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Banking Performance
In Tenth District States

A Changing Rural America

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Banking Performance In Tenth District States

By William R. Keeton and Katherine M. Hecht

The year 1985 was a difficult one for commercial banks in Tenth District states. Asset growth slowed as borrowers reduced their demand for credit and banks became more cautious about making new loans. But the retrenchment came too late to curb loan losses. Writeoffs of bad loans continued to mount and bank profitability was reduced to less than half the peak level reached four years earlier. Banks were able to maintain high capital-asset ratios despite these lower earnings. However, this achievement resulted from slower asset growth rather than reinvestment of earnings or infusion of capital.

The continued decline in overall banking performance in 1985 obscured a remarkable diversity in performance among banks—not just among banks of different size, lending specialization, and location, but also among banks that are similar in all these respects. Some district banks did very poorly, dragging down most measures of average performance. But other banks continued to do well, growing rapidly and earning high profits.

This article examines district banking performance in 1985, focusing on both the decline in overall performance and the divergence in performance among banks. The article first reviews two key aspects of performance, growth and profitability. Next, the article discusses the contribution of net interest income and loan losses to profitability. The article then turns to another aspect of performance, the adequacy of banks' capital. The article concludes with a brief analysis of banking performance in each of the Tenth District states, revealing which states did better than average and which states did worse.

Growth

One aspect of performance is growth. The faster the banking industry grows, the more services it can provide to businesses and households. However, if excessive, growth can divert resources from more productive uses and undermine financial stability. In the past, growth in the banking industry has occurred in two ways—

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through increases in the number of banks and increases in the size of banks.

Changes in number

In banking, as in other industries, it is not unusual for new firms to enter the industry at the same time other firms are exiting through failure or merger. From 1970 until 1985, the number of commercial banks started in Tenth District states every year exceeded the number of banks closed by a significant margin. As a result, the total number of insured banks grew steadily—from about 2,500 banks at the end of 1970 to about 3,000 banks at the end of 1984.

In 1985, the steady growth in the number of district banks came to an end as bank closings exceeded bank openings.

TABLE 1
Change in number of insured commercial banks, Tenth District states*

	1984	1985
Banks established *de novo*	70	38
− Failed banks†	23	63
+ Banks established to succeed failed banks	16	22
− Open banks merged with other banks	32	56
= Net change in number of banks	31	−59

*Excludes the change due to banks switching from uninsured status to insured status. Seventeen industrial banks made this switch in 1984 and 17 in 1985.

†Includes one bank that closed for reasons other than financial difficulties.

In 1985, the steady growth in the number of district banks came to an end as bank closings exceeded bank openings. As shown in Table 1, 38 banks were started last year, despite the sharp decline in average profitability since 1981. However, the number of banks started in 1985 was only half as great as the previous year. Also, 63 banks failed during the year, almost three times as many as in 1984. Although some of the banks that failed were replaced by new banks formed to take over their deposits, most of the failed banks were either merged with existing banks or liquidated altogether. Finally, a relatively large number of open banks disappeared in 1985 through mergers. The result of these various changes was a net decline of 59 in the number of insured commercial banks, compared with a net increase of 31 banks in 1984.

Changes in size

The decrease in the number of district banks in 1985 was accompanied by a significant slowdown in the growth of assets and loans at remaining banks. Over the course of 1985, assets grew 4.8 percent and loans increased 2.7 percent. In 1984, by contrast, assets grew 6.2 percent and loans increased 11.6 percent.

Although banks in aggregate grew slower during 1985 than 1984, growth differed greatly by size and type of bank. Table 2 shows the growth in assets and loans at banks in three size categories. Each of the three size categories holds a third of total bank assets in the district. In 1985, small banks had assets of less than $57 million, medium-size banks had assets between $57 million and $266 million, and large banks had assets of more than $266 million.[1] Table 2 also shows how growth within the two smaller size

[1] Because inflation and economic growth tend to increase the assets of all banks, the two size thresholds have risen over time. In defining size groups, many studies of bank performance use the same dollar thresholds in early years as in later years. That

TABLE 2
Growth in loans and total assets, commercial banks in Tenth District states*
(percent)

	Number of Banks, 1985	Growth in Assets		Growth in Loans	
		1984	1985	1984	1985
All banks	2,890	6.2	4.8	11.6	2.7
Small banks	2,341	7.9	5.3	9.9	2.7
Agricultural	1,212	5.2	2.6	3.9	−3.2
Nonagricultural	1,129	10.5	7.9	15.6	7.6
Medium banks	495	7.0	4.0	11.3	3.9
Agricultural	79	4.7	2.0	5.4	−4.0
Nonagricultural	416	7.4	4.3	12.4	5.0
Large banks	54	4.0	4.9	13.5	1.5

*Growth from beginning of year to end of year at banks in operation the entire year.

groups differed between agricultural banks and nonagricultural banks. Agricultural banks are defined as those with at least 25 percent of their loan portfolios in farm real estate loans or farm operating loans. In 1985, over 90 percent of these banks were small and all but one of the rest were medium size.

Over the course of 1985, growth in assets and loans was fastest at small nonagricultural banks and slowest at the two sizes of agricultural banks. At small nonagricultural banks, assets increased 7.9 percent and loans increased 7.6 percent. These growth rates were lower than in 1984 but still relatively rapid. At agricultural banks, growth was much slower. For example, the assets of small agricultural banks increased only 2.6 percent in 1985, half the 1984 rate. And loans fell 3.2 percent in 1985, a sharp reversal from the moderate increase the year before.

approach can produce severe distortions over long periods of time, because the tendency for all banks to grow in dollar terms causes the small size group to shrink relative to the larger groups.

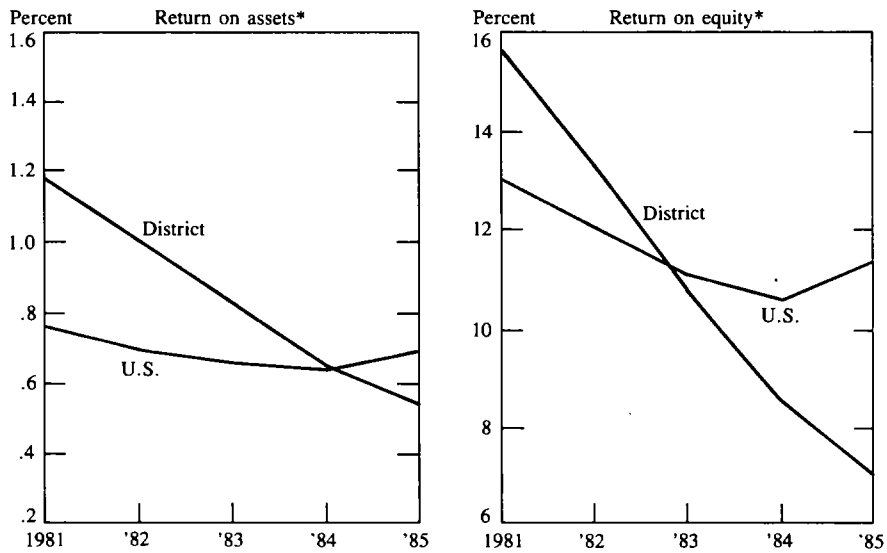
The decline in loans at agricultural banks during 1985 reflected both a reduced demand for credit from farmers and an increased desire for safety on the part of banks. In contrast to agricultural banks, many small nonagricultural banks are newer banks located in prosperous urban areas. The age and location of small nonagricultural banks help explain why their assets and loans continued to grow rapidly in 1985.

Profitability

A second dimension of performance is profitability.[2] To survive over the long run, banks must earn a reasonable rate of profits. Without profits banks cannot pay dividends to their

[2] For a longer run analysis of profitability focusing on the period from 1977 to 1984, see William R. Keeton and Lyle Matsunaga, "Profits of Commercial Banks in Tenth District States," *Economic Review*, Federal Reserve Bank of Kansas City, June 1985.

CHART 1
Profitability of commercial banks



shareholders, and without dividends banks cannot attract the new equity funds required for growth.

To compare profitability across time or across banks, profits must be deflated by some measure of bank size. Return on equity (ROE) deflates a bank's profits by its equity, the amount owners have invested in the bank through the purchase of stock or retention of earnings. Return on assets (ROA) deflates profits by total assets, including both financial and physical assets.

Measured by either ROE or ROA, the profitability of commercial banks in Tenth District states fell in 1985 for the fourth year in a row (Chart 1).[3] The decline in profitability in 1985 was somewhat smaller than in 1984. Nevertheless, ROA was only 0.55 percent in 1985, less than half the 1981 peak. Similarly, ROE was only 7.1 percent in 1985, down from 15.6 percent at the 1981 peak. For the nation as a whole, profitability has been much more stable in recent years. At banks nationwide, both ROA and ROE declined moderately from 1981 to 1984 and then rebounded in 1985.

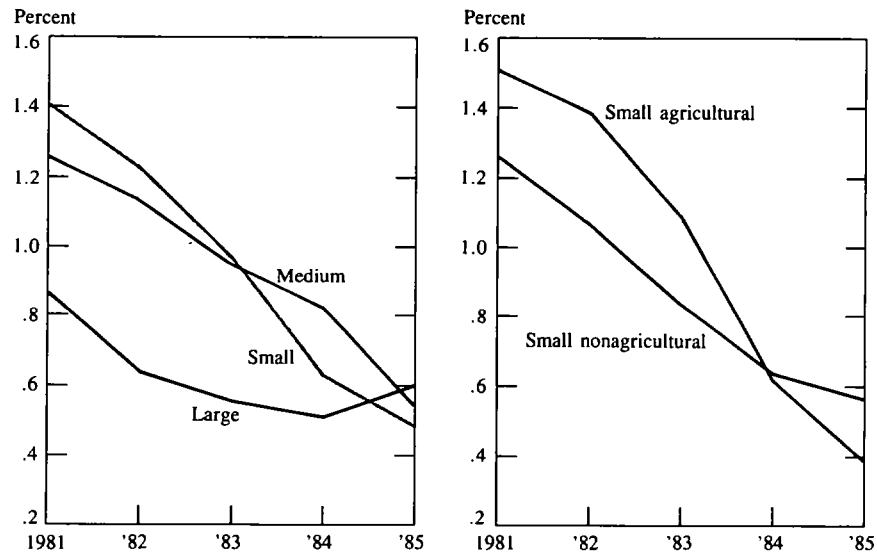
Profitability by size and type

In 1985, as in previous years, earnings performance varied by size and type of bank. On average, changes in profitability were most

[3] All data in this article were taken from the Reports of Condition and Income filed by insured commercial banks. Balance sheet data for 1981 to 1983 were adjusted for mergers at the Board of Governors of the Federal Reserve System to ensure that the assets and liabilities of merging banks were combined as close as possible to the date at which they began reporting their income jointly. Data for 1984 and 1985 were adjusted the same way by the authors.

CHART 2

Return on assets at banks in Tenth District states*



*Profits divided by average assets

favorable at large banks and least favorable at medium-size banks and banks specializing in agricultural lending.

The left panel of Chart 2 shows how profitability has changed at the three size groups, as measured by ROA. From 1981 to 1984, ROA fell less at medium-size banks than at small banks. Last year, though, ROA fell more at medium-size banks, bringing the two groups closer together. In contrast to small and medium-size banks, large banks became more profitable in 1985. This improvement left large banks with a slightly higher ROA than the other two size groups, reversing the ranking of 1981.[4]

Measured by ROE, differences in the relative profitability of the three size groups in 1985 were even greater. Large banks earned 9.4 percent on their equity, up a percentage point from 1984. In contrast, small banks earned only 5.5 percent and medium-size banks 7.1 percent. The reason the three size groups differed more in terms of ROE than ROA is that larger banks tend to have greater leverage, relying less on equity and more on borrowed funds to finance their assets.

Among banks of similar size, profitability continued to decline more at agricultural banks than at nonagricultural banks. As noted earlier, most agricultural banks are small. The right panel of

[4] These changes in profitability were partly due to shifts in the composition of the three size groups. In 1985, for example, slow growth caused a dozen banks that were just over the size cutoff for the large group to shift to the medium-size group. Because these banks were also unprofitable, the shift tended to raise the average ROA of large banks and reduce the average ROA of medium-size banks. In the absence of this shift, the change in ROA would still have been least favorable at medium-size banks and most favorable at large banks. However, instead of increasing moderately, the ROA of large banks would have decreased moderately.

TABLE 3
Income and expense of insured commercial banks, Tenth District states*
(percent)

	1981	1982	1983	1984	1985
Net interest income (NIM)†	4.70	4.67	4.41	4.29	4.36
− Loan loss provisions	0.30	0.56	0.65	0.85	1.05
− Net noninterest expense	2.24	2.36	2.34	2.28	2.37
+ Net security gains‡	−0.13	−0.04	0.01	0.03	0.10
− Total taxes	0.86	0.70	0.60	0.54	0.49
Profits (ROA)	1.18	1.00	0.83	0.66	0.55

*All variables are expressed as a percentage of average annual assets net of loan loss reserves. Average annual assets are computed from beginning-of-year, middle-of-year, and end-of-year figures, with weights of one-quarter, one-half, and one-quarter, respectively.
†Interest income is calculated on a taxable-equivalent basis. That is, each bank's tax-exempt income from state and local securities is adjusted by its marginal tax rate.
‡Includes net gains on extraordinary items.

Chart 2 compares the recent earnings performance of small agricultural banks with that of small nonagricultural banks. At both types of banks, ROA fell less in 1985 than 1984. But the 1985 decline was three times greater at small agricultural banks, leaving their ROA well below that of small nonagricultural banks. Within the medium-size group, declines in ROA were roughly similar at agricultural banks and nonagricultural banks. However, this similarity was due only to shifts in the composition of the two subgroups. Adjusted for such shifts, ROA fell about twice as much at medium-size agricultural banks as at medium-size nonagricultural banks.

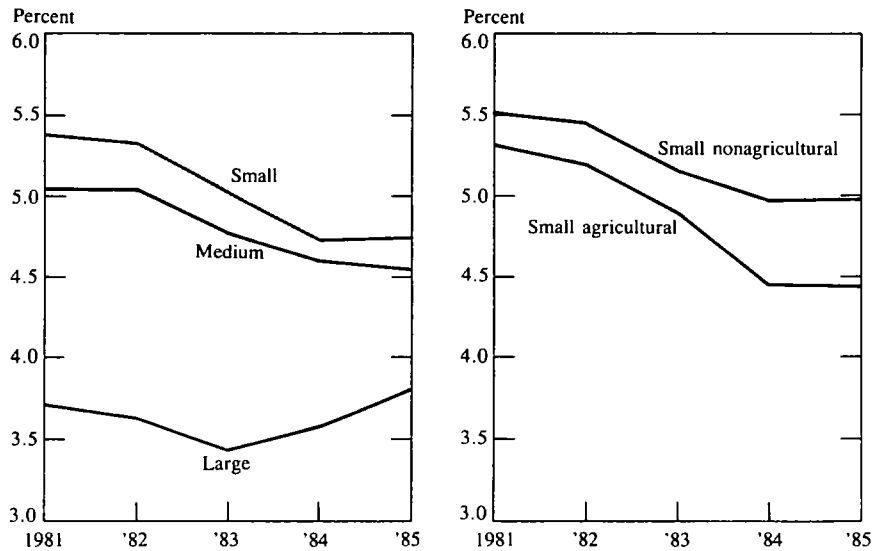
Although there were significant differences in earnings performance among different sizes and types of banks, there were also substantial differences within each category. In 1985, for example, 330 of the region's 1,300 agricultural banks suffered net losses, up from 250 the previous year. During the year, however, 470 agricultural banks managed to earn an ROA greater than 1 percent—fewer than in 1984 but a significant number nevertheless. Changes in profitability also varied greatly, with ROA declining more than 50 basis points at 430 agricultural banks but increasing more than 50 basis points at 220 banks. Within each of the three categories of nonagricultural banks, the story was much the same—some banks did very poorly in 1985 while others performed quite well.

Determinants of profitability

The decline in average profitability in 1985 was due primarily to a large increase in the provision of funds for loan writeoffs. Profits can be defined as net interest income and net gains from security sales minus loan loss provisions, net noninterest expense, and taxes. Table 3 deflates each of these components by total assets for the years from 1981 to 1985. As shown in the table, loan loss provisions increased in 1985 for the fourth consecutive year, reaching 1.05 percent of assets. Reinforcing this increase was a jump in net

CHART 3

Net interest margin at banks in Tenth District states*



*Net interest income divided by average assets

noninterest expense. These adverse developments were partly offset by an improvement in net interest income, an increase in net gains on security sales, and a decline in taxes. However, the improvement in the latter components of profits was not enough to prevent a net decline in ROA, from 0.66 percent in 1984 to 0.55 percent in 1985.

The next two sections take a closer look at net interest margin and loan loss provisions, the two items that have accounted for most of the change in district profitability over the last several years.

Net interest margin

The moderate improvement in net interest margin (NIM) in 1985 ended a steep decline over the previous two years. The NIM of district banks increased seven basis points in 1985, following declines of 26 points in 1983 and 12 points in 1984 (Table 3).

NIM by size and type

In 1985, as in 1984, changes in NIM were most favorable at large banks. As shown in the left panel of Chart 3, the NIM of small banks remained virtually unchanged in 1985 and the NIM of medium-size banks fell slightly. At the region's large banks, by contrast, NIM increased a very strong 22 basis points. This increase was the second in a row for large banks, raising their NIM above the 1981 level.

For the most part, NIM behaved the same at agricultural banks as at nonagricultural banks of similar size. As shown in the right panel of Chart 3, NIM remained virtually unchanged in 1985 at both small agricultural banks and small nonagricultural banks. This similarity was in sharp contrast to 1984, when NIM fell significantly more at small agricultural banks. Within the medium-size group, there was more of a

TABLE 4

Changes in interest income and expense by size of bank, Tenth District states
(percentage-point change in ratio to average assets)

	1983-84	1984-85
Small banks		
Change in interest income ratio	+0.12	−0.71
Portfolio shift	+0.02	−0.02
Rate effect	+0.10	−0.69
Change in interest expense ratio	+0.44	−0.72
Portfolio shift	+0.25	+0.14
Rate effect	+0.19	−0.86
Change in NIM	−0.32	+0.01
Portfolio shift	−0.23	−0.16
Rate effect	−0.09	+0.17
Medium banks		
Change in interest income ratio	+0.33	−0.82
Portfolio shift	+0.07	−0.01
Rate effect	+0.26	−0.82
Change in interest expense ratio	+0.51	−0.76
Portfolio shift	+0.22	+0.13
Rate effect	+0.28	−0.89
Change in NIM	−0.18	−0.06
Portfolio shift	−0.15	−0.14
Rate effect	−0.02	+0.07
Large banks		
Change in interest income ratio	+0.83	−0.78
Portfolio shift	+0.20	+0.05
Rate effect	+0.63	−0.83
Change in interest expense ratio	+0.68	−1.00
Portfolio shift	+0.08	+0.03
Rate effect	+0.60	−1.02
Change in NIM	+0.15	+0.22
Portfolio shift	+0.12	+0.02
Rate effect	+0.03	+0.19
Memo:		
Change in 6-month Treasury bill rate	+1.05	−2.13

divergence between the two types of banks in 1985, with NIM rebounding at agricultural banks but continuing to fall at nonagricultural banks.

Determinants of NIM

The two most important factors affecting NIM are movements in market interest rates and shifts in the composition of banks' portfolios. If banks' assets and liabilities are not equally sensitive to market interest rates, changes in rates will have a different effect on interest income than on interest expense, altering NIM. And if the composition of banks' assets or liabilities shifts between categories with low rates of return and categories with high rates of return, interest income and interest expense will be affected even without any change in market interest rates.

Table 4 shows the contribution of rate changes and portfolio shifts to the behavior of district banks' interest income ratio, interest expense ratio, and NIM since 1983. These estimates were obtained by splitting each size group's assets and liabilities into broad categories. The impact of portfolio shifts between categories was estimated by calculating the amount by which interest income, interest expense, and NIM would have changed if the average rate of return earned or paid on each category had remained constant. The rest of the change is the "rate effect," the part due to changes in the average rates of return on different categories.[5]

In 1985, small and medium-size banks continued to be hurt by adverse portfolio shifts but were benefited by the turnaround in market interest rates. As in previous years, the composition of funds shifted away from demand deposits, passbook savings accounts, and regular NOW accounts toward deregulated time and savings deposits paying higher rates of return. Although this shift was less important in 1985 than 1984, it raised the interest expense ratio of small banks by 14 basis points and the interest expense ratio of medium-size banks by 13 basis points. Working in the opposite direction was the decline in market rates. Because deposit deregulation had made most small banks liability sensitive, the decline in market rates in 1985 reduced their interest expense ratio 17 basis points more than their interest income ratio. This favorable rate effect just offset the adverse portfolio shift at small banks, preventing their NIM from falling. At medium-size banks, the rate effect was also favorable, but smaller. As a result, their NIM declined six basis points.

Relative to assets, loan loss provisions increased roughly the same amount in 1985 as in 1984.

Large banks did not enjoy as favorable a portfolio shift in 1985 as in 1984, but they received an even larger boost from the decline in market rates than small and medium-size banks. The improvement in large banks' NIM in 1984 was due to a large shift in the composition of their assets from money market instruments to higher yielding loans. This shift did not continue in 1985. However, the decline in market rates reduced large banks' interest expense ratio 19 basis points more than their interest income ratio, producing an even larger increase in NIM than the year before.

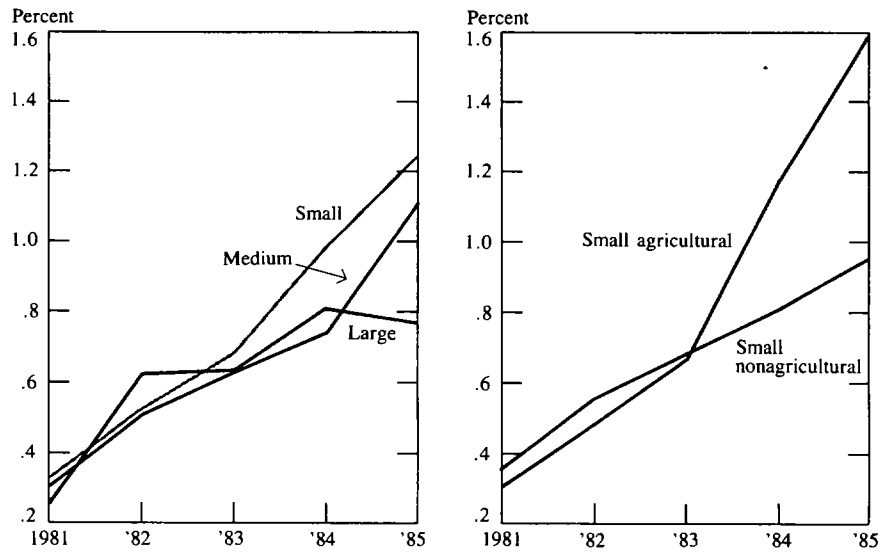
Loan loss provisions

Relative to assets, loan loss provisions increased roughly the same amount in 1985 as in 1984—about 20 basis points (Table 3). As in previous years, most of the increase in loss pro-

[5] For a more detailed explanation of the decomposition, see Keeton and Matsunaga.

CHART 4

Loan loss provisions at banks in Tenth District states*



*Provisions divided by average assets

visions in 1985 was to cover higher chargeoffs of bad loans. Only a tenth of 1985 loss provisions represented net additions to banks' loan loss reserves.[6]

Provisions by size and type

Although 1985 loan loss provisions were high at all sizes and types of district banks, the trend was much less favorable at small and medium-size banks than at large banks (Chart 4). At small banks, provisions increased almost as much in 1985 as in 1984, reaching 1.25 percent of assets. And at medium-size banks, loss provisions rose even more in 1985 than 1984, surpassing 1.1 percent of assets. Although large banks also had high loss provisions in 1985, their provisions were slightly lower than in 1984 and significantly lower than in the two smaller size groups.

As in 1984, loss provisions rose much more at agricultural banks than at nonagricultural banks of similar size. In 1985, provisions of small agricultural banks increased about 40 basis points, almost as much as in 1984. At small nonagricultural banks, provisions rose a little more than in 1984 but significantly less than at small agricultural banks. As a result, the gap in the loan loss provisions of the two types of banks widened further. Within the medium-size group, the story was much the same, with loss provisions increasing sharply at both agricultural banks and nonagricultural banks but especially at agricultural banks.

[6] When banks write off bad loans, they charge their loan loss reserves, not their earnings. Writeoffs affect earnings only to the extent that banks provide enough funds for their reserves to make up for the chargeoffs.

TABLE 5
Net chargeoffs by type of loan, Tenth District states

	Chargeoff Rate*		Percent of Total Loans,
	1984	1985	Dec. 1985
Real estate loans†	0.4	0.6	31
Credit card loans	1.3	1.8	3
Installment loans	0.6	0.9	16
Agricultural operating loans	2.2	4.2	10
Commercial and industrial and all other loans	1.7	2.1	40
Total loans	1.2	1.6	100

*Net chargeoffs as a percent of end-of-year loans.
†Includes farm real estate loans, which represent less than 2 percent of total loans.

Table 5 breaks down the net chargeoffs of district banks by major categories of loans. Given the sharp increase in loan losses at agricultural banks, it comes as no surprise that the biggest increase in chargeoffs in 1985 was for agricultural operating loans. In 1984, the chargeoff rate for agricultural operating loans was only moderately higher than the chargeoff rate for commercial and industrial loans. Last year, however, the chargeoff rate for agricultural operating loans rose to 4.2 percent, twice the rate for commercial and industrial loans. Although some observers have pointed to real estate loans as the next problem area for commercial banks, Table 5 reveals that average losses on real estate loans remain relatively small. Last year, the chargeoff rate on real estate loans was only 0.6 percent, lowest of the major loan categories.[7]

Nonperforming loans

Future loan losses are closely related to the current level of nonperforming loans. These loans are loans that have not been written off but are 90 days or more overdue, nonaccruing, or renegotiated.[8] Some nonperforming loans may eventually be repaid in full, and others may be partly salvaged. Nevertheless, banks that have high levels of nonperforming loans today are likely to have high rates of loan losses in the future.

Table 6 shows that the percent of nonperforming loans increased sharply in 1985. In the district as a whole, nonperforming loans jumped from 3.3 percent of loans at the end of 1984 to 3.9 percent at the end of 1985. This increase occurred

[7] Data are unavailable on chargeoff rates for different types of real estate loans. However, banks specializing in farm real estate tended to have very high chargeoff rates on their real estate loans. Also, banks specializing in commercial real estate tended to have somewhat higher chargeoff rates on their real estate loans than banks specializing in residential real estate.

[8] Banks are allowed to count as income any interest that is due but not received, provided the interest and principal are less than 90 days overdue or the loan is well secured and in process of collection. Nonaccruing loans are overdue loans that do not meet either of these conditions. Renegotiated loans are troubled loans with terms that have been eased to facilitate repayment by the borrower.

despite the fact that district banks wrote off record amounts of their problem loans during the year.

As shown in Table 6, the increase in nonperforming loans was sharpest at the region's agricultural banks. By the end of the year, nonperforming loans had risen to 5.3 percent at small agricultural banks and 5.5 percent at medium-size agricultural banks. At all three sizes of nonagricultural banks, nonperforming loans were much lower—around 3½ percent. However, the percent of nonperforming loans was up sharply at the two smaller sizes of nonagricultural banks, eliminating the edge that these banks previously enjoyed over large banks.

For district banks in aggregate, delinquency rates were greatest for agricultural operating loans and lowest for consumer loans. At the end of 1985, 6.9 percent of agricultural operating loans were nonperforming, 4.8 percent of commercial and industrial loans, and 3.5 percent of real estate loans.[9] In the consumer category, which includes both credit card loans and installment loans, only 1.1 percent of loans were nonperforming. The lower delinquency rate on consumer loans results partly from the fact that they are not as well secured by collateral. The lack of collateral makes banks quicker to write these loans off when borrowers fall behind on their payments.

TABLE 6
Nonperforming loans by size and type of bank, Tenth District states*
(percent of total loans, end of year)

	1984	1985
All banks	3.3	3.9
Small banks	3.4	4.3
Agricultural	3.9	5.3
Nonagricultural	3.0	3.5
Medium banks	3.3	4.0
Agricultural	3.6	5.5
Nonagricultural	3.2	3.8
Large banks	3.3	3.4

*Nonperforming loans at banks in operation all of 1985.

Causes of loan losses

The main cause of increased loan losses at district banks has been the downturn in energy and agriculture, two sectors that are much more important in this region than in the nation as a whole. Falling prices have reduced the incomes of farm and energy borrowers and depressed collateral values. In addition, the recessions in energy and agriculture have had serious ripple effects in some communities, impairing bank loans to other borrowers.

Although adverse economic conditions are clearly the main cause of higher loan losses, wide variation in the severity of loan problems among district banks suggests that other factors may also have played a role. At the end of 1985, almost 5½ percent of total loans were nonperforming at the district's 1,300 agricultural banks. However, the proportion of nonperforming loans exceeded 5 percent at only 450 of these banks. Of the remaining banks, close to 400 had nonperforming loans between 2 and 5 percent and 450 had nonperforming loans less than 2 percent. Among nonagricultural banks, the variation in nonperforming loans was not quite as large, but still significant.

Some of these differences in delinquency rates can be explained by differences in local economic conditions. For example, some areas may have

[9] Data are unavailable on nonperforming loans for different types of real estate loans. However, a comparison of real estate delinquencies at banks with different lending specializations suggests that the delinquency rate on farm real estate loans was higher than that on any other type of bank loan. The delinquency rate on commercial real estate loans appears to have been slightly lower than that on commercial and industrial loans, while the delinquency rate on residential real estate loans appears to have been significantly lower.

TABLE 7
Variation in percent of nonperforming loans among small agricultural and nonagricultural banks, Tenth District states

Percent of Nonperforming Loans, 1985	Loan-Asset Ratio in 1981 (percent)	Return on Loans in 1981 (percent)
Small agricultural banks		
Greater than 5%	56.4	15.52
2 to 5%	52.9	15.24
Less than 2%	47.7	15.04
Small nonagricultural banks		
Greater than 5%	57.4	16.07
2 to 5%	54.3	15.66
Less than 2%	51.3	14.97

had worse crop conditions than others and some may have been more dependent on energy production. Even within the same metropolitan area or county, however, banks differ greatly in the severity of their loan problems. At the end of 1985, the average deviation of each bank's delinquency rate from the delinquency rate for its area was over three percentage points for agricultural banks and almost 2½ percentage points for nonagricultural banks.

There are several reasons why such large differences in delinquency rates could exist even within the same local market. Some of the variation may be random. When a bank makes a loan, it cannot be sure how creditworthy the borrower is or how favorably events will turn out for him. The banks with the highest delinquency rates may have accidentally ended up with the worst mix of borrowers. Another explanation for high delinquency rates is poor credit management. Banks with the most loan problems may have unwittingly made loans to borrowers that other banks rejected as bad credit risks. Finally, banks with the greatest loan problems may have consciously made risky loans, hoping to earn higher profits in return for greater risk.

It is impossible to say with certainty which of these factors accounts for the unusually severe loan problems at some district banks. However, Table 7 provides evidence that risk-taking may have played a role. This table divides small agricultural and nonagricultural banks into three categories according to their delinquency rates at the end of last year. For each category, the table also shows the average loan-asset ratio and the average rate of return on loans in 1981, the year profitability peaked.

Among both agricultural and nonagricultural banks, Table 7 reveals a clear tendency for banks with the highest delinquency rates to have invested more of their assets in loans and less of their assets in government securities and money market instruments. The willingness to take risk by investing heavily in loans does not prove that these banks were also willing to make riskier loans. However, the high loan-asset ratios of these banks

is at least consistent with the notion that they had a greater propensity to take risk.[10]

The risk-taking hypothesis receives further support from the relationship in Table 7 between delinquency rates and average rates of return on loans. The only incentive for a bank to make riskier loans is to earn a higher rate of return. Thus, if banks with high delinquency rates deliberately made riskier loans, they should have earned higher rates of return at the height of the boom, before their loans went sour. As shown in Table 7, this relationship holds for both small agricultural banks and small nonagricultural banks, though more so for the latter.

Capital

A final dimension of performance is capital, the amount by which banks' assets exceed their liabilities. The more capital a bank has, the more cushion it has against adverse shocks and the longer it can sustain losses without having to close. Like profitability, a bank's capital can be measured in various ways. The measure used in this article is primary capital, the sum of equity capital and loan loss reserves.

Despite sharply increased loan losses, district banks managed to maintain their capital-asset ratios last year. Primary capital edged upward from 8.2 percent of assets at the end of 1984 to 8.3 percent of assets at the end of 1985. Over the year, the ratio of equity capital to assets stayed the same and the ratio of loan loss reserves to assets increased. However, it was slow asset growth rather than strong equity growth that allowed banks' equity to keep pace with their assets. District banks not only earned lower profits in 1985 but also paid out a higher fraction of those profits in the form of dividends to shareholders. As a result, earnings retention contributed only three-fifths as much to equity growth in 1985 as in 1984.

The stability in capital-asset ratios last year extended to all three size groups and to agricultural and nonagricultural banks within each size group. At the end of the year, primary capital represented 7.0 percent of assets at large banks, 8.4 percent at medium-size banks, and 9.5 percent at small banks. Despite the steeper decline in their earnings, small agricultural banks continued to have the highest capital-asset ratio of all, just over 10 percent.

The adequacy of capital must be judged relative to the potential for future losses. As suggested earlier, a useful indicator of banks' future loan losses is the level of their nonperforming loans. At the end of 1985, almost 2,500 of the region's 2,900 banks still had more than twice as much primary capital as nonperforming loans. However, 116 banks ended the year with less primary capital than nonperforming loans, up from 70 at the end of 1984. The plight of these 116 banks resulted from a combination of three factors—more of their loans were delinquent, more of their assets were invested in loans, and fewer of their assets were backed by capital.

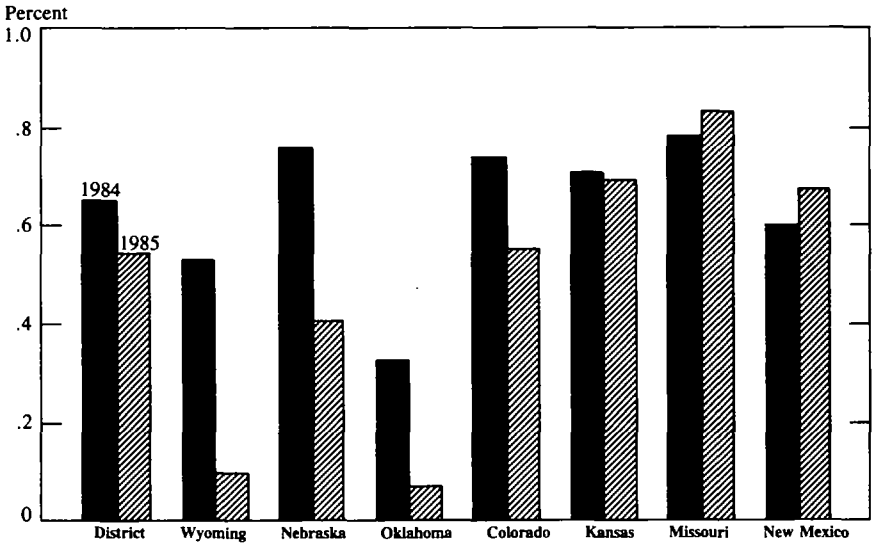
Despite sharply increased loan losses, district banks managed to maintain their capital-asset ratios last year.

Performance by state

The deterioration in banking performance in 1985 was not uniform across the seven states in the Tenth District. By most measures, performance declined more than average in Wyoming,

[10] The correlation among agricultural banks between delinquency rates and loan investment has also been noted by Emanuel Melichar. See "Agricultural Banks Under Stress," *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, July 1986, pp. 445-446.

CHART 5
Return on assets at banks in Tenth District states*



*Profits divided by average assets.

Oklahoma, Nebraska, and Colorado but was relatively stable in Kansas, Missouri, and New Mexico. This section briefly analyzes the banking performance of each state in order of the decline in ROA last year.

Wyoming

Banking performance in Wyoming continued to be hurt in 1985 by the severe recession in energy and mining. Of Tenth District states, Wyoming had the largest decline in ROA in 1985, about 40 basis points (Chart 5). Five of the state's 120 banks failed during the year and only one new bank was started.[11] At other Wyoming banks, assets grew very slowly and loans declined (Chart 6).

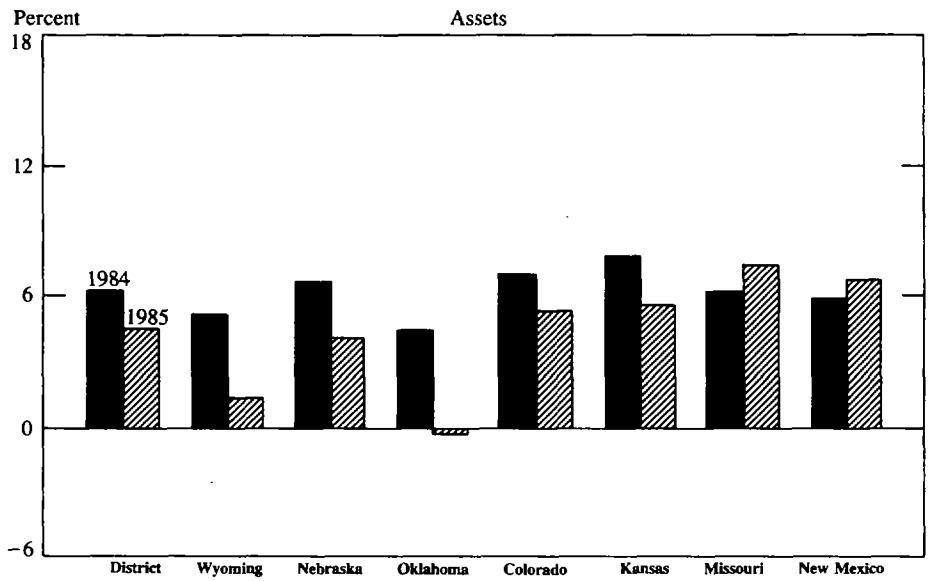
The decline in profitability in 1985 followed equally steep declines the previous two years. Although small banks earned about the same ROA in Wyoming as in the rest of the district, large and medium-size banks suffered net losses as a group. As a result, the average ROA for the state was only 0.1 percent in 1985, well below the district average.

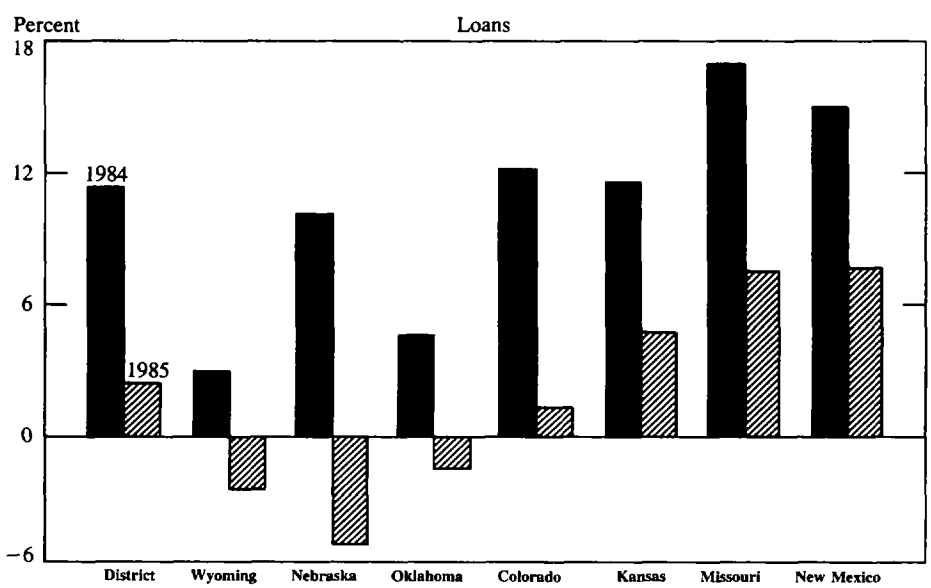
Most of the decline in profitability in 1985 was due to sharp increases in loan loss provisions. Provisions increased from 1.0 percent of assets in 1984 to 1.6 percent of assets in 1985, with all of the increase occurring at the state's large and medium-size banks. Also contributing to the decline in ROA was a significant increase in the net noninterest expense ratio. Banks' overhead costs responded sluggishly to the sharp slowdown

[11] Throughout this section, the term "new banks" refers only to banks established *de novo* and not to banks formed to take over the deposits of failed banks.

CHART 6

Growth in bank assets and loans in Tenth District states





in their asset growth, boosting the state's net expense ratio by 20 basis points.

At the end of 1985, 7.4 percent of loans at Wyoming banks were nonperforming. This delinquency rate was the highest in the district, reflecting slower than average repayment of real estate loans and commercial and industrial loans.

Nebraska

Because Nebraska has the largest proportion of agricultural banks in the district, its banking performance has been the most affected by the slump in agriculture. In 1985, ROA fell 35 basis points in Nebraska, the second largest decline in the district (Chart 5). Thirteen of the state's 470 banks failed during the year, and only three new banks were established. At other Nebraska banks, assets grew only slightly less than in the district as a whole, but loans fell sharply (Chart 6).

Last year's decline in profitability left ROA at 0.4 percent, higher than in Wyoming but lower than in the district as a whole. Besides accounting for a higher proportion of total assets, agricultural banks in Nebraska suffered a larger drop in ROA than agricultural banks in other states. Nebraska's large banks also suffered a steep decline in ROA in 1985. Despite the decline, though, these banks were still able to earn half a percent on their assets last year, close to the district average.

The decline in overall profitability in 1985 was due mainly to a sharp increase in loan loss provisions. Loss provisions increased from 1.1 percent of assets in 1984 to 1.6 percent in 1985. At agricultural banks, the increase was even greater, with loss provisions approaching 2 percent of assets. Meanwhile, rapid growth in nonsalary overhead costs boosted the state's net noninterest expense ratio by 15 basis points, reinforcing the increase in loss provisions.

At the end of 1985, nonperforming loans were 4.1 percent of total loans at Nebraska banks. This delinquency rate slightly exceeded the district average, but only because agricultural loans are three times more important in Nebraska than in the district as a whole.

Oklahoma

The adverse impact of the energy recession was no less evident in the performance of Oklahoma banks than Wyoming banks. Of Tenth District states, Oklahoma had the third largest decline in ROA in 1985, about 25 basis points (Chart 5). Thirteen of Oklahoma's 540 banks failed in 1985, but despite the recent decline in profitability, seven new banks were started. At other Oklahoma banks, total assets failed to grow over the year and loans fell (Chart 6).

The steep decline in profitability last year was the fourth in a row for Oklahoma banks, reducing the state's average ROA to only 0.1 percent. As in the case of Wyoming, small banks did not do any worse in Oklahoma than in the district as a whole. But large banks as a group incurred heavy losses, and medium-size banks earned only a small profit.

The decline in ROA last year was due to an increase of almost 30 basis points in the net noninterest expense ratio. Although loan loss provisions remained very high at 1.3 percent of assets, this level was only slightly higher than the year before, with decreases at large banks offsetting increases at small and medium-size banks. The unusually large increase in the net noninterest expense ratio was concentrated at the state's large and medium-size banks, reflecting slower growth in assets and faster growth in nonsalary overhead costs.

Oklahoma had the second highest delinquency rate in the district at the end of 1985, with 5.9 percent of loans nonperforming. The delinquency rate on agricultural loans was somewhat lower than in the rest of the district. However, delinquency rates on real estate loans and commer-

cial and industrial loans were both significantly higher.

Colorado

Banking performance in Colorado was close to the district average in 1985. ROA fell 20 basis points, a bit more than in the district as a whole (Chart 5). However, the total number of banks continued to increase, as six of the state's 450 banks failed but 12 new banks were started. Also, even though assets and loans increased less in 1985 than in 1984, growth remained significantly higher than in the more depressed states of Wyoming, Nebraska, and Oklahoma (Chart 6).

The continued decline in profitability in 1985 left the state's average ROA at just under 0.6 percent, the same as in the district as a whole. Medium-size banks experienced about the same decline in ROA as elsewhere, and the ROA of the state's large banks remained virtually unchanged. In contrast to other states, though, profitability fell very sharply at small nonagricultural banks. The average ROA of these banks fell 40 basis points last year, almost four times as much as in the district as a whole.

Performance declined more than average in Wyoming, Oklahoma, Nebraska, and Colorado

Higher loan loss provisions and lower net interest margins accounted for all of the 1985 decline in ROA at Colorado banks. The increase in loss provisions was widespread, reaching 1.1 percent of assets for the state as a whole. The decline in NIM was confined to the state's small and medium-size banks. Because these banks rely more heavily on demand deposits and passbook savings accounts than their counterparts in other states, their interest expense responded less to the decline in market rates.

Colorado had the third highest delinquency rate in the district, with 4.5 percent of loans nonperforming at the end of 1985. Delinquency rates were about average on real estate loans and consumer loans, but significantly higher than average on both agricultural loans and commercial and industrial loans.

Kansas

Although Kansas has the second highest proportion of agricultural banks in the district, its overall banking performance has been significantly better than average. ROA declined only slightly in 1985. During the year, 13 of the state's 630 banks failed and only six new banks were started. However, at remaining banks, assets and loans both grew at a respectable pace.

The stability of profits in 1985 was in sharp contrast to 1984, when ROA fell sharply. Throughout the downturn in bank profitability, though, ROA has remained higher in Kansas than the district as a whole, equaling 0.7 percent last year. As in other states, agricultural banks suffered a sharp drop in ROA in 1985. However, this decline was offset by strong performance at all three sizes of nonagricultural banks, where ROA either stabilized or increased slightly. The state's large banks continued to do especially well, earning an average ROA of almost 1.3 percent in 1985.

The relative stability in ROA last year was due to better than average behavior of net noninterest expense. Changes in loan loss provisions and NIM were about equal to the average for the district. But in contrast to the district as a whole, the state's net noninterest expense ratio failed to increase.

At the end of 1985, 3.2 percent of loans in Kansas were nonperforming. This rate was somewhat

lower than the average for the district, with below-average delinquency rates on real estate and commercial and industrial loans making up for the higher percentage of agricultural loans in the state.

Missouri

Because Missouri has a more diversified economy than other district states, its banking performance has held up much better during the recent downturn. ROA edged upward in 1985, making up for the small decline of the previous year. Nine of the state's 710 banks failed, and seven new banks were started. Forty Missouri banks were merged out of existence in 1985, an unusually large number. However, most of these banks merely combined with other banks in the same holding company. Assets grew even faster in 1985 than 1984, giving Missouri banks the highest rate of growth in the district. Loans also grew rapidly, but at less than half the 1984 rate.

Although Missouri had the lowest ROA of the district states at the peak in 1981, it had the highest ROA last year—0.8 percent. As in Kansas, the continued decline in profitability at Missouri agricultural banks was offset by the strong performance of the state's nonagricultural banks. Last year, ROA fell 30 basis points at agricultural banks but increased ten basis points at nonagricultural banks, with all three size groups sharing in the gain.

There were several reasons why Missouri banks escaped the districtwide decline in profitability in 1985. Loss provisions increased less in Missouri than in the district as a whole because of stable provisions at the state's nonagricultural banks. Also, NIM increased a strong 20 basis points in Missouri due to a relatively small decline in the average rate of return on loans at nonagricultural banks and a relatively large portfolio shift by these banks from securities to higher yielding loans. Finally, in contrast to the district as a whole, the net noninterest expense ratio of Missouri banks remained unchanged.

Missouri had the lowest proportion of nonperforming loans in the district at the end of 1985, 2.4 percent. Although the delinquency rate on agricultural loans was higher than elsewhere, delinquency rates on all other types of loans were significantly lower.

New Mexico

Like Kansas and Missouri, New Mexico enjoyed better than average banking performance. Average profitability was slightly higher in 1985 than in 1984. Three of the state's 100 banks failed during the year. But two new banks were started, and assets and loans at other banks grew considerably faster than in the district as a whole.

The improvement in profitability in 1985 left New Mexico's ROA at 0.7 percent, the same as in Kansas but less than in Missouri. The improvement in ROA was due entirely to the failure in 1985 of a large bank that incurred heavy losses the previous year. If this bank had not been present in 1984, ROA would have declined about the same in New Mexico last year as in the rest of the district. ROA remained well over 1 percent at the state's large banks. At medium-size banks, however, increases in loan provisions and net noninterest expense caused ROA to fall 40 basis points, twice as much as in the district as a whole.

At the end of 1985, 3.0 percent of loans were nonperforming at New Mexico banks. This figure was below the district average, reflecting lower delinquency rates on all types of loans.

Conclusions

The overall performance of district banks continued to decline in 1985. For the first time in many years, the number of banks closed in Tenth District states exceeded the number opened. Meanwhile, at other banks, the growth in assets

and loans slowed sharply. The average profitability of district banks also fell in 1985, leaving return on assets and return on equity at less than half their 1981 peaks. Net interest margins stabilized during the year, aided by a decline in market interest rates and a reduced outflow of funds from low-cost demand deposits and passbook savings accounts. Loan losses continued to mount, however, as the region's all-important energy and agricultural sectors remained weak. District banks did manage to maintain their capital-asset ratios during the year, but only because of slower asset growth and increases in loan loss reserves.

The decline in overall banking performance in 1985 was far from uniform. Growth and profitability declined much more than average at banks of medium size, banks specializing in agricultural lending, and banks located in energy-producing states. Performance also differed greatly among banks of the same size and type and among banks operating in the same market area. Some of these differences in performance may have been random. However, there is evidence that at least some of the variation in performance was due to conscious risk-taking in the past by the banks that now face the greatest problems.

As for 1986, there is both good news and bad news. The good news is that market interest rates have continued to decline during the year. Because deposit deregulation has made most district banks liability sensitive, the decline in rates should reduce interest expense more than interest income, boosting net interest margins. The bad news is that oil prices have also fallen sharply since the beginning of the year. The latest drop in oil prices may benefit banks in some parts of the district by stimulating household spending and reducing production costs of local farmers and manufacturers. However, the decline will obviously hurt many banks in energy-producing states, both by increasing their direct losses on energy loans and by depressing local economies. Difficult challenges lie ahead. But by looking to their capital and exercising prudent management, the vast majority of district banks should be able to weather their problems.

A Changing Rural America

By Mark Henry, Mark Drabenstott, and Lynn Gibson

A brisk wind is blowing across rural America that is bringing economic change. Rural lenders are experiencing a sharp increase in loan losses, and bank failures in rural communities are running at a post-Depression high. Small rural towns are finding their economic viability in question, and county governments are straining under an eroded tax base. In short, the rural economy is under pronounced stress that is accelerating the tempo of change.

Although rural economic change has been underway for a long time, the recent economic downturn is significant for two principal reasons. First, it marks the first time in the past two decades that rural residents have not made real economic gains toward their urban counterparts. Urban residents have long had higher per capita incomes than rural residents, but until recently the gap had been narrowing. The stall in rural improvement has been especially difficult after the rapid economic gains made by many rural residents, notably farmers, in the early 1970s. Second, it marks the first time since the Great Depression that so much public attention has been focused on rural problems. Federal, state, and local authorities have brought forward an array of public policy initiatives to address rural issues. The initiatives range from increased farm program spending to new rural development programs. For these two reasons, there is a great need for understanding how the rural economy is changing.

This article compares the recent economic performance of rural America with that of urban America. It also explores some of the causes of the recent rural performance. The article concludes that the convergence of rural and urban incomes seems to have stalled and that the remaining gap will be more difficult to remove because of structural forces now at work.

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What is rural America?

For the purposes of this study, nonmetropolitan counties are assumed to constitute rural America.[1]

TABLE 1
Population, personal income, and employment, U.S. metropolitan and nonmetropolitan counties, 1984

County Type	County Number*	Population (thousands)†	Population Percent of Total
All Counties	3,067	232,882	100.00
Metropolitan	626	168,302	72.27
Nonmetropolitan	2,441	64,580	27.73
Manufacturing	618	23,401	36.23
Mining	176	3,918	6.07
Farm	602	7,407	11.47
Retirement	222	7,316	11.33
Government	239	8,329	12.90
Mixed	128	1,896	2.94
Trade	370	10,571	16.37
Other	86	1,742	2.70

*Economic Research Service, U.S. Department of Agriculture, modifications by the authors
†Bureau of Economic Analysis, U.S. Department of Commerce
‡Bureau of Labor Statistics, U.S. Department of Labor. Includes private and civilian government employees for second quarter 1984. Excludes farms with fewer than ten employees.

Of the more than 3,000 counties in the contiguous 48 states in 1984, about 83 percent, or 2,441, were classified as nonmetropolitan counties. These rural counties are then grouped according to the economic sector most important to each: manufacturing, mining, farm, retirement, government, mixed, trade, and other.[2] (See the Appendix for definitions of these categories.)

Contrary to the popular notion that rural counties depend mostly on farming, manufacturing is the dominant economic base of rural America. Counties depending on manufacturing accounted for about 36 percent of the nonmetropolitan personal income and population in 1984 (Table 1). Manufacturing also accounted for about 40 percent of the employment in rural areas, more than

[1] The definition of nonmetropolitan as rural America is consistent with the framework developed by L. Bender and others, "The Diverse Social and Economic Structure of Nonmetropolitan America," *Rural Development Research Report 49*, Economic Research Service, U.S. Department of Agriculture, September 1985. Nonmetropolitan status is based on 1974 Office of Management and Budget designations.

[2] The economic base model of regional economics is founded on the assumption that certain types of economic activity are affected by exogenous forces; that is, by forces outside the regional economy. These are called basic economic sectors. Examples are farming, mining, and manufacturing sectors that sell their goods to users located outside of the region. Other examples include tourist activities that draw spending into the region from outside residents, retirement communities that receive transfer payment income from outside the region, and government activities like military bases that obtain income payments from outside the region.

In contrast, the nonbasic sectors of a regional economy are those in the region providing goods and services to the basic sectors and local population. These are usually the trade, utility, and personal services sectors. The level of activity in these nonbasic sectors depends on the level of activity in the basic sectors.

Personal Income		Employment	
(billions of dollars)	Percent of Total	(thousands)‡	Percent of Total
2,971.52	100.00	91,546	100.00
2,309.58	77.72	72,029	78.68
661.94	22.28	19,517	21.32
240.76	36.37	7,703	39.47
38.01	5.74	1,115	5.71
77.57	11.72	1,782	9.13
76.97	11.63	2,115	10.84
84.26	12.73	2,538	13.00
17.75	2.68	530	2.72
110.75	16.73	3,228	16.54
15.87	2.40	506	2.59

any other sector. These proportions of nonmetropolitan economic activity were more than three times the proportion for counties depending on farming. Taken together, counties dependent on government, retirement, and trade accounted for about the same proportion of rural population, income, and employment as farm-dependent counties. While the farm-dependent counties account for more activity in some regions, such as states of the Tenth District, the economic composition of rural America is much more diverse than usually recognized.

How well is rural America doing?

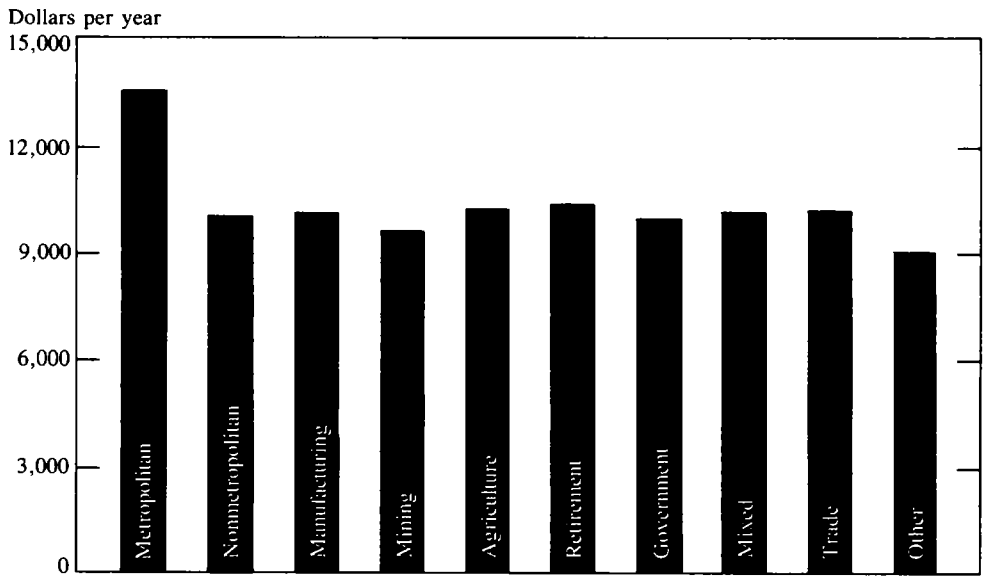
Is there an economic gap between rural and urban counties? If so, is rural America catching up with the rest of the country or falling behind? This section answers these questions by reviewing the patterns of per capita income in rural and urban America over the 20 years ended in 1984. The section also discusses the pace of rural economic activity over the period and examines the variability of rural incomes.

The rural income gap

Per capita income differs substantially between rural and urban counties. Metropolitan counties of the United States had income levels approaching $14,000 per capita in 1984—$4,400 in 1967 dollars (Chart 1). In contrast, the nonmetropolitan counties clustered around the $10,000 level—$3,300 in 1967 dollars. To match metropolitan levels in 1984, rural per capita incomes needed to have been about 35 percent

CHART 1

Mean per capita income, metropolitan and nonmetropolitan counties, 1984



higher.[3] Chart 1 also shows that per capita income does vary somewhat between rural areas, but far less than between metropolitan counties and any of the rural county groups.

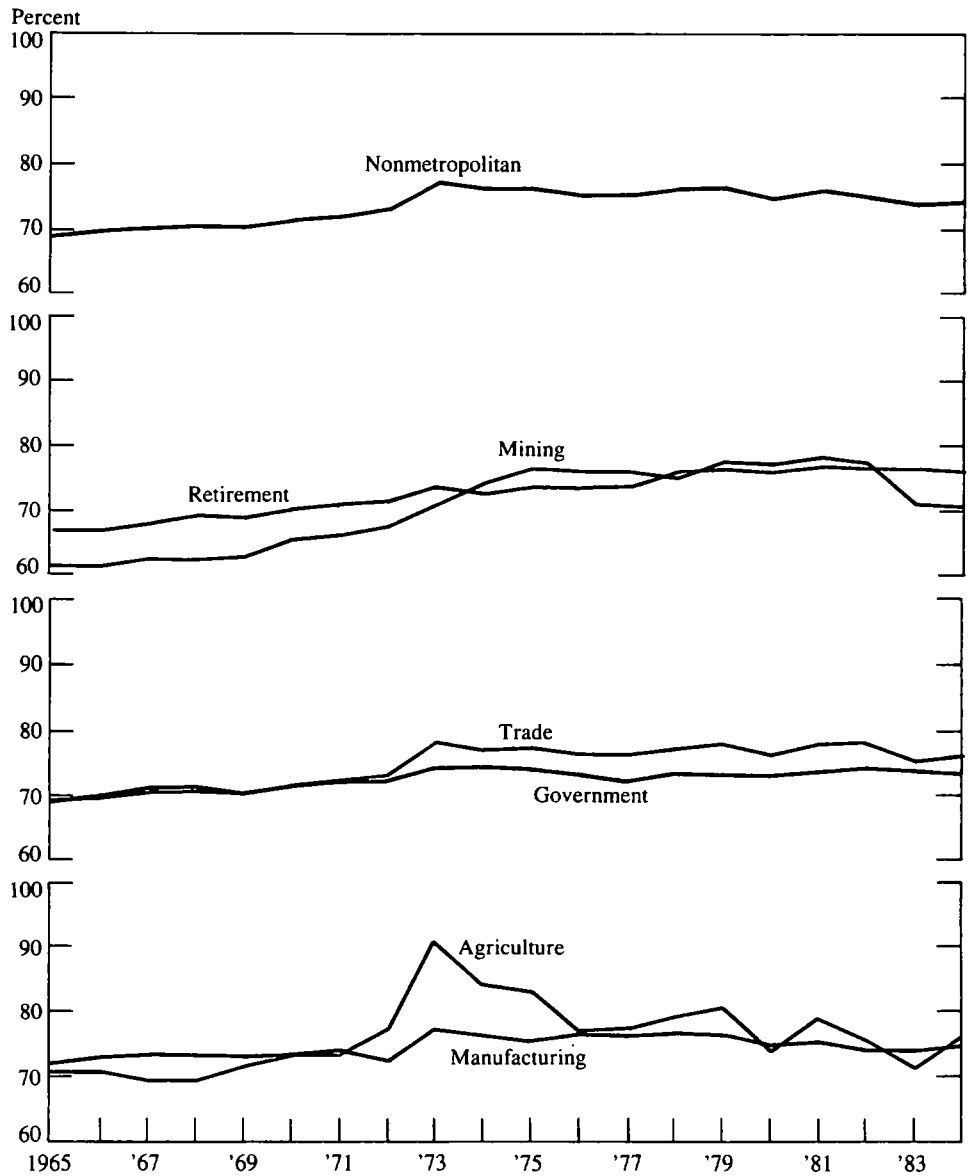
Has the per capita income gap been increasing or decreasing in recent years? Chart 2 shows the real per capita income gap expressed as the ratio of nonmetropolitan per capita income to metropolitan per capita income for the 1965-84 period. Two periods appear to have been particularly important over this 20-year span. First, the 1965-73 period reveals a narrowing of the gap ratio, with rural income rising as a percent of urban income from 69 percent in 1965 to 78 percent in 1973. In constant 1967 dollars, the gap declined from $970 in 1965 to $885 in 1973. Second, the 1973-84 period shows nonmetropolitan per capita incomes making no further progress toward metropolitan levels. The gap actually widened over the last five years, with the ratio of rural to urban income falling to 75 percent in 1984. In 1967 dollars, the gap rose from $885 in 1973 to $1,116 in 1984.

For most of the rural county groups, then, incomes appear to have stagnated from 1973 to 1979. But another interpretation of Chart 2 can be made

[3] Another explanation for the gap in metropolitan and nonmetropolitan per capita income is simply that the cost of living is usually much lower in rural areas than in urban areas. Thus, some argue the income gap is much narrower when adjusted for the difference in local prices. That is the real gap, when computed with the appropriate deflators, is much smaller than the nominal gap. Unfortunately, there are no reliable indexes for measuring the cost of living differences. One effort to gauge regional cost of living differences concluded that low-income areas differ from high-income areas in terms of the expenditure patterns associated with low and high-income households but there may not be much difference in prices paid for items in the budget. See Advisory Commission of Intergovernmental Relations, *Regional Growth: Historical Perspective*, 1980.

CHART 2

Nonmetropolitan real per capita income as percent of metropolitan real per capita income, by type of county, 1965-1984



Average annual growth in real personal income, population, and real per capita income, Tenth District metropolitan and nonmetropolitan counties, selected periods, 1965-84
(percent)

Area	1965-69			1969-73		
	Total Personal Income	Population	Per Capita Income	Total Personal Income	Population	Per Capita Income
Metropolitan	4.5	1.6	2.8	4.4	1.7	2.7
Nonmetropolitan	3.6	−0.0	3.6	7.1	1.1	5.9
Farm	3.8	−0.6	4.4	10.0	0.2	9.8
Mining	2.8	−0.1	2.9	5.3	1.2	4.1
Manufacturing	3.2	0.0	3.1	5.6	1.1	4.5
Government	4.4	0.7	3.7	5.0	1.5	3.4
Retirement	3.9	0.1	3.9	7.6	3.0	4.5
Trade	3.4	−0.0	3.4	6.7	0.8	5.8
Mixed	4.2	−1.6	5.9	8.7	−0.3	9.0
Other	2.7	1.3	1.4	9.9	3.4	6.3

Source: Calculated from unpublished data, Bureau of Economic Analysis, U.S. Department of Commerce

Rural Tenth District

The seven states in the Tenth Federal Reserve District form a distinctly rural region. Where 20 percent of the counties nationwide are metropolitan counties, only 10 percent of the district counties are metropolitan. With almost half the district's population living in rural areas and with 39 percent of the district's personal income earned in rural areas, Tenth District states have a particular interest in the problems and changes facing rural America.

The composition of the district's rural economy is quite different from the economy of rural America as a whole. Energy and agriculture are extremely important in the district economy. Nationwide, mining counties account for only 6 percent of nonmetropolitan personal income and agricultural counties account for 12 percent. In the Tenth District, the corresponding percentages are nearly twice as high. In further contrast, manufacturing counties generate 36 percent of nonmetropolitan income nationwide, compared

for some rural counties. Farm-dependent counties had a spectacular jump in income in 1973. That was due to a unique set of world circumstances—among them world crop shortages and increased Soviet imports—that sent U.S. crop prices soaring. The high farm income subsequently proved unsustainable, and farm income declined through 1977. Nevertheless, farm income in the late 1970s was still higher than in the early 1970s. Some would suggest, therefore, that the 1973-77 period was an aberration and farm-dependent counties were, in effect, closing the gap with metropolitan counties from 1965 to 1979. The steady gains in farm wealth and farmland values throughout this period support this view. But even though farm-dependent counties may have made steady gains, the evidence suggests that income growth in many other types of rural counties, notably the domi-

Area	1973-79 Total Personal Income	1973-79 Population	1973-79 Per Capita Income	1979-84 Total Personal Income	1979-84 Population	1979-84 Per Capita Income
Metropolitan	2.7	1.1	1.6	2.3	1.4	0.9
Nonmetropolitan	2.4	1.4	1.0	1.0	1.2	−0.1
Farm	−0.6	0.3	−0.9	0.8	0.5	0.3
Mining	7.0	3.3	3.6	−0.1	2.0	−2.0
Manufacturing	2.6	1.0	1.5	1.0	0.7	0.3
Government	2.8	1.5	1.3	1.8	1.4	0.4
Retirement	4.8	2.6	2.2	2.4	2.2	0.2
Trade	2.0	1.0	1.1	0.9	0.8	0.1
Mixed	0.8	0.7	0.2	0.4	1.7	−1.2
Other	6.2	3.3	2.9	2.7	2.8	−0.0

with only 11 percent for the district. The district also has larger percentages of nonmetropolitan income originating in trade and government-based counties, while the district nearly matches the national percentage of income from retirement counties.

These differences are reflected in the growth figures in the table above. Mining and agriculture-based rural counties in the district thrived during the 1969-73 period, and nonmetropolitan income grew faster in the district than in the nation. In contrast, the much slower growth in mining and agriculture since 1973 has caused district rural income growth to slow and finally lag behind rural regions elsewhere in the nation. Though the retirement, trade, and government counties in the district showed solid growth from 1965 through 1979, growth in these counties has been sluggish in recent years and not enough to offset the downward run of income declines in the agricultural and mining sectors. In summary, rural economic stress is even more pronounced in the district states than in the rest of the nation.

nant manufacturing-dependent counties, began to fall behind urban counties in 1973, and the gap proceeded to widen through the remainder of the 1970s.

Thus, the overall rural income gap appears to have narrowed from 1965 to 1973 and widened from 1973 to 1984. These two periods are now examined to determine how the various types of rural counties have fared.

The most dramatic gains in the 1965-73 period were made in farming and mining counties (Chart 2). Farm-dependent counties moved from 70 percent of the metropolitan per capita income level in 1965 to almost 92 percent in 1973. As noted above, the year 1973 was unusually profitable for U.S. agriculture due to extremely favorable commodity market conditions. Mining counties increased their incomes from 62 percent of the

TABLE 2

Average annual growth in real personal income, population, and real per capita income, U.S. metropolitan and nonmetropolitan counties, selected periods, 1965-84
(percent)

Area	1965-69			1969-73		
	Total* Personal Income	Population	Per* Capita Income	Total Personal Income	Population	Per Capita Income
Metropolitan	7.0	3.3	3.7	3.4	1.1	2.2
Nonmetropolitan	4.6	0.4	4.2	6.2	1.5	4.7
Farm	3.7	−0.6	4.3	9.3	0.5	8.7
Mining	3.8	−0.4	4.2	6.9	1.4	5.4
Manufacturing	5.0	0.9	4.2	4.8	1.3	3.5
Government	5.2	1.1	4.1	5.9	2.1	3.7
Retirement	5.3	0.9	4.3	7.7	3.6	4.0
Trade	4.0	0.0	4.0	6.1	1.0	5.0
Mixed	5.4	1.3	4.0	6.2	1.2	5.0
Other	3.3	−0.3	3.6	7.0	1.3	5.6

Source: Calculated from unpublished data, Bureau of Economic Analysis, U.S. Department of Commerce
*The personal income and per capita income data used to compute growth rates were in 1967 dollars.

metropolitan level in 1965 to 71 percent in 1973. The other traditional rural counties, where manufacturing dominates, made less dramatic improvement relative to metropolitan counties, but they still raised their incomes from about 72 percent of the metropolitan level in 1965 to about 77 percent in 1973. Similar growth was seen in the other major groups of nonmetropolitan counties, those dependent on government, trade, or retirement activities. Income in each of these county groups grew from about 68 percent of the metropolitan per capita income average in 1965 to the 74 to 78 percent range in 1973.

From 1973 to 1984, when the overall income gap was widening, some types of nonmetropolitan counties fared better than others. Only the retirement counties, however, were able to improve their relative wellbeing, advancing from 74 percent of the metropolitan level in 1973 to 77 percent in 1984. Incomes of all other types of nonmetropolitan counties fell further behind the metropolitan level.

The most dramatic drop was in farm counties, where real per capita income fell from 91 percent of the metropolitan level in 1973 to 76 percent in 1984. Incomes in manufacturing counties started the period at 77 percent of the metropolitan level and showed a slow but steady downward trend to 75 percent by 1984.

Relative per capita income in mining counties fluctuated during the period but ended 1984 at about 71 percent, the same as in 1973. Government and trade counties also showed little net change from their 1973 positions. Government counties had about 75 percent of the metropolitan level in 1973 and 74 percent in 1984, while trade counties dropped from 78 percent of the metropolitan income level to 76 percent.

Area	1973-79 Total Personal Income	1973-79 Population	1973-79 Per Capita Income	1979-84 Total Personal Income	1979-84 Population	1979-84 Per Capita Income
Metropolitan	1.9	0.9	1.0	1.8	1.0	0.8
Nonmetropolitan	2.2	1.4	0.8	1.2	0.9	0.3
Farm	−0.2	0.7	−0.9	0.5	0.6	−0.1
Mining	4.7	2.0	2.6	−0.1	1.1	−1.2
Manufacturing	2.0	1.1	0.9	0.9	0.5	0.4
Government	2.7	1.8	0.8	2.1	1.3	0.8
Retirement	5.0	3.3	1.7	3.3	2.6	0.7
Trade	2.1	1.1	1.1	1.0	0.7	0.3
Mixed	1.6	1.2	0.4	0.9	0.8	0.1
Other	3.4	1.8	1.6	0.7	1.2	−0.5

Rural and urban economic activity

Real per capita income reflects the average well-being of the population in a county group. By looking at changes in the gap between urban and rural per capita incomes, it can be determined whether the average level of wellbeing of rural America is converging or diverging with urban wellbeing. To assess the overall vitality of the rural economy, however, other measures of economic activity are needed.[4]

One measure of change in economic activity at the county level is the rate of growth in total real income. The rate of population growth also is useful, since population change reflects the number of local workers available and the number of local consumers of goods and services. Table 2 shows average annual rates of growth in total real income, population, and real per capita income for metropolitan and nonmetropolitan counties. To the extent that the data allow, they are divided to coincide with business cycle peaks.

As shown in Table 2, nonmetropolitan counties had a small 0.5 percent advantage over metropolitan counties in per capita income growth from 1965 to 1969. That advantage was consistent with the slow upward movement in the gap ratio shown in Chart 2. During that period, however, there were indications that economic activity was increasing faster in metropolitan counties. Metropolitan rates of growth in both total personal income and population exceeded the nonmetropolitan rates. Thus, while the per capita in-

[4] H. Perloff, "Problems of Assessing Regional Economic Progress," *Regional Income: Studies in Income and Wealth*, National Bureau of Economic Research, Princeton University Press, 1957, pp. 48-49.

come gap was slowly narrowing from 1965 to 1969, nonmetropolitan counties were not showing robust growth in economic activity.

Sluggish rural economic activity in the 1965-69 period was particularly evident in terms of population growth. While metropolitan population grew an average of 3.3 percent a year, the population of nonmetropolitan counties grew only 0.4 percent a year. Farm and mining-dependent counties actually lost population during this period. Taken in conjunction with the slower total income growth in nonmetropolitan counties, therefore, nonmetropolitan counties were not keeping up with metropolitan areas in generating new economic activity.

The period from 1969 to 1973 was a far different story. During that period, total personal income grew faster in all types of nonmetropolitan counties than in metropolitan counties. Population growth in nonmetropolitan counties also exceeded growth in metropolitan counties. Only the farm and trade counties lagged metropolitan counties in population growth. That was also a period when rural per capita incomes grew more than twice as fast as metropolitan incomes. Further, the 1969-73 period saw the emergence of strong population and income growth in retirement counties, a trend that has persisted throughout the 1970s and 1980s. Population in retirement counties grew at average annual rates more than three times the rates in metropolitan areas. The rate in retirement counties was well over twice the rate of the average nonmetropolitan county. The 1969-73 period, then, was a time of vigorous economic activity in rural America and a time of convergence in the well-being of rural and urban residents.

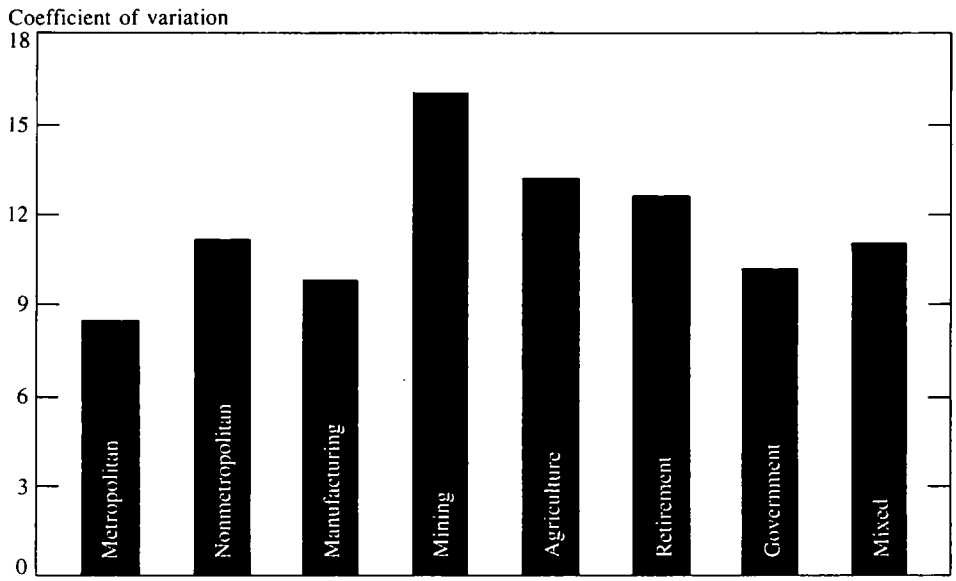
The gap in per capita income growth widened substantially between rural and urban counties from 1979 to 1984. This divergence underscores the conclusion that the economic health of rural America has worsened in the 1980s.

From 1973 to 1979, indicators of broad economic activity remained strong in nonmetropolitan counties. All types of nonmetropolitan counties—except those dependent on farming—had faster population growth during this period than metropolitan counties. Moreover, more rapid growth in nonmetropolitan personal income accompanied the growth in rural population. However, not only was this late 1970s growth in rural population temporary, but it was also concentrated in a small subset of rural counties—those dependent on retirement, mining, and government. Population increased 3.3 percent in counties dependent on retirement, 2.0 percent in counties dependent on mining, and 1.8 percent in counties dependent on government. In comparison, population growth in metropolitan areas averaged only 0.9 percent. Further, on average, total real personal income was falling in farm counties.

The gap in per capita income growth widened substantially between rural and urban counties from 1979 to 1984. Table 2 shows that the expanding overall gap between rural and urban wellbeing was also accompanied by slower rural rates of growth in total personal income and population. This divergence underscores the conclusion that the economic health of rural America has worsened in the 1980s. While the divergence in per capita incomes from 1973 to 1979 was associated with generally robust rural population growth, the divergence of the 1980s was in tandem with slower income and population growth in rural areas than in urban areas.

Thus, growth in the average level of wellbeing and the volume of rural economic activity have slowed significantly since 1979, both absolutely and relative to gains in metropolitan counties. In terms of income growth, the parts of rural America that have lagged the most are the tradi-

CHART 3
Variation in mean per capita income, metropolitan and nonmetropolitan counties, 1965-1984



tional rural counties—those depending on agriculture, manufacturing, and mining. Nonmetropolitan counties with economies based on government and retirement activities continue to outperform the metropolitan areas in both income and population growth.

Instability in rural incomes

Rural incomes have not only lagged behind metropolitan incomes, they have also ranged more widely over time—that is, they have not been stable. Since 1965, all of the nonmetropolitan county groups have experienced a wider range of fluctuations around the 20-year mean per capita income than have the metropolitan counties. This is illustrated in Chart 3, which plots the coefficient of variation, a statistic that measures the variation of observations around their mean value.[5]

The wide variations in income suggest that rural counties are highly sensitive to short-term economic events that affect the value of the commodities or goods they produce. As might be expected, the commodity-dependent counties—those depending on agriculture and mining—show the greatest instability. Those based on manufacturing and government activities show the least instability.[6]

[5] The index is the coefficient of variation (CV) of weighted per capita income in each group of counties. CV is the standard deviation of the group's weighted mean per capita income expressed as a percentage of the weighted mean per capita income. Large coefficients of variation indicate a large amount of variation within a county group around the group's mean per capita incomes.

[6] Rural counties also have had wider disparity in income at any particular moment in time. Some mining-dependent counties, for example, may consistently be found in the high-income range while others hover near the poverty line. The average of yearly coefficients of variation in the incomes of county groups from

The rural income gap: long-run trend or cyclical?

Views differ on whether the gap in rural and urban per capita incomes should be expected to disappear or to become larger as time passes.[7] One consideration is whether the gap is associated with phases of the business cycle. For example, urban per capita incomes might increase faster than rural per capita incomes during business expansions. If so, the per capita income gap would tend to widen during the expansion phase of the business cycle and the size of the gap would be partially a cyclical phenomenon.

A procedure to test for the influence of the business cycle is to express the gap in real per capita income over the past 20 years in terms of an annual index and then compare movements in that index with annual changes in real Gross National Product (GNP). The aggregate income gap index measures the dispersion of per capita income for each category of counties around the national average per capita income.[8] If per capita incomes of rural and urban counties are converging over time, this index should become smaller, indicating that the per capita income for each region is moving closer to the national average. The index also reflects per capita income differences between the various types of rural counties. Thus, the index is a measure of both the degree of income dispersion between rural and urban counties and between rural counties over the past 20 years.

Chart 4 plots the per capita income gap index against annual changes in real GNP. Examination of the gap index by itself supports the findings that the difference between urban and rural incomes narrowed and then widened. The index fell until 1973, indicating that the gap between rural and urban per capita incomes narrowed. Since 1973, however, the index has increased slightly, indicating that the income gap widened. The convergence of urban and rural incomes seems to have stalled for ten years.

Comparison of the gap index with annual percentage changes in real GNP shows no correlation. That conclusion is supported when the

1965 through 1984 shows that nonmetropolitan counties have a significantly wider range of income levels than metropolitan counties. Of the nonmetropolitan counties, those depending on manufacturing, retirement, and mixed bases have average disparity measures close to that of metropolitan counties. Farming and mining counties have much wider variations.

[7] Some analysts expect rural and urban per capita incomes to converge over a long time. Arguments for this view are based on a model of regional growth that predicts labor and capital resources will be sufficiently mobile to equalize rates of return to these resources over geographical areas. Resource movement continues until wage rates—and ultimately, per capita incomes—converge between regions.

Others view regional income gaps as the result of long-run structural problems that will not be reversed by resource reallocations in the economy. According to this view, once a region obtains some growth advantage, it will continue to grow faster than other regions. For example, agglomerative (or mutual attraction) forces in urban areas may arise from the diversified pools of skilled labor, services, and intermediate goods available mostly in urban counties. These forces may give a growth advantage to urban areas that will be cumulative and result in larger income gaps between rural and urban areas as the national economy expands.

[8] The index of the regional income gap derived from J. Williamson, "Regional Income Inequality and the Process of National Development: A Description of the Patterns," *Economic Development and Cultural Change*, 1965, pp. 1-45, and O. Amos, "The Sensitivity of Regional Income Variation to Cyclical Economic Fluctuations," *Review of Regional Studies*, Spring 1983, pp. 4-11.

$$Vw = \frac{\left(\sum_{i=1}^{n}(yi-y)^2 \, fi/N\right)^{1/2}}{y},$$

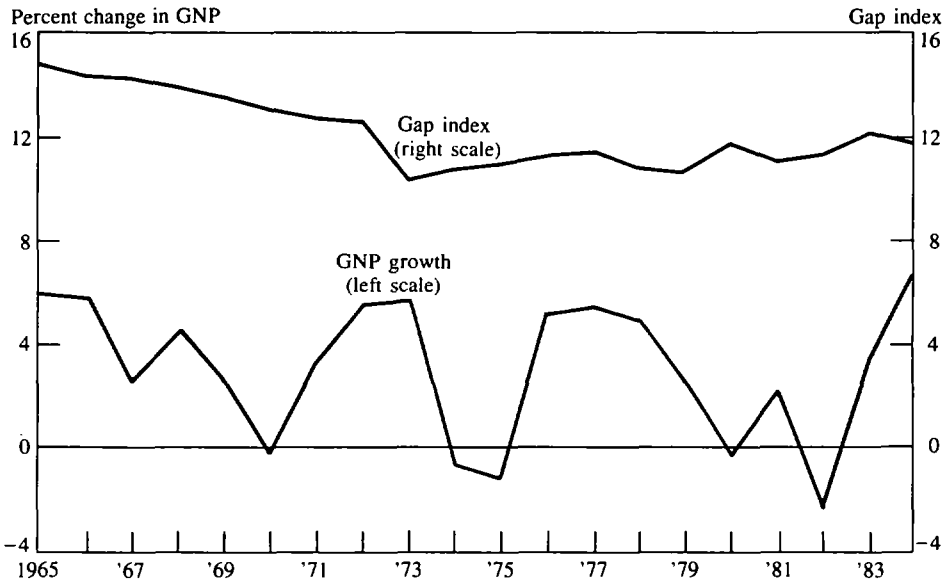
where

yi = mean income of the ith region
y = national mean income
fi = population in region i
N = national population
n = number of regions

In this article, there are seven nonmetropolitan regions defined by their economic base categories and one metropolitan region. The "other" category, which included 86 nonmetropolitan counties that could not qualify in any economic base categories, was eliminated from the national totals and, thus, did not enter into the calculation.

CHART 4

Relation of metropolitan to nonmetropolitan income dispersion to growth in real GNP



income gap index is regressed on the percentage change in GNP and some time variables. The coefficient that reflects the relationship between the gap index and percentage change in real GNP is not statistically different from zero.[9]

Thus, the rural income gap does not appear to respond to business cycles. This finding supports the view that the rural income problem is more a long-term structural issue than a manifestation of the business cycle. That being the case, such variables as public infrastructure, education and job skills, and institutional change take on added importance as factors affecting rural America.

[9] The estimated equation is:

$$Vw = \underset{(33.04)}{16.17^{*}} - \underset{(-0.23)}{0.01}\ GNPR - \underset{(-7.51)}{0.69^{*}}\ Year + \underset{(5.86)}{.025^{*}}\ Year^2$$

The t values in parentheses and the asterisks indicate regression coefficients that are significant at the 0.001 level. Vw is the gap index with a range shown in Chart 5: Year = 1 through 20, with 1965 = 1; GNPR is the real annual growth in GNP, with a range from −2.13 to 6.80. Summary statistics are:

Durbin-Watson = 1.43, or in the indeterminate range for positive autocorrelation. $R^2 = 0.86$. Use of a first order autoregressive correction procedure yielded results similar to those reported.

A second equation was estimated using the nonmetropolitan/metropolitan per capita income ratio as the dependent variable in place of Vw. Using the gap ratio from Chart 2 as the dependent variable also revealed no statistically significant relationship between GNPR and the gap ratio given the time trend in the gap ratio.

$$\frac{\text{Nonmetro Per Capita Income}}{\text{Metro Per Capita Income}} = \underset{(63.0)}{0.66^{*}} + \underset{(0.52)}{.0005}\ GNPR + \underset{(6.80)}{.014}*Year - \underset{(-5.34)}{.0005}*Year^2$$

Durbin-Watson = 1.26
$R^2 = 0.83$

Forces leading to rural economic change

As shown above, rural incomes have not made gains on urban incomes in the past ten years. And despite slight overall increases, real per capita incomes have declined in some rural counties during the last five years, especially in many of the traditional rural counties depending on mining and agriculture. In addition, the gap between rural and urban incomes appears to be structural, unrelated to the business cycle.

What forces explain the slowdown in the rural economy? This section discusses four forces that appear to have contributed to rural economic problems in the 1980s: international factors, the shift to services, deregulation, and agricultural change.

International factors

Several international factors have played a critical role in the U.S. economy in recent years. Those that have affected rural industries are brought into focus by examining the international forces at work in the national economy and then looking at how traditional rural industries have performed.

Mounting international competition has put many U.S. industries on the defensive in the 1980s. Good examples include basic manufacturing, agriculture, and forest products. A strengthening of the U.S. dollar from late 1979 to early 1985 intensified the competition by giving foreign producers a price advantage. Also, a deep worldwide recession in 1981-82 cut demand for many products traded in international markets, including food and energy, so that producers from various countries were left to compete for a stagnant or declining total world market. As the effects of the world recession linger, many international markets, especially for commodities, remain weak.

The net result of these international factors is that U.S. industries that export or compete against imports have not performed well in the 1980s. And, it is just such industries that form the economic backbone of the traditional rural economy.

Rural manufacturing has been especially subject to foreign competition in recent years. Rural manufacturing plants tend to produce labor-intensive goods and, thereby, face stiff competition from abroad where wage rates are often lower than in the United States. For example, the textile industry in the United States, which is concentrated in the rural Southeast, has seen a rise in textile imports from Pacific Basin countries that has replaced a significant share of domestic production in recent years. As a result, textile makers, like many other rural manufacturers, have had disappointing sales in the 1980s and employment has been pared.

U.S. industries that export or compete against imports have not performed well in the 1980s. And, it is just such industries that form the economic backbone of the traditional rural economy.

Agriculture—a uniquely rural industry—has endured a deep recession in the 1980s that to a considerable degree can be attributed to developments in international food markets. Agriculture's downturn has put many rural communities under economic stress. Recent surveys suggest that nearly a fourth of rural nonfarm businesses are having severe financial problems.[10]

The energy industry also has undergone a sharp downturn due mainly to international factors. Like agriculture, energy production—the extraction of oil, gas, and coal—is largely a rural industry. Increased international energy supplies and stagnant

[10] *Agricultural Credit Survey*, Federal Reserve Bank of Kansas City, February 1986.

world demand have led to significant declines in energy prices in recent years. Because of the downturn in the international energy industry, many rural regions that developed rapidly when the industry boomed have recently had extremely weak local economies.

The forest products industry also has been affected by increased foreign competition, notably from Canada. Lumber production in the Northwest and, to a less degree, the Southeast has been curtailed partly because of the increase in imports. Thus, local economies in regions that depend on lumber production have been weak.

In general, the traditional rural economy has been adversely affected by international forces in the 1980s. Manufacturing, agriculture, energy, and forest products industries all have had difficult economic problems as a result of increased foreign competition, the strong dollar, and weak world markets. While the same international factors also have had negative effects on the urban economy, metropolitan areas generally have more diverse economies that buffer some of these effects. Rural economies, on the other hand, normally depend upon one principal industry, and none of the traditional rural industries have fared well in the 1980s.

The shift to services

While many U.S. basic industries have been in recession through much of the 1980s, the service portion of the U.S. economy has boomed. But urban areas have benefited more from that development than rural areas. Most rural counties essentially have been left behind in the nation's shift to a service-based economy.

Service jobs are less important in the rural economy than in the urban economy. Service jobs were about 15 percent of total rural employment at the end of 1984, compared with 22 percent of total urban employment. Thus, service industries are about half again more important in urban areas than in rural areas.[11] This difference means that if the service sector of the economy continues to grow faster than other sectors, most rural counties will likely have slower growth in total employment than urban counties.

Service jobs have grown in rural areas, but much more slowly than in urban areas. More than two-thirds of the new jobs created in the United States between the fourth quarter of 1979 and the fourth quarter of 1984 were in services—over 3.6 million jobs. Seven out of every eight of the new service jobs were in metropolitan areas. Over this period, service jobs increased 24.1 percent in metropolitan areas and only 18.0 percent in rural areas. Chart 5 shows that between 1979 and 1984 the increase in rural service jobs was concentrated in counties depending on retirement and government activities, where the percentage increase was greater than in metropolitan areas. Service jobs in the traditional rural counties increased much less than in metropolitan areas.

Most rural communities are ill-situated to benefit from the U.S. economy's shift to services. Recent studies indicate that the types of service employment that have increased most rapidly are business services, computer and data processing services, and temporary help services.[12] Firms that provide these types of services prosper in metropolitan areas, where potential clients are concentrated. They are not likely to locate in rural areas, where clients are fewer and much more dispersed.

Deregulation

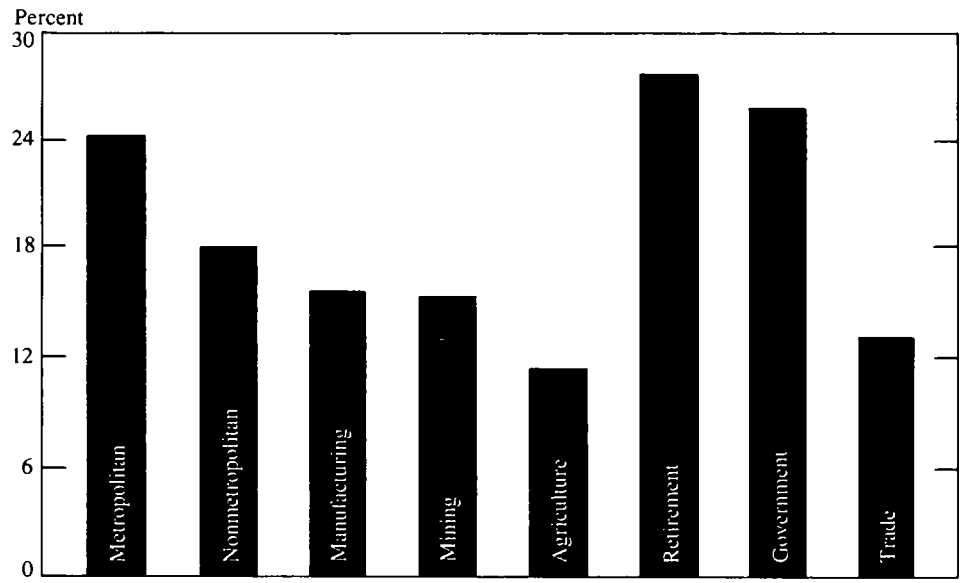
Deregulation, especially of financial markets, has been another force for rural economic change

[11] Federal Reserve Bank of Kansas City analysis of Bureau of Labor Statistics data. Services include lodging, business services, repair services, and health, educational, and social services, Standard Industrial Classification 2-digit groups 20 through 89.

[12] Wayne J. Howe, "The Business Services Industry Sets Pace in Employment Growth," *Monthly Labor Review*, April 1986, pp. 29-36.

CHART 5

Percentage change in service employment, metropolitan and nonmetropolitan counties, fourth quarter 1974 to fourth quarter 1984



in the 1980s. In essence, deregulation appears to have forced businesses in many rural areas to pay higher interest rates and, in some cases, higher transportation rates than in the 1970s, when both the banking and transportation industries were regulated.

Many analysts argue that deregulation of the banking industry has raised interest rates to rural borrowers.[13] When the interest rates banks could pay on deposits were regulated, the cost of funds to rural banks was lower, overall, than the cost of funds to urban banks. Many rural banks had large demand deposits that paid no interest. Because the cost of their funds was lower than metropolitan banks, rural banks charged lower interest rates for their loans. But with the lifting of interest rate ceilings under the Depository Institution Deregulation and Monetary Control Act of 1980, nearly all rural banks had to pay more to attract deposits. Thus, deregulation contributed to an increase in the cost of funds of most rural banks in the 1980s. As the cost of their funds increased, so did the interest rates they charged rural borrowers.

While the cost of capital in rural areas tended to be below the market in the 1970s, it has been about the same as the market in the 1980s. Hence, while rural business activity was spurred by low-cost capital in the 1970s, the higher cost of capital in the 1980s has slowed rural business activity. This negative effect of deregulation has been offset, at least to some degree, by the higher interest

[13] See Peter J. Barry, "Deregulation: A More Competitive Rural Credit Market," paper delivered at the meeting of the Federal Reserve System Committee for Agriculture and Rural Development, Kansas City, May 31, 1984.

rates rural savers receive on their deposits. On balance, however, economic activity in many rural communities probably has been negatively affected by the higher interest rates from deregulation. Higher debt service costs have an immediate effect on rural business activity while higher returns to rural savers increase rural wealth, which tends to influence spending and economic activity over a longer period of time.

Deregulation of the transportation industry has not affected the rural economy as much as the deregulation of banking, but it too has brought changes. Generally, transportation service to rural areas has not been reduced, but corresponding prices have increased in some cases, especially when compared with transportation costs for metropolitan areas. For example, airline service to rural areas has increased since deregulation, but the number of flights that service metropolitan areas has increased more.[14] Airfares to and from some rural locations have increased, while heightened hub travel at major airports has actually driven down airfares between many major cities. Truck freight hauling rates have risen in some rural areas, particularly remote places.[15]

Some small farm-dependent communities are likely to continue to suffer economically due to the evolving farm structure of U.S. agriculture.

In the past, regulation contributed to lower interest rates and transportation costs in rural areas than in metropolitan areas. Recently, though, deregulation has brought new market forces to bear on rural areas. And coming at a time when the rural economy was under many downward pressures, the effects of deregulation may have contributed to that stress.

Agricultural change

Farm financial stress is the most widely known reason for rural economic problems. That stress is leaving a trail of serious marks on the rural economy and is exacerbating an already well-established trend in U.S. farm structure. Increasingly, U.S. agriculture is dominated by a large number of small part-time farms that earn most of their family income off the farm and by a relatively small number of very large farms that produce most of the nation's food and fiber. The farms in between, the closest remaining relative to the "family farm," are those on the decline. Since many rural communities have built their local economy around servicing a large number of medium-sized farms, it is not surprising that these communities are having economic problems.

Recent data on U.S. farm numbers verify these trends. In 1984, 70 percent of the United States' 2.3 million farms had annual sales of less than $40,000. The vast majority of these farmers earned more income off the farm than on the farm. Together, they produced only 15 percent of U.S. farm products. But 1 percent of the nation's farms had annual sales of more than $500,000 and these farms produced nearly 30 percent of U.S. farm products.

A distinguishing feature of the large farms that control a mounting proportion of U.S. farm production is their sophistication in purchasing inputs and services and in marketing the commodities they produce. Dealing in large volumes, these farm operators often bypass small com-

[14] T. Moore, "U.S. Airline Deregulation: Its Effect on Passengers, Capital, and Labor," *Journal of Law and Economics*, XXIX(1), April 1986, pp. 1-28.

[15] See U.S. Department of Transportation, *Fourth Follow-up Study of Shipper/Receiver Mode Choice in Selected Rural Communities, 1984-1985* and U.S. Department of Transportation, *Trucking Deregulation in 1986.*

munities in search of better prices. Meanwhile, most of the small farms tend to be located near cities that offer employment opportunities. Such jobs often are not available in small farm communities. Some small farm-dependent communities, then, are likely to continue to suffer economically due to the evolving farm structure of U.S. agriculture.

Thus, a confluence of forces has negatively affected the rural economy. International competition and a strong dollar served to put traditional rural industries at a disadvantage in the first half of the 1980s. Also, the rural economy has not participated fully in the shift to service jobs. Moreover, deregulation has brought new market forces to bear on rural areas, and structural change in agriculture has placed financial and economic pressures on many rural communities tied to an earlier farm structure.

Conclusions

Rural America is in the midst of difficult economic change. A few of the nonmetropolitan counties, especially those depending on retirement and government, have continued to show income growth since 1979. Overall, however, the growth in rural incomes has slowed significantly since the 1970s, compared with growth in metropolitan incomes. The divergence in income growth does not appear correlated with movements in the business cycle; rather it appears related to longer term structural problems in rural areas. Thus, the causes for rural America's lagging incomes probably go well beyond short-run fluctuations in the demand for the goods that rural America produces.

Traditional rural America faces the most difficult problems. Real per capita income in farm-dependent counties has declined on an average annual basis since 1973. Counties depending on mining and manufacturing have also shown slow growth or declines in average income in recent years. Together, these three groups of traditional rural counties account for more than half of the rural population and income in the United States.

A new group of counties is moving to the fore of the rural economy. The bright spot in the rural mosaic currently is the strong growth in the retirement counties. Along with increases in the number of people seeking environmental amenities with retirement, the steady growth in transfer payments and other sources of nonwage income in these rural counties may provide the basis for a steady increase in the growth in the retirement-dependent counties. Similarly, the rural counties that depend on military bases, institutions of higher learning, and other government installations might expect stable growth in incomes. Rural counties that are becoming wholesale and retail trade centers may be another group with growth potential, though perhaps at the expense of traditional mainstreet business in neighboring small communities.

Much public attention has been focused on farm problems in the 1980s. But as the results of this study suggest, the economic problems now facing rural America encompass far more than just agriculture. Thus, as policymakers begin to consider rural problems, their challenge will be to craft policy that addresses the full scope of rural economic change. In the second article of this series, some new objectives and directions for rural economic policy will be explored.

Appendix

Definitions of each of the nonmetropolitan areas were derived from those used by Bender and others at the Economic Research Service (ERS), U.S. Department of Agriculture. Manufacturing counties received at least 30 percent of total labor and proprietor's income from manufacturing enterprises in 1979. Mining counties received at least 20 percent of this income from mining sectors in 1979. Farming counties realized at least 20 percent of their labor and proprietor's income from agriculture over the 1975-79 period, based on the weighted mean contribution of this income over the entire period. Government counties received at least 25 percent of their income from government payrolls. Retirement counties are identified by 1970-80 inmigration patterns. If the number of inmigrants over the age of 60 comprised more than 15 percent of the 1980 over 60 population, the county was assumed to be a retirement county. Income in these counties is likely to depend highly on transfer payments, private pensions, dividends, and interest earnings. Mixed counties are those meeting more than one of the economic base criteria. Diverse counties do not fall into any of the other categories mentioned and may be trade centers that derive income by providing goods and services to surrounding counties. Of the 86 counties classified as "other," half were poverty counties and half were federal land counties that did not qualify for any of the economic base categories.

The approach in cataloging the counties was to emphasize a single economic base for each county and allow the poverty and federal lands counties to sort to the economic base group where they belonged. Counties that satisfied more than one of the economic base groups were assigned to the mixed group. This process allowed an accounting of population, income, and employment shares for each type of rural county.

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