

# The Competitive Effects of Interstate Banking

By Charles Morris

The prohibitions against interstate banking have emerged in recent years as a policy issue. Although federal law prohibits branch banking and bank holding company control of banks across state lines, the demand for interstate financial services has increased as state economies have become more integrated with one another. And because there are profits to be made by providing the goods and services that society wants, financial institutions have been extremely innovative in finding ways around the restrictions on interstate banking. As a result of these natural market forces, many bank and bank-like services are now provided on an interstate basis. Bank holding companies can cross state lines and own loan production offices, Edge corporations, and nonbank subsidiaries that provide services closely related to banking. Nonbank institutions, such as thrifts, brokerage houses, and retailers, also offer many financial services on an interstate basis.

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It is often argued that the laws should be changed to allow interstate banking because many financial services are already provided on an interstate basis, but in an excessively costly and inequitable way. Not only do financial institutions spend resources finding ways around current laws but they also often provide interstate banking services in a more costly way than if interstate banking were allowed. Major corporations and wealthy individuals can easily make financial transactions across state lines, but small businesses and households cannot easily make such transactions. Also, traditionally defined banks cannot compete with other financial institutions on an equal basis.

Before legislators decide whether to change the laws, however, several other factors should be considered. These include the effect of interstate banking on the safety and soundness of the banking system, the flow of credit between regions, the viability of small banks, and the competitiveness of the banking system.

Although all of these factors are important,

the impact of interstate banking on competition is of major importance.<sup>1</sup> The reason is that social welfare is usually greatest when firms in an industry actively compete against each other. Competition among firms in an industry results not only in larger levels of output than would otherwise be produced, but also in lower prices and higher quality products. To remain competitive, firms must also meet the demands of consumers and produce at the lowest possible cost.

This article argues that interstate banking will result in a more competitive banking system. Thus, the current prohibitions against interstate banking cannot be justified on the basis that interstate banking would adversely affect the competitiveness of the banking system. A brief discussion of the legislative history of restrictions on interstate banking is presented in the first section. This is followed by a theoretical discussion of the competitive effects of interstate banking. Empirical evidence on the competitive effects is discussed in the third section. Concluding remarks are presented in the final section.

## Legislative history

Geographic restrictions on expansion by state and national banks, particularly across state lines, have long been part of the U.S. banking system. State banks can operate only in the state that charters them. If a state bank wants to operate in another state, it must apply for a charter in that state. National banks are also prohibited from crossing state lines. A system of national banks, chartered and regulated by the Comptroller of the Currency, was

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<sup>1</sup> Many analysts dismiss the argument that interstate banking would lead to a less competitive banking system as irrelevant to the issue. They argue that the antitrust laws are sufficient to prevent anticompetitive behavior.

created by the Currency Act of 1863, later revised as the National Bank Act of 1864. Although neither act mentioned branches, early Comptrollers interpreted the law as meaning that national banks could not branch at all, either within a state or across state lines. The current prohibition against interstate branching by national banks was adopted in a provision of the Banking Act of 1933 that amended the McFadden Act of 1927. According to the McFadden Act as amended in 1933, national banks can branch in any state within the geographic limits specified by the laws of that state. Thus, the issue of branching was deferred to the states.

Restrictions on branching were often overcome through the use of bank holding companies.<sup>2</sup> If restrictions on branching kept a bank from operating a multi-office system, the bank could achieve the same end by forming a holding company that owned more than one bank. Multibank holding companies, used to circumvent restrictions against branching in unit-banking states, were also used to set up interstate banking networks. By 1956, seven domestically owned and five foreign owned bank holding companies owned banks in more than one state. As a result, interstate banking had come into existence even though the McFadden Act prohibited interstate branching.

The Douglas Amendment to the Bank Holding Company Act of 1956 prevented any further use of this "loophole" in the McFadden Act by limiting the interest that a bank holding company could acquire in an out-of-state bank to 5 percent of the voting stock.<sup>3</sup> Apparently,

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<sup>2</sup> Restrictions on branching also were overcome in other ways. For example, chain banking was often used as a way to avoid branching restrictions.

<sup>3</sup> The Douglas Amendment does not prevent bank holding companies from owning subsidiaries that provide bank-like services across state lines. Bank holding companies can establish an interstate presence by owning, say, mortgage banking, factoring, or finance companies in other states.

to avoid a conflict with states' rights, the Douglas Amendment allows a bank holding company to acquire an out-of-state bank if such acquisitions are specifically allowed by the laws of the state where the bank to be acquired is located.

Although the 12 companies that already owned banks in more than one state were allowed to continue their interstate operations, the Douglas Amendment, for the most part, prevented any further expansion of bank holding companies across state lines. In recent years, however, holding companies have used provisions of new and old laws to expand across state lines.

The Garn-St Germain Act, passed in 1982 primarily to help regulators aid distressed institutions, created a way for banks to expand interstate by allowing failing institutions to be acquired by institutions from out of state. For example, the two largest bank holding companies in the United States, Citicorp and BankAmerica Corporation, have used this act to extend their interstate operations.

Still more recently, the so-called "nonbank bank" loophole has given bank holding companies a means of crossing state lines. The Bank Holding Company Act as amended in 1970 defines a bank as an institution that accepts demand deposits and makes commercial loans. A nonbank bank is an institution that has a bank charter and offers many bank-like services, but either does not accept demand deposits or does not make commercial loans. Because nonbank banks do not meet the definition of a bank, bank holding companies can establish nonbank banks in any state without violating the Douglas Amendment. Over 40 major bank holding companies have applied for charters for more than 300 nonbank banks. The future of nonbank banks depends, however, on pending national legislation that redefines a bank for purposes of the

Bank Holding Company Act. Depending on the outcome of this legislation, the nonbank bank movement will be halted or it will not.<sup>4</sup>

Several states have taken advantage of the clause in the Bank Holding Company Act that allows bank holding companies to acquire out-of-state banks if explicitly allowed by outside states. Twelve states have authorized entry by out-of-state bank holding companies. The constitutionality of some of these state laws is being challenged, however, leaving the future of the laws uncertain.

Although the trend in recent legislation has been to provide ways for banks to offer traditional services across state lines within the spirit of the law, some would like to reverse that trend. These opponents of interstate banking give many reasons for their opposition. One of the main reasons is that they believe interstate banking will result in a less competitive banking system.

### **Interstate banking and competition: theory**

At a theoretical level, there is great debate over the competitive effects of interstate banking. Some argue that interstate banking would be anticompetitive in that it would result in a less competitive banking system, while others counter that interstate banking would not be anticompetitive. Still others argue that interstate banking would result in a more competitive banking system.

#### *The anticompetitive argument...*

The anticompetitive argument is usually framed within the context of the concentra-

<sup>4</sup> For a more detailed discussion of the nonbank bank issue, see Charles Morris, "Nonbank Banks and Interstate Banking," *Financial Letter*, Federal Reserve Bank of Kansas City, September 1984.

tion-conduct-performance hypothesis. According to this hypothesis, market concentration in an industry influences firm conduct, which, in turn, affects industry performance. The concentration of a market is measured as the percentage of an industry's output that is produced by the largest firms in the industry. Conduct refers to the degree of rivalry among competing firms in a market or to the extent to which they engage in competitive activities. And industry performance refers to the closeness of industry output and price to their competitive levels.

Figure 1A illustrates the argument that interstate banking would result in a less competitive banking system. Removal of the interstate banking prohibitions, it is argued, would make it easier for out-of-state banking organizations to enter new banking markets either by opening new banks or by acquiring existing banks. These newly opened or acquired banks would then expand their market share at the expense of other banks, making local markets more concentrated.<sup>5</sup> As concentration increased, the banks in a market would explicitly or tacitly agree to reduce the degree of rivalry among themselves. They might, for example, refrain from raising deposit rates or from lowering loan rates. The result would be a deterioration of industry performance as banks restricted output below the competitive level and provided lower quality services in their efforts to raise prices and profits. For example, the volume of deposits and loans might be held below competitive levels. This argument is used by many as a reason for not removing the prohibitions against interstate banking.

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<sup>5</sup> Even if the market share of newly opened banks increases, there could still be a net decline in market concentration. This is because concentration initially declines when a new bank is opened.

### *...and the counterarguments*

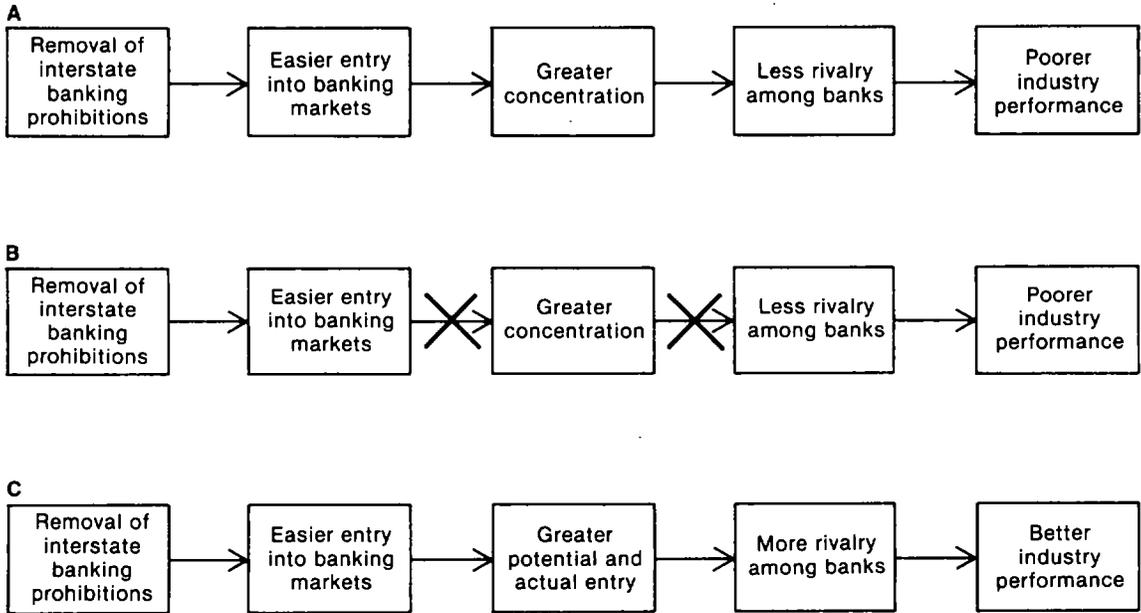
Arguments that interstate banking would not result in a less competitive banking system are illustrated in Figure 1B. One of these counterarguments is that easier conditions of entry would not cause concentration to increase. A second counterargument is that even if greater concentration were to occur it would not cause a reduction in the degree of rivalry among firms. A variation of the second counterargument is that greater concentration might initially result in a lesser degree of rivalry among firms, but would not cause a reduction in the degree of rivalry in the long run. If any of these counterarguments are correct, interstate banking would not result in a less competitive and poorer performing industry.

Some critics of the anticompetitive argument say that easier conditions of entry would not cause concentration to increase. Local market concentration would increase as out-of-state banking organizations entered new markets only if the market share of newly opened or acquired banks increased at the expense of other banks. But these critics argue that the market share of the new banks, whether newly opened or acquired, would increase only if they could produce more output at a lower additional cost than banks of similar size that were not part of a banking network. A newly acquired bank's market share would increase, for example, only if it could attract more deposits or make more loans at a lower additional cost than before it was acquired.<sup>6</sup>

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<sup>6</sup> Because marginal costs must be lower, a decrease in fixed costs will not affect the newly affiliated bank's market share, although it will affect the bank's profits. Affiliation with a banking network could allow a bank to increase its market share without a reduction in marginal costs, however, if affiliation was accompanied by an increase in the demand for bank services. This could happen, for example, if affiliation led to the introduction of a new product that other banks in the market could not copy.

FIGURE 1



Because these critics do not believe there are significant cost advantages to affiliating with banking networks, they argue that entry would not cause concentration to increase. They conclude that, regardless of the link between concentration and conduct, interstate banking would not be anticompetitive because it would not cause concentration to increase.<sup>7</sup>

Other critics of the anticompetitive argument say that even if interstate banking resulted in greater local market concentration, there would not be a reduction in the degree of rivalry among banks. Even if there are only two banks in a market, they say, there are strong incentives for each bank to engage in

competitive activities. Each bank would still have an incentive to compete with the other bank for a larger market share, for example, by offering higher deposit rates or a more attractive mix of deposit services. Output and prices, therefore, will be the same whether there are two banks or 100 banks in a market. These critics conclude that although the degree of rivalry does influence performance, there is no connection between concentration and the degree of rivalry. There is no connection, therefore, between concentration and performance.

A variation of this argument is that even if concentration increased and banks explicitly agreed to refrain from rivalry, there would be no effect on the competitive activities of banks in the long run. These critics argue that explicit collusive agreements are inherently unstable and, therefore, often unsuccessful.

<sup>7</sup> To the extent that such cost advantages are responsible for more concentrated markets, society still may be better off with interstate banking than without it. The savings in production costs may be greater than other costs associated with interstate banking.

Because every bank in the colluding group has an incentive to produce more than its share of output, successful collusion requires the colluding group to police the behavior of group members and enforce the production quotas. Effective enforcement of such agreements, always difficult, is even more difficult because collusive agreements to restrict output and raise prices are illegal in the United States. Without effective enforcement, such agreements would not be successful so that output would rise and prices and profits would fall to competitive levels.<sup>8</sup> These critics conclude that, even if interstate banking led to high concentration and explicit agreements that prevented rivalry initially, rivalrous behavior would still result in the long run.

### *The procompetitive argument*

The procompetitive argument, illustrated in Figure 1C, is that interstate banking would result in more competitive banking markets because easier entry results directly in banks engaging in more competitive activities. Because current prohibitions against interstate banking make market entry more difficult, they have resulted in many markets with only a few banks. It is argued that there is little rivalry among banks in these markets. Moreover, the banks in these markets are protected not only from actual competition, but also from the threat of competition from banks ready to enter a market where profits are above competitive levels. If the prohibitions against interstate banking were removed, entry would be easier. The threat of competition from potential entrants would increase immediately in all banking markets, bringing out-

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<sup>8</sup> Successful collusion is even more difficult because it requires not only that group members successfully enforce output quotas but that they prevent all forms of rivalry—price and nonprice.

put, quality, prices, and profits to competitive levels in many previously protected markets. Even in many one-bank markets, the increased threat of competition would prevent the single bank from earning excess profits by restricting output and charging noncompetitive prices. Where banks continued to maintain noncompetitive conditions, high profits would lead to actual entry by new banks that would eventually force output, quality, prices, and profits to competitive levels. This argument is used by many as a reason for removing the prohibitions against interstate banking.

### **Interstate banking and competition: evidence**

Because the competitive effects of interstate banking cannot be determined at a theoretical level, it is an empirical question. The competitive effects of interstate banking depend on the resolution of several issues discussed in the previous section. Does less restriction on geographic expansion by banks result in more concentrated banking markets? If so, does concentration affect bank conduct and performance? And what is the direct effect of easier entry on bank conduct and performance? Evidence from studies that look at these questions will be presented. Further evidence on the competitive effects of interstate banking will be presented from studies that do not test a particular theory but look directly at the relationship between branching laws and bank performance. Overall, the evidence supports the view that interstate banking would result in more competitive markets.

### *Interstate banking and concentration*

The effect of interstate banking on market concentration depends on how interstate banking is implemented. If the Douglas Amend-

ment is changed to allow *bank holding companies* to cross state lines, the effect of bank holding company expansion on market concentration must be determined. On the other hand, if the McFadden Act is changed to allow national banks to *branch* across state lines, the effect of branching on concentration must be determined.

*Holding company expansion and concentration.* There are two ways to infer the effect of bank holding company expansion on concentration. One way, which is based on the claim that the market share of banks affiliated with a holding company would increase only if they had lower marginal production costs than unaffiliated banks, is to determine whether such costs are lower for affiliated banks.<sup>9</sup> Another way is to see how past holding company expansion has affected concentration.

Two recent studies indicate that the marginal costs of banks affiliated with a multi-bank holding company are greater than or equal to those of banks that are not affiliated. A study by George Benston, Gerald Hanweck, and David Humphrey showed that holding company affiliation had no effect on state branch or unit bank costs.<sup>10</sup> A later study by Benston, Hanweck, Humphrey, and Allen Berger showed that marginal production costs are greater at affiliated state unit banks than at unaffiliated state unit banks.<sup>11</sup> Holding company affiliation had no effect on the costs of

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<sup>9</sup> There are some methodological problems with cost studies in general. They use historical accounting costs, rather than opportunity costs, they implicitly assume that all firms choose from the same set of technologies, they never take risk into account, and they cannot account for unquantifiable aspects of output, such as service differences among banks. Also, older studies may no longer be relevant because of changes in banking technology and the regulatory environment.

<sup>10</sup> George J. Benston, Gerald A. Hanweck, and David B. Humphrey. "Scale Economies in Banking: A Restructuring and Reassessment." *Journal of Money, Credit, and Banking*, November 1982, pp. 435-456.

state branch banks. Because these studies do not find a cost advantage to bank holding company affiliation, they suggest that interstate banking in the form of bank holding company expansion across state lines is not likely to result in more concentrated banking markets.

The implications of the cost studies for banking concentration must be viewed with caution, however, because they do not use data from banks with more than \$1 billion of deposits. While this would not ordinarily be a problem, it becomes a serious shortcoming if these studies are used to determine the likely effect of holding company expansion across state lines on concentration. If there are cost advantages to these large banks affiliating with a holding company and if these are the banks that would become affiliated if the Douglas Amendment was amended, interstate banking could result in more concentrated markets.

As would be expected from the evidence in the cost studies, most studies of the effect of past intrastate bank holding company expansion on banking market concentration have found that holding company expansion had little effect on concentration. These studies have generally looked at changes over time in local banking market concentration after holding companies had expanded in those markets. Cynthia Glassman and Robert Eisenbeis reviewed several studies, conducted in the 1970s, of trends in banking concentration and concluded that bank holding company expansion has not significantly increased local market concentration, where market output is measured as the value of deposits.<sup>12</sup> In another survey of the effect of bank holding company

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<sup>11</sup> George J. Benston, Allen N. Berger, Gerald A. Hanweck, and David B. Humphrey. "Economies of Scale and Scope in Banking." *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, 1983, pp. 432-455.

expansion on concentration, Stephen Rhoades looked at seven studies and concluded that bank holding companies had no effect on concentration.<sup>13</sup> Rhoades also examined the results from four other studies and concluded that bank holding company acquisitions had no systematic effect on the market share of the acquired banks. A more recent study by John Rose and Donald Savage shows that when bank holding companies open new banks in rural and small metropolitan area markets, significant decreases in concentration follow.<sup>14</sup> In another study, Rose found that bank holding company entry into local markets had little effect on the market share of the acquired bank.<sup>15</sup>

Although these studies would seem to indicate that removal of the prohibition against interstate expansion by bank holding companies would not increase banking concentration, these results must also be viewed with caution. One reason is that some of the earlier studies attribute all changes in concentration to bank holding company expansion and thereby neglect other factors that could be responsible for the changes in concentration. Another is that many of the studies looked at the change in concentration for only a short

period after bank holding companies expanded. If the effect of holding company expansion was not complete in that time, the evidence from these studies could be misleading.

*Branching and concentration.* Because there is no evidence on whether bank branches have lower marginal production costs than similar sized unit banks, the only way to infer the effect of branching on banking concentration is to see how past intrastate branching has affected concentration. Instead of looking at how a change in state branching laws has affected market concentration over time, most analysts have looked at how concentration varies across states with different branching laws.<sup>16</sup>

The evidence on the effect of branching on local market concentration seems to indicate that local markets are slightly more concentrated in branching states than in unit banking states. Defining a local banking market as a Standard Metropolitan Statistical Area (SMSA), in June 1982 the largest bank's local market share averaged 32.5 percent in SMSA's in statewide branching states, 33.0 percent in SMSA's in limited branching states, and 29.0 percent in SMSA's in unit banking states.<sup>17</sup> The average local five-firm concentration ratios were 82.3 percent in SMSA's in

<sup>13</sup> Cynthia A. Glassman and Robert A. Eisenbeis, "Bank Holding Companies and Concentration of Banking and Financial Resources," *The Bank Holding Company Movement to 1978: A Compendium*, Board of Governors of the Federal Reserve System, September 1978, pp. 209-261. Banking industry output is measured in most studies as the value of deposits. Throughout the remainder of this article, unless specified otherwise, the value of deposits is the measure of output used in calculating market shares and concentration ratios.

<sup>14</sup> Stephen A. Rhoades, "The Effect of Bank Holding Companies on Competition," *The Bank Holding Company Movement*, pp. 185-207.

<sup>15</sup> John T. Rose and Donald T. Savage, "Bank Holding Company De Novo Entry and Banking Market Deconcentration," *Journal of Bank Research*, Summer 1982, pp. 96-100.

<sup>16</sup> John T. Rose, "Bank Holding Company Affiliation and Market Share Performance," *Journal of Monetary Economics*, January 1982, p. 118.

<sup>16</sup> A 1972 study by Bernard Shull examines the change in concentration in Virginia banking markets after a 1962 change in Virginia law that allowed banks to branch statewide by merger. Shull reports, however, that the change in the law encouraged statewide expansion through the bank holding company mechanism. Thus, the Virginia case cannot be used for evidence on the relationship between branching and concentration. See Bernard Shull, "Multiple-Office Banking and the Structure of Banking Markets: The New York and Virginia Experience," *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, 1972, pp. 30-43.

<sup>17</sup> Donald Savage of the Board of Governors of the Federal Reserve System kindly provided these data. The average concentration ratios exclude multistate SMSA data and were computed from *Summary of Deposits*, 1982.

statewide branching states, 82.9 percent in SMSA's in limited branching states, and 76.0 percent in SMSA's in unit banking states. While the quantitative differences across states are not large, the evidence seems to imply that branching is related to greater local market concentration. On the other hand, from a comparison of the 1982 concentration ratios with 1970 concentration ratios that were reported in a study by Donald Savage, it appears that concentration tends to decline over time at about the same pace in branching states as in unit banking states.<sup>18</sup>

The evidence based on comparisons of concentration ratios between markets may be misleading, however, as such comparisons are meaningful only if the markets are correctly defined. A market is an area in which the action of one firm has an effect on another firm. While the SMSA may be the relevant market in states that allow branching throughout the SMSA, the area may be too wide in unit banking states. The relevant market for many retail deposits and small loans is probably smaller than the SMSA. Where branching is allowed throughout an SMSA, all the banks in the SMSA can have an effect on each other because they can compete for these retail deposits and small loans by branching throughout the area. But in unit banking states, a bank competes for these retail deposits and small loans mostly in the small area around its location. Because the size of the relevant market is overstated in unit banking states, the number of banks and value of deposits in the market are overstated. The con-

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<sup>18</sup> Donald T. Savage, "Developments in Banking Structure, 1970-81," *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, Washington, D.C., February 1982, pp. 77-85. Savage also reports average state five-firm concentration ratios for different types of state branching laws. He notes, however, that because states are not banking markets, this evidence is of limited value.

centration ratio, therefore, is understated. Although the average concentration ratio in SMSA's is greater in branching states than in unit banking states, the difference in the ratios may be overstated. If the correct market was used to determine concentration in unit banking states, markets in branching states might even be found to be less concentrated than markets in unit banking states.<sup>19</sup>

Overall, the evidence does not support the view that interstate banking would increase market concentration. First, evidence from the cost studies, though limited, suggests that interstate banking in the form of holding company expansion would not cause greater concentration. Second, evidence on the effect of past bank holding company expansion on concentration is consistent with the evidence from the cost studies and shows that bank holding company expansion has not affected market concentration. Finally, while the evidence on branching suggests that SMSA's are slightly more concentrated in branching states than in unit banking states, the difference might be reduced or even reversed if the relevant market in unit banking states was correctly

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<sup>19</sup> There is some empirical evidence that an SMSA in a unit banking state is not a single market for banking services. According to the law of one price, all firms that sell exactly the same good and operate in the same market will charge the same price. In one study, Larry Mote reports that the prices of banking services across banks are more variable in SMSA's in unit banking states than in branching states. He also reports that in branching states prices of banking services in the suburbs of SMSA's are not significantly different from prices in the central city, but in the largest unit banking SMSA's there are significant price differences between the suburbs and the central city. Because the variation in prices for essentially the same good is greater in SMSA's in unit banking states than in SMSA's in branching states, SMSA's in unit banking states are more likely to be composed of several markets than are SMSA's in branching states. See Larry Mote, "The Perennial Issue: Branch Banking," *Compendium of Issues Relating to Branching by Financial Institutions*, Subcommittee on Financial Institutions, Committee on Banking, Housing, and Urban Affairs, U.S. Senate, U.S. Government Printing Office, 1976, p. 446.

defined. Moreover, concentration tends to decline over time at about the same pace in branching states as in unit banking states.

### *Concentration-performance studies in banking*

Studies of the competitive effects of greater concentration usually focus only on the relationship between concentration and performance. Although the competitive effects of greater concentration depend on the relationship between concentration and conduct in banking, conduct is difficult to measure. Therefore, conduct is usually ignored in empirical studies of the concentration-conduct-performance hypothesis.

Most studies use statistical techniques such as multiple regression or correlation analysis to determine the relationship between concentration and performance in state or local markets. Although concentration ratios are usually used in these studies, other measures of market structure are also used, such as the number of banks in the same market or the Herfindahl index.<sup>20</sup> Performance refers to the closeness of output and price to their competitive levels, but these measures are not available. Thus, performance is measured by average bank profits in the market or by the price of bank services, such as interest rates on loans.

Most empirical studies of the concentration-performance hypothesis in banking show a definite but only slight relationship between concentration and performance. Stephen Rhoades reported that of 39 studies conducted between 1960 and September 1977, 30

showed a positive but small relationship between concentration and performance in banking.<sup>21</sup> In other words, increases in concentration are associated with small increases in bank profits or prices of bank services. The relationship was generally less than that found in concentration-performance studies of other industries. In a follow-up survey of 26 studies performed between October 1977 and June 1982, Rhoades found that 23 studies found a positive but small relationship between concentration and performance.<sup>22</sup>

The evidence in support of the concentration-performance hypothesis is not as strong as it first appears, however. First, Rhoades noted that many of the studies that used prices as a measure of performance did not account for the effect of costs on prices. Higher prices due to higher costs is not an indication of poorer industry performance. In the first survey, for example, Rhoades found that 31 studies used prices to measure performance but only 12 accounted for costs. Of the 31 studies that used prices, 27 found a positive relationship between concentration and price. But of those 12 that accounted for costs, only eight found a positive relationship between concentration and price. Rhoades also noted that while 13 of 20 studies found a positive relationship between concentration and profits, these studies usually used profits from a single year rather than profits averaged over a few years. The problem with using profits for a single year is that good business conditions in that year could raise profits. Profits averaged over

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<sup>20</sup> The Herfindahl index is defined as the sum of the squared market shares of all firms in the same market. Whereas the concentration ratio reflects only the size of the largest firms in an industry relative to the other firms, the Herfindahl index reflects the number of firms in the industry and the size distribution of all firms.

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<sup>21</sup> Stephen A. Rhoades, "Structure-Performance Studies in Banking: A Summary and Evaluation," Staff Economic Studies No. 92, Board of Governors of the Federal Reserve System, 1977.

<sup>22</sup> Stephen A. Rhoades, "Structure-Performance Studies in Banking: An Updated Summary and Evaluation," Staff Studies No. 119, Board of Governors of the Federal Reserve System, 1982.

a few years, however, gives a better indication of the long-run profit rate in a particular market.

A more fundamental problem with studies that use profits instead of prices as a measure of performance is that high profits do not necessarily indicate less competitive performance. High profits are seen not only in noncompetitive industries where output is restricted, but also in highly competitive industries where some firms produce at a lower cost than others. Thus, a positive relationship between concentration and profits does not necessarily mean that increases in concentration cause poorer industry performance.

There is good reason, in fact, for believing that a positive relationship between concentration and profits reflects superior performance. Harold Demsetz argues that the superior performance of some firms causes both concentration and profits to rise together.<sup>23</sup> He argues that it is the potential increase in profits that provides firms with the incentive to lower costs and improve their product. If firms that are more efficient or that produce a better quality product are not rewarded at least temporarily with higher profits, they have no incentive to perform better. And if firms are more efficient, it is the resulting lower costs of production, rather than the higher prices caused by collusion, that produce larger profits. Superior performing firms not only earn greater profits, but also expand their market share as they successfully compete with less able firms. Because superior performance causes profits and market shares to rise together, a positive relationship between concentration and profits is to be expected in industries where some firms are more efficient

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<sup>23</sup> See Harold Demsetz, *The Market Concentration Doctrine*, American Enterprise Institute-Hoover Institution Policy Studies, August 1973.

than others. Using data from almost 100 industries, Demsetz presents empirical evidence in support of this view.

Although the evidence on the relationship between concentration and performance suggests that increases in concentration reduce performance, the evidence must be interpreted with caution. First, the effect is small. Second, many studies failed to control for other factors that affect prices and profits. Finally, studies that found a positive relationship between concentration and profits may have found such a relationship only because superior performance by some banks causes both concentration and profits to rise together.<sup>24</sup>

#### *The effect of entry on bank performance*

There have been several studies of the direct effect of entry on bank performance. These studies usually looked at new bank entry into unit banking markets with relatively few banks and compared the pre-entry and post-entry performance of banks in entry markets with the performance of banks in non-entry markets. Better performance was measured not only by decreases in prices and profits as in other studies, but also often by increases in loan to asset ratios and interest-bearing to non-interest-bearing deposit ratios. The studies found that entry substantially improved unit bank performance.

Robert Chandross examined the effect of new bank entry on unit bank performance in

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<sup>24</sup> There are also reasons for believing that the estimated relationship between concentration and performance is biased. First, if the relevant market is not correctly defined, the results will be upwardly biased. Second, the effect of risk on the measures of performance is usually not taken into account. For a discussion of other problems with concentration-performance studies, see George J. Benston, "The Optimal Banking Structure: Theory and Evidence," *Journal of Bank Research*, Winter 1973, pp. 220-237.

98 previously one-bank towns.<sup>25</sup> For the three years before the new entry, these banks earned significantly above-average profits and had significantly below-average loan to asset ratios. In the three years after entry, their earnings fell significantly but not below the average for large groups of banks in the same state. Their loan to asset ratios also rose significantly.

In another study, Donald Fraser and Peter Rose compared the pre-entry and post-entry performance of banks in markets previously served by one, two, or three independent unit banks with the performance of a control group of banks of similar size in a similar environment except that there was no entry.<sup>26</sup> Before entry, the loan to asset ratios and time deposit to total deposit ratios were lower in the entry markets than in the nonentry markets. Profit rates were the same in both markets. After entry, both the loan to asset ratios and time deposit to total deposit ratios rose in the entry markets to the same levels as in the nonentry markets, without an increase in prices or a decrease in profitability or growth.

Alan McCall and Manfred Peterson also compared the pre-entry and post-entry performance of banks in markets previously served by one, two, or three unit banks with the performance of a control group of similar banks in markets where there was no entry.<sup>27</sup> They found the net benefits of entry substantial in number and magnitude. Before entry, the sample banks in entry markets had greater earnings on assets than banks in the nonentry

markets. They also had lower loan to asset ratios and smaller interest-bearing to total deposit ratios. They paid lower interest rates on time and savings accounts and had a greater proportion of expenses due to officer and employee expense. In the year after entry the banks in the entry markets raised the interest rates paid on deposits. Their loan to asset ratios rose, as did the time and savings deposit to total deposit ratios. The proportion of expenses due to officers and employees declined. Except for the change in the loan to asset ratio, which was not affected consistently after the first post-entry year, all these changes persisted throughout the five-year period after entry that was studied. Although profit rates declined significantly over the five-year period, they did not fall below the levels at the control banks so that entry did not have an adverse impact on the viability of the banks that existed before entry.

These studies indicate that to the extent interstate banking leads to entry into small banking markets with only a few banks, the markets would become more competitive. If interstate banking led mostly to entry into large banking markets, however, the competitive effects are less clear. And while these studies provide evidence on the competitive benefits of actual entry, they give no evidence on the competitive effects of potential entry.

### *The effect of branching laws on bank performance*

The difference in performance between banks in unit banking states and banks in branch banking states provides direct evidence on whether interstate banking would result in markets that were more competitive or less competitive. If easier entry due to less restrictive branching laws results in more competitive markets, bank performance should be bet-

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<sup>25</sup> Robert H. Chandross, "The Impact of New Bank Entry on Unit Banks in One Bank Towns," *Journal of Bank Research*, Autumn 1971, pp. 22-30.

<sup>26</sup> Donald R. Fraser and Peter S. Rose, "Bank Entry and Bank Performance," *Journal of Finance*, March 1972, pp. 65-78.

<sup>27</sup> Alan S. McCall and Manfred O. Peterson, "The Impact of *De Novo* Commercial Bank Entry," *Compendium of Issues*, pp. 499-521.

ter in branching states than in unit banking states. But if less restrictive branching laws result in less competitive markets, bank performance should be worse in branching states than in unit banking states.

In their study of the effect of bank entry on performance, McCall and Peterson also found that the effect of entry on performance in branching states was significantly different from the effect in unit banking states.<sup>28</sup> In branching states, pre-entry profit levels, deposit interest rates, operating costs, and asset structures were the same at banks in entry markets as at banks in nonentry markets. The only difference was that banks in entry markets had higher service charges on demand deposits than banks in the nonentry markets. Over a five-year period after entry, the only change was that service charges on demand deposits fell in the entry markets in all five years. In unit banking markets, however, there was a substantial difference between banks in entry markets and the control banks before entry and that difference was largely eliminated after entry. Also, before entry, banks in branch entry markets performed better than banks in unit entry markets. Entry in branching areas apparently had little effect because the ability to branch resulted in either actual or potential competition that made bank performance better from the start.

In another test of the effect of branching laws on competition, Donald Savage and Stephen Rhoades compared the performance of unit banks in unit banking states with the performance of unit banks in branching states.<sup>29</sup> Unit banks in statewide branching states earned a lower rate of return on assets and paid higher interest rates on time and savings deposits than unit banks in unit banking

states. Service charges on demand deposits were the same in both groups. Unit banks in limited branching states earned a lower rate of return on assets than unit banks in unit banking states. They also charged lower interest rates on loans, charged lower service charges on demand deposits, and paid higher interest rates on time and savings accounts.

In a similar study, Mark Flannery found that unit banking restrictions result in significant price inefficiencies.<sup>30</sup> Flannery estimated that unit banks in unit banking states earn 17.5 to 23 percent higher profits than unit banks in branching states. He attributed the difference to unit banks in unit banking states being able to charge higher prices—as opposed to producing banking services at a lower cost.

The evidence suggests that interstate banking would likely result in a more competitive banking system. The evidence is consistent with the hypothesis that less restrictive branching laws result in more competitive banking markets. Banks in unit banking states are apparently protected to some extent from competition. Whether due to potential or actual competition, bank performance is better in branching states than in unit banking states. Because intrastate branching increases competition, it can be inferred that interstate banking would also increase competition.

## Conclusion

Many financial institutions have found ways of providing bank and bank-like services on an

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<sup>28</sup> Alan S. McCall and Manfred O. Peterson, "The Impact."

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<sup>29</sup> Donald T. Savage and Stephen A. Rhoades, "The Effect of Branch Banking on Pricing, Profits, and Efficiency of Unit Banks." *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, 1979, pp. 187-196.

<sup>30</sup> Mark J. Flannery, "The Social Costs of Unit Banking Restrictions." *Journal of Monetary Economics*, March 1984, pp. 237-249.

interstate basis. Along with the growth of interstate financial services there has been an increasing demand for removal of the prohibitions against interstate banking so that traditionally defined banks can participate in providing these services. Many issues must be settled, however, before legislators decide to remove the prohibitions.

One issue is the competitive effects of interstate banking. This article discusses the theoretical aspects of this issue and empirical evidence. The evidence suggests that interstate banking would likely result in a more competitive banking system. The evidence indicates that interstate banking is not likely to result in more concentrated banking markets. And even if concentration increased, the evidence from concentration-performance studies suggests that there would be little effect on bank performance. The evidence from studies of the effect of entry suggests that the removal of prohibitions against interstate banking would, in fact, result in substantial benefits if it led to new banks being opened in protected local markets. Finally, comparisons of bank performance in branching states with performance

in unit banking states are consistent with the view that the benefits from removing the prohibitions against interstate banking could be large.

Although interstate banking should result in more competitive banking markets, other questions have to be answered before legislators and regulators will support interstate banking legislation. These questions include the effect of interstate banking on the cost efficiency of the financial services industry, the safety and soundness of the banking system, the viability of small banking institutions, and the flow of credit between regions. Furthermore, decisions would have to be made about the best way to implement interstate banking. Some analysts favor repeal of the Douglas Amendment, while others favor amendment of the McFadden Act. Some recommend a gradual movement toward full interstate banking, while others recommend immediate removal of all geographic restrictions in banking. Thus, many issues other than the competitive effects of interstate banking still must be resolved before any legislative action is taken.