

## Interstate banking game plans: Implications for the Midwest

*Dave Phillis and Christine Pavel*

Interstate banking is spreading rapidly throughout the country. It is fairly well entrenched in the Southeast and in New England, and in 1985, interstate banking appeared in the Midwest with the passage of Indiana's regional interstate banking bill in April. In November, Illinois passed a similar law. Nevertheless, 26 states still prohibit interstate mergers and acquisitions.<sup>1</sup> Over 9,500 institutions, representing 63 percent of all U.S. banking firms and 46 percent of domestic bank assets, are still forbidden to acquire or be acquired by bank holding companies across state lines.

As of December 1985, at least thirteen state legislatures were grappling with the interstate banking issue. Most of these were considering regional, reciprocal legislation. Such laws allow out-of-state bank holding companies to acquire or merge with in-state institutions on a reciprocal basis. In the other 13 states, some sort of interstate legislation will probably be introduced.

Indeed, interstate banking is a trend that is becoming more and more difficult to ignore. Market forces, especially those fostered by interest rate deregulation, have been encouraging banks to compete for retail deposits on a nationwide basis. Recent advances in data processing and communications technology are facilitating this nationwide competition for retail customers. Also, the proliferation of non-bank banks, the nationwide deployment of nonbank subsidiaries by bank holding companies, and the acquisitions of failing banks and thrifts across state lines have added to the de facto existence of interstate banking organizations in this country.

In August 1981, when Key Banks of Albany, New York took advantage of Maine's reciprocal interstate banking law by agreeing to acquire Depositors Corporation of Augusta, the interstate banking movement began to take a more direct route. Since then, over 50 bank holding companies have proposed to acquire out-of-state organizations. Most of this merger activity has occurred in New England, in the Southeast, and in the Washington, D.C. met-

ropolitan area where regional interstate banking compacts are fairly well developed. Most states in those regions permit interstate banking on a regional, reciprocal basis.

An analysis of the interstate banking experience in these states can help legislators, regulators, bankers and consumers of banking services in other states to understand the market forces that are driving the first round of interstate acquisitions. The experiences of these states can also provide information about the types of institutions that become involved in interstate banking, the attributes that acquirers value, and how consumers will fare as banks compete for their business across state lines.

This article examines interstate merger and acquisition activity since 1981. The first section identifies key characteristics that separate institutions that have not engaged in regional interstate merger activity from those that have. This section also identifies the significant factors that separate target institutions from acquirers. The second section presents two models for predicting whether or not a banking firm will be a target, an acquirer, or a spectator. The next section examines 37 interstate mergers and acquisitions since 1981 and attempts to identify what factors affect the price paid in an interstate deal. The last section draws implications for the Midwest, particularly the Seventh Federal Reserve District. Implications for Seventh District bankers, as well as for consumers, are discussed in the conclusions.

### **Who is involved in interstate mergers?**

We compared various financial and market variables across banking firms based in established interstate banking regions—the

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Southeast, Northeast, and New England states—to identify characteristics that differentiate banking firms that have become involved in the first round of regional interstate merger and acquisition activity from those that have not and to identify characteristics that separate target institutions from acquiring institutions. To make our sample manageable, only the 12 states that had at least one banking firm that was a target or an acquirer in a regional interstate deal as of August 1985 were included.<sup>2</sup> The financial and market share data are from *Reports of Condition* and *Reports of Income* as of December 1981, the last year before any regional interstate deal was proposed. Data for banks that belong to the same holding company organization are grouped together as one observation.

The banking organizations were separated into several groups. First, they were classified as either players or spectators. A player had been involved in a regional interstate bank merger or acquisition, either as an acquirer or as a target as of August 1985.<sup>3</sup> The group of players was further broken down into targets and acquirers. In the 12-state sample, 2 percent of all institutions were players—28 targets and 16 acquirers. The group of 1,786 spectators was reduced to 80 by taking a random sample.

The means of the financial and market variables for the players and spectators and the corresponding T-statistics, which indicate whether the two groups differ significantly with respect to these variables, are shown in Table 1; the means and T-statistics for targets and acquirers are shown in Table 2. As can be seen in these two tables, several factors are significant in separating banking organizations that have not been involved in a regional interstate acquisition from those that have, either as targets or as acquirers. Many of these same factors, in turn, separate target institutions from acquiring institutions. In general, spectator institutions tend to be smaller in asset size and number of offices, have smaller statewide deposit shares, and are less commercial-oriented than player institutions.

Size is the predominant factor that differentiates targets and acquirers from spectators. On average, institutions that have not become involved in interstate deals had total assets of \$137 million in 1981, although the largest had \$2.5 billion in assets. The average target, with

**Table 1**  
**Separating the players from the spectators**  
**in the Southeast and Northeast:**  
**Mean values & T-statistics**  
*(\$ millions)*

	Players (n=44)	(T-statistics)	Spectators (n=80)
<b>SIZE</b>			
Total assets	\$2,170	(-8.621)*	\$137
Banking offices	78	(-10.736)*	5
<b>PROFITABILITY</b>			
Return on assets	1.0%	(-0.068)	1.0%
Net spread <sup>1</sup>	4.9%	(0.283)	5.0%
<b>FOCUS</b>			
Retail deposits/assets	65.2%	(3.387)*	75.0%
Consumer loans/assets <sup>2</sup>	15.0%	(-0.431)	14.3%
Commercial loans/assets <sup>3</sup>	16.7%	(-4.223)*	10.6%
<b>MARKET</b>			
Statewide deposit share	7.3%	(-9.339)*	0.3%
MSAs	2	(-6.125)*	1
<b>OTHER</b>			
Net charge-offs/assets	0.4%	(-0.121)	0.4%
Capital/assets	7.2%	(2.077)*	11.6%
Fee income/income	7.1%	(-4.870)*	4.5%

\*Significant at the 1 percent level.

<sup>1</sup> Net income from earning assets as a percent of earning assets.

<sup>2</sup> Loans to individuals divided by domestic assets.

<sup>3</sup> Commercial and industrial loans divided by domestic assets.

\$1 billion in assets, was nearly eight times as large and the average acquiring institution, with \$4 billion in assets, was more than 30 times as large as the average spectator banking institution.

The average target and acquirer also tended to have more extensive branch networks than institutions that were not involved in interstate deals. The average spectator had only 5 banking offices and a presence in only one metropolitan area in 1981, while the average target had roughly 47 offices and a presence in two metropolitan areas and the average acquirer had 138 offices in three metropolitan areas.

The number of offices that an institution has is indicative of the branching laws in the state in which it operates as well as the size of the organization and its marketing orientation. In the sample, however, all but two states allowed statewide branching in 1981. These two allow limited intrastate branching.

Another significant factor that separates spectator institutions from the players, and targets from acquirers, is statewide presence. The statewide share of total deposits for the average institution that was involved in a regional interstate acquisition was 7.3 percent, nearly 25 times that of the average spectator institution. The average target's state share



was 5.1 percent, about half that of the average acquirer.

Institutions that were involved in interstate deals also tend to be more commercial-, as opposed to consumer-, oriented than their uninvolved counterparts, although they have significant retail banking operations. Retail deposits (deposits less than \$100,000) as a percent of assets at player institutions averaged 65 percent in 1981. This compares with 75 percent at spectator institutions. Retail deposits were 69 percent of total assets at the average target, and 59 percent of total assets at the average acquirer. Commercial loans as a percent of assets were also higher at the average acquirer (20 percent) than at the average target (15 percent). And at the average spectator institution, commercial loans accounted for only 11 percent of total assets.

Analysis of the key factors that distinguish players from spectators and acquirers from targets suggests that bank holding companies that are acquiring banks across state lines are doing so to enhance their retail banking operations. These bank holding companies are acquiring institutions that have extensive, albeit smaller, retail networks, slightly more consumer-focused loan portfolios, and strong retail deposit bases. Although the average institution that has been a spectator of interstate banking so far has a

strong retail deposit base and a loan portfolio that is weighted heavily with consumer loans, it is relatively small. Most acquirers do not seem willing to expend managerial resources to purchase and integrate a string of small retail banks.

## Predicting targets and acquirers

A banking institution can basically follow one of three interstate strategies. It can become an acquirer, a target, or a spectator. While the means of key variables and their T-statistics indicate how these three types of institutions differ, they cannot be used to predict which strategy an institution is likely to follow. Therefore, we developed a model to predict an institution's probable interstate strategy.

Using a stepwise logit technique, the variables in Tables 1 and 2 were used to develop two models for predicting whether a given institution would become a target, an acquirer, or neither.<sup>4</sup> A logit model, basically, is a choice model that assumes that an individual, in this case a banking institution, is faced with two or more alternatives and that the institution's choice is dependent upon the characteristics of the institution.

Each model begins by predicting whether an institution would become involved in a regional interstate acquisition. Assuming that an institution will become involved in an interstate deal, each model then predicts whether the institution will become a target or an acquirer. (The details of each model are presented in the box entitled "Descriptions of logit and purchase premium models.") As expected, both models suggest that acquiring institutions are using interstate banking as a vehicle to expand their retail banking networks.

The first model indicates that the number of offices (branches plus main offices) is critical in determining whether and how an institution will be involved in a regional interstate acquisition. In general, the more banking offices an institution has, the more likely it is to become a player in interstate banking. Assuming that an institution will become a player, it is more likely to become an acquirer, the greater its asset size. According to this "office" model, an institution that operates more than 26 banking offices has a greater than 50 percent probability of becoming a player, and a player with more than \$3.3 billion in assets at year-end 1984 has

**Table 2**  
**Separating the acquirers from the targets**  
**in the Southeast and Northeast**  
**Mean values & T-statistics**  
*(\$ millions)*

	Acquirers (n=16)	(T-statistics)	Targets (n=28)
<b>SIZE</b>			
Total assets	\$4,141	(6.290)*	\$1,044
Banking offices	138	(6.120)	47
<b>PROFITABILITY</b>			
Return on assets	0.9%	(-0.554)	1.0%
Net spread <sup>1</sup>	4.7%	(-0.668)	5.0%
<b>FOCUS</b>			
Retail deposits/assets	58.8%	(-2.914)*	68.8%
Consumer loans/assets <sup>2</sup>	13.6%	(1.126)	15.8%
Commercial loans/assets <sup>3</sup>	20.2%	(2.758)*	14.7%
<b>MARKET</b>			
Statewide deposit share	11.1%	(3.024)*	5.1%
MSAs	3	(0.869)	2
<b>OTHER</b>			
Net Charge-offs/assets	0.3%	(-1.464)	0.4%
Capital/assets	6.7%	(-1.078)	7.4%
Fee income/income	6.6%	(-0.909)*	7.4%

\*Significant at the 1 percent level.

<sup>1</sup> Net income from earning assets as a percent of earning assets.

<sup>2</sup> Loans to individuals divided by domestic assets.

<sup>3</sup> Commercial and industrial loans divided by domestic assets.

### The logit and purchase premium models

Two hierarchical logit models and a purchase premium model were developed from various financial, market, demographic and structural variables. (See Tables 1, 2, and 3 for a description of these variables). The logit models predict whether an institution would become a target, an acquirer, or a spectator in regional interstate banking. The purchase premium model identifies which characteristics acquirers tend to pay premiums for and which they tend to discount.

#### The logit models

Two logit models were developed from a set of 17 financial, market, and structural variables to predict regional, interstate acquisition activity (see Tables 1 and 2). The models are estimated from a sample of 16 acquirers, 28 targets, and 80 randomly selected spectator institutions from 12 states in the Southeast, Northeast, and New England. The second model differs from the first in that number of offices was excluded from the set of variables for the second model. This variable was excluded in order to develop a model that may be more applicable to a region that contains unit banking and limited branching states.

Each model contains two equations. The first predicts whether an institution will be a spectator or a player. Given that an institution will be a player, the second equation predicts whether an institution will be a target or an acquirer.

A stepwise procedure yielded the following "best" model with offices:

$$\begin{aligned} \text{Probability(Player)} &= 1/(1 + e^{-a}) \\ \text{Probability(Target|Player)} &= 1/(1 + e^{-b}) \\ \text{where } a &= -2.66 + .104(\text{number of offices}) \\ b &= 3.86 - .001(\text{assets}) \\ e &\text{ is the base of natural logarithms} \\ \text{Assets} &\text{ are in millions of dollars and are deflated by the growth} \end{aligned}$$

in total bank assets since year-end 1981.

The first equation of this model, when tested against the sample on which it was estimated, was correct 89.5 percent of the time and had a false-positive rate of 8.1 percent and a false-negative rate of 11.5 percent. The second equation, when tested against the sample, correctly distinguished between targets and acquirers 84.1 percent of the time and had a false-positive rate of 13.8 percent and a false-negative rate of 20.0 percent. The variables in each equation are significant at the 1 percent level using a two-tailed test.

A second model, which excluded number of offices from the set of possible variables, was also developed. A stepwise procedure yielded the following "best" model without offices:

$$\begin{aligned} \text{Probability(Player)} &= 1/(1 + e^{-c}) \\ \text{Probability(Target|Player)} &= 1/(1 + e^{-b}) \\ \text{where } c &= -2.84 + 2.128 \\ &\quad (\text{state share of deposits}) \\ b &= 3.86 - .001(\text{assets}) \end{aligned}$$

The only difference between the two models is the first equation, which predicts which institutions will be players and which will be spectators. In the first model, whether an institution becomes a player depends on the number of offices that it operates, whereas in the second model, state share of deposits is the critical factor.

The first equation of the second model, when tested against the sample, was correct 91.1 percent of the time. The false-positive rate was 5.4 percent and the false-negative rate was 10.3 percent. The variable state share is significant at the 5 percent level using a two-tailed test.

#### The purchase premium model

The purchase premium model was estimated from a sample of 37 interstate acquisitions in 17 states that had been proposed or completed by the end of Au-



gust 1985. Five interstate acquisitions were excluded from the sample because of inaccurate or incomplete data. Twenty-six financial, structural, and demographic variables were initially identified. A step-wise regression procedure was used to select the best measure of certain variables and to screen out variables which had little relationship to purchase premiums.

As shown below, five of the ten variables are statistically significant at the 10 percent level. The model explains 56 percent of the variability in premiums.

#### Results of purchase premium regression

Variable	Coefficient (T value)
Net spread	3.1818*** (2.77)
Consumer mortgages	-.4878* (-1.97)
Fee income	-.5519* (-1.71)
Net charge-offs	-8.5070* (-1.93)
Share of statewide Deposits	-.0032** (-2.19)
Retail deposit growth	-.0232 (-1.09)
Population	.0000 (.01)
Population growth	.0111 (.28)
Per capita money Income	-.000005 (-.29)
Per capita money Income growth	-.0372 (-.38)
$R^2$	55.7
Adjusted $R^2$	38.7

\*Significant at the 10 percent level.

\*\*Significant at the 5 percent level.

\*\*\*Significant at the 1 percent level.

Since a target banking institution's net spread position is very important in determining the premium an acquiring banking institution is willing to pay, a regression model was developed to identify the factors that influence a target's net spread position. As shown in the table, the net spread model contains ten variables and explains 78 percent of the variability in net spread. Four of the ten variables in the net spread model are statistically significant at the 10 percent level using a two-tailed test.

#### Results of net spread regression

Variable	Coefficient (T value)
Retail deposits	.0543*** (3.00)
Retail deposit growth	-.0018 (-.73)
Consumer mortgages	-.1395*** (-4.50)
Consumer loans	.0450** (2.12)
Commercial mortgages	.0110 (.37)
Commercial loans	-.0242 (-1.43)
Population	.0000 (.43)
Population growth	-.0031 (-.65)
Per capita money Income	.000003** (5.57)
Per capita money Income growth	.0052 (.41)
$R^2$	77.8
Adjusted $R^2$	69.3

a greater than 50 percent chance of becoming an acquirer.

The “office” model performed fairly well when tested against the 12-state sample of 124 institutions. It correctly distinguished between players and spectators 90 percent of the time and between targets and acquirers, 84 percent.

The second model was developed from the same set of variables as the first with the exception of the variable for number of offices. This variable was dropped because the number of offices that an institution operates is influenced by its home state’s branching law. Most of the states in our sample allow branching statewide, but in the Seventh District, Illinois severely restricts branching, and Indiana, Iowa, Michigan, and Wisconsin permit only limited branching.<sup>5</sup> In addition, until only recently Indiana did not permit the formation of multibank holding companies; Illinois limits the geographic spread of multibank holding companies. (On July 1, 1986 the limitations on intrastate acquisitions will be eliminated, but Illinois’ highly restrictive branching laws will remain intact.) Therefore, to make our model more applicable to the Seventh District, we estimated a second model without the variable for number of offices.

This second model indicates that size and statewide deposit share are most significant in predicting interstate acquisition activity among institutions. In general, the larger an institution’s share of statewide deposits, the more likely it is to become involved in a regional interstate acquisition. An institution with at least 1.3 percent of statewide deposits has a greater than 50 percent probability of becoming a player. Given that an institution will become a player, the greater its size, based on total assets, the more likely it is to become an acquirer. This “deposit share” model, when tested against the sample of 124 institutions, correctly distinguished players from spectators 91 percent of the time and targets from acquirers, 84 percent.

Both models perform fairly well; however, because retail banking seems to be a key force driving interstate consolidation, the “office” model may be better for predicting interstate acquisition activity. Large banks (banks that generally have been acquirers) in unit banking and limited branching states tend to concentrate on commercial/merchant banking activities. In the sample of 28 regional interstate

deals, only one involved an acquirer and a target that are essentially “merchant” banks, i.e., banks that primarily serve business customers and wealthy individuals. The acquiring institution, a small bank holding company located in Washington, D.C., has proposed to acquire a small Maryland bank in a Washington, D.C. suburb.

Banks have engaged in “merchant” banking activities on a nationwide basis for some time now through loan production offices and Edge Act offices, and through nonbank subsidiaries of bank holding companies. If these “merchant” banks want to continue to concentrate primarily on commercial customers, then they probably will not initiate any interstate acquisitions. If, however, they view interstate banking as a vehicle to establish a significant presence in retail banking, then they will probably become acquirers.

The two models, therefore, implicitly contain opposite assumptions. The first model assumes that geographic presence is not important for “merchant” banks. The second assumes that “merchant” banks want to expand into retail banking or that geographic presence is important in its own right.

### **What are acquirers buying?**

Another way to identify merger and acquisition strategies is to analyze the deals that have been proposed so far. Analysis of what acquirers are willing to pay a premium for and what they tend to discount also indicates that interstate banking is consumer-driven.

No merger or acquisition will occur unless the merging firms are perceived to be worth more together than apart. The more the combined firm is worth relative to the value of the independent organizations, the more the acquiring firm is willing to pay above the market value of the target; i.e., the acquirer will pay a purchase premium.

To gain further insight into what is driving interstate mergers and acquisitions, we attempted to identify variables that are significant in determining the price paid for interstate bank acquisitions.<sup>6</sup> Various financial, structural, and demographic variables were regressed on the ratio of price paid for a target to the target’s total domestic assets (purchase premium) of 37 interstate bank mergers and acquisitions—28 in the Southeast, Northeast,



and New England and nine in developing interstate regions (Table 3). The value of transactions reported in the trade press (*American Banker* and *Wall Street Journal*) were used as the purchase price. Total assets and other financial variables were obtained from the financial statements periodically filed with federal bank regulators.<sup>7</sup>

The definition of purchase premium used in this model is not the conventional definition. The purchase price divided by the book value of assets rather than equity was used because equity for a bank is largely determined by regulatory policy. Book values rather than market values were used because many of the targets' stocks are not widely traded, and therefore market values were difficult to obtain. Book value of a bank is a good substitute for market value, however, because at least 70 percent of a typical bank's assets are short-term or are re-priced frequently.

The financial variables used in this study measure the target institutions' profitability

and the composition of its assets and liabilities. Five-year averages of the profitability measures were used in order to mitigate the effects of any unusually profitable or unprofitable years. Loan-to-asset ratios for consumer and commercial loans measure the focus of the target institutions' lending activities. The levels and five-year growth rates of deposits under \$100,000 capture the extent of the targets' retail deposit-gathering activities. The capital-to-asset ratios and the five-year average net charge-off rates measure target firms' capital positions and lending records. Other financial variables that were tested in this study include the ratio of each target's total assets to its acquirer's total assets, the percent of each target's operating income derived from fees, and the percent of each target's assets involved in nonbank activities.

Structural variables were included to capture the varied legal environments in which the target banks operate. Branching laws are classified as either statewide, limited, or unit

**Table 3**  
**Variables used to develop the purchase premium model**

Financial variables

Profitability:	Net income/total assets (ROA)* Net income/total equity (ROE)* Net spread/average earning assets* Operating income/total assets*
Lending:	Consumer loans/total assets Consumer mortgages/total assets Commercial mortgages/total assets Commercial loans/total assets Consumer loans and mortgages of target/consumer loans and mortgages of acquirer Commercial loans and mortgages of target/commercial loans and mortgages of acquirer
Deposit taking	Deposits less than \$100,000/total assets Growth in deposits less than \$100,000*
Miscellaneous	Investment in nonbank subsidiaries/total equity Net loan charge-offs/total loans Total equity/total assets Total assets of target/total assets of acquirer

Structural variables

Market share	State rank and share of statewide deposits Rank and share of deposits in lead bank's local market
Legal restrictions	State branching status (statewide, limited, or unit) Type of interstate law (regional or national) Number of interstate law (regional or national) Number of domestic branches operated by target
Miscellaneous	Region (New England, Southeast, or neither) Type of consideration (cash, stock, both)

Demographic variables\*\*

Population (1980)
Population growth (1970-80)
Per capita money income (1980)
Per capita money income growth (1970-80)
Households earning more than \$30,000/year (1980)

\*Averaged over five years preceding announcement of acquisition.

\*\*All demographic variables are for the county in which the target's lead bank operates its main office.

banking. Interstate banking laws are classified as either regional or national. Other structural variables include each target's share of statewide deposits and rank in its home state, as well as the rank and share of each target's lead bank in its primary local banking market, the number of domestic branches operated by each target, the interstate compact region (Southeast, New England, or neither), and the type of consideration provided.

The demographic variables regressed on the purchase premium control for the varying characteristics of the primary local market in which each target's lead bank operates. The level and growth of population and income are used as proxies for the level of demand and growth in demand for banking services.

In some instances there are several alternative measures of important financial, structural, and demographic variables. For example, profitability can be measured by return on assets, return on equity, the ratio of operating earnings to assets, or the net spread on average earning assets. A stepwise regression procedure was used to select the best of these alternative variables. The stepwise regression was also used to screen out variables that have little relationship to the purchase premium.

This information was used to develop the final purchase premium model. The final model, which includes ten variables, accounts for 56 percent of the variability in purchase premiums. (See the box for a detailed discussion of this regression.) Five of these variables play a statistically significant role in explaining purchase premiums: net spread, consumer mortgage loans, fee income, net charge-offs, and statewide deposit share (see Figure 1). The other five variables were included in the model as controls.

A target institution's net spread position is by far the most important determinant of its purchase price. Net spread is the total income earned from loans and securities less the interest paid on deposits as a percent of average earning assets. The target firms in this study, on average, earned a net spread of 4.88 percentage points over the five-year period before they agreed to be acquired. The regression results indicate that if a target firm earned a net spread of 5.37 percent, 10 percent above the average, an acquirer would pay 10.2 percent more than the average purchase premium to

acquire that firm, all else equal. Acquirers, therefore, seem to be looking for target institutions that are very effective in the basic businesses of both lending and deposit taking. This seems reasonable since banking firms could already offer either, but not both, of these services at the same location on an interstate basis.

Four other variables are statistically significant but inversely related to the purchase premium. Generally, a target institution with few consumer mortgages, low fee income, and low net charge-offs would receive a relatively large purchase premium. The inverse relationship between net charge-offs and purchase premiums indicates that banks with highly skilled lending departments attract relatively large purchase premiums.

Since only 55 percent of fee income is derived from deposit-taking and lending activities, the inverse relationship between fee income and purchase premiums may mean that, although targets are profitable, core services are not priced correctly.<sup>8</sup> Such banks may provide an acquirer with an opportunity to generate additional fee income and, therefore, additional profits after the merger by instituting better pricing policies and by introducing or expanding fee-generating services such as trust services.

The relationship between purchase premium and consumer mortgages is understandable because mortgage loans are generally long-term and fixed-rate. Also, interest rates during the last five years have been quite volatile, making mortgages highly vulnerable to interest-rate risk, and often unprofitable.

The purchase premium equation also indicates that there is an inverse relationship between purchase premium and a target's share of statewide deposits. This relationship is difficult to explain. The sample on which the equation was estimated had an average share of statewide deposits of 7.1 percent, which indicates that targets generally hold strong positions in their home states and acquirers look for relatively large target organizations. The average target is about one-quarter of the size of the average acquirer. The inverse relationship between state share and purchase premium, therefore, may indicate that targets with large state shares gained market share by paying above average interest rates for deposits or, more likely, overexpanding their branching networks. This would adversely affect profits



and reduce purchase premiums. The variable for number of offices, however, was not statistically significant in the purchase premium model.

Another possible explanation for the inverse relationship between purchase premium and state share is that banks with very large shares are more vulnerable in a market that is becoming increasingly competitive due to interstate banking. Also, the largest banking organizations in a state may insist upon a merger of equals, making it difficult to structure a deal.

Since a target's net spread is paramount in determining the premium an acquirer is willing to pay, a regression model was developed to determine what factors influence a target's net spread position. The net spread model contains ten variables, which account for 78 percent of the variability in the net spread of the target firms in the sample (see box on the logit and purchase premium models).

One demographic and three financial variables exhibit a statistically significant relationship with net spread (see Figure 2). The level of retail deposits held by the target is an important determinant of the firm's net spread position. The typical (average) target firm in this study funded 71.8 percent of its assets with deposits of less than \$100,000. The net spread equation indicates that a typical target firm with retail deposits 10 percent above average

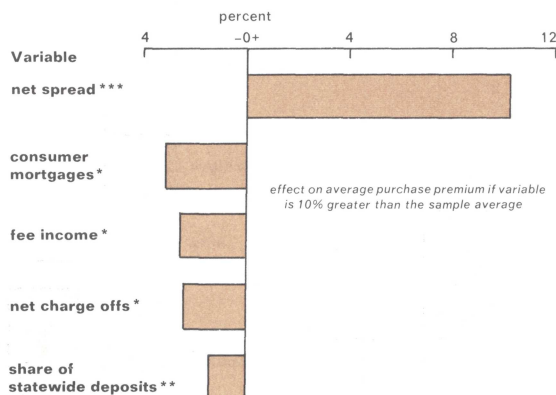
would earn an 8 percent higher net spread. Similarly, the income level of the population served by a target's lead bank is also important in determining the target's net spread position. If the income of the county served by a typical target's lead bank were 10 percent above average, the target's net spread would be 7.4 percent above average. The net spread equation also indicates that a high level of consumer loans tends to raise a target's net spread while a high level of consumer mortgages tends to lower a target's net spread position.

The information contained in the net spread equation corroborates the conclusions drawn from the comparisons of targets and acquirers, the choice models, and the purchase premium model. Acquirers are looking for institutions that have profitable retail banking operations. Target institutions that operate their lead banks in affluent areas and have established sizable consumer loan and retail deposit bases will attract relatively high purchase premiums. Institutions with high ratios of consumer mortgages to total assets, however, will receive relatively low premiums.

### Implications for the Midwest

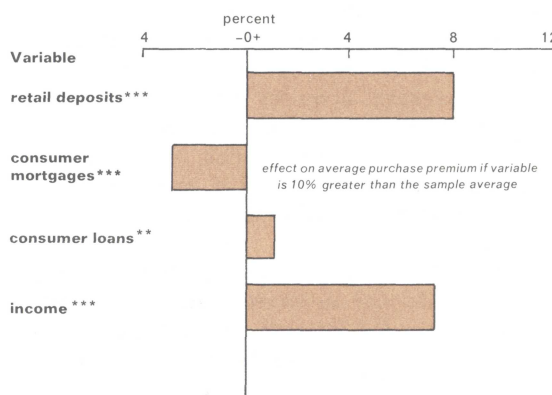
We applied both choice models and the purchase premium model to the five states of the Seventh Federal Reserve District to see what to expect in the District after the first

Figure 1  
Relative importance of variables in  
purchase premium regression



NOTE:  $R^2=55.7$ , adjusted  $R^2=38.7$ .  
\*Significant at the 10 percent level.  
\*\*Significant at the 5 percent level.  
\*\*\*Significant at the 1 percent level.

Figure 2  
Relative importance of variables in  
net spread regression



NOTE:  $R^2=77.8$ , adjusted  $R^2=69.3$ .  
\*Significant at the 10 percent level.  
\*\*Significant at the 5 percent level.  
\*\*\*Significant at the 1 percent level.

phase of regional interstate banking in the Midwest. Year-end 1984 data were used; 1984 assets were deflated by the average growth in bank assets over the 1981-84 period. We assume that the Midwest interstate banking region comprises Illinois, Indiana, Iowa, Michigan, and Wisconsin, although not exclusively. For example, an acquirer in Michigan does not have to acquire a target in one of the other four District states; it could acquire a bank in, say, Ohio. Similarly, a target in the District could be acquired by a bank holding company outside the District.

The "office" model predicted that 215 institutions from the Seventh District, or 8 percent, would be involved in an interstate acquisition (see Table 4). Nineteen institutions have an average probability to become players of 94 percent; 11 have an average probability of 63 percent; 11 have an average probability of 36 percent; and 2,348 have an average probability of 7 percent.

Predictions of which institutions would be targets and which would be acquirers, however, were based on the 30 institutions that have greater than 50 percent probabilities of becoming players. From these 30 institutions, the "office" model predicts that 10 firms would be acquirers, and 20, targets (see Figure 3). The average institution with a greater than 50 percent probability of being an acquirer has nearly five times the assets and four times the number of offices of the average institution with more than a 50 percent probability of becoming a target.

The ratios of retail deposits to assets and commercial loans to assets were not significant in the choice model. However, these ratios for the average predicted acquirer and target in the Seventh District are consistent with those of the average acquirer and target in the 12-state sample. The average predicted acquirer in the District has a lower retail deposits-to-assets ratio and a higher commercial loans-to-assets ratio than the average target institution.

If a region is not strictly defined, the 10 acquirers do not necessarily have to acquire banks within the Seventh District, and the 20 targets do not have to be purchased by an acquirer in the District. The fact that the model predicts more targets than acquirers may suggest that the prices paid for targets will be bid down. This contrasts with the 12-state

**Table 4**  
**Predicting the players in interstate banking**

	Office model			
	Probability of becoming a player			
	0-25%	25-50%	50-75%	75-100%
Total in group	2,522	11	11	19
Average probability	7.4%	36.4%	62.8%	93.5%

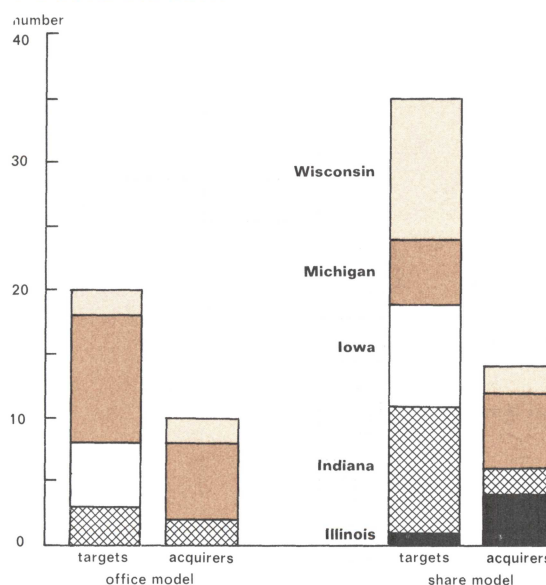
	Deposit share model			
	Probability of becoming a player			
	0-25%	25-50%	50-75%	75-100%
Total in group	2,499	15	15	34
Average probability	6.9%	32.5%	61.9%	94.0%

sample, in which the number of targets exceeded the number of acquirers.

Based on the predictions of the "office" model, the average interstate deal within the Seventh District will consist of an acquirer purchasing a \$1.2 billion institution to create a new \$7 billion institution. The average price paid for the target will be \$164 million, representing a purchase premium of 13.7% over book value.

The "deposit share" model predicted that 219 firms in the District will be involved in an interstate acquisition (see Table 4). According to this model, 34 firms have average probabilities of 94 percent of being involved in interstate

**Figure 3**  
**Locations of predicted players in the Seventh District**





banking; 15 firms have average probabilities of 62 percent; 15 firms, 33 percent; and 2,499, 7 percent.

The 49 institutions with greater than 50 percent probability of being players were used to predict which firms would be targets and which would be acquirers. Fifteen institutions are expected to be acquirers, and the other 34 are expected to be targets (see Figure 3). According to the "deposit share" model, the average acquirer accounts for 9.5 percent of the deposits in its home state, about 3 1/2 times the average target's share of state deposits. This model's predictions are consistent with the 12-state sample: the average acquirer will have more commercial loans as a percent of assets than the average target, but the average target will have a stronger retail deposit base.

Based on the prediction of the "deposit share" model, the average interstate deal in the Seventh District will cost \$146.3 million, rep-

resenting a purchase premium of 13.3 percent over asset value. The average acquirer will have about \$8.4 billion in assets, and the average target will have \$1.1 billion in assets.

As shown in Table 5, both the "office" model and the "deposit share" model are fairly consistent. In differentiating between players and spectators, the only significant differences are in the average player's retail deposits-to-assets ratio and in the average spectator's size based on total domestic assets. The "office" model predicts that the average player will have a higher ratio of retail deposits to assets than the average player predicted by the "deposit share" model. Also, the "office" model predicts that the average spectator will be larger than predicted by the "deposit share" model.

In distinguishing targets from acquirers, the two models differ only in their prediction of the average target. According to the

**Table 5**  
**Separating the players from the spectators and the acquirers**  
**from the targets in the 7th District:**  
**Office models vs. deposit share model**

	Players		Spectators	
	Office	Deposit share	Office	Deposit share
Expected number of firms	215	219	2,348	2,344
<u>Average values</u>				
Domestic assets ( <i>millions</i> )	\$2,773	\$3,164	\$89**	\$60**
Offices	74	47	1	1
Statewide share of deposits	5.4%	4.6%	0.1%	0.1%
Retail deposits/assets	74.5%*	67.7%*	82.1%	82.2%
Commercial loans/assets	14.2%	17.2%	1.9%	1.7%
	Acquirers		Targets	
	Office	Deposit share	Office	Deposit share
Number of firms	10	15	20	34
<u>Average values</u>				
Domestic assets ( <i>millions</i> )	\$5,841	\$8,440	\$1,238	\$1,053
Offices	143	105	39***	24***
Statewide share of deposits	9.9%	9.3%	3.1%	2.7%
Retail deposits/assets	68.4%	60.8%	77.6%	73.2%
Commercial loans/assets	19.3%	22.7%	11.6%*	14.9%*
Acquisition price ( <i>millions</i> )			\$164.0	\$146.3
Premium			13.7%	13.3%

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

“office” model, the average target will operate fewer offices, have more commercial loans as a percent of assets, and have a smaller retail deposit base than the average target predicted by the “deposit share” model.

### Winners and “losers” by state

As shown in Figure 3, the “deposit share” model predicts that nearly three-quarters of all players in the Seventh District will be from Indiana, Michigan, and Wisconsin—limited branching states. Only five institutions that will be involved in interstate merger activity will be from Illinois, a unit banking state. Four of these should be acquirers.

The “office” model, however, predicts that most institutions that will be involved in interstate merger activity are based in Michigan, and most would-be-acquirers are based in that state as well. This is particularly interesting because Illinois has four of the ten largest institutions in the region. The “office” model excluded all Illinois banks from the set of player institutions because number of offices is a key determinant in this model.

Both models imply that current intrastate branching restrictions will have profound implications for a state’s role in interstate banking. If either model is applicable to a region that contains unit banking states, highly restrictive branching laws could mean that banks in unit banking states like Illinois will sit on the sidelines while interstate banking allows banks in less restrictive neighboring states to combine and grow around them.<sup>9</sup>

The application of the choice models and the purchase premium model to the Seventh District may have limitations because the models were estimated on data from regions that are different from the Seventh District. Perhaps most important is that states that have interstate banking laws tend to have more liberal intrastate branching laws than do Seventh District states. Thus, a highly restrictive branching law, such as Illinois’, limits the number and geographic spread of banking offices that an in-state bank operates and, therefore, limits its statewide share of deposits as well.

There is some evidence, however, that Illinois banking organizations will be sitting on the sidelines. As shown in Table 6, eight of the

District’s 15 largest bank holding companies increased their deposits more than 10 percent through acquisitions in the last three years. Four of these institutions are in Michigan and only two are in Illinois. Furthermore, three of the District’s 15 largest banking firms increased their deposits by more than 20 percent through acquisitions. Not one of these is in Illinois.

Analysis of the intrastate acquisition activity in Illinois and Indiana also indicates that Illinois institutions do not tend to be aggressive acquirers. Since January 1, 1982, Illinois has permitted the formation of multibank holding companies. From January 1 to December 31, 1982, 47 banks had been acquired by 24 of the state’s 1,200 holding companies; however, only 15 of the 47 targets did not have a previous relationship with their acquirers.<sup>10</sup> Since July 1, 1985, Indiana has permitted multibank holding companies. In the subsequent three months, more than 24 of the state’s 400 banks had agreed to be acquired.

The applications for nonbank banks by District banking organizations also indicate that bank holding companies in Illinois and Iowa are less expansion-minded than holding companies in Michigan, Indiana, and Wisconsin. Of the five applications for nonbank banks by District organizations, four are from a Michigan bank holding company and one is from an Indiana institution. Of the four applications to convert limited power trust companies into nonbank banks, three are from Michigan bank holding companies and one is

**Table 6**  
**15 largest 7th District bank holding companies:**  
**1984**

	Total deposits (in billions)	Percent of deposits acquired in last 3 years	Banking offices
First Chicago Corp. (IL)	\$14.6	17%	17
NBD Bancorp Inc. (MI)	9.9	15	271
Continental Illinois Corp. (IL)	7.8	2	6
Comerica Inc. (MI)	7.3	17	238
Michigan National Corp. (MI)	5.9	0	342
Bank of Montreal (Harris Bank, IL)	4.8	15	16
Manufacturers Nat’l Corp. (MI)	4.7	0	136
First of America Bank Corp (MI)	4.2	14	216
First Wisconsin Corp. (WI)	4.1	3	73
Northern Trust Corp. (IL)	3.9	8	9
Marshall & Ilsley Corp. (WI)	3.4	23	78
Old Kent Financial Corp. (MI)	3.3	35	170
Marine Corp. (WI)	2.7	33	75
Indiana National Corp. (IN)	2.4	0	55
American Fletcher Corp. (IN)	2.4	0	69

SOURCE: Board of Governors of the Federal Reserve System.



from a Wisconsin holding company. Each of these applications is for an institution that accepts demand deposits but does not make commercial loans.

## Conclusions

Serving the retail banking customer seems to be the driving force behind the first phase of interstate consolidation. Acquiring institutions are purchasing profitable banks that have strong consumer banking operations and fairly extensive retail distribution networks. Furthermore, they are paying a premium for these targets, which suggests that acquiring institutions are committed to serving consumers.

The models developed in this article indicate that the number of offices that an institution operates, which is indicative of its retail banking operation, is crucial in determining whether an institution will become involved in a regional interstate acquisition. Large banks with very few offices, e.g., large Illinois banks, tend to concentrate on serving commercial customers and have very little experience operating retail banking networks. They would not, therefore, be expected to become active in the retail market when interstate banking is permitted throughout the Midwest. This is as much a result of branching restrictions as it is of the marketing orientations of these institutions. Most medium-sized Illinois institutions, which do have experience serving consumers, also have limited experience operating retail networks. They too would not be expected to become involved in an interstate merger or acquisition.

The models developed in this article also indicate that the largest institutions in a region would become acquirers, provided that they have a significant number of banking offices. A player institution with more than \$3.3 billion in domestic assets at year-end 1984 has a greater than 50 percent probability of becoming an acquirer. The average acquirer's domestic assets would be between five and eight times greater than those of the average target.

The smallest predicted target had over \$400 million in domestic assets at year-end 1984; thus, the fear that interstate banking will cause small banks to be "gobbled up" by large banks seems unwarranted. The first phase of interstate consolidation will occur among the largest institutions. Furthermore, in the first

phase, targets will command attractive purchase premiums (about 13.5 percent in the District). Over time, however, premiums will decline as the most attractive banking institutions are acquired and as competition erodes profit margins.<sup>11</sup>

Regardless of which banks are acquirers and which are targets, consumers of banking services should not be harmed by interstate banking and many consumers could benefit. Retail banking seems to be the driving force behind interstate banking, and acquirers are willing to pay a premium for relatively large, profitable, consumer-oriented banks. An acquiring institution, therefore, would not be expected to adopt policies that would dissipate its customer base. In addition, economic theory holds that the removal of geographic barriers to entry increases competition and, therefore, reduces price and/or increases quality, thus benefitting consumers. If, however, number of offices is the key determinant in who becomes a player and who becomes a spectator in interstate banking, consumers in unit banking or highly restrictive branching states will be sitting on the sidelines with the bankers unless restrictions on branching and intrastate acquisitions are relaxed.

Relaxation of these restrictions would benefit both bankers and consumers of banking services. More liberal branching and multi-bank holding company laws would allow banking organizations in highly restrictive branching states to grow through branching or through intrastate mergers and acquisitions. And, if they so choose, these banks could assemble intrastate retail banking networks, thus preparing them to operate regional networks across state lines, and making them more attractive to out-of-state bidders. Consumers would benefit from the increased competition that would ensue, and to the extent that the current banking laws support a greater number of banks than market forces would permit, more liberal banking laws would lead to a more efficient banking system.

Our analysis suggests that unit banking states may be at a disadvantage when interstate banking arrives. Legislatures in these states can either forego passage of an interstate banking bill or begin to liberalize restrictive branching legislation. The first solution has the merit of preserving the status quo. But this status quo can only be preserved by sacrificing

### Lessons from nonbank subsidiaries and nonbank banks

Despite prohibitions against interstate banking, bank holding companies have separately offered deposit-taking and lending services across state lines for nearly 30 years through nonbank subsidiaries, loan production offices, and nonbank banks. A careful examination of the types and locations of nonbank subsidiaries and offices that bank holding companies have established and the types and locations of nonbank banks that they are seeking to establish, indicates that interstate banking is consumer-driven and that bank holding companies are establishing presences in areas that have been experiencing rapid growth.

#### Nonbank subs and LPOs

The 4(c)8 provisions of the Bank Holding Company Act allow banks to provide services such as consumer and commercial finance, mortgage banking, lease financing and credit insurance underwriting on an interstate basis through nonbank subsidiaries. The map shows the ten states that house the most 4(c)8 offices. These ten states account for a combined 3,052 4(c)8 offices, 55.5 percent of the U.S. total. California accounts for the most 4(c)8 offices and nearly five times as many as the average state. Five of the top ten states are in the Southeast,

an area that has been experiencing rapid economic growth recently.

Most nonbank subsidiaries are directed at consumers rather than businesses. Over 65 percent of all nonbank subsidiaries are consumer finance companies, trust companies, or industrial banks. This is the case among the top ten states, where 86 percent of all 4(c)8 offices are consumer-oriented. Furthermore, most of these consumer nonbank subsidiaries are lending offices. Only Florida has a significant number of trust companies, and Colorado—not among the top ten—has the most industrial banks (40).

In the case of the industrial bank subsidiaries, a prime determinant of a state's magnetism is legislative. Many states forbid industrial banking activity. In fact, all 105 industrial banks in the United States are located in 11 states, and over half are located in Arizona, California, Colorado, and Kansas.

Business-oriented 4(c)8 offices—e.g., commercial finance companies and lease financing operations—account for a very small proportion of all nonbank subsidiaries. Among the top ten states, they account for only 14 percent. Texas, California, and Ohio house the most business 4(c)8 offices, with 11, 10, and 10, respectively.

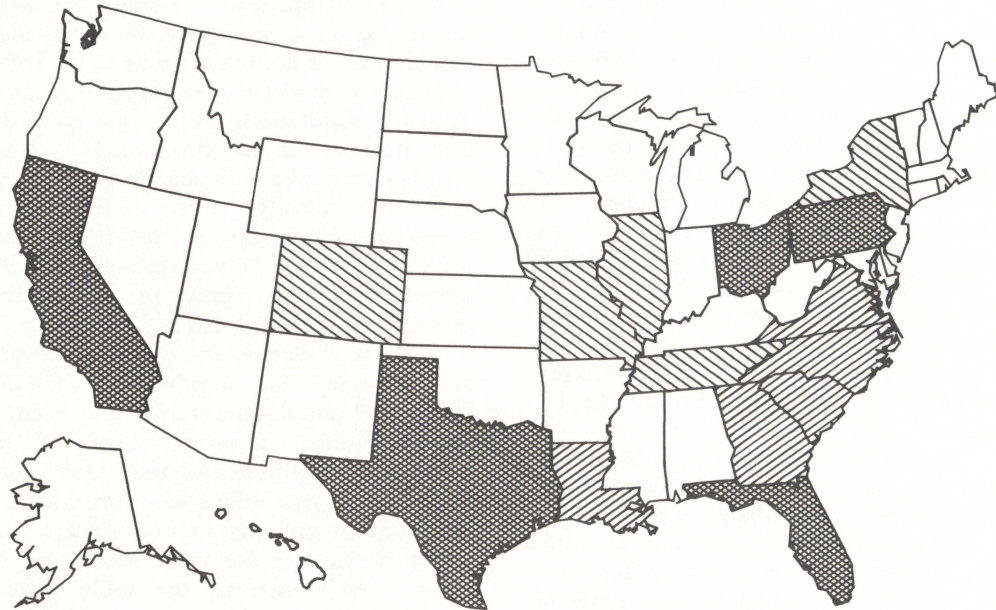
Nonbank banks—Top 10 states




	Nonbank banks applications	Will accept demand deposits	Will make commercial loans
Florida*	44	29	15
Texas*	33	18	15
Georgia*	22	13	9
Virginia*	19	15	4
Pennsylvania*	17	9	8
California*	15	9	6
Arizona	14	8	6
Maryland	14	11	3
Massachusetts	12	8	4
New Jersey	12	8	4

\*Also rank among the top ten states for nonbank subsidiaries.



### Nonbank subsidiaries of bank holding companies: 1983



-  Rank among top 10 states for total 4(c)8 offices, total consumer 4(c)8 offices, and total commercial 4(c)8 offices plus LPOs
-  Rank among top 10 states for total 4(c)8 offices and total consumer 4(c)8 offices
-  Rank among top 10 states for total commercial 4(c)8 offices plus LPOs

SOURCE: David D. Whitehead, *A Guide to Interstate Banking: 1983*, Federal Reserve Bank of Atlanta.

As shown in the map, five states rank among the top ten states for both consumer and commercial nonbank subsidiaries. These states include California, Florida, Ohio, Pennsylvania, and Texas. Together these five states account for 33 percent of all 4(c)8 offices.

Loan production offices are another means for bank holding companies to provide services to customers across state lines. Loan production offices serve as calling offices for a bank's commercial lending department and are operated on an interstate basis. Forty-four organizations in 19 states maintain interstate LPOs in 34 states. Six states house more than 10 LPOs each. These states include California (22), Illinois (21), Texas (19),

New York (16), Colorado (14) and Tennessee (14). The first four of these states also rank among the states with the most business-oriented 4(c)8 offices.

### Nonbank banks

Nonbank subsidiaries of bank holding companies and LPOs have been permitted for nearly 30 years, but nonbank banks are a fairly recent phenomenon. In March 1984, U.S. Trust Company of New York received permission from the Federal Reserve Board to convert its Florida trust company into an institution that accepts demand deposits but does not make commercial loans—not a commercial bank as

defined in the Bank Holding Company Act. Since then, over 300 nonbank bank applications to charter such nonbank banks have been filed with the Office of the Comptroller of the Currency (although less than one-tenth have been approved). Most of these applications are for institutions that will accept demand deposits and make consumer loans, although 151 will make commercial loans but not accept demand deposits. In May 1985, the 11th U.S. Circuit Court of Appeals overturned the Fed's U.S. Trust decision, thus putting nonbank banks on hold; nevertheless, we can gain some insight into what is driving interstate banking by examining the locations for nonbank bank charters.

As shown in the table opposite, eight states are particularly attractive for the establishment of nonbank banks. Not surprisingly, Florida, Texas, and Georgia head the list; these states rank among the top ten states for nonbank subsidiaries of bank holding companies. Collectively, these ten states account for over 25 percent of all proposed nonbank banks in the United States.

To better understand what is attracting nonbank banks to these states, various population, income and market variables at the MSA level (metropolitan statistical area) were regressed on the number of nonbank bank applications in an MSA filed by bank holding companies. The MSA level was used because state-

wide statistics tend to mask important variations within states. Using a stepwise linear regression procedure, we found that the number of nonbank banks in an MSA increases with per capita income, income growth, population, population growth, and number of banking offices. The number of nonbank banks decreases with population density. Each of these variables are significant at the 10 percent level, and these six variables explain 44 percent of the variability in the number of proposed nonbank banks in an MSA.

At first glance, the inverse relationship between the number of nonbank banks and population density may seem a bit surprising. Careful analysis of the data, however, indicates that most nonbank bank applications have been for institutions in growing metropolitan areas, which as yet are not very densely populated. As shown in the table below, banking firms seeking to establish an interstate presence are attracted to metropolitan areas that have been experiencing rapid population and income growth. These areas are primarily in the Southeast and in the West. The few exceptions are Philadelphia, Chicago, Boston, and New York. These cities, however, have very high population and income levels, which account for their attractiveness and compensate for their low population and income growth rates.

**Nonbank banks: population and income for top 10 MSAs**

	Nonbank banks applications	Population		Per capita income	
		1980 Level	1970-80 Growth	1980 Level	1970-80 Growth
		(millions)		(thousands)	
Washington, D.C.	33	3.3	69.0%	\$9.4	1.6%
Atlanta	22	2.1	27.0	6.8	2.3
Dallas	16	2.0	25.8	8.0	2.2
Phoenix	14	1.5	55.4	7.7	1.8
Houston	13	2.7	44.7	7.8	2.7
Philadelphia	13	4.7	-2.2	7.8	1.6
Tampa-St. Pete	12	1.6	46.0	6.6	2.2
Boston	11	3.7	-1.3	7.7	1.6
Chicago	11	6.1	-0.5	9.1	1.5
New York	9	8.3	-8.8	8.1	1.4



Six states rank among the top ten in both the number of nonbank subsidiaries and the number of nonbank banks. These states include California, Florida, Georgia, Pennsylvania, Texas, and Virginia. Most nonbank banks and nonbank subsidiaries of bank holding companies in these states, as well as in the others, are consumer-oriented. That is, most of the nonbank subsidiaries are consumer finance and trust companies, and most of the nonbank

banks will not make commercial loans. The flood of nonbank bank applications since March 1984 seems to indicate that bank holding companies are seeking to expand into areas that have been developing. Cities with high income and population levels, however, are also attractive even if they have not been growing rapidly in recent years.

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any role as a leader in retail banking. It would also deny consumers in these states the potential benefits available to consumers in most of the country. The second solution would permit the development of a more sophisticated banking industry capable of competing with the retail banking organizations that are emerging in other parts of the country. It is also likely to benefit consumers.

<sup>1</sup> Four states have grandfather laws and six allow out-of-state bank holding companies to establish in-state limited service banks.

<sup>2</sup> The 12-state sample includes: Connecticut, District of Columbia, Florida, Georgia, Maine, Maryland, Massachusetts, New York, North Carolina, Rhode Island, South Carolina, and Virginia.

<sup>3</sup> The term "acquisitions" will be used throughout this article to refer to mergers and acquisitions. There are two mergers in our sample. The smaller institution in each case was designated as the target institution.

<sup>4</sup> Three additional variables were also included: 1) the number of states in our subset of 12 states that are included in the interstate law of an organization's home state; 2) the number of states included in our subset of 12 states that an organization can enter; and 3) branching status of an organization's home state (0 if statewide, 1 if limited). None of these additional variables proved significant.

<sup>5</sup> Iowa allows limited branching. A bank can branch within its home county and in contiguous counties in communities that do not have state or national banks. Illinois law allows a bank to establish five "facilities" within its home county or within 25 miles of its main office.

<sup>6</sup> For a discussion of what factors affect purchase premiums of intrastate acquisitions, see Randolph P. Beatty, John F. Reim and Robert F. Schapperle, "The Effects of Barriers to Entry on Shareholder Wealth: Implications for Interstate Banking," *Journal of Bank Research* (Spring 1985), pp. 8-15.

<sup>7</sup> Board of Governors of the Federal Reserve System, *Reports of Condition, Reports of Income, Annual Report of Domestic Bank Holding Companies, Bank Holding Company Financial Supplement*, various issues.

<sup>8</sup> Board of Governors of the Federal Reserve System, *Functional Cost Analysis: 1984 Average Banks*.

<sup>9</sup> Interstate banking may provide a means by which holding companies in unit banking states can escape outmoded intrastate branching restrictions. However, if the nonbank bank experience is any indication, Illinois bank holding companies do not seem anxious to take advantage of this opportunity to expand across state lines. As of November 1985, no Illinois holding company had an application pending to establish a nonbank bank.

<sup>10</sup> Sue F. Gregorash, "First year experience: Illinois multibanks shop carefully," *Economic Perspectives* (May/June 1983) p.15.

<sup>11</sup> See Joel A. Bleeke, "Banking or Brewing? A Fresh Look at Acquisition Patterns," *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, 1984, pp. 249-63.