Banking Consolidation in Tenth District States

By William R. Keeton

Bank mergers have attracted much attention during the last year due to a surge in mergers among the nation's largest banking companies. The consolidation of the banking industry has been going on much longer, however. Since the early 1980s, the number of banking organizations has fallen by more than a third in both Tenth District states and the nation as a whole. Some of the decline has been due to failures, but most has been due to mergers.

In debating the pros and cons of such consolidation, analysts point to three important ways it may alter the structure of the banking industry. First, if consolidation occurs through the absorption of small banks by large banks, it may reduce the role of small banks in the banking system. Second, if consolidation occurs through the merger of banking organizations in different markets, it may increase the geographic scope of bank operations—that is, the extent to which banks operate over wide areas within and across state lines. And third, if consolidation occurs through the merger of banking organizations within the same market, it may increase the concentration of local markets—that is, the tendency for markets to be dominated by a few banks. Analysts agree each of these effects is important to bank owners and customers but disagree as to whether each effect is beneficial or harmful on balance.

Has consolidation had these effects, and if so, to what degree? To date, no one has carefully examined this question for Tenth District states. This article attempts to fill the gap by documenting the effects of bank mergers on the role of small banks, the geographic scope of bank operations, and the concentration of local banking markets in Tenth District states. The article concludes that consolidation has reduced the role of small banks, increased geographic diversity, and increased local market concentration. The magnitude of these effects, though, has differed across states and between urban and rural markets within each state. The first section provides an overview of how consolidation has reduced the number of banking organizations. The next three sections quantify the effects of consolidation on size distribution, geographic scope, and concentration.

AN OVERVIEW OF DISTRICT BANKING CONSOLIDATION

The number of banking organizations has declined sharply in Tenth District states. This

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Table 1
NUMBER OF BANKING ORGANIZATIONS
End of year

	1979	1984	1989	1995	Percent change, 1979-95
Tenth District states	2,400	2,401	1,997	1,521	-37
United States	12,490	11,410	9,608	7,672	-39

Note: Organizations are defined at the district level for Tenth District states and at the national level for the United States.
Source: National Information Center Database.

section documents the decline and shows that most of it has been due, not to bank failures, but to a steadily increasing rate of bank mergers.[1]

The decline in banking organizations

As evidence of banking consolidation, financial commentators often point to the decline in the number of banking organizations.[2] A banking organization is defined as a multibank holding company, a one-bank holding company, or an independent bank. Table 1 shows that a sharp break in the growth of district banking organizations took place in the mid-1980s. During the first half of the 1980s, the number of banking organizations in Tenth District states held steady at about 2,400. But the number of organizations fell sharply in the second half of the decade and dropped to about 1,500 by 1995. Over the 1979-95 period, the number of organizations fell by 37 percent. This decline coincided with a moderate increase in district population, producing a sharp drop in the number of banking organizations per capita.[3]

The total attrition in banking organizations was about the same in the nation as the district. Over the same 1979-95 period, the number of banking organizations in the nation fell 39 percent, only slightly more than in the district. In contrast to the district, however, the number of banking organizations in the United States fell in all three subperiods, including the first half of the 1980s.

All district states shared in the decline in banking organizations. As indicated in Table 2, the two states that enjoyed the highest population growth over the period also lost the fewest banking organizations—Colorado and New Mexico, both with declines of less than one-fifth.[4] Declines were much greater in the other five states, exceeding a third in each state.

Sources of the decline in banking organizations

The number of banking organizations is influenced by other factors besides mergers. Some of the decline in banking organizations could be due to a high rate of failures or a low rate of formation of new organizations. To determine the relative importance of these various factors, Table 3 decomposes the change in district banking organizations from the end of 1979 to the end of 1995 into four sources—voluntary mergers and breakups, failures, new bank charters, and

Table 2

NUMBER OF BANKING ORGANIZATIONS BY STATE

End of year

	1979	1984	1989	1995	Percent change, 1979-95
Colorado	213	257	240	173	-19
Kansas	614	627	515	385	-37
Missouri	508	434	384	323	-36
Nebraska	449	446	351	279	-38
New Mexico	63	63	59	53	-16
Oklahoma	488	513	402	307	-37
Wyoming	67	65	53	43	-36

Source: National Information Center Database.

net conversions of nonbanks to banks. The last column shows the results for the entire period, while the first four columns report the results for three subperiods—1980-84, 1985-89, and 1990-95. The same decomposition is reported for each district state in Table A1 of the appendix.

Table 3 highlights three important facts about district banking consolidation. First, over the period as a whole, mergers actually accounted for all of the decline in banking organizations, with the positive effect of new charters and conversions approximately offsetting the negative effect of failures. Specifically, voluntary mergers and breakups resulted in a net loss of 907 organizations over the 16-year period, slightly more than the actual decline in organizations.

Second, while the steep decline in organizations in the district did not begin in earnest until 1985, a substantial number of organizations were lost through mergers even before that point. A total of 182 organizations were lost through mergers in the years 1980-84. The only reason the number of organizations remained approximately unchanged during those years was that there were sufficient new charters to offset the negative effect of mergers.

Third, while sizable throughout the period, the loss of organizations through voluntary mergers increased over time, reaching an especially high level in the 1990s. The net loss of organizations from mergers and breakups increased to 257 in 1985-89 (an average of 51 per year) and then jumped to 468 in 1990-95 (an average of 78 per year). The only reason the number of organizations did not fall significantly more in 1990-95 was a sharp slowdown in failures. In the 1990s, only 42 banking organizations were lost from this source, far fewer than the 225 failures during the second half of the 1980s.

The upward trend in district mergers is also evident in Chart 1, which plots the number and inflation-adjusted assets of organizations acquired each year through voluntary mergers.[5] The chart shows that acquisitions increased over the period but varied somewhat from year to year, peaking in 1984, 1988, and 1993. Acquisitions jumped

Table 3
SOURCES OF CHANGE IN NUMBER OF BANKING ORGANIZATIONS
Tenth District states

	1980-84	1985-89	1990-95	Entire period
Mergers and breakups	-182	-257	-468	-907
Failures	-21	-225	-42	-288
New charters	182	56	26	264
Conversions	21	20	8	49
Net change	0	-406	-476	-882

Note: Failures exclude failed organizations succeeded by new organizations, while new charters exclude new organizations that succeed failed organizations. Conversions represent the net effect of banks becoming insured, thrifts converting to banks, and banks converting to thrifts.

Source: National Information Center Database.

an especially large amount in 1993, remained high in 1994, and then subsided somewhat in 1995. The amount of assets acquired through voluntary mergers peaked in the same years but showed much more variation, dominated as it was by the handful of megamergers between very large organizations.[6]

What accounted for the general increase in district merger activity over the period? Some of the increase was due to the same factors at work in the nation as a whole, while some of the increase was due to factors specific to the district. During the 1980s, a desire to reduce risk through geographic diversification accounted for many acquisitions. And in the 1990s, many mergers were motivated by a desire to cut costs by eliminating overlap in branches and back-office facilities. Relaxation of legal barriers to consolidation also played an especially important role in the district. At the beginning of the period, no district state allowed banks to operate branches throughout the state, and no district state allowed acquisitions by out-of-state holding companies. Moreover, three states prohibited bank holding companies from acquiring additional banks within the state—Kansas, Nebraska, and Oklahoma. By the end of the period, these barriers had been drastically reduced, with all seven states allowing multibank holding company expansion, some form of statewide branching, and some form of out-of-state entry.[7]

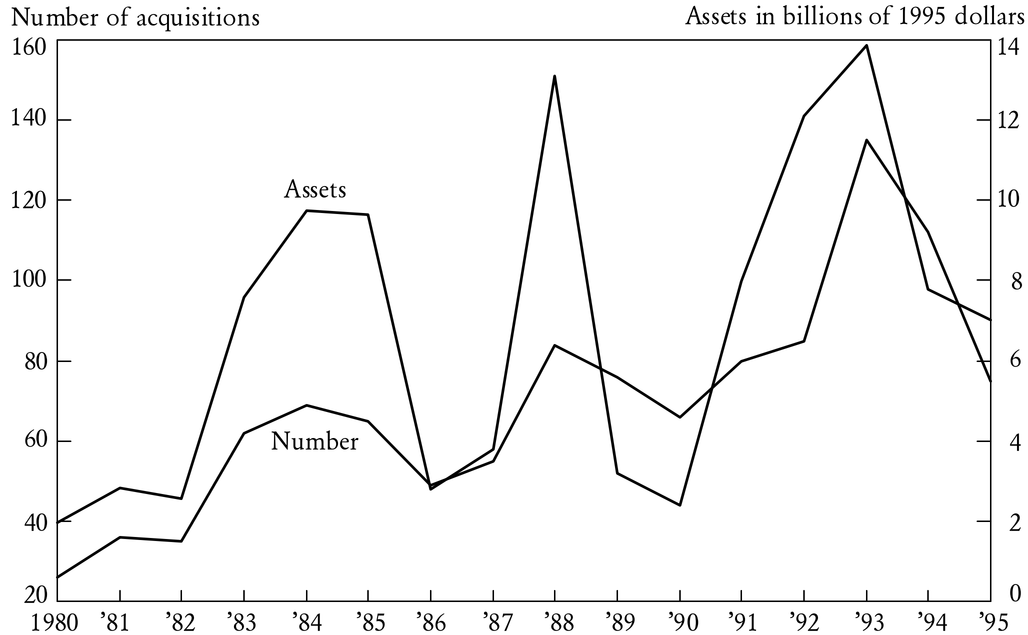
CONSOLIDATION'S IMPACT ON THE SIZE OF BANKING ORGANIZATIONS

It is widely believed that an important consequence of banking consolidation is a reduced role for small banks in the banking system. Some analysts welcome this change, arguing that small banking organizations are less efficient at backroom operations than large organizations, less able to offer a wide array of financial services to their customers, and less able to lend because of their lack of access to the capital markets. Other analysts decry the change, arguing that small banking organizations are more able and willing than large organizations to lend to small businesses. Moreover, small banking organizations are less likely to impose huge costs on the government should they fail.[8]

Chart 1

ACQUISITIONS OF BANKING ORGANIZATIONS

Tenth District states



Source: Reports of Income and Condition and National Information Center Database.

This section confirms that consolidation has significantly reduced the role of small banking organizations in Tenth District states. Such organizations, however, remain much more important in the district than in the nation, and urban bank customers have been less affected than rural customers. Thus, the recent interest in the costs and benefits of a decline in the role of small banks appears fully warranted.

Change in the size distribution of assets

The role of small banking organizations can be measured by their share of total banking assets. Table 4 shows the distribution of assets among three size categories of banking organizations—small organizations, with less than $100 million in assets in constant 1995 dollars; medium-size organizations, with $100 million to $1 billion in assets; and large organizations, with more than $1 billion in assets. For the district as a whole, the share of small organizations fell from just under a third of total assets at the end of 1979 to a fifth at the end of 1995—a drop of 11 percentage points. The gain accrued entirely to large organizations, as the share of medium-size organizations slipped a couple of percentage points.[9]

The distribution of banking assets also shifted from small organizations toward large organiza-

Table 4

PERCENT OF TOTAL ASSETS IN EACH SIZE CATEGORY OF BANKING ORGANIZATION

End of year

	1979	1995	Change
Tenth District states			
Small	31	20	-11
Medium	28	26	-2
Large	41	54	13
	100	100	0
United States			
Small	11	6	-5
Medium	16	13	-3
Large	73	81	8
	100	100	0

Note: Small organizations are those with less than $100 million in assets in 1995 dollars; medium-size organizations are those with $100 million to $1 billion; and large organizations are those with more than $1 billion. Organizations are defined at the state level in all cases.

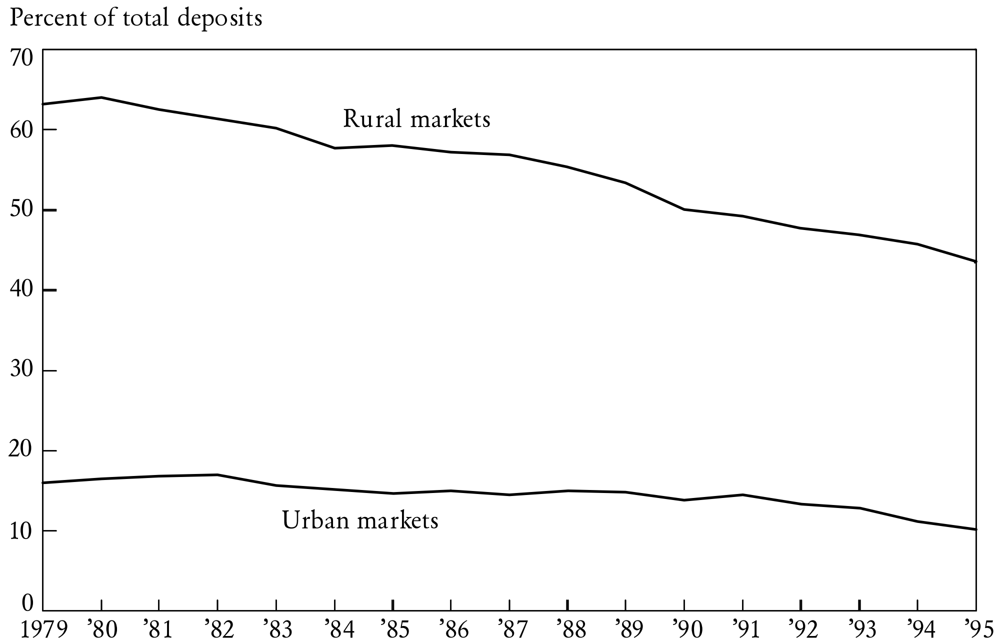
Source: Reports of Income and Condition and National Information Center Database.

tions in the nation as a whole, but to a lesser degree. The share of small organizations fell only five percentage points and the share of large organizations increased only eight points, reducing somewhat the sharp difference in size distribution between the district and the nation. At the end of the period, however, small organizations still accounted for a much smaller share of assets in the United States than the district.

While the asset share of small organizations fell in all district states, the magnitude of the decline varied greatly among states (Table A2 in the appendix). The two states that started the period with the highest percentage of assets in small organizations—Kansas and Nebraska—also experienced the biggest declines in that percentage. The state with the least change in size distribution was Oklahoma, where the failure of several large energy banks during the 1980s limited the increase in the share of large organizations to only a few percentage points. The only state in which the share of large organizations did not rise at all was Colorado. Large organizations in Colorado started out much more important than in the rest of the district but suffered a loss in asset share to medium-size organizations, causing the state to resemble the district more closely by the end of the period.

The decline in the role of small banking organizations affected bank customers in all areas of the district but had an especially large impact on rural customers. Chart 2 shows the shares of rural and urban deposits held in offices of small banking organizations.[10] From mid-1979 to mid-1995, this deposit share fell 20 percentage points in rural areas but only six percentage points in urban areas. The reason the deposit share fell more in rural areas was not that small rural

Chart 2
DEPOSITS IN SMALL BANKING ORGANIZATIONS
Tenth District states



Note: Data are for middle of year.
Source: Summary of Deposits and National Information Center Database.

banking organizations disappeared at a greater rate than small urban banking organizations—on the contrary, the number of small organizations fell about the same percentage in both areas. Rather, the reason was that rural areas started out the period much more dependent on small organizations for banking services. Thus, as small banking organizations disappeared, a relatively high proportion of rural bank customers were forced to shift their business to larger organizations, many of them based in urban areas.

Did mergers cause the decline in the role of small banks?

The fact that the share of small organizations in district banking assets declined during a period when mergers were high does not prove that mergers caused the decline. Mergers would have led to such a decline if large or medium-size organizations had acquired small organizations. On the other hand, if mergers had been confined to large and medium-size organizations or to very small organizations, the percent of assets in the smallest size category would have been unaffected. Moreover, the share of small organizations in total assets could have declined for other reasons besides mergers—for example, because large organizations had outcompeted small organizations for funds or because small organizations were located primarily in slower growing areas.

The evidence shows that many small banking organizations in the district were acquired by larger organizations over the course of the period, implying that at least some of the shift in size distribution was due to mergers. Over the entire 16-year period, 840 small organizations ($25 billion in assets) were acquired in voluntary mergers. Of these small organizations, about half ($8.5 billion in assets) were acquired by other small organizations, with little effect on the size distribution of assets.[11] But the other half ($16.5 billion in assets) were absorbed by large and medium-size organizations, directly reducing the percent of total assets in the smallest size category. Such acquisitions were especially high in 1993 and 1994, exceeding $2 billion both years.

Mergers clearly helped reduce the role of small banking organization, but did they account for all of the decline? To answer this question, the direct effect of all voluntary mergers and breakups on the asset shares of the three size categories was calculated for each quarter. These estimates of the quarterly merger effect were then summed over the entire period to obtain an estimate of the total merger effect.[12] According to this calculation, mergers reduced the asset share of small organizations by a total of 11 percentage points, the same as the actual decline. Thus, the decline in the role of small banking organizations was due entirely to mergers and not to any tendency for large organizations to outcompete small organizations for funds.[13]

CONSOLIDATION'S IMPACT ON GEOGRAPHIC EXPANSION

Another possible consequence of banking consolidation is an increase in the geographic scope of bank operations. Mergers among banking organizations in different markets of the same state should result in more organizations with statewide operations, while mergers among organizations in different states should result in more organizations with nationwide or regional operations. Some analysts argue that the growth of banking organizations with widely dispersed operations is undesirable because such banks are inattentive to the needs of local communities and inefficient at lending to small borrowers. Others argue that the growth of such organizations is desirable because they are more diversified and thus less vulnerable to local downturns, and because they can better serve the needs of large nationwide businesses.[14]

This section shows that consolidation has significantly increased the geographic scope of district bank operations, both within and across states. Out-of-market mergers have steadily increased the share of local deposits controlled by organizations based elsewhere in the state, especially in rural areas. And after a slow start, interstate mergers have increased the share of deposits controlled by organizations based outside the state. This increase in geographic scope may well be the biggest effect of district banking consolidation, although the data do not reveal whether the effect has been harmful or beneficial to bank customers.

Intrastate expansion

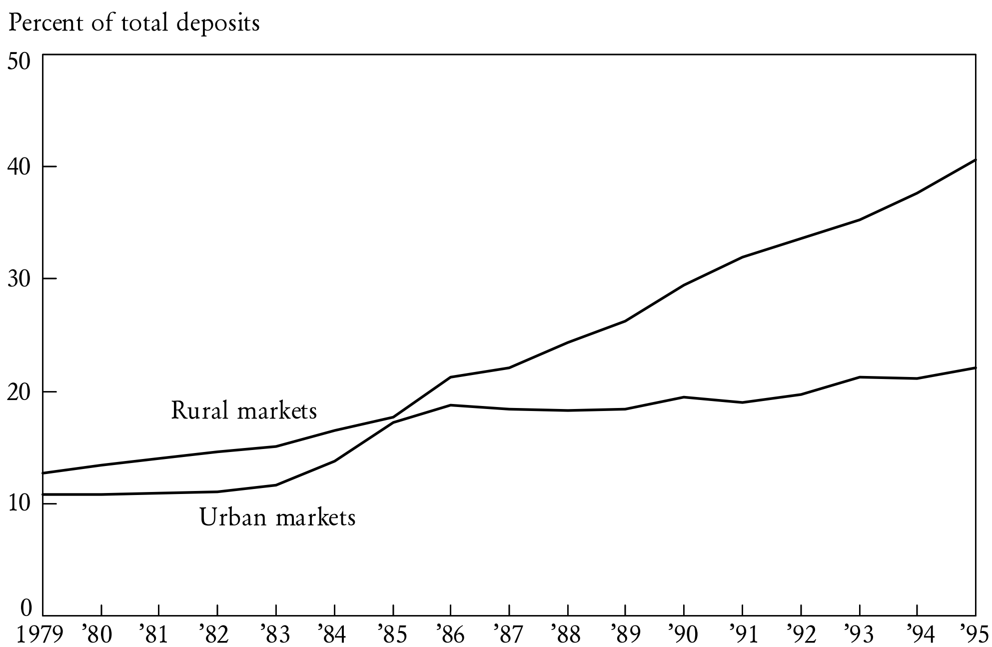
One measure of intrastate expansion is the average penetration ratio in local banking markets—the percent of deposits in each local market held in branches or subsidiaries of organizations based outside that market.[15] Chart 3 and Table 5 show that this ratio increased in both rural and urban areas in the district but especially in rural areas. In rural areas, the penetration ratio increased throughout the period, accelerating somewhat after 1985. At the end of the period, the ratio stood at 41 percent, an increase of 28 percentage points. The penetration ratio also increased in urban areas. The increase was less than half as much, however, and was concentrated in 1984 and 1985.

District banking organizations were not the only ones to expand within state lines during the

Chart 3

LOCAL DEPOSITS IN OUTSIDE BANKING ORGANIZATIONS

Tenth District states



Note: Data are for middle of year.

Source: Summary of Deposits and National Information Center Database.

period. Rural and urban penetration ratios rose roughly the same amount in the United States as the district and remained significantly higher than in the district. Thus, despite the spread of banking operations within district states, the district continued to lag well behind the nation in intrastate banking.

Among district states, differences in intrastate expansion are partly explained by differences in legal restrictions (Table A3 in the Appendix). The three states in which outside penetration of local markets increased the most were Kansas, Nebraska, and Oklahoma, all of which prohibited multibank holding company expansion at the start of the period but dropped the ban later on. Local market penetration increased almost as much in Missouri, even though that state already permitted multibank holding company expansion.

Interstate expansion

Has consolidation resulted in more banking organizations operating across state lines, as well as over broader areas within states? Interstate expansion can be measured by the proportion of deposits in each state held in subsidiaries of organizations headquartered outside the state (Table 6). In the district as a whole, this proportion remained low throughout the 1980s, increasing only slightly from 4 percent at the beginning of the decade to 6 percent at the end. The deposit share of out-of-state organizations then increased

Table 5

PERCENT OF LOCAL DEPOSITS IN BRANCHES OR SUBSIDIARIES OF OUTSIDE BANKING ORGANIZATIONS

Middle of year

	1979	1995	Change
Tenth District states			
Rural	13	41	28
Urban	11	22	11
United States			
Rural	27	52	25
Urban	19	33	14

Note: Local markets are defined as MSAs or rural counties. An outside organization is one whose main deposit market in the state is a different market.

Source: Summary of Deposits and National Information Center Database.

sharply in the 1990s, reaching 23 percent by the end of 1995.[16]

Interstate banking got off to an earlier start in the nation and ended up increasing even more than in the district. The proportion of all deposits in the United States held in out-of-state organizations surged from 3 percent to 20 percent in the 1980s. The share then continued climbing during the 1990s, reaching 29 percent at the end of 1995.

While most district states experienced substantial intrastate expansion during the period, the degree of interstate expansion varied sharply (Table A4 in the appendix). At one extreme were the three mountain states of Colorado, New Mexico, and Wyoming, where the deposit share of out-of-state organizations increased well over 40 percentage points. In each of these states, more than half of all deposits were controlled by out-of-state organizations at the end of the period, well above the national average. At the other extreme were Missouri, where the out-of-state deposit share failed to rise above 2 percent, and Nebraska, where the deposit share reached only 12 percent. These differences can be explained partly by differences in laws governing out-of-state entry. By the end of the period, Colorado, New Mexico, and Wyoming all permitted entry by bank holding companies from anywhere in the nation, while Missouri allowed entry only from neighboring states. Such legal differences cannot explain all the variation in interstate banking within the district, however, suggesting that on economic grounds some district states were more attractive to out-of-state banks than others.[17]

In contrast to intrastate expansion, which has had a bigger impact on rural markets than urban markets, interstate banking has mainly affected urban markets. In mid-1979, 4 percent of rural deposits and 5 percent of urban deposits in the district were held in subsidiaries of out-of-state banking organizations. By mid-1995, the percent of rural deposits in out-of-state organizations had

Table 6

PERCENT OF DEPOSITS IN SUBSIDIARIES OF OUT-OF-STATE BANKING ORGANIZATIONS

End of year

	1979	1989	1995	Total change
Tenth District states	4	6	23	19
United States	3	20	29	26

Source: Reports of Income and Condition and National Information Center Database.

increased to 13 percent, while the percent of urban deposits in out-of-state organizations had jumped to 29 percent.

CONSOLIDATION'S IMPACT ON LOCAL MARKET CONCENTRATION

The third possible consequence of consolidation is an increase in the concentration of local banking markets. Markets are said to be concentrated if they are dominated by a few organizations that hold most of the deposits or make most of the loans. To the extent consolidation occurs through mergers among organizations operating in the same market, concentration should increase. Some analysts argue that such an increase in concentration is undesirable because it reduces competition among banking organizations, leading to lower deposit rates, higher loan rates, and lower quality services. Others argue that increases in local market concentration do not have these adverse effects because the threat of entry by outside organizations keeps organizations with high market shares from trying to exploit their customers. Some analysts even argue that in-market mergers, which increase local concentration, may benefit bank customers by reducing wasteful overlap among banking organizations and enabling organizations to cut their expenses.[18]

This section shows that consolidation has boosted the concentration of district banking markets, especially urban markets. The increase in concentration, however, appears to be less dramatic than the decrease in the role of small banks or the increase in geographic scope. And the overall level of concentration remains moderate, due partly to strong growth by those smaller banking organizations that remained independent. In the case of urban markets, however, the increase in concentration is also fairly recent. If current trends continued, concentration could become a greater concern.

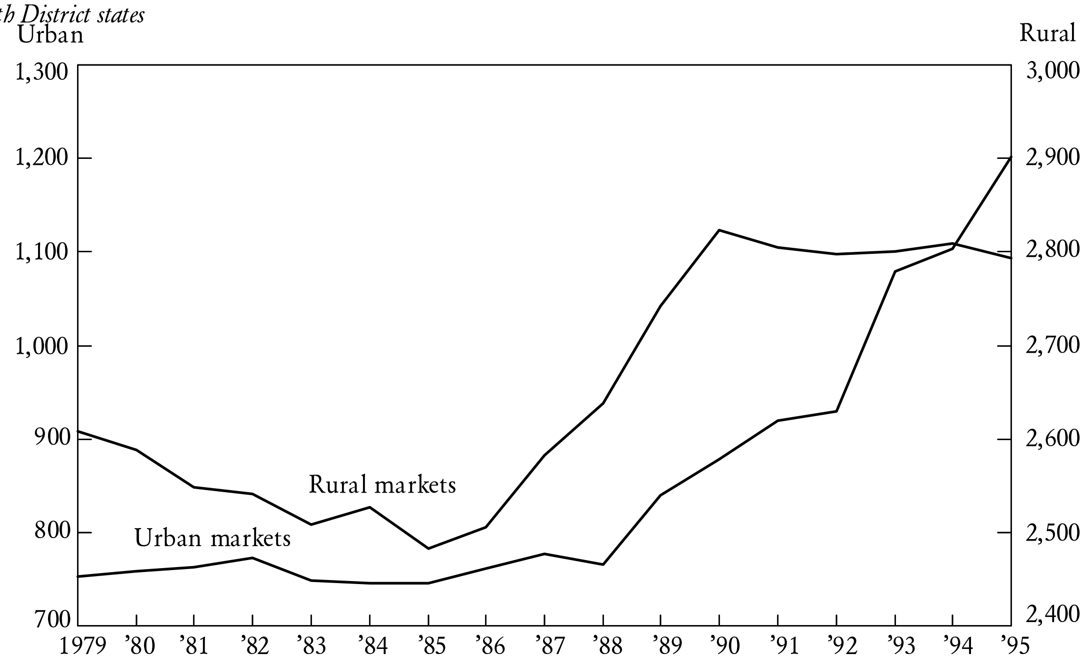
Changes in local market concentration

The most common measure of local market concentration used by bank regulators is the Herfindahl-Hirschman Index (HHI). For each market, this index measures the tendency for deposits to be concentrated in a few banking organizations.[19] The HHI can range from close to zero to as high as 10,000, with higher values representing higher degrees of concentration. For example, a market with ten equal-size organizations

Chart 4

CONCENTRATION OF LOCAL BANKING MARKETS
AVERAGE HERFINDAHL-HIRSCHMAN INDEX

Tenth District states



Note: Data are for middle of year, and thrift deposits have a 50 percent weight.
Source: Summary of Deposits, Survey of Savings, and National Information Center Database.

would have an index of 1,000; a market with two equal-size organizations would have an index of 5,000; and a market with only one organization would have an index of 10,000. In estimating local market concentration, regulators also adjust the index to take into account that thrift institutions compete for at least some of the same business as banks.[20]

Although there are exceptions, regulators generally worry about the anticompetitive effects of a merger if it would raise the HHI by more than 200 points and also result in an index above 1,800. In keeping with this standard, most banking analysts consider a market to be unconcentrated if it has an HHI below 1,000, moderately concentrated if it has an HHI between 1,000 and 1,800, and highly concentrated if it has an index above 1,800. Rural markets usually have an HHI well above 1,800 because they are defined to include only one county and thus have a much smaller number of organizations.

Chart 4 and Table 7 show that since 1979 concentration has increased in both rural and urban markets in the district but especially in urban markets. From mid-1979 to mid-1995, the average HHI increased 186 points in rural markets and 449 points in urban markets. The index for urban markets ended up at 1,202, above the cutoff for unconcentrated markets but near the bottom of the range for moderately concentrated markets. The timing as well as the magnitude of the increase differed between the two types of

Table 7

CONCENTRATION OF LOCAL BANKING MARKETS

Average Herfindahl-Hirschman Index

Middle of year

	1979	1995	Change
Tenth District states			
Rural	2,608	2,794	186
Urban	753	1,202	449
United States			
Rural	2,634	2,725	91
Urban	1,040	1,258	218

Note: The Herfindahl-Hirschman Index is the sum of squared deposit market shares, with a 50 percent weight for thrift deposits. Local markets are defined as MSAs or rural counties.

Source: Summary of Deposits, Survey of Savings, and National Information Center Database.

markets. In rural markets, the index edged down during the early 1980s, turned up in 1986, and then leveled off in the 1990s. In urban markets, by contrast, the HHI did not turn up until 1989 and then continued rising through the end of the period, with an especially large jump in 1993.

Concentration also increased in rural and urban markets nationwide, but to a smaller degree than in the district. The average HHI rose 91 points in rural markets and 218 points in urban markets. Despite the smaller increase, urban concentration remained slightly higher in the United States than the district. Rural concentration, on the other hand, ended the period slightly lower in the United States than the district.

Local market concentration increased more in some district states than others (Table A5 in the appendix). The urban HHI rose more than 300 points in all states except Oklahoma, where the index increased only slightly. The change in rural concentration varied more, with the HHI increasing more than 200 points in Kansas, Nebraska, and Oklahoma but falling modestly in Colorado and Wyoming.

Did mergers cause the increase in local market concentration?

As with the shift in size distribution, the fact that concentration increased at a time when bank mergers were high does not necessarily mean that the mergers caused the increase. Local market concentration may have increased only because the dominant organizations in each market outbid their smaller competitors for funds and grew faster. Alternatively, concentration may have increased due to the wave of thrift failures in the late 1980s and early 1990s. Anytime the deposits of a failed thrift disappeared, the HHI tended to increase because thrift institutions are included in the calculation of the index. And anytime the deposits of a failed thrift were taken over by a large banking organization in the same market, the HHI tended to increase because the distribution of bank deposits became more unequal.[21]

The geographic pattern of district mergers suggests that mergers account for at least some of the increase in local market concentration. Over the period as a whole, about 280 urban organizations with assets of $45 billion were acquired by organizations with operations in the same market. Furthermore, the year with the largest number of such in-market mergers was 1993, when the urban HHI showed an especially large jump. Not surprisingly, a much smaller proportion of rural acquisitions were by organizations operating in the same market. Still, almost 170 rural organizations with $5 billion in assets were acquired in this way, helping explain the fact that the rural HHI increased as well.

To determine precisely how much mergers contributed to the increase in local market concentration, the direct effect of all voluntary mergers and breakups on the HHI of each local market was calculated for each year-long period between successive Junes.[22] These estimates of the annual merger effect were then summed over the entire 16-year period to obtain an estimate of the total merger effect. According to this calculation, mergers increased the urban HHI by a total of 347 points, more than three-fourths of the actual increase in the index over the period. And mergers increased the rural HHI by a total of 187 points, virtually the same as the actual increase in the index.

While mergers had a clear tendency to raise local market concentration, the fact that they explain most of the increase in concentration over the period does not mean that other factors were unimportant. In the early 1990s, the closing of large thrifts boosted urban concentration significantly, causing the actual increase in the urban HHI to exceed the merger effect by a wide margin during those years. Throughout the period, however, the dominant banks in urban markets tended to lose ground to their competitors when not making acquisitions. In other words, adjusted for mergers, deposits tended to grow slower at dominant banks than at smaller banks. As a result, the actual increase in the urban HHI fell short of the merger effect during the 1980s. Thus, while thrift closings and differential rates of growth both had important effects on local market concentration, for the period as a whole they were largely offsetting.[23]

SUMMARY

The banking industry in Tenth District states has undergone substantial consolidation over the last 16 years. Mergers were common in the first half of the 1980s, and then trended noticeably upward thereafter, reaching an especially high level in the 1990s before subsiding somewhat in 1995. By the end of 1995, mergers had reduced the number of district banking organizations by more than a third, about the same decline as in the nation. While this activity has sparked much debate about the pros and cons of banking consolidation, evidence up to now has been lacking on the actual effects of consolidation in Tenth District states.

This article shows that consolidation has had three main effects on the structure of district banking. First, as small organizations have been absorbed, consolidation has caused a significant decline in the percent of assets in small organizations and a matching increase in the percent of assets in large organizations, with the medium-size category largely unaffected. Second, through the merger of organizations in different markets, consolidation has produced a significant increase in the geographic scope of banking, with banks operating over much wider areas within and across state lines. Third, through the merger of organizations in the same market, consolidation has resulted in some increase in the concentration of local markets, although most urban markets remain only moderately concentrated and dominant banks appear to have lost ground to their competitors when not making acquisitions.

Most of these changes in banking structure have also occurred in the nation. But the changes have generally been bigger in the district, reducing the wide disparity that used to exist between banking structure in the district and the nation. Despite this convergence, the district as a whole still differs in important ways from the nation, having a much higher proportion of small banks and a lower degree of geographic diversification.

While the effects of consolidation have been felt throughout the district, they have been more pronounced in some states. The two states that started out with the highest share of assets in small organizations—Kansas and Nebraska—were also the states in which that share declined the most. And the three states that first banned and then permitted multibank holding company expansion—Kansas, Nebraska, and Oklahoma—also experienced the greatest increase in statewide banking. In contrast, interstate banking increased much more in the mountain states of Colorado, New Mexico, and Wyoming than in the rest of the district, partly because these states allowed entry from anywhere in the nation and partly because they were viewed as attractive markets.

Finally, the effects of consolidation have not only differed across district states but also between urban and rural areas within each state. Due to their traditional dependence on small banks, rural customers have been much more affected than urban customers by the declining role of small banks. And because so many rural banks have been the target of out-of-market acquisitions, rural customers have witnessed a bigger shift in control of local banking resources to organizations based elsewhere in the state. On the other hand, urban bank customers have been more affected by the growth of interstate banking and the rise in local concentration, because most out-of-state acquisitions have been of urban banks and most in-market mergers have been between urban banks.

In short, consolidation has significantly altered the structure of district banking. Nationwide, most banking experts expect the decline in banking organizations to continue. How much additional consolidation will occur is difficult to predict. But the fact that the district banking structure has converged only partially toward the national banking structure suggests that some effects of consolidation—such as the reduction in the role of small banks—will continue to be felt with greater force in the district.

APPENDIX

Table A1

SOURCES OF CHANGE IN NUMBER OF BANKING ORGANIZATIONS

	1980-84	1985-89	1990-95	Entire period
Colorado				
Mergers and breakups	-30	-13	-70	-113
Failures	-3	-40	-13	-56
New charters	66	14	11	91
Conversions	11	20	5	36
Net change	44	-19	-67	-42
Kansas				
Mergers and breakups	-1	-78	-131	-210
Failures	-2	-44	-6	-52
New charters	16	9	5	30
Conversions	0	0	2	2
Net change	13	-113	-130	-230
Missouri				
Mergers and breakups	-85	-54	-61	-200
Failures	-4	-17	-4	-25
New charters	15	21	4	40
Conversions	0	0	1	1
Net change	-74	-50	-60	-184
Nebraska				
Mergers and breakups	-20	-73	-76	-169
Failures	-5	-27	-1	-33
New charters	11	5	5	21
Conversions	11	0	0	11
Net change	-3	-95	-72	-170

Table A1 (continued)

SOURCES OF CHANGE IN NUMBER OF BANKING ORGANIZATIONS

	1980-84	1985-89	1990-95	Entire period
New Mexico				
Mergers and breakups	-6	-1	-3	-10
Failures	0	-3	-5	-8
New charters	6	0	1	7
Conversions	0	0	1	1
Net change	0	-4	-6	-10
Oklahoma				
Mergers and breakups	-26	-36	-83	-145
Failures	-5	-84	-12	-101
New charters	55	9	0	64
Conversions	0	0	0	0
Net change	24	-111	-95	-182
Wyoming				
Mergers and breakups	–13	–2	–11	-26
Failures	-2	-10	0	-12
New charters	13	0	0	13
Conversions	0	0	0	0
Net change	-2	-12	-11	-25

Note: Failures exclude failed organizations succeeded by new organizations, while new charters exclude new organizations that succeed failed organizations. Conversions represent the net effect of banks becoming insured, thrifts converting to banks, and banks converting to thrifts.

Source: National Information Center Database.

Table A2

PERCENT OF TOTAL ASSETS IN EACH SIZE CATEGORY OF BANKING ORGANIZATION

End of year

	1979	1995	Change
Colorado			
Small	20	13	-7
Medium	14	26	12
Large	66	61	-5
	100	100	0
Kansas			
Small	53	34	-19
Medium	42	34	-8
Large	5	32	27
	100	100	0
Missouri			
Small	20	13	-7
Medium	21	17	-4
Large	59	70	11
	100	100	0
Nebraska			
Small	51	29	-22
Medium	22	26	4
Large	27	45	18
	100	100	0
New Mexico			
Small	20	9	-11
Medium	34	37	3
Large	46	54	8
	100	100	0
Oklahoma			
Small	34	30	-4
Medium	36	34	-2
Large	30	36	6
	100	100	0
Wyoming			
Small	31	16	-15
Medium	53	31	-22
Large	16	54	38
	100	100	0

Note: Small organizations are those with less than $100 million in assets in 1995 dollars; medium-size organizations are those with $100 million to $1 billion; and large organizations are those with more than $1 billion. Organizations are defined at the state level.

Source: Reports of Income and Condition and National Information Center Database.

Table A3

PERCENT OF LOCAL DEPOSITS IN BRANCHES OR SUBSIDIARIES OF OUTSIDE BANKING ORGANIZATIONS

Middle of year

	1979	1995	Change		1979	1995	Change
Colorado				New Mexico			
Rural	30	47	17	Rural	41	47	6
Urban	21	22	1	Urban	7	10	3
Kansas				Oklahoma			
Rural	0	31	31	Rural	0	29	29
Urban	0	18	18	Urban	0	19	19
Missouri				Wyoming			
Rural	26	50	24	Rural	27	46	19
Urban	18	30	12	Urban	5	9	4
Nebraska							
Rural	3	43	40				
Urban	0	12	12				

Note: Local markets are defined as MSAs or rural counties. An outside organization is one whose main deposit market in the state is a different market.
Source: Summary of Deposits and National Information Center Database.

Table A4

PERCENT OF DEPOSITS IN SUBSIDIARIES OF OUT-OF-STATE BANKING ORGANIZATIONS

End of year

	1979	1989	1995	Total change
Colorado	13	18	59	46
Kansas	1	1	16	15
Missouri	*	1	2	2
Nebraska	8	9	12	4
New Mexico	12	9	61	49
Oklahoma	*	5	20	20
Wyoming	18	32	69	51

* Less than 0.5 percent.
Source: Reports of Income and Condition and National Information Center Database.

Table A5

CONCENTRATION OF LOCAL BANKING MARKETS

Average Herfindahl-Hirschman Index
Middle of year

	1979	1995	Change		1979	1995	Change
Colorado				New Mexico			
Rural	3,030	3,000	-30	Rural	3,055	3,217	162
Urban	829	1,174	345	Urban	1,621	2,030	409
Kansas				Oklahoma			
Rural	2,342	2,657	316	Rural	2,495	2,735	240
Urban	679	1,046	367	Urban	779	809	30
Missouri				Wyoming			
Rural	2,636	2,745	110	Rural	3,308	3,220	-88
Urban	454	946	491	Urban	2,279	5,485	3,206
Nebraska							
Rural	2,462	2,683	221				
Urban	1,109	1,578	468				

Note: Local markets are defined as MSAs or rural counties. An outside organization is one whose main deposit market in the state is a different market.
Source: Summary of Deposits and National Information Center Database.

ENDNOTES

1 For recent overviews of banking consolidation in other regions and the nation as a whole, see Amel 1996; Furlong and Zimmerman; Klemme; Ludwig; Rhoades 1996; and Yellen.

2 The number of banks has also declined sharply, but most analysts believe the change in banking organizations is a better measure of consolidation than the change in banks. Banks belonging to a multibank holding company are subject to common ownership and control, despite having separate charters. As a result, such banks are more likely to behave like bank branches than independent banks.

3 Population increased 13 percent from 1979 to 1994, the most recent year for which data are available.

4 Population grew almost 30 percent in Colorado and New Mexico from 1979 to 1994. The states with the smallest population growth were Nebraska and Wyoming, where population increased 4 percent and 5 percent, respectively.

5 The CPI excluding food and energy is used to adjust for inflation. Mergers are included in the year in which they are consummated. Also, the larger organization in each merger is treated as the acquiror, even though in a few cases the

smaller organization was actually the survivor. In addition to the mergers represented in Table 1, the chart includes two types of mergers that did not reduce the number of district banking organizations—those in which the acquiror owned no district banks and those in which only part of an organization was acquired. Over the period as a whole, there were 31 acquisitions of the first type ($10.5 billion in assets) and 56 acquisitions of the second type ($7.6 billion in assets).

6 The moderation in district merger activity in 1995 may come as a surprise, given the increased publicity about large bank mergers in the national financial press. However, Chart 1 excludes two major mergers that were announced in 1995 but not consummated until the first quarter of 1996—the acquisition of FirsTier of Nebraska by First Bank of Minnesota and the acquisition of Fourth Financial of Kansas by Boatmen's of Missouri. Furthermore, the decline in total mergers last year was not unique to the district—despite an unprecedented number of megamergers, total mergers also declined in the nation as a whole (Bank Mergers and Acquisitions). The drop in district mergers in 1995 was in keeping with the year-to-year fluctuations shown in Chart 1 and does not imply that the consolidation trend has ended.

7 Possible motives for recent mergers are discussed in Berger, Hunter, and Timme; Berger, Kashyap, and Scalise; Laderman 1995b; McLaughlin; and Radecki. Information on geographic barriers to expansion in each state can be found in Amel 1993.

8 For further discussion of these effects of a change in the size distribution of banks, see Berger, Hunter, and Timme; Berger, Kashyap, and Scalise; Keeton; Nakamura; Peek and Rosengren; and Wilmarth.

9 Organizations are defined at the state level in Table 4. For example, an interstate company with two $750 million banks in different district states is counted as two medium-size organizations rather than one large organization. If organizations were computed at the district level, the share of large organizations would be three percentage points higher at the end of 1995, the share of medium-size organizations three points lower, and the share of small organizations unchanged.

10 Deposits are used to measure the relative importance of small organizations in rural and urban areas because deposits are the only item that banks report separately for their rural and urban branches. All data on local deposits in this article are from the Summary of Deposits filed by banks at the end of every June. Current MSA definitions are used for the entire period.

11 A merger between two small organizations would reduce the share of assets in the smallest size category if it created a new medium-size organization—for example, if a $75 million organization acquired a $50 million organization, producing a $125 million organization. Most mergers between small organizations did not result in medium-size organizations, however.

12 The simplest way to explain the calculation is by example. At the beginning of 1985, total district banking assets were $229 billion in 1995 dollars. Suppose that sometime during the first quarter, an organization that started the quarter with $2 billion in assets acquired another organization that started with $750 million in assets. Such a merger would be estimated to shift $750 million in assets from the medium-size category to the large category, reducing the share of assets in the medium-size category by 0.33 percentage points (100 x .750/229). The effects of all such mergers and breakups were calculated, including those in which only part of an organization was acquired.

13 The calculation also shows that mergers and breakups reduced the asset share of medium-size organizations by a total of five percentage points, three points more than the actual decline. The reason was that large organizations acquired an even greater amount of assets from medium-size organizations than medium-size organizations acquired from small organizations. Because ten large organizations were acquired by other large organizations during the period, mergers also contributed to a significant increase in the average size of large organizations, from $2.9 billion at the start of the period (1995 dollars) to $3.7 billion at the end.

14 For further discussion of these effects of an increase in geographic scope, see Berger, Kashyap, and Scalise; Calem; General Accounting Office; Keeton; Levonian; Nakamura; and Wilmarth.

15 For each market, an outside organization is defined as one whose main deposit market in the state is a different MSA or rural county. Thus, for purposes of this calculation, an out-of-state organization that did not operate in any other markets in the state would not be considered an outside organization.

16 The data for 1995 do not reflect two large out-of-state acquisitions that were announced in 1995 but not consummated until the first quarter of 1996 (see note 6). These acquisitions increased the out-of-state deposit share 15 percentage points in Kansas and 13 points in Nebraska, boosting the average deposit share for the district by three percentage points.

17 For example, Oklahoma and Nebraska allowed entry

from anywhere in the nation but had a much lower out-of-state presence than the three mountain states. And Kansas restricted entry to neighboring states but had a much higher out-of-state presence than Missouri.

[18] For further discussion of these effects of an increase in local market concentration, see Berger, Hunter, and Timme; Hannan and Liang; Holdsworth; Radecki; and Shaffer.

[19] The HHI is the sum of the squared percentage market shares of all organizations competing in the market. In the special case in which all organizations are of the same size, this sum equals 10,000 divided by the number of organizations. More detailed explanations of the HHI can be found in Laderman 1995a and Rhoades 1993.

[20] Specifically, the HHI is calculated by assigning a weight of 50 percent to all thrifts operating in the market. Under this method, a market with one banking organization and one thrift of the same size would have an HHI of 5,578 ($67^2 + 33^2$)—lower than a market with one banking organization and no thrifts, but higher than a market with two equal-size banking organizations and no thrifts.

[21] The HHI for a particular market can also increase due to deposit shifts within banking organizations—for example, because an interstate organization finds it convenient to book deposits in a particular state. Between mid-1994 and mid-1995, a large deposit influx of this kind raised the HHI of Casper, Wyoming, over 4,000 points, tending to sharply boost the urban HHI for the district.

[22] The calculations were performed over these periods because the Summary of Deposits data are reported only once a year in June. As before, the simplest way to explain the calculation is by example. At the end of June 1984, total deposits in the Kansas City market were $13.7 billion adjusted for thrifts. Suppose that sometime during the next 12 months, two $1 billion banking organizations merged. Such a merger would be estimated to replace two organizations with 7.3 percent market shares (100 x 1/13.7) by one organization with a 14.6 percent market share, increasing the HHI by 107 points ($14.6^2 - 2 \times 7.3^2$). The effects of all such mergers and breakups were calculated, including those in which only part of an organization was acquired.

[23] One indication that thrift closings had a major effect on local concentration is that the HHI shows a much smaller increase over the period when thrifts are excluded from the calculation. With thrifts excluded, the rural HHI actually declines 110 points instead of rising 186 points, and the urban HHI increases 337 points instead of 449 points. Under this method of calculation, the merger effect also becomes much larger—246 points for the rural HHI and 516 points for the urban HHI. Thus, mergers overexplain the change in concentration when thrifts are excluded, confirming that dominant banking organizations lost ground to smaller banking organizations when not making acquisitions.

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