (2) the acquirer’s past performance has been strong, and (3) the market served by the incumbent is small. Importantly, how incumbents react has significant performance implications: The authors find that large incumbents that deviate from acquirers’ product mix strategy perform better than other incumbents do.

Keywords: market entry, competitive reaction, product mix strategy, acquisitions, strategic aspirations

Browse through any section of a business newspaper, and the odds are high that it will feature news of a corporate acquisition. And more often than not, this news is about yet another acquisition by a corporate behemoth. Corporate acquisitions worldwide number in the tens of thousands each year, and the total price tag of these acquisitions is in the trillions of dollars. Many large firms view acquisitions as a means to enter new markets, and leverage economies of scale. But as acquisitions become more prominent, so do concerns about their effect on incumbents. There is much fear that acquisitive entry by large firms could reduce the ability of incumbents to compete (e.g., Berger et al. 2004; Froeb 2004). For example, small cable operators faced with the threat of acquisition by large cable and satellite companies “paint themselves as mom and pop operators that come under siege when Wal-Mart rolls into town with lower prices and better distribution networks” (Lee 2001, p. C1). In the telecommunications industry, Wilson (2005, p. 16) notes that “SBC [now AT&T] and its fellow behemoths have squashed the life out of dozens of small, promising service providers developing innovative, low-cost services.”

The prevalence of behemoth entry has spurred a significant and growing literature on the effects of such entry on incumbent firms. A particular focus—especially in marketing and economics—has been on entry by Wal-Mart and on incumbents’ performance following entry by a large competitor (Basker 2005; Gielens et al. 2008; Hausman and Leibtag 2007; Jia 2005; Singh, Hansen, and Blattberg 2006). A much smaller and more recent literature has also examined incumbents’ reactions to such entry (Ailawadi et al. 2010). Despite the contributions of the existing literature...
and the fact that insights from it are used widely by managers and policy makers, we still lack insights into the determinants of reactions to entry. Specifically, while evidence suggests that there is substantial variance in incumbents’ reactions and performance following entry, explanations for such variation remain elusive. For example, a recent paper on the topic concludes that “it is difficult to explain variation in [incumbent] reactions” (Ailawadi et al. 2010, p. 591). Yet, as these authors emphasize, “reactions matter: they significantly influence the [performance] of incumbents.”

A reason for the difficulty in explaining variation in incumbent reactions might be that existing explanations often rely on classical models of competition, which assume that incumbents behave rationally. However, such reasoning may only partly explain reactions by incumbent managers. Managers, being all too human, may also be susceptible to other, more psychological factors (e.g., Chatterjee and Hambrick 2007), and predictions that address these factors may diverge from those based on simple economic models. A second reason for the difficulty in explaining variation in incumbent reactions might be that existing research tends to focus on reactions to a single behemoth: Wal-Mart, in particular, has been the focus of a substantial volume of research (see Ailawadi et al. 2010). However, different characteristics of behemoth acquirers and the markets in which they enter, which cannot be comprehensively studied in research that focuses on a single entrant, may lead to significantly different reactions to acquisitive entry.

A third possible reason for the difficulty in explaining variation in incumbent reactions is that existing research tends to focus on a limited set of incumbents. Indeed, a stumbling block for research on the impact of behemoths’ entry has been the limited availability of marketwide, objective data. Because few mom-and-pop stores make financial information publicly available, researchers face many obstacles in assessing, in a comprehensive and bias-free manner, the impact of behemoth entry on incumbents in a market. Existing multifirm studies tend to focus on stock prices or market shares (Froeb 2004; Gielens et al. 2008). A focus on the stock prices of public firms may lead to inaccurate inferences about the effects of acquisitive entry on small firms, many of which are private. A focus on market share may also be similarly inadequate. As the Federal Trade Commission (2003, p. 2) notes, “Market share and concentration data provide only the starting point in analyzing the competitive impact of a merger.” Perhaps most important, these limited analyses often yield widely varying conclusions.

In this article, we propose a framework to further explain variation in incumbents’ reactions and performance following acquisitive entry. This framework, which is based on the concept of strategic aspirations, brings together insights from corporate strategy, social psychology, and marketing to study (1) how the nature of the incumbent, the acquisitive entrant, and the market explain variation in incumbents’ product mix reactions to entry and (2) how such variation in reaction drives incumbents’ performance following acquisitive entry by behemoths.

We test the predictions from this framework on a unique, large-scale data set from an industry that involves more than $1 trillion in annual transactions: the U.S. commercial banking industry. This industry is an important exception to the data difficulties that hobble much of the research on the impact of acquisitions. In this industry, information on a wide variety of strategic variables is reported regularly, as required by law. As such, we are able to obtain information on variables of interest for all incumbent firms—small and large, public and private. Our data include 4614 incumbent banks in 583 U.S. metro areas from 1995 to 2003. The banking industry has also been the arena of a spate of mergers and acquisitions (M&As) involving assets in the trillions of dollars in total since the early 1990s. Therefore, the banking industry provides a particularly appropriate context in which to test our ideas.

Classical economic models suggest that the best course of action for incumbents faced with entry by a large, resource-rich competitor is to differentiate themselves from the entrant on the products they offer to customers (e.g., Mazzoni 2002). However, many incumbents do not differentiate; indeed, they seek to be more like the entrant in the products they offer to customers (Haveman 1993). The theoretical arguments we present in this article offer an explanation for the frequent examples of imitative reactions encountered in the marketplace. Specifically, we argue that the reactions of incumbent firms are driven by their managers’ aspirations. This aspiration-based framework points to specific incumbent, acquirer, and market characteristics that can explain variability in the similarity between incumbents’ and the entrant’s postacquisition product mix strategy. These reactions have significant performance consequences for incumbents: Our results suggest that incumbents that deviate from acquirers’ product mix strategy perform the best. The finding that managers of some firms choose to imitate large entrants rather than differentiate from them, combined with the finding that those that differentiate do
better, suggests that managers could gain from resisting their inherent aspirations.

The focus of this article is on incumbent reactions in the form of their product mix strategies. Specifically, we examine how incumbents align their product mix strategies with those of the acquisitive entrant two (respectively three) years after entry, as well as the performance consequences of these changes in product mix strategies. Of course, competitors can also react through other elements of the marketing mix (Carpenter and Nakamoto 1990; Hauser and Shugan 1983). We focus on product mix reactions because prior research has suggested that responses to competitive actions tend to be reciprocal—that is, product reactions for product actions, price reactions for price actions, and so forth (Axelrod 2002; Bowman and Gatignon 1995). Such reciprocal reactions have been documented across industries. For example, Kuester, Homburg, and Robertson (1999) find that 81.2% of competitors that reacted to new products did so with actions on the product dimension. Given our interest in examining how aspirations drive incumbent reactions, the product mix provides a clean yet important dimension on which these reactions are manifested. Restricting our study to product mix reactions also has practical benefits. Given the large number of markets we cover, and given our interest in the actions of all incumbents—large and small—in each market, data on nonproduct reactions by each incumbent in each market are extremely difficult to obtain and, more importantly, not available for all firms. Because nonproduct reactions are not central to our thesis, the incremental insights from such a data collection exercise would not be commensurate with the loss in data completeness.

A Theory of Strategic Aspirations

How do incumbent firms react to acquisitive entry by large firms? What impact do incumbents’ reactions following such entry have on their subsequent performance in the market? Why do some incumbents do poorly while others do well? Few existing theories address these questions. In this section, we propose a theoretical framework that provides some unique responses to these questions. This framework takes the perspective of the managers of incumbent firms and is an attempt to understand their cognitive and behavioral reactions to acquisitive entry. The theoretical framework integrates three important concepts that have largely existed in isolation—the psychological concept of social comparison (e.g., Lockwood and Kunda 1997; Mussweiler 2003), the corporate strategy concept of strategic groups (e.g., Fiegenbaum and Thomas 1995), and the marketing concept of product mix strategies (e.g., Grashof 1970; Jank and Kannan 2005; South and Oliver 1992)—to identify a series of hypotheses on the impact of acquisitive entry on marketplace outcomes.

Social Comparison

A fundamental tenet of the social comparison literature is that “human judgment is comparative in nature” (Mussweiler 2003, p. 472) and that “striving for superiority is a central human motivation” (Mussweiler, Gabriel, and Bodenhausen 2000, p. 398). Thus, managers are likely to routinely make comparisons between themselves, the members of the groups they belong to, and other social groups. Managers are particularly inclined toward making upward social comparisons, or comparisons to groups that are, in some way, superior to their own (Collins 1996; Lockwood and Kunda 1997). These comparisons act as the basis for the aspirations that motivate behavior. When the focus of such comparisons appears within reach, the reference group becomes an aspirational group, and managers will seek to emulate its actions (e.g., Baum and Dahlin 2006; Escalas and Bettman 2003). Conversely, when the focus of comparisons appears beyond reach, the reference group becomes a dissociative group, and managers will seek to avoid being associated with it (e.g., Lockwood 2002; White and Dahl 2006).

Strategic Groups

The literature on strategic groups (McGee and Thomas 1986) highlights the competitive context in which incumbents operate and from which they make strategic decisions. A significant stream of research in this domain has established that groups of firms develop shared beliefs, structures, practices, and strategies as a result of the cognitions and interactions of their organizational members (e.g., Porac and Thomas 1990; Reger and Huff 1993). In addition, this literature suggests that managers within an industry classify the firms they manage as well as the competitive landscape in which they operate along dimensions of strategic relevance, such as size, resources, market position, or performance (Armstrong and Collopy 1996; Debruyne and Reibstein 2005). This classification, which serves to simplify the competitive landscape, results in managers viewing their firm as belonging to one of a few strategic groups within an industry. Their strategic group then acts as a reference point that informs and drives managers’ strategic decisions, such as what product mix to offer to their customers (e.g., Armstrong and Collopy 1996; Peteraf 1993).

However, managers are unlikely to remain satisfied with the membership in their current strategic group for an extended period of time. Attempts to move across groups are particularly likely following a shock to the market such as that created by the acquisitive entry of a large firm. Large, resource-rich entrants may serve as new reference points for incumbents’ strategies. To the extent that the entrant’s position appears within reach, managers of some incumbent firms will seek to emulate the entrant. However, other managers may seek to dissociate their firms from the entrant and use their differentiating characteristics and strategies to strengthen or even redefine their market position (Garcia-Pont and Nohria 2002; Greve 1998). In summary, acquisitive entry has the potential to reshape strategic groups in the market, either by creating new strategic groups or by realigning existing ones.

Product Mix Strategies

The final element in our theoretical framework is drawn from the literature on product mix strategies. Two streams in this literature are relevant to our research. First, there is strong analytical and empirical evidence that a firm’s prod-
uct mix is shaped by competitive entry (e.g., Brander and Eaton 1984; Grashof 1970; Mazzeo 2002; Watson 2009). However, while some authors suggest that differentiation is the best response to entry by large, resource-rich competitors (e.g., Mazzeo 2002), others find evidence of a more complex relationship between competitive entry and product mix decisions (see Watson 2009). Second, a growing body of research documents changes in product mix following M&As (e.g., Krishnan, Joshi, and Krishnan 2004; Sweeting 2010). Taken together, findings from these streams suggest that a behemoth acquirer’s product mix strategy should be a very salient reference point for incumbents.

Different factors are likely to influence how managers perceive and respond to entry by behemoths. Three factors are particularly relevant in predicting the pattern of reactions: (1) incumbents themselves, (2) the behemoths that enter, and (3) the markets in which the incumbents and behemoth entrants interact. We now present hypotheses on each of these three factors.

**Incumbents’ Reactions to Acquisitive Entry: The Size of the Incumbent Matters**

Whether managers aspire to associate or dissociate themselves from the new entrant depends on the extent to which the new entrant appears to be within or beyond their competitive reach. In turn, this depends on the market positions of incumbent firms relative to those of the new entrant. Because our focus is on behemoths, the entrant will, by definition, be larger and more resource rich than most incumbents in the market. Thus, while all incumbents’ managers may compare their market position to that of the entrant, managers of large incumbents are more likely to conclude that the entrant is within their reach. For these managers, aspirations of similarity will dominate their comparisons, and they will aspire to associate their firms with a new strategic group redefined around the entrant. In contrast, managers of small incumbents are likely to conclude that the entrant’s market position is beyond their reach; for these managers, aspirations for divergence will lead them to disassociate their firms from the strategic group centered on the entrant.

Our framework also suggests that this tendency to aspire to associate or dissociate will be reflected in strategic decisions. Specifically, once managers of incumbent firms have identified their new strategic group, this new group will act a reference point and drive their subsequent strategic decisions, in particular, product mix decisions. Because managers of large incumbents are more likely to associate their firms with the large entrant, they are likely to move their product mix strategy in a direction that mirrors that of the entrant, over and above their baseline strategy before the entry of the large entrant. In contrast, because managers of small incumbents are more likely to dissociate their firms from the large entrant, they are more likely to restructure their product mix strategy away from that of the entrant, beyond their baseline strategy before the entry of the large entrant. Thus:

\[ H_1: \text{In response to entry by large acquirers in an incumbent’s market, the larger the incumbent, the more similar the incumbent’s product mix is to that of the acquisitive entrants.} \]

**Incumbents’ Reactions to Acquisitive Entry: The Performance of the Acquirer Matters**

Aspirations to emulate a competitor can be rooted in perceptions of similarity but may also arise from the perceived attractiveness of that competitor’s market position. As they examine the market position of a behemoth that has just entered their market, managers of incumbent firms may be more likely to aspire to be similar to a well-performing acquirer. The performance record of the acquisitive entrant is just as likely as its size to contribute to the reshuffling of managers’ perceptions of strategic group membership and thus influence the strategic changes they will implement in reaction to entry. How do managers of incumbent firms react to acquirers with a record of high performance? Conventional economic theories of competitive reaction (e.g., Hauser and Shugan 1983; Porter 1980) suggest that they will seek to avoid head-on competition because these high-performing entrants will be formidable competitors in a head-to-head matchup offering similar products.

In contrast, our aspiration-based framework makes the opposite prediction. Our framework suggests that aspirations to belong to a specific group may also be driven by how attractive the members of a group are perceived to be. Entrants with a record of high performance will appear more competent, knowledgeable, and worthy of emulation. Thus, managers of incumbents faced with acquisitive entry by successful behemoths will tend to want to imitate such entrants. Those faced with entry by less successful behemoths will not view such entrants as being particularly attractive and therefore will be less likely to want to imitate them.

For these reasons, ceteris paribus, we predict that incumbents faced with acquisitive entrants that are high performers will be likely to adapt their product mix strategies to be more similar to those of the acquirers.

\[ H_2: \text{In response to entry by large acquirers in an incumbent’s market, the better the preacquisition performance of the acquirer, the more similar the incumbent’s product mix will be to that of the acquisitive entrants.} \]

**Incumbents’ Reaction to Acquisitive Entry: The Size of the Market Matters**

Faced with the acquisitive entry of a behemoth, managers of incumbents are likely to respond differently depending on the size of the market in which they operate. How are managers of incumbent firms in small markets likely to react relative to those in large markets? As we argued previously, conventional theories of competitive reaction (e.g., Porter 1980) suggest that managers of incumbent firms will seek to avoid head-on competition with entrants in smaller markets because large entrants will be even more formidable competitors in such markets. Specifically, in smaller markets, large entrants can more easily employ their superior resources to attract customers away from incumbents that go head-to-head with them in terms of their product mix strategies.
In contrast to conventional theories of competition, our aspiration-based framework makes the opposite prediction. Our framework suggests that managers of incumbent firms aspire to imitate large entrants, and this tendency is exacerbated in the context of small markets. In small markets, large entrants loom larger and thus become more prominent targets of emulation for managers of incumbent firms: A big fish will make a bigger splash in a small pond. In addition, in small markets, there is less room for differentiation; because the acquirer decided to enter despite the market size, it must be confident that its product mix strategy is uniquely appropriate for that market’s limited customer base. For all these reasons, we argue that incumbents faced with large acquisitive entrants in small markets will adapt their product strategies to be more similar to those of the acquirers than entrants in large markets.

H2: In response to entry by large acquirers in an incumbent’s market, the smaller the incumbent’s market, the more similar the incumbent’s product mix is to that of the acquisitive entrants.

Next, we discuss the performance implications of strategic aspirations and the product mix decisions that follow from them.

Incumbents’ Performance Following Acquisitive Entry

Given the pattern of incumbents’ reactions to behemoth entry that we noted previously, what is the likely impact of such entry on incumbents’ performance? As we argued previously, because entrants tend to be more resource rich than incumbents, existing theory suggests that head-on competition with similar products is likely to hurt the performance of incumbents (Dickson and Ginter 1987; Hauser and Shugan 1983; Porter 1980). In addition, if the incumbent offers products that are similar to those offered by the entrant, customers are more likely to perceive the incumbent as an imitator, with negative consequences for the incumbent’s customer acquisition and retention efforts (Barreto and Baden-Fuller 2006). As such, both large and small incumbents that differentiate their product offerings from those of the entrants may do better than incumbents that do not. We predict, however, that large incumbents are best positioned to benefit from this differentiation strategy. Specifically, the superior resources of large incumbents that differentiate will enable them to compete better against the smaller incumbents that do so. Thus:

H2: Following entry by large acquirers, larger incumbents that differentiate their product strategy from that of the acquirer perform better than other incumbents.

Taken together, our four hypotheses argue that incumbents’ product mix strategies following an acquisition depend on acquirer, incumbent, and market characteristics and that incumbents’ choice of product mix strategy has important performance consequences. Next, we present an empirical study that tests the hypotheses and assesses how the choice of product mix strategies explains the performance of incumbents following acquisitive entry.

Method

Empirical Context

An ideal empirical context to test our hypotheses should have the following features: (1) significant M&A activity; (2) comprehensive data on acquirers and incumbents across large, public as well as small, privately held firms; (3) objective measures of product mix strategies that can discriminate between alternative strategies; (4) objective and bias-free measures of firm performance; and (5) clearly delineated market boundaries. As we noted previously, the unavailability of objective and comprehensive data on the prevalence and impact of acquisitive entry for a range of entrants and incumbents has prevented systematic research in this area.

We make an initial attempt to overcome these empirical challenges. We test our hypotheses on data from the U.S. commercial banking industry, a context that meets all the previously listed requirements. First, this industry has seen a spate of acquisitions as a result of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 (P.L. 103-328, 108 STAT. 2338), which dramatically loosened restrictions on bank operations across geographic markets. Until the passage of this act, the United States—unique among industrialized countries—severely restricted the extent to which banks could enter new markets (for a review, see Giedemann 2004). A variety of regulations imposed restrictions on intrastate and interstate banking. Independent banks arose to meet the needs of customers in each geographic area, yielding a banking industry with more than 10,000 independent banks nationwide. The Riegle-Neal Act, “by giving banks permission to operate widespread interstate branching networks for basically the first time in U.S. history,” dramatically increased entries by banks into new geographic markets (Giedemann 2004, p. 328) with 93% of the entries by large banks being made through acquisitions. Between 1994 and 2003, banking acquisitions grew to $3.1 trillion in assets and $2.1 trillion in deposits (Piloff 2004).

Second, comprehensive financial and M&A data are available for all banks, including small, private ones. Specifically, all banks are required to report, on a quarterly basis, information on financial performance to a variety of agencies, including the Federal Deposit Insurance Corporation (FDIC), the Office of the Comptroller of Currency, and the Federal Reserve. Similarly, banks are required to get regulatory approval before they undertake a merger or an acquisition (Rhoades 1996). This ensures that information on all M&As, as well on all incumbents, big and small, is recorded and available to interested researchers. As a result, the banking industry does not suffer from the dearth of data that has limited the scope of previous research on the impact of acquisitions but offers instead a unique opportunity to study all firms in a given market.

Third, the product mix strategies of all banks can be clearly inferred from the data they report. Banks are required to report sales broken down by the types of services offered. Specifically, banks are required to report data on all types of loans extended as well as data within several
types of loans. For a manufacturer, this would be the equivalent of reporting sales at the product line level. From this disaggregated picture of a bank’s revenue stream, we can piece together the bank’s product mix strategy. It is important to note that although the banking industry is subject to more regulation than others, regulation does not impose any limit on the bank’s product mix or in any way constrain the bank’s choice of loan size or sector activity (commercial vs. real estate).

Fourth, the markets in which banks operate can be clearly delineated using the U.S. Census Bureau’s Core Based Statistical Areas (CBSAs), which refer collectively to Metropolitan and Micropolitan Statistical Areas and capture approximately 93% of the U.S. population. In line with previous research in banking (e.g., Avery and Samolyk 2004), we use CBSAs to define the markets in which banks operate and in which acquisitions take place.

We focus on entry by large acquirers, rather than other types of entry, for several reasons. First, our theoretical framework relies on the idea of upward comparisons with what is perceived to be an attractive market player. Large acquisitive entrants are well positioned for such upward comparisons: Their significant resource base and their acquired customer base make them a significant threat to incumbents. Second, large M&As are arguably among the most salient forms of market entry. An executive of an incumbent bank whom we interviewed shortly after the acquisitive entry of Citibank in his market confirmed that Citibank’s arrival was greeted with significant apprehension, that the banks were closely watching Citibank’s product offerings, and that they were prepared to change their product strategy in response to the changes that Citibank was implementing to the acquired target. In contrast, the executive seemed significantly less concerned about de novo entry and suggested that other types of entry were rare in that market. Third, as we previously argued, acquisitions are by far the most frequent mode of entry in this industry.

Data and Sample

Sample selection. We collected, from archival sources, data on variables that measure the performance and product mix strategies of banks. At the market, or CBSA, level we collected data on M&A activity, non-M&A market entry activity, start-up activity, and demographic characteristics for each market. Table 1 presents an overview of our data and the sources we used.

We obtain our sample of acquisitions from the SNL Financial database, which contains comprehensive information on the financial transactions of U.S. banks. We focus on the impact of entry by large acquirers on the actions of incumbents.

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<th>Conceptual Variable</th>
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<th>Measured Variable</th>
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<td>Dependent Variables</td>
<td>Incumbent–acquirer similarity of product mix strategy</td>
<td>Incumbent–acquirer similarity of product mix strategy, ( i,j,t )</td>
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<td>Incumbent performance</td>
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<td>Acquirer size</td>
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<td>Average assets of large acquirers entering each CBSA</td>
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<td>Acquirer preacquisition performance</td>
<td>Acquirer Preacquisition Performance(_{j,t})</td>
<td>Weighted average return on assets of large acquirers in the year preceding the acquisition</td>
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<td>Market size</td>
<td>Market Size(_{j,t})</td>
<td>Total deposits in each CBSA</td>
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<td>Start-up activity</td>
<td>Start-up Activity(_{j,t})</td>
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<td>Nonacquisitive market entry</td>
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<td>Number of banks entering each CBSA in a nonacquisitive manner</td>
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<td>Purchasing power</td>
<td>Purchasing Power(_{j,t})</td>
<td>Per capita income in each CBSA</td>
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incumbent firms because large (vs. small) acquirers are more likely to disrupt the equilibrium when entering a market (Berger et al. 1998). In the banking context, large acquisitive entrants are defined as banks with assets greater than or equal to $1 billion (Berger et al. 1998; Gilbert and Belongia 1988). We were able to obtain complete data for all the variables included in the study on 839 of the 1096 M&As undertaken by large banks, both public and private, between 1995 and 2003. Our focus on large acquirers enables us to capture a majority of acquisitions because 77% of acquisitions made between 1995 and 2003 were made by large banks. Moreover, large acquirers account for 98% of all deposits acquired, which further ensures that our sample is representative of the overall acquisition activity in the U.S. banking industry. Figure 1 shows the distribution of these acquisitions during the 1995–2003 period.

The greatest data collection challenge we faced was to create a database of incumbents in each market in which a large acquirer entered between 1995 and 2003. To compile such a database, we aligned each acquisition with all banks operating in the CBSA in which the acquisition took place. In essence, this is equivalent to identifying each potential competitor for the acquirer in the market in which it had just entered. We did so using data from the Summary of Deposits database, which includes annual deposit reports at the branch level. By summing a bank’s deposits across all branches in a CBSA, we obtained a measure of the magnitude of its presence in that CBSA for each year in our sample. In addition to M&A data, we also collected detailed financial data for all incumbents from the SNL Financial, FDIC, and the Summary of Deposits databases; we collected demographic data at the market level from the 2000 U.S. Census.

The product mix strategies of banks and details on bank lending practices. Loans are banks’ main source of revenue. We focus on the two categories of business loans that commercial banks can extend, which typically constitute a majority of banks’ business: (1) loans secured by real estate (nonresidential) and (2) commercial and industrial loans. Loans secured by real estate include loans backed by real estate as evidenced by mortgages on business and industrial properties, hotels, motels, churches, hospitals, educational and charitable institutions, and similar properties. Commercial and industrial loans include loans for commercial and industrial purposes to sole proprietorships, partnerships, corporations, and other business enterprises, whether secured (other than by real estate) or unsecured, single payment, or installment. We also included loans to individuals for commercial, industrial, and professional purposes, but not for investment or personal expenditure purposes. Summaries of loan activity by type of loan are periodically reported in the banking press because they are considered a crucial determinant of banks’ financial performance.

Banks are required to report three subcategories of loans secured by real estate: (1) secured by construction and land development, (2) secured by multifamily residential properties, and (3) secured by nonfarm nonresidential properties. As their names indicate, these types of loans serve different purposes, are typically targeted to different segments, and as such are distinct components of a bank’s product mix. In addition, banks are required to report the following categories of commercial and industrial loans: (1) small (less than $100,000), (2) medium (between $100,000 and $1 million), and (3) large (more than $1 million). As is the case with the subcategories of loans secured by real estate, the three subcategories of commercial and industrial loans are also distinct components of a bank’s portfolio of products. Indeed, each type is targeted to a different segment of customers. For example, large-sized commercial and industrial loans are typically given to large businesses, while small-sized commercial and industrial loans are typically given to small businesses (Berger et al. 1998; Levonian and Soller 1996). Furthermore, the characteristics of these segments of customers require substantially different lending practices (Berger et al. 1998). Specifically, smaller customers tend to seek small business loans and tend to be more informationally opaque borrowers (Berger et al. 1998). In gen-

4In general, banks with assets less than $100 million cannot make loans larger than $1 million without running afoul of Federal Reserve lending guidelines (Berger et al. 2001). We explicitly account for this issue in our empirical analysis.
eral, lending to such borrowers is a customized process requiring a good knowledge of the local environment rather than a more general process based on a predetermined set of criteria. Conversely, larger customers tend to seek large loans and be more informationally transparent borrowers. In summary, commercial banking offers a context in which the components of the product mix of each firm can be clearly delineated, and thus product mix strategies can be easily identified and compared across firms.

**Measures**

Our goal is to show how firms’ product mix strategies change following acquisitive entry into their markets and how these changes affect their performance. Our hypotheses focus on (1) how the size of the incumbent, the preacquisition performance of the entrant, and the size of the market in which the incumbent operates influence the incumbent’s emphasis on a product mix that is similar to that of the large entrant and (2) how an incumbent’s choice of product mix strategies affects its performance.

**Hypothesized variables.** We have six hypothesized variables. First, there is the “incumbent–acquirer similarity of product mix strategy.” To assess the similarity between the incumbent and the acquirer’s product strategy, we begin by computing the Mahalanobis distance in the loan portfolio between the incumbent and the acquirer (Kim and Finkelstein 2009).

For each bank, we construct a vector $L_i$ that captures the composition of its product portfolio. This vector captures the emphasis that a bank puts on each of its product lines (i.e., each different type of loan it extends) as a percentage of its total loans:

$$L_i = \begin{pmatrix}
% \text{ real estate loans secured by construction and land development} \\
% \text{ real estate loans secured by multifamily residential properties} \\
% \text{ real estate loans secured by nonfarm nonresidential properties} \\
% \text{ commercial and industrial loans less than $100,000} \\
% \text{ commercial and industrial loans between $100,000 and $1 million} \\
% \text{ commercial and industrial loans over $1 million}
\end{pmatrix}.
$$

We then compute the Mahalanobis distance between the vector $L_{\text{incumbent}}$ and $L_{\text{acquirer}}$ for each incumbent facing an acquisitive entry by a large acquirer in its market, as follows:

$$MD = (L_{\text{acquirer}} - L_{\text{incumbent}})^TW^{-1}(L_{\text{acquirer}} - L_{\text{incumbent}}),$$

where $W^{-1}$ is the inverse of the pooled covariance matrix.

The multivariate nature of the Mahalanobis distance constitutes an obvious advantage over univariate measures such as simple differences or the Euclidian distance. Furthermore, the Mahalanobis distance also accounts for potential correlations between the various types of loans by taking into account the covariance matrix between the six loan types (Kumar, Mahalanobis, and Juday 2005). In substantive terms, it is well suited for our purpose: The Mahalanobis distance between the two vectors captures how closely the product strategies of two banks match. The more similar the emphasis of the two banks on each type of loan, the smaller is the difference in the percentages of these loans across the two vectors, and the shorter is the Mahalanobis distance. Thus, the incumbent–acquirer similarity of product mix strategy increases as Mahalanobis distance decreases. Because our theoretical arguments and hypotheses are worded in terms of similarity, we compute the similarity between product mix strategies as follows:

$$\text{Similarity}_{i} = \max(\text{MD}) - \text{MD}_{i},$$

where $\max(\text{MD})$ is the maximum Mahalanobis distance across the entire data set. This metric captures similarity comprehensively, accounting for alignment in the size of product categories included in the product portfolio, as well as for possible correlations between loan types (Kim and Finkelstein 2009; Kumar, Mahalanobis, and Juday 2005).

Our second hypothesized variable is “incumbent performance.” $H_4$ predicts how an incumbent’s emphasis on a certain product mix strategy will affect its performance following the entry of a large acquirer into its market. In line with previous research in the banking industry, we use return on assets (ROA) as a measure of performance of incumbent banks (Rose 1987).

Our third variable is “incumbent size.” Consistent with previous research, we use a bank’s assets to measure its size (Goldberg and White 1998). We expect that the larger the incumbent, the more it will attempt to mimic the acquirer by aligning its product mix strategy to that of the acquirer.

Fourth, we have the “acquisition performance of large acquirers.” In line with the performance measure used for the incumbent, we measure the acquirer’s preacquisition performance using ROA. If more than one large acquirer entered a CBSA in a given year, we used a weighted average (by size) of the performance of all large acquisitive entrants. We expect that the more successful the acquirer has been in the recent past, the stronger the incumbent’s aspirations are to emulate the acquirer, and the more likely the incumbent is to imitate its product mix strategy.

Our fifth variable is “market size.” We measure the size of the incumbent’s market using the total amount of bank deposits in the incumbent’s CBSA (Berger et al. 2004). We expect that the smaller the market, the stronger the incumbent’s reaction is to the large acquisitive entry in that market, and the more likely the incumbent is to go head-to-head with the acquirer and imitate its product mix strategy.

The sixth variable is “acquisitive entry.” We measure the extent of acquisitive entry in a given market (CBSA) using the total number of acquisitions made by large acquirers (assets greater than or equal to $1$ billion) in that CBSA in each year. We expect that the more acquisitions are undertaken in a CBSA, the more likely it is that incumbents will react by updating their product mix strategies.

**Control variables.** We also consider four control variables. First, we consider “acquirer size.” We use the
average assets of the large acquirers that entered a CBSA in a given year as a control variable. We expect that the larger the size of the acquirers that enter the market, the more likely it is that incumbents will react and change their product mix strategies.

Second, we consider “purchasing power.” Previous research has indicated that the demographic composition of each CBSA may affect the lending activities that banks perform in that market (e.g., Berger, Goldberg, and White 2001). We measure the purchasing power in each CBSA using the per capita income in that CBSA (Amel and Liang 1997).

Third, we consider “start-up activity.” We measure the extent of the start-up activity in a market using the number of new bank charters recorded each year in each CBSA. Prior research has indicated that acquisitive entry increases the number of new (de novo) bank charters in the market (Seeleg and Critchfield 2003) and that de novo charters are more likely to extend certain types of loans (Berger et al. 2004; Goldberg and White 1998), thus asymmetrically increasing competitive pressure in some of the product lines included in incumbents’ portfolios.

Fourth, we consider “nonacquisitive entry activity.” We measure the extent of the nonacquisitive entry activity in a market using the number of established banks that entered each CBSA in each year in our sample. Banks that opened new branches in a CBSA in which they did not previously do business have the potential to affect the product mix strategies of incumbent firms by increasing concentration in the market. We focus on nonacquisitive entries by large banks only, to preserve symmetry with acquisitive entry and to reduce noise in the data, because banks are less likely to react to actions taken by small competitors.

**Model**

The characteristics of our sample and the nature of the relationships we study guided us in choosing the econometric model most appropriate for testing our hypotheses. First, we need to allow sufficient time for the effects of acquisitions to materialize. Previous research has suggested that it takes approximately three years for an acquirer to complete the restructuring of the target (Focarelli and Panetta 2003; Peek and Rosengren 1998) and for incumbents to adjust to the acquirer’s presence in their market (Avery and Samolyk 2004; Berger et al. 1998). In addition, this lag reflects the notion that banking relationships are long-standing and that it takes time for a bank to modify its customer base in a manner that would best match the bank’s updated product mix strategies. As such, we measure the similarity between incumbents’ and acquirers’ product mix strategies, as well as incumbents’ performance, three years following an acquisition in a CBSA. We examine the sensitivity of our results to alternative lags of the data subsequently, in the section in which we discuss robustness checks, and find that our results are not sensitive to the three-year lag used.

Second, because product mix decisions and performance may be path dependent, we need to account for the effect of past levels of these variables. We do so by using a distributed-lag specification (Intriligator, Bodkin, and Hsiao 1996). This specification eliminates the need for multiple lags of the independent variables. Furthermore, we account for unobserved heterogeneity among the banks in our sample by adding a firm-specific random effect.

Our econometric model contains two recursive equations. The first equation models the similarity between the incumbent and the acquirer product mix strategies as a function of their past product mix strategies, size, acquisitive entry, and controls. The second equation models incumbents’ performance following acquisitive entry as a function of banks’ past performance, similarity in product mix strategies, size, acquisitive entry activity, and controls. Recursive equations, with the assumption of uncorrelated errors, do not require simultaneous estimation.

(1) Incumbent–acquirer similarity of product mix strategy i,j,t + 3 = \( \beta_0 + \beta_1 \text{Incumbent–acquirer similarity of product mix strategy } i,j,t+2 \) + \( \beta_2 \text{Incumbent Size } i,t + \beta_3 \text{Acquisitive Entry } j,t + \beta_4 \text{Incumbent Size } i,t \times \text{Acquisitive Entry } j,t \) + \( \beta_5 \text{Acquisitive Entry } j,t + \beta_6 \text{Acquirers Preacquisition Performance } j,t \) + \( \beta_7 \text{Acquirers Preacquisition Performance } j,t \times \text{Acquisitive Entry } j,t \) + \( \beta_8 \text{Market Size } j,t + \beta_9 \text{Market Size } j,t \times \text{Acquisitive Entry } j,t \) + \( \beta_{10} \text{Acquirers Size } j,t + \beta_{10} \text{Purchasing Power } j,t \) + \( \beta_{11} \text{Start-up Activity } j,t + \beta_{12} \text{Nonacquisitive Entry } j,t \) + \( \nu_i, \text{Year Dummy } + \mu_j, + \epsilon_{i,j,t} \), and

(2) \( \text{ROA } i,j,t + 3 = \zeta_0 + \zeta_1 \text{ROA } i,j,t+2 \) + \( \zeta_2 \text{Incumbent–acquirer similarity of product mix strategy } i,j,t + 3 \) + \( \zeta_3 \text{Incumbent Size } i,j \) + \( \zeta_4 \text{Incumbent–acquirer similarity of product mix strategy } i,j,t + 3 \times \text{Incumbent Size } i,j + \zeta_5 \text{Acquirers Size } j,t + \zeta_6 \text{Purchasing Power } j,t \) + \( \zeta_7 \text{Market Size } j,t + \zeta_8 \text{Start-up Activity } j,t \) + \( \zeta_9 \text{Nonacquisitive Entry } j,t + \nu_i, \text{Year Dummy } + \mu_j, + \epsilon_{i,j,t} \).

where i stands for firm (bank), j represents market (CBSA), and t is time.

These models involve a dynamic panel specification. Dynamic models with lagged dependent variables cannot be estimated using ordinary least squares, given the correlation between the lagged dependent variable and the random error term (Baltagi 2008). Instead, they are typically estimated using generalized method of moments (GMM; Arellano and Bover 1995). Usually, for such estimators, the predetermined and endogenous variables in first differences are instrumented with suitable lags of their own levels. However, in many instances, these lagged levels of the independent variables are not good instruments. Furthermore, the paucity of information in the levels of the variables about the parameters of interest may result in the loss of a substantial part of the total variation in the data (Arellano and Bover 1995, p. 48).

To overcome these problems, Arellano and Bover (1995) and Blundell and Bond (1998) propose a “system GMM” estimator that includes both the differences in and the levels of the predetermined and endogenous variables as instruments. Additional instruments for this estimator are
the lags of the first difference of the predetermined and endogenous variables. The use of these additional instruments renders the system GMM estimator more efficient than the first difference estimator. Therefore, we use the system GMM approach proposed by Arellano and Bover (1995) and Blundell and Bond (1998) and apply the Windmeijer (2005) finite sample correction to estimate the coefficients and standard errors for our model.

The use of the system GMM approach has an additional, important benefit when modeling incumbent reactions to acquisitive entry. The entry decision by potential acquirers is endogenous—indeed, acquirers do not choose to enter markets randomly, by throwing darts on a map of the United States. Rather, they enter on the basis of an assessment of the inherent attractiveness of the market, as well as an assessment of prior entry into the market. By using absolute levels as well as first differences of market factors and prior acquisitions as instruments, the system GMM approach accounts for endogeneity in the acquirers' decision to enter a particular market.

### Results

Descriptive statistics reveal interesting insights into the extent and type of market entry in our empirical context. While each CBSA experienced, on average, more than two acquisitions by large acquirers per year, the number of nonacquisitive entries by large banks was far lower, at only approximately 10 per year, on average. The number of new charters per year in each CBSA was, on average, also lower than the number of large acquisitive entries (2.40 new charters vs. 2.75 entries by large acquirers, on average, per year, per CBSA). These statistics suggest that acquisitions were the most prevalent way large banks entered new markets, perhaps as a result of the Riegle-Neal Act. Table 2 presents descriptive statistics on all variables included in the analysis.

To further understand our sample, we break it down by type of incumbent and type of market. First, recall that in line with the banking literature, we used $1 billion in assets as a cutoff size to identify the large acquirers (Berger et al. 1998; Gilbert and Belongia 1988). Using the same cutoff for incumbents yields 231 large and 4220 small incumbents (163 incumbents were close to the cutoff and fall in and out of the “large” category throughout the nine-year period covered in our study). Thus, as we expected, small incumbents constitute a majority, and the threat of entry posed by large acquirers is likely to be significant for most of these firms.

Second, we examine the characteristics of the markets in which acquisitive entry took place. The distribution of the size of these markets is skewed as well. Using the median cutoff yields 820 small and 19 large CBSAs. A closer look at the large CBSAs reveals, as expected, a higher level of acquisitive entry: While the average CBSA experienced 2.75 entries by large acquirers per year, the largest 19 CBSAs had, on average, 3.25 such entries versus 1.31 entries for the smaller CBSAs. We control for the size of the CBSA in our empirical analyses.

Third, to gain a better understanding of the product line strategies of incumbent banks, we examine the variance in the loans offered by incumbents, as well as any potential strategy differences between large and small incumbents or incumbents present in small or large markets. Table 3 presents a breakdown of the loans used to compute the similarity metric by loan type, incumbent size, and market size. The only discernible difference is that large banks extend a higher percentage of commercial and industrial loans of more than $1 million (24.7% vs. 9.4%), in line with their larger asset base and better ability to handle such large loans. The types of loan extended do not appear to significantly vary by the size of incumbents’ home markets. Finally, we also examine the temporal variation of the percentages of the different types of loans by taking two-year differences between the types of these loans pre- and postacquisitive entry. We find that these differences are in general significantly different from zero, albeit small, indicating that while there is some degree of stickiness in product mix strategies, banks indeed change these strategies and reshuffle their product mixes to adjust to market conditions.

The similarity metric that captures the differences in the percentages of six types of business loans exhibits appropriate variance, and it is fairly normally distributed across the sample. We also find that similarity in product mix strategy between incumbents and the acquirers that have entered their markets significantly increases, on average, in the three years following the acquisition, offering face validity to our assertion that incumbents align their product mix strategies with those of the incumbents.

Tables 4 and 5 present the results of the GMM estimation of Equations 1 and 2. We conduct several checks to confirm the appropriateness of the models we use. As we mentioned previously, the system GMM estimator (Arellano and Bover 1995) affords the choice of a large number of instrumental variables that can be used to address concerns about endogeneity (i.e., the lags in the levels of the variables and the lags of the first differences). Thus, as the length of the panel increases, the number of instruments available increases, but the instruments used must also be valid (i.e., orthogonal to the errors; see Baum and Schaffer 2002). We check for instrument validity using the Hansen J statistic (Hansen 1982; see also Baum and Schaffer 2002). In our estimations, the p-values for the Hansen test of over-identifying restrictions are nonsignificant, indicating that the null of orthogonality of instruments and errors cannot be rejected at the 5% level, and thus the instruments we use are valid.

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6We also estimated our two main models using this similarity measure for each type of loan using the same method used in the study. We were not able to identify any patterns that would suggest that one type of loan is likely to be more prone to alignment with the acquirer’s strategy.
## TABLE 2
Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Similarity of product mix strategies (i,j,t + 3)</td>
<td>37.160</td>
<td>1.902</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>ROA (i,j,t)</td>
<td>.942</td>
<td>1.330</td>
<td>.032</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Incumbent Size (i,t)</td>
<td>(8.58 \times 10^8)</td>
<td>(10.27 \times 10^9)</td>
<td>.045</td>
<td>.010</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Acquisitive Entry (i,t)</td>
<td>2.755</td>
<td>2.257</td>
<td>-.135</td>
<td>-.008</td>
<td>-.012</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Acquirer Size (j,t)</td>
<td>(11.47 \times 10^{11})</td>
<td>(13.28 \times 10^{10})</td>
<td>-.045</td>
<td>-.028</td>
<td>.015</td>
<td>.385</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Market Size (j,t)</td>
<td>(6.97 \times 10^{10})</td>
<td>(10.64 \times 10^{10})</td>
<td>-.154</td>
<td>-.051</td>
<td>.096</td>
<td>.325</td>
<td>.031</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Acquirer Preentry Performance (j,t)</td>
<td>.017</td>
<td>.062</td>
<td>-.065</td>
<td>.000</td>
<td>.011</td>
<td>.056</td>
<td>-.105</td>
<td>.079</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Nonacquisitive Entry (j,t)</td>
<td>.107</td>
<td>.332</td>
<td>.018</td>
<td>-.010</td>
<td>-.006</td>
<td>-.051</td>
<td>-.063</td>
<td>.110</td>
<td>-.006</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Purchasing Power (i,t)</td>
<td>29,612</td>
<td>5873</td>
<td>-.139</td>
<td>-.050</td>
<td>.035</td>
<td>.251</td>
<td>.117</td>
<td>.488</td>
<td>.046</td>
<td>.061</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Start-up Activity (i,t)</td>
<td>2.402</td>
<td>3.105</td>
<td>-.147</td>
<td>-.041</td>
<td>-.012</td>
<td>.390</td>
<td>.154</td>
<td>.331</td>
<td>-.006</td>
<td>.164</td>
<td>.252</td>
</tr>
</tbody>
</table>
It is important to note that all our models account for firms’ product mix strategies before entry. If our results indicate that some incumbents emphasize certain strategies, our lagged variable approach suggests that they do so beyond their preacquisition propensity to emphasize such strategies. Thus, our results cannot be attributed to firm inertia in product mix strategies but rather reflect significant changes implemented by firms following acquisitive entry.

Questions may also arise about the magnitude of the change in product mix strategy: If the acquirer does not change the product mix strategy of the acquired bank, there should not be a change of equilibrium in the market, and there is little impetus for the incumbent to make any changes to its product strategy. In studying the industry and as a result of several interviews with banking executives involved in acquisitions, we learned that the strategies of acquired banks do change in line with the identities of the acquirers. In a vast majority of cases, the charters (and thus the identities) of target banks are replaced by those of the acquirers. Behemoths, in particular, rely on economies of scale and expect the target to quickly align with their product mix strategies and lending policies. Thus, the acquirer’s strategy becomes the new benchmark for the incumbent. The magnitude of the change will indeed depend on how

<table>
<thead>
<tr>
<th>Type of Loan</th>
<th>Entire Sample</th>
<th>Small (Less Than $1 Billion in Assets)</th>
<th>Large ($1 Billion or More in Assets)</th>
<th>Small (Below Median Deposits)</th>
<th>Large (Above Median Deposits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans secured by real estate: construction, land development, and other land loans</td>
<td>11.99%</td>
<td>12.10%</td>
<td>10.65%</td>
<td>12.80%</td>
<td>10.18%</td>
</tr>
<tr>
<td>Loans secured by real estate: secured by multifamily (five or more) residential properties</td>
<td>4.60%</td>
<td>4.36%</td>
<td>7.54%</td>
<td>3.66%</td>
<td>6.71%</td>
</tr>
<tr>
<td>Loans secured by real estate: secured by nonfarm nonresidential properties</td>
<td>36.73%</td>
<td>37.02%</td>
<td>33.19%</td>
<td>36.12%</td>
<td>38.10%</td>
</tr>
<tr>
<td>Commercial and industrial loans smaller than $100,000</td>
<td>6.42%</td>
<td>6.66%</td>
<td>3.36%</td>
<td>6.85%</td>
<td>5.45%</td>
</tr>
<tr>
<td>Commercial and industrial loans between $100,000 and $1 million</td>
<td>11.58%</td>
<td>11.83%</td>
<td>8.59%</td>
<td>11.26%</td>
<td>12.31%</td>
</tr>
<tr>
<td>Commercial and industrial loan greater than $1 million</td>
<td>10.68%</td>
<td>9.54%</td>
<td>24.71%</td>
<td>11.20%</td>
<td>9.51%</td>
</tr>
</tbody>
</table>

*aAll loan percentages are calculated relative to the sum of the loans included in the analysis. Other types of loans that certain banks may extend, but are not commonly extended by all banks, such as loans secured by farmland, loans to finance agricultural production, or loans to foreign governments and officials, are excluded.

**TABLE 3**

Descriptive Statistics on the Type of Loans Extended by Incumbents: Percentage Loans by Incumbent and Market Size

<table>
<thead>
<tr>
<th>Incumbent Bank Size</th>
<th>Market Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Large</td>
</tr>
<tr>
<td>Small</td>
<td>Large</td>
</tr>
<tr>
<td>Large</td>
<td>Small</td>
</tr>
<tr>
<td>Large</td>
<td>Large</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Loan</th>
<th>N = 15,051</th>
<th>N = 13,994</th>
<th>N = 1139</th>
<th>N = 4692</th>
<th>N = 10,441</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans secured by real estate: construction, land development, and other land loans</td>
<td>11.99%</td>
<td>12.10%</td>
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<td>24.71%</td>
<td>11.20%</td>
<td>9.51%</td>
</tr>
</tbody>
</table>

\[ \text{TABLE 4} \]

Similarity in Product Mix Strategies

<table>
<thead>
<tr>
<th>Incumbent–Acquirer Similarity of Product Mix Strategy [ y_{i,j,t+3} ]</th>
<th>[ y_{i,j,t+2} ]</th>
<th>[ y_{i,j,t+1} ]</th>
<th>[ y_{i,j,t} ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>7.73 (3.99)</td>
<td>7.33** (.11)</td>
<td>1.55** (.48)</td>
</tr>
<tr>
<td>Incumbent–acquirer similarity of product mix strategy [ y_{i,j,t+2} ]</td>
<td>[ -1.47 \times 10^{-9} ] (3.26 \times 10^{-9})</td>
<td>[ 3.59 \times 10^{-9} ] (9.59 \times 10^{-10})</td>
<td>[ -20.34** (5.21) ]</td>
</tr>
<tr>
<td>Acquisitive Entry [ y_{i,j,t} ]</td>
<td>[ -1.55** (4.8) ]</td>
<td>[ 20.18** (5.21) ]</td>
<td>[ -1.45 \times 10^{-9} ] (2.07 \times 10^{-9})</td>
</tr>
<tr>
<td>Incumbent Size [ y_{i,j,t} ] \times Acquisitive Entry [ y_{i,j,t} ]</td>
<td>[ 3.26** (0.8) ]</td>
<td>[ -0.88 ] (0.05)</td>
<td>[ -0.98** (0.40) ]</td>
</tr>
<tr>
<td>Acquirer Preacquisition Performance [ y_{i,j,t} ] \times Acquisitive Entry [ y_{i,j,t} ]</td>
<td>[ 2.20 \times 10^{-9} ] (9.93 \times 10^{-10})</td>
<td>[ -0.98** (0.40) ]</td>
<td>[ 206.51** ]</td>
</tr>
<tr>
<td>Market Size [ y_{i,j,t} ]</td>
<td>[ -1.21 \times 10^{-9} ] (3.25 \times 10^{-10})</td>
<td>[ 1.15 \times 10^{-9} ] (2.07 \times 10^{-9})</td>
<td>[ -1.45 \times 10^{-9} ] (2.07 \times 10^{-9})</td>
</tr>
<tr>
<td>Market Size [ y_{i,j,t} ] \times Acquisitive Entry [ y_{i,j,t} ]</td>
<td>[ 2.20 \times 10^{-9} ] (9.93 \times 10^{-10})</td>
<td>[ -0.98** (0.40) ]</td>
<td>[ 206.51** ]</td>
</tr>
<tr>
<td>Acquirer Size [ y_{i,j,t} ]</td>
<td>[ -0.88 ] (0.05)</td>
<td>[ -0.98** (0.40) ]</td>
<td>[ 206.51** ]</td>
</tr>
<tr>
<td>Purchasing Power [ y_{i,j,t} ]</td>
<td>[ 1.15 \times 10^{-9} ] (2.07 \times 10^{-9})</td>
<td>[ -1.21 \times 10^{-9} ] (3.25 \times 10^{-10})</td>
<td>[ 2.20 \times 10^{-9} ] (9.93 \times 10^{-10})</td>
</tr>
<tr>
<td>Start-up Activity [ y_{i,j,t} ]</td>
<td>[ -0.98** (0.40) ]</td>
<td>[ 206.51** ]</td>
<td>[ 206.51** ]</td>
</tr>
<tr>
<td>Nonacquisitive Entry [ y_{i,j,t} ]</td>
<td>[ 2.20 \times 10^{-9} ] (9.93 \times 10^{-10})</td>
<td>[ -0.98** (0.40) ]</td>
<td>[ 206.51** ]</td>
</tr>
<tr>
<td>Wald [ \chi^2 ]</td>
<td>[ 206.51** ]</td>
<td>[ 206.51** ]</td>
<td>[ 206.51** ]</td>
</tr>
</tbody>
</table>

\* \( p < .05 \)
** \( p < .01 \)

Notes: Standard errors are listed in parentheses. Coefficients of year dummies are excluded for brevity.
close they were at the time of the acquisition, but we control for that starting point through our lagged dependent variable.

Tests of Hypotheses

Incumbents’ reactions following acquisitive entry: similarity in product mix strategies. H1 predicts that in response to entry by large acquirers, large incumbents seek to become more similar to the entrants in their product strategy than other incumbents. Our results provide support for H1 (see Table 4). The coefficient of the interaction term between acquisitive entry and incumbent size is positive and significant (β4 = 3.59 × 10⁻⁹, p < .01), implying that the greater the extent of acquisitive entry and the larger the incumbent, the more similar incumbent’s product mix strategy is to that of the acquisitive entrant. The coefficient of the lagged dependent variable (i.e., the past similarity in product strategy between incumbent and acquirer) is associated with greater similarity between the incumbent and the acquisitive entrant’s product mix strategy (β6 = .24, p < .01). Furthermore, we find that a high income per capita in a CBSA is associated with greater similarity between the incumbent and the acquisitive entrant’s product mix strategies (β10 = .26, p < .01), and a greater extent of nonacquisitive entry is associated with a lower similarity between incumbent and acquisitive entrant’s strategies (β12 = -.98, p < .01). Finally, both the Hansen test for overidentification of restrictions and the Arellano–Bond test for autocorrelation on the residuals in first differences (AR(2)) are nonsignificant, indicating that the instruments used to estimate the model are adequate.

Incumbent performance following acquisitive entry. H4 predicts that in response to entry by large acquirers, the less similar the incumbent’s product strategy is to that of the acquirer and the larger the incumbent, the better is the incumbent’s performance. We find support for this hypothesis. The coefficient of the interaction between incumbent size and similarity in product strategy between incumbent and acquirer is significant and negative (β9 = -7.80 × 10⁻⁹, p < .05). These results suggest that large incumbents’ propensity to closely mirror a large acquisitive entrant’s product strategy is ill-advised, and divergence from this strategy leads to the best performance. In this context, aspirations to emulate the entrant do not result in a better performance.

The results in Table 5 also show that the coefficient for lagged ROA is positive and significant (ζ1 = .24, p < .01), the number of new charters in the CBSA is positively associated with incumbent ROA (ζ5 = .052, p < .01), and the number of large nonacquisitive entrants is negatively associated with performance (ζ10 = -.36, p < .01). As was the case with the first equation, both the Hansen test for overidentification of restrictions and the Arellano–Bond test for AR(2) in first differences are nonsignificant, indicating that the instruments used to estimate this model are adequate.

Alternative Explanations, Robustness Checks, and Additional Analysis

Does inertia provide an alternate explanation for our results? A skeptical reader may argue that our results can be explained by simple inertia: Large banks, whether they are incumbents or acquirers, emphasize similar loans in their portfolios, and thus their product strategies appear to be similar. Note, however, that our analyses control for the effects of inertia, and our results are beyond any effects we might expect as a result of firms’ past strategies. First, as we noted previously, our dynamic panel approach assesses behaviors beyond those that would arise from firms’ base-

| TABLE 5 | Incumbent Performance Following Acquisitive Entry |
|----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Intercept | 3.54* (1.65) | ROA_{i,j,t} + 3 | Acquisitive Entry_{i,j,t} | 0.24* (1.3) | Incumbent–acquirer similarity of product mix strategy_{i,j,t} | 2.25 × 10⁻⁷* (1.28 × 10⁻⁷) |
| Incumbent Size_{i,t} | -0.063* (0.03) | Incumbent–acquirer similarity of product mix strategy_{i,j,t} × Incumbent Size_{i,t} | -7.80 × 10⁻⁹* (3.85 × 10⁻⁹) |
| Acquisitive Entry_{i,j,t} | -0.027 (0.027) | Acquirer Size_{j,t} | 1.60 × 10⁻¹⁰ (3.59 × 10⁻¹¹) |
| Acquirer Size_{j,t} | 0.012 (0.02) | Purchasing Power_{i,t} | Start-up Activity_{i,t} | -1.45 × 10⁻¹⁰ (9.83 × 10⁻¹¹) |
| Market Size_{i,t} | -0.012 (0.02) | Market Size_{i,t} | -1.45 × 10⁻¹⁰ (9.83 × 10⁻¹¹) |
| Nonacquisitive Entry_{i,t} | -0.052** (0.020) | Nonacquisitive Entry_{i,t} | -0.36** (0.13) |
| Wald χ² | 3523.64** | Notes: Standard errors are listed in parentheses. Coefficients of year dummies are excluded for brevity.

*p < .05.

**p < .01.
line tendencies to behave a certain way. Second, we find that, on average, the similarity between incumbents and acquirers increases following the acquisition, suggesting that the product mix strategies of firms are not static and are restructured in response to competitive threats.

**Does differentiation provide an alternate explanation for our results?** Another argument that could be made is that our results simply show that differentiation is a more profitable strategy than imitation—that is, firms that follow a differentiation strategy in response to acquisitive entry will perform better than others. We believe that we provide a more nuanced view on differentiation. First, our framework makes systematic, theoretically based predictions about which firms are likely to diverge and which ones will aspire to be similar. Second, we show that differentiation affects firms differently; firms that are most similar to the acquisitive entrant (i.e., large firms) are actually hurt most if they fail to differentiate. Thus, although differentiation could explain one of our four hypotheses, it does not provide an overarching alternative explanation to our results.

**Are our results sensitive to the three-year lag used?** Our results are based on estimations that use a three-year lag following acquisition to measure incumbents’ emphasis on customers that are similar to or different from those that the entrant targets as well as to measure incumbents’ performance. To test whether these results are robust to other specifications of the lagged effects of acquisition, we reestimate Equations 1 and 2 using a two-year rather than a three-year lag for customer-targeting strategies and performance. The results of this analysis are similar to those reported previously, suggesting that our results are not sensitive to the three-year lag used.

**How robust are our results to the assumption that incumbents are smaller than entrants?** An implicit assumption behind our conceptual arguments and empirical analysis is that even the largest incumbents are likely to be smaller than entrants in any given market. However, if this assumption does not hold for some incumbents in certain markets, it is likely that these incumbents will not be as vulnerable to changes brought about by acquisitive entry as their smaller counterparts will. To determine the robustness of our findings to this possibility, we examined whether any of the incumbents in our sample have assets greater than the acquirers that enter their markets. We found only 102 such incumbents, which account for a mere 2.2% of the banks in our sample. To rule out any potential confounding effects of using these banks in our estimation, we repeated our analysis on a subsample that excludes these observations. In general, the results of this additional analysis are consistent with the results presented previously. Alternatively, we also estimated our models on a subsample that includes only the incumbents that have 50% of their deposits in one CBSA, arguably the ones that are the most affected by the acquisitive entry, and we find that the results are consistent with the ones from the full sample.

**How sensitive are our results to the inclusion of markets in which many large banks have headquarters?** It is possible that in markets in which many large banks are headquartered, incumbents already have product mix strategies that reflect the presence of these large banks. Additional entry by large acquirers in such markets may not cause as large a disruption to the market equilibrium as it would in markets with a lower presence of large banks. To check whether our results are robust to the exclusion of the markets with the largest number of large banks, we first sort all markets on the basis of the number of large banks headquartered in them. A scree plot reveals that nine CBSAs stand out as having the largest number of large bank headquarters. We find that dropping these nine CBSAs yields results consistent with those reported previously. Although the significance of some results becomes marginal due to a large reduction in sample size, we nevertheless conclude that the results reported in Tables 4 and 5 do not rely on the inclusion of markets in which many large banks have headquarters. As an additional robustness check, we also estimated alternative models by dropping, in a similar way, the largest CBSAs as measured by the total deposits held by banks in these markets. Again, the results are consistent with those reported in Tables 4 and 5.

**Summary and Discussion**

Acquisitive entry by large firms can cause anxiety among incumbents in the targeted market. Such entrants represent a shock to the competitive equilibrium in incumbents’ markets. This shock prods many incumbents to react to the entry. However, the reactions differ and so do the payoffs. This research represents an early effort to understand why some incumbents react and perform differently from others when behemoths arrive at their gates. By combining insights from social psychology, corporate strategy, and marketing, we develop a framework that attempts to explain the varying reactions and performance outcomes of incumbent firms confronted with entry by large firms. We emphasize the importance of a key marketing decision—the incumbent’s product mix strategy—in driving the reactions and performance of firms.

Moreover, our framework makes predictions that differ from those of other theories of competitive response. In contrast to theories of inertia, we show that in response to acquisitive entry, some firms actually restructure their product mix. In contrast to theories of differentiation, we show that in response to acquisitive entry, some firms do not differentiate from the entrant. Moreover, in contrast to theories of imitation, we show that in response to acquisitive entry, some firms resist the pressure to imitate and actually perform better as a result. Finally, in contrast to simple models that rely purely on rational economic reasoning, we show that social–psychological factors play an important role in how managers respond to competitive entry. While alternative theories can explain a subset of the phenomena we study, we believe that our framework offers a comprehensive explanation of the differences in firm behavior and performance consequences following acquisitive entry. Furthermore, by empirically examining reactions and performance outcomes in a large and vital industry and by using a data set that is fairly unprecedented in its scope and size, we provide significant initial empirical evidence in support of our arguments.
**Implications**

Aspirations may explain entry response strategies that fall outside the predictions of simple economic models. To best understand the differences between our empirical findings and those predicted by, for example, simple Hotelling-type economic models, it is helpful to cast our context in the following terms: We have incumbents and entrants, each picking a product mix. A product mix in our case consists of a portfolio of loans (i.e., type of loan and how much). Firms’ decisions can now be thought of in two ways. First, one could conceive of two firms deciding on their product positioning, in line with Hotelling. There would then be two opposing forces influencing each firm’s choice of position: (1) a demand effect, which would move them toward each other to the position where maximum demand is, thus leading to minimal differentiation, and (2) a strategic effect, which would move them away from each other (maximal differentiation) to minimize competition. With the entrant’s position fixed (which is what maps onto our case), the balance of these two forces would suggest where the incumbent would locate. Our $H_1$—the incumbent would mimic the entrant—suggests that the force toward minimal differentiation overrides that toward maximal differentiation. Indeed, if competition is in quantities and not in prices, we would expect minimal differentiation. In short, one could, albeit with quite a few simplifications, view our story as similar to one variant of a Hotelling model. However, if the equilibrium strategy for the incumbent that the Hotelling model suggests is one of minimal differentiation, that should indeed be the one that yields the highest profits. However, we find the opposite, suggesting that forces other than those implied by simple Hotelling-type models are at play; our framework is an attempt to precisely accommodate these forces. This said, we acknowledge that the reduced-form measures in our empirical model may not fully tap the variety of demand effects and strategic effects at play. We hope our study serves as an impetus for more comprehensive analyses of these effects.

Other frameworks dealing with entry describe response strategies to entry ("top dog," "puppy dog," "lean and hungry," "fat cat") in a two-period Stackelberg game (Fudenberg and Tirole 1984). These frameworks suggest different strategies for the incumbent according to whether the variables of interest are strategic complements or substitutes. If one were to think of competition for a set of loans as quantity competition (strategic substitutes) rather than price competition (strategic complements), the model would suggest a top-dog strategy—that is, the incumbent should invest aggressively. While Fudenberg and Tirole’s (1984) focus is on the quantum of investment, the result can be interpreted somewhat loosely as suggesting a strategy similar to what we observe—that is, go after the same product space that the entrant is going after. However, again, it is difficult to reconcile that reasoning with the notion that this strategy seems to lead to poorer performance outcomes for incumbents that follow such a strategy. In contrast, our framework can explain the tendency to either mimic or differentiate from the entrant as well as the performance consequences of the response strategy that incumbents choose to implement. We hope that our research provides an impetus for others to study managers’ motivations in explaining firms’ strategic decisions and performance outcomes.

Managerial aspirations may incorrectly encourage imitative behavior. Much existing research treats managers as rational calculators governed only by cool-headed considerations of profit and loss. In contrast, we argue that managers are also driven by other, more social motivations. Our results and the insights from interviews with banking executives suggest (1) that managers compare their firms with other firms in the market and then either aspire to be like those firms or choose to dissociate from them and (2) that this tendency is stronger for large incumbents. Although we were not able to directly test the extent to which managers rely on aspirations in their decision making, descriptive statistics from our sample provide some face validity for our assertions. For example, we find that the incumbents in the top similarity quartile (the top 25% incumbents that restructured their strategy to be closest to that of the acquirer) are, on average, more than four times larger than the incumbents in the remaining quartiles. Thus, we find strong evidence that large incumbents indeed mimic the acquirers, despite negative consequences on their performance. We also find that the similarity between these incumbents and the acquirer increases following the acquisition (i.e., the differences in similarity from one period to another following the acquisition are statistically significant), which indicates that the effects we identify are not just a reflection of large firms following similar strategies but rather that of actual changes to incumbents’ product mix in an attempt to imitate the acquirer.

*Imitation is hazardous.* A key implication of our findings for the managers of large incumbent firms is that closely mimicking the product mix strategies of the acquisitive entrant will hurt their performance. Conversely, large incumbents can actually prosper following the entry of a behemoth if they employ a product mix strategy that is different from that of the entrant. Indeed, an examination of the performance of such incumbents shows that large incumbents (above median assets) in the bottom similarity quartile (the top 25% incumbents that restructured their strategy to be furthest from that of the acquirer) exhibit significantly better performance than any other incumbents. Again, this provides some evidence that our results are not simply a reflection of large firms adopting similar strategies, whether they are new entrants or established incumbents.

Acquisitive entry in small markets or by well-performing acquirers is a highly salient and potentially disruptive event. Managers of large incumbents may find the success of the acquirer appealing, or they may view the acquirer’s strategy in a small market as the only legitimate one. Whatever drives their aspirations, managers would do well to avoid the hubris of thinking that they can win by offering the same products as the behemoths; such thinking is likely to lead to expensive mistakes.

**Understanding competitive reaction at the product portfolio level requires a distinct perspective from that used to understand reaction to entry with a new product.** Most
research in marketing that has examined reactions to competitive entry has focused on market entry with new products rather than on acquisitive entry. Accordingly, the determinants of the reaction to entry that have been most closely examined are various components of the product mix (e.g., Carpenter and Nakamoto 1990; Hauser and Shugan 1983) and the innovativeness of the newly introduced product (e.g., Kuester, Homburg, and Robertson 1999). These insights are not particularly helpful for managers faced with the entry of a large acquirer that is not launching a new product. However, such entry is prevalent in industries such as computer software and pharmaceuticals, in which large firms routinely acquire smaller counterparts to become a player in a certain product category. Our research is a first step in providing a set of determinants of the reaction to a distinct and unique type of entry, namely, that of a large acquirer. We hypothesize and empirically show that incumbent, acquirer, and market characteristics contribute in counterintuitive ways to the manner in which the incumbent proceeds to defend its market position.

**Limitations and Further Research**

As an early study of a largely unexplored domain, our research has limitations that could potentially serve as topics for further research. First, we focus on a single industry—banking. Doing so enhances the internal validity of the study and permits access to unusually rich data that are unavailable in other contexts. Moreover, acquisitive entry is by far the most frequent means of entry by large firms in this market; this feature of the industry fits well with our focus on acquisitive entry. However, our hypotheses and conceptual arguments are not unique to banking: They are general in nature and might also apply to other industries. Nevertheless, the commercial banking industry is characterized by a high degree of regulation and some specific “rules of the market.” Further research might examine incumbent reactions to entry by large firms in other industries.

Second, while acquisitions are a common mode of entry in banking and many other industries, other modes of entry, such as greenfield or alliance formation, also exist and are worth exploring, especially in industries in which such modes of entry are common. Therefore, further research might examine how incumbent reactions to acquisitive entry differ from other modes of entry by firms.

Third, we focus on the impact of managerial aspirations on the firm’s product mix. Such aspirations might also affect other dimensions of the firm’s marketing strategy.

The role of a firm’s product mix strategies in competitive interaction is of keen interest to researchers in many fields and to practitioners across sectors. Nevertheless, further research on industries with more direct data on other strategic areas that managers are likely to focus on in forming aspirations and reacting would bring additional insights to bear on the effects of market entry on the strategies of incumbents.

Fourth, while we find performance benefits for incumbents that differentiate from entrants following entry, we are unable to examine the counterfactual—that is: What would have happened had incumbents not adjusted their product mix strategy accordingly? Further research might explore the performance consequences of incumbent response more rigorously by controlling for all other differences across markets—for example, by including market fixed effects in the estimation.

Fifth, because we cannot directly observe the thought processes of the managers of incumbent firms, there may be alternative explanations for the imitative behavior we document. For example, imitative behavior might be driven by scarce resources and the perceived threat to these resources. In a market with scarce resources, an alignment in product mix strategy is more likely to be observed among large incumbents that are forced to vigorously compete for these limited resources than among smaller incumbents, which could coexist alongside the entrant. Although we control for market-level variables such as market size and purchasing power, as well as for firm resources, further research might examine the conceptual issues implied in the scarce resources and perceived threats argument.

Finally, further insights could be obtained in industries in which targets’ strategies can be clearly delineated after the acquisition. While in the banking industry the target’s strategy is typically immediately aligned with that of the acquirer, in other industries, the targets may be afforded some flexibility in continuing to serve their markets (partial acquisitions, though extremely uncommon in banking, would provide a context in which targets may retain some control over their product mix strategies). Incumbents would then be faced with a firm acting locally but with the potential to draw from a larger resource base. Furthermore, such a context would allow researchers to assess the effect of the complementarity between the target and the acquirer following the acquisition. It would be helpful to understand how incumbents react and perform in such instances.

**REFERENCES**


