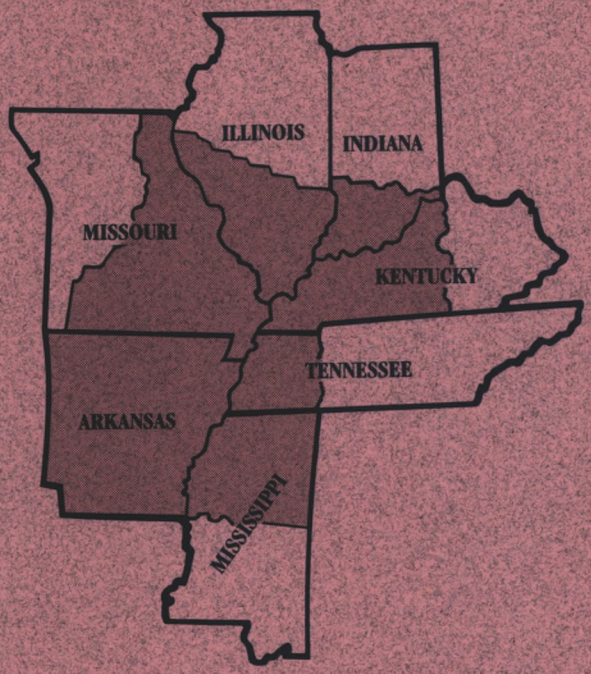
June 1989

Pieces of Eight

An Economic Perspective on the 8th District

THE FEDERAL RESERVE BANK of ST. LOUIS

THE EIGHTH FEDERAL RESERVE DISTRICT



CONTENTS

Pieces of Eight—An Economic Perspective on the 8th District is a quarterly summary of agricultural, banking and business conditions in the Eighth Federal Reserve District. Single subscriptions are available free of charge by writing: Research and Public Information Department, Federal Reserve Bank of St. Louis, Post Office Box 442, St. Louis, MO 63166. The views expressed are not necessarily official positions of the Federal Reserve System.

The Relative Performance of the District's Major Metropolitan Areas

by Thomas B. Mandelbaum

Metropolitan economies have outperformed rural areas during the 1980s. Total employment, personal income and per capita income, for example, rose more than twice as fast in metropolitan areas than in rural areas between 1979 and 1986. Metropolitan areas also tend to have substantially higher per capita incomes and different employment compositions, with proportionately fewer manufacturing workers.[1] Given these differences in performance and structure, to evaluate a particular metropolitan economy, it is more meaningful to make comparisons with other metropolitan areas than with states or the nation. This article compares the Eighth District's four largest metropolitan areas (Little Rock, Louisville, Memphis and St. Louis) with the nation's leading 100 metropolitan areas as listed in Data Resources' *Metro Insights* (1988). This article focuses on three major areas: employment growth, insulation from cyclical fluctuations and per capita income.

Employment Growth

As the table shows, payroll employment growth has been relatively slow in each of the four District metropolitan areas since 1977. Memphis, with a 2.1 percent annual growth rate of payroll employment between 1977 and 1987, had the most rapid job expansion of the four areas, but still ranked only 56th among the 100 areas. Louisville's 0.9 percent rate was less than half of the 2.6 percent average for all 100 areas.

The employment growth in the region's metropolitan areas has shown relative improvement since the last recession. Between 1983 and 1987, Memphis' employment rose at a 4 percent rate, exceeding the 3.4 percent average for the 100 metropolitan areas. Louisville's 3.2 percent rate and St. Louis' 3 percent rate since 1983 approached the 100-metropolis average, while Little Rock's 2.8 percent pace was not far behind. As shown in the first table of the Statistics section at the end of this issue, payroll employment continued to rise in 1988 in each of the District's major metropolitan areas. Last year's job growth ranged from 1.5 percent in St. Louis to 3.1 percent in Little Rock and Louisville.

After reaching record highs in the late 197Os, U.S. manufacturing employment plunged during the severe recession of the early 1980s. While trending upward since 1983, the number of manufacturing jobs has not yet matched the 1979 level. Thus, the decline in manufacturing employment between 1977 and 1987 in each of the four leading District metropolitan areas is not unexpected. In fact, of the nation's 100 leading metropolitan areas, half experienced declining manufacturing employment during that period. The drop in factory jobs was particularly severe in the four District metropolitan areas, as evidenced by the low rankings shown in the table. These declines contributed heavily to the areas' low rankings in payroll employment growth.

In 1988, manufacturing employment expanded in each of the metropolitan areas. Little Rock's 6.8 percent gain led the District's major metropolitan areas. Memphis manufacturing employment rose by 2.8 percent while the 0.9 percent and 1.1 percent gains in Louisville and St. Louis were more modest.

Cyclical Sensitivity

In addition to its growth, an economy's cyclical stability is a key measure of performance. During periods of economic downturn, economies more sensitive to the national economy have relatively larger increases in unemployment rates. State and local governments are burdened with increased costs for unemployment compensation and other services while collecting less in taxes. Cities are also forced to bear the social costs associated with increased joblessness. During recovery periods, rapid employment and population increases in cyclically sensitive areas may strain their capacities to provide utilities and educational services.

To a considerable extent, an area's sensitivity to business cycles is related to its industrial structure. If a metropolitan economy is heavily concentrated in durables manufacturing, for example, it tends to be more sensitive to national economic changes than one dominated by government services. The insulation rankings listed in this article's table indicate how responsive the industry mix in that area is to national business cycles.[2] A relatively insulated area, with a low numerical ranking, has an economy that is not prone to

Economic Indicators for the Eighth District's Largest Metropolitan Areas

	Little Rock	Rank	Louisville	Rank	Memphis	Rank	St. Louis	Rank
Employment, Compounded Annual Rate of Change, 1977-87								
Nonagricultural Payroll[1]	1.9%	66	0.9%	88	2.1%	56	1.4%	79
Manufacturing[1]	−1.7	78	−2.1	84	−1.4	72	−1.4	71
Insulation Index, 1987[2]		134		258		104		237
Per Capita Income, 1987[1]	$13,745	86	$14,423	75	$13,966	83	$16,487	36
Per Capita Discretionary Income, 1987[1]	7,842	71	8,143	65	7,777	77	9,348	25
Cost of Housing, 1987[1, 3]	82,543	91	81,131	93	93,845	72	93,544	74
State and Local Taxes Per Capita, Fiscal Year, 1986[4]	1,196	89	1,346	72	1,231	84	1,299	78

SOURCE: Data Resources (1988). *Metro Insights.*

[1]Ranks are out of 100.

[2]Ranks are out of 313.

[3]Median price of non-condominium home.

[4]Ranks are out of 98.

severe cyclical fluctuations, while a high numerical ranking indicates concentration in industries that have tended to experience sharp employment changes. Unlike the employment indicators, the insulation measure is ranked among 313 metropolitan areas in the nation.

As shown in the table, Little Rock and Memphis have job compositions that tend to insulate them from national business cycles. Little Rock is the 134th most insulated of the 313 metropolitan areas measured. As the capital of Arkansas, it has a large, stable, government sector. It is also the commercial and distribution center for the state with a heavy concentration of business, financial, medical and other services. The area's three largest firms, for example, include a hospital and two utilities.

Memphis, whose industry mix ranks among the third most insulated metropolitan areas, has a relatively small manufacturing sector, a relatively large government sector, and a high concentration of jobs in distributional services firms. Federal Express Corporation is, by far, Memphis' largest employer and has contributed heavily to the area's strong job growth in since 1983.

Louisville and St. Louis have insulation indexes of 258 and 237, respectively. They therefore rank among the quarter of the 313 metropolitan areas with the least insulated industrial compositions. If the national economy slides into recession in the next few years, as some observers think likely, these areas may experience a relatively severe downturn.

Although Louisville lost more than 25,000 manufacturing jobs between 1978 and 1983, mostly in the production of metals, machinery and transportation equipment, durables manufacturing continues to be an important sector of its economy. This dependence on durables manufacturing, such as household appliances and transportation equipment, contributes to Louisville's relative sensitivity to national economic fluctuations. General Electric appliance factories are Louisville's leading employer. The expansion of transportation equipment production in recent years has fueled growth in a number of related sectors but makes the area more susceptible to sharp contractions during future recessions. A light truck plant in the Louisville area is undergoing a major expansion and a number of parts suppliers are locating in the area to serve the region's motor vehicle plants.

The growth of health, educational and business services has somewhat countered Louisville's trend toward unstable industries. These service-producing sectors contributed more than 12,000 jobs to the local economy between 1983 and 1987.

St. Louis is one of the more diverse metropolitan economies in the nation, with a wide variety of business, educational, medical, transportation and financial services. Despite this, St. Louis ranked relatively low in insulation from business cycles

because it has a high concentration in durables goods production, particularly in motor vehicle production, which tends to be highly cyclical. The area's largest employer, McDonnell-Douglas Corporation, has enjoyed steady growth in recent years. Since military aircraft is the firm's major product in St. Louis, however, future cuts in the defense budget—which many think likely—may result in employment declines in the 1990s.

Per Capita Income

Per capita personal income is an approximate indicator of the average economic welfare of an area's population. Personal income is a broad measure, including wages and salaries, other labor income, transfer payments, dividends, interest and rent. Per capita personal income in Little Rock, Louisville and Memphis was fairly low in 1987. The areas rank 86, 75 and 83, respectively, among the 100 metropolitan areas considered. St. Louis residents fared considerably better, with average personal incomes of $16,487 in 1987, the 36th highest.

Per capita income, however, does not take into account intercity differences in state and local taxes and in other costs-of-living. These are factors which may well affect the real buying power of an area's residents and could affect the intercity rankings. To partially account for these differences, a measure of discretionary income was calculated by Data Resources which better indicates the actual buying power of each area's residents. This measure adjusts each metropolitan area for differences in federal, state and local taxes, housing costs and "other labor income" that isn't immediately available for spending.[3] As the table shows, per capita discretionary income ranked considerably higher in each District metropolitan area than per capita personal income. St. Louis moved up 11 places to 25th place after the adjustments were made, while Little Rock moved up 15 places to 71.

The lower state and local taxes and housing costs that contributed to this improvement are shown in the table. Housing costs were relatively low in each of four District metropolitan areas and, in Little Rock and Louisville, were among the 10 lowest of the 100 areas considered. State and local taxes per capita are also shown to be well below the median in each of the four areas.

Summary

This comparison of the Eighth District's four largest metropolitan areas with others in the nation suggests that their workforces have grown relatively slowly between 1977 and 1987. One factor contributing to this slow growth has been the comparatively sharp contractions of their manufacturing sectors. The employment compositions of Little Rock and Memphis are conducive to relative stability, while those of Louisville and St. Louis are more sensitive to fluctuations in national business cycles. Except for St. Louis, per capita incomes are rather low, but are partially offset by relatively low taxes and housing costs.

Although some of these comparisons are not particularly encouraging, it is important to recall that the growth comparisons are for a particular period and do not necessarily reflect current or future trends. In fact, employment in Little Rock, Louisville, Memphis and St. Louis has accelerated in recent years. Despite this limitation, the rankings presented in this article do allow one to assess how the District's largest metropolitan areas are faring in comparison with others throughout the nation as a starting point for understanding their strengths and weaknesses.

FOOTNOTES

[1]See Kenneth C. Carraro and Thomas B. Mandelbaum, "Rural Economic Performance Slows in the 1980s". *Pieces of Eight - An Economic Perspective on the Eighth District* (March 1989), pp. 5-8.

[2]The insulation index for a metropolitan area is the standard deviation of the year-to-year national change (1977-87) in an industry's employment, multiplied by the metropolitan area's share of total employment in that industry summed over 432 industries. Thus, a particular area's actual cyclical insulation will differ from that suggested by the insulation index to the extent that its industries' stability differs from their national counterparts.

[3]Other labor income primarily consists of contributions to private pensions and welfare funds and to privately insured workmen's compensation funds, components of income which are not immediately spendable.

Agriculture

Japan: An Important Export Market for U.S. Beef Producers?

by Jeffrey D. Karrenbrock

To reduce its large annual trade deficit with Japan and ease growing sentiment for retaliatory trade sanctions, the United States has encouraged Japan to import more U.S. goods. Some success was achieved last summer as Japan agreed to liberalize its import policies for beef and citrus products. This article looks at the importance of Japan as an export market for U.S. beef producers and examines the significance of beef exports in determining the United States' trade balance with Japan.

Background

Japan's restrictions on agricultural imports stem from its desire to be self-sufficient in agricultural production. Although it does not have a comparative advantage in the production of many food products, Japan's desire to be self-sufficient can be traced to memories of food shortages after World War II and temporary embargoes on shipments of commodities, such as the U.S. soybean embargo in 1973. By putting tariffs and quotas on imported goods, the domestic price of agricultural goods becomes artificially high, subsidizing domestic food production. Without this protection, Japanese food production would be lower and imports of food would rise.

The national interest in self-sufficiency is reinforced by the political power of agricultural interests. Japanese electoral districts allow farmers to have a disproportionately strong voice relative to their numbers in the government. Furthermore, Japanese farmers are well-organized through the Agricultural Cooperative Association. Nearly all of the five million farm households in Japan are members of agricultural cooperatives. Although only about 8 percent of the households are beef producers, the national cooperative organizes concerted efforts by all local grower/producer cooperatives when an issue such as trade liberalization threatens farm interests.

Japanese Beef Import Restrictions

From 1958 until 1964, beef imports were controlled in terms of value, but, since 1964, they have been controlled by physical volume.[1] The Livestock Industry Promotion Corporation (LIPC) administers this policy and attempts to stabilize Japanese beef prices through the use of an import quota and tariff system. The government sets a global import quota that imposes a ceiling on the overall volume of beef imports. The ceiling is divided among a general quota and special quotas (see figure 1).

The general quota, which is equal to approximately 90 percent of the global allotment, is subdivided into LIPC-controlled and private purchases. The LIPC in recent years has received 90 percent of the general quota, or in other words, 81 percent of the global quota. The LIPC imports and sells its share of the quota in a variety of ways. The special quotas, the remaining 10 percent of the global allotment, apply to hotels, school lunch programs and boiled and canned beef purchases. The LIPC also uses surcharges and a 25 percent tariff to discourage beef imports further.

Figure 1

Shares of Japan's Global Import Quota

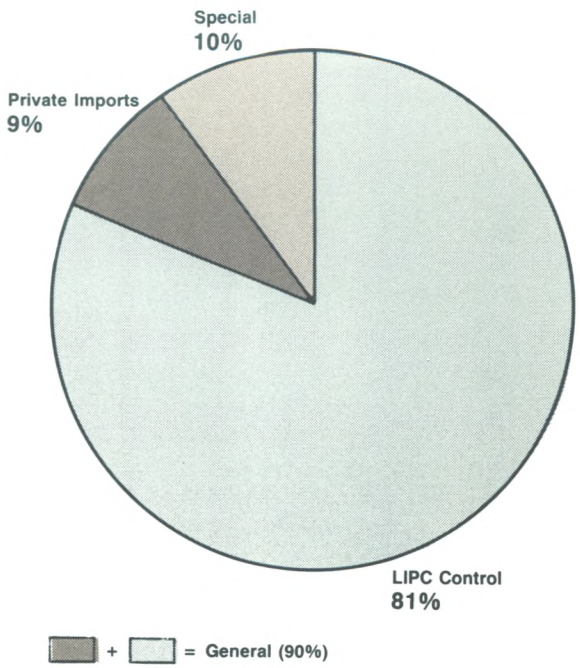
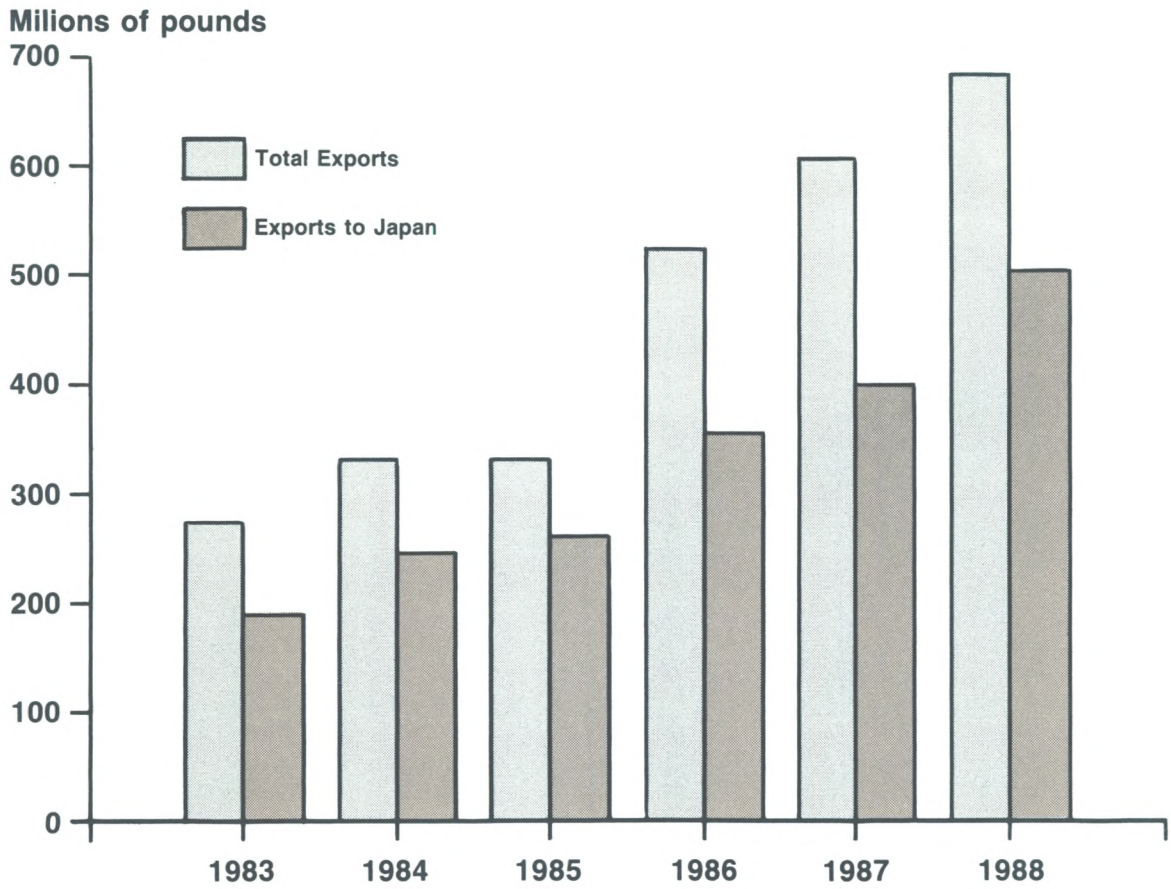


Figure 2

U.S. Beef Exports



As a result of the recent negotiations, the Japanese have agreed to phase out their import quotas over a three-year period. During this period, the Japanese will increase their quotas from the fiscal year (April-March) 1988 quota of 274,000 metric tons to 334,000 metric tons during 1989, and 394,000 metric tons in 1990. Simultaneously, the LIPC will decrease its surcharges during 1988-90, while the 25 percent tariff on beef imports remains in effect. Once the surcharges are reduced, temporary tariffs on imported beef will be set at 70 percent in 1991, 60 percent in 1992, and 50 percent in 1993.[2] Therefore, it appears that the United States will have the opportunity to increase its beef exports to Japan.

Japan's Importance to U.S. Beef Producers

Japan is the United States' most important beef export market, as it normally purchases 65 percent to 75 percent of all U.S. beef exports. For example, in 1988, the United States exported 680 million pounds of beef, of which 501 million pounds went to Japan. Total U.S. beef exports and U.S. beef exports to Japan since 1983 are shown in figure 2. Although Japan is America's most important beef export market, the United States is not the most important supplier of beef to Japan in terms of volume. In 1986, Australia held 59 percent of the Japanese beef import market, while the United States held 35 percent of the market. These figures reflect a major change. In 1979, Australia's market share was 77 percent, while the United States held only 18 percent of all Japanese beef imports.

More important than the U.S. increase in the Japanese beef import market share is the substantial increase in the actual quantity of U.S. beef exported to Japan in recent years. In 1988, U.S. beef producers exported about 2.2 percent of total U.S. beef production to Japan. In 1983, the United States exported 188 million pounds of beef, or less than 1 percent of its total beef production, to Japan

U.S. Beef Exports to Japan (millions of pounds)

Year	Total U.S. Beef Production[1]	Total U.S. Beef Exports[2]	U.S. Beef Exports to Japan[2]	U.S. Exports to Japan as a Percent of Total Production
1983	23,241	272.1	188.0	0.8%
1984	23,596	328.8	244.1	1.0
1985	23,728	328.2	259.1	1.1
1986	24,371	520.9	353.9	1.5
1987	23,566	604.0	396.7	1.7
1988	22,735	679.8	501.2	2.2

[1]SOURCE: USDA, *Livestock Slaughter*, various issues.

[2]SOURCE: USDA, Commodities Economics Division, Economic Research Service. Figures given are carcass weights.

(see the table). While exports to Japan account for only 2.2 percent of total U.S. beef production, the rapid growth in export sales has supported prices and continued rapid growth could make Japan a large consumer of U.S. beef in the near future.

The expansion in the Japanese export market has served to help U.S. beef producers by mitigating the trend for lower red meat consumption in the United States. Total beef consumption in the United States was predicted to drop 27 million pounds in 1988 from 1987 levels.[3] During that same period, exports of beef to Japan increased by 104.5 million pounds. Since 1986, U.S. domestic consumption of beef has fallen by 757 million pounds, while U.S. beef exports to Japan have increased 147.3 million pounds.

Although the Japanese beef import liberalization plan might seem to be good news to U.S. farmers, the positive impact of the Japanese beef import liberalization on U.S. beef producers may be quite small. The current Japanese import barriers are structured such that importers have a monetary incentive to import the higher-priced, grain-fed U.S. beef instead of cheaper, grass-fed beef from countries such as Australia. When quotas are applied to beef imports, the wholesale price of beef increases because of the decreased supplies. With the domestic price of beef artificially increased because of the quotas, importing firms that hold part of the quota earn extra profits. The extra profit that they receive is the difference between the wholesale price and the price paid by the importer, that is, the import price plus the 25 percent tariff and local transport. Research has shown that for beef imported outside LIPC tender, the quota rent on frozen grain-fed beef was 1382 yen per kilogram in 1986, while the quota rent on frozen grass-fed beef was 748 yen per kilogram. Thus, private importers had a monetary incentive to import grain-fed beef.

The Japanese beef import market trade shares, given earlier, suggest that U.S. beef producers captured most of the increase in grain-fed beef imports. This relatively large U.S. market share is puzzling given that other countries, such as Canada, also produce grain-fed beef at competitive prices. Some researchers have argued that the political benefits to Japan of funnelling beef import quotas to the United States are higher than if the quotas had been given to other countries. These political benefits would include reduced pressure in the United States for trade sanctions against Japan. While the Japanese global import quota on beef is officially open to any beef-producing country meeting certain health requirements, the LIPC-controlled portion of the import quota is potentially vulnerable to political pressures.

When the import restrictions are lowered, the monetary incentive to import grain-fed beef will be reduced, and the Japanese consumers' demands for beef products will be more accurately reflected in beef imports. Research has shown that, while recent beef consumption growth in Japan has been concentrated in the low-quality sector of the market, the growth in beef imports has been largest for grain-fed beef, usually considered to be higher-quality beef. Domestically produced Japanese dairy cattle, Australian grass-fed beef and some cuts of U.S. grain-fed beef all help supply the low-quality market. Hence, when the monetary incentives to import grain-fed beef are reduced, U.S. beef producers may be forced to compete more in the low-quality beef market.

Whether U.S. beef producers will be able to increase their overall exports to Japan will depend on several factors including how the Japanese con-

sumer responds to relative price changes in low- and high-quality beef resulting from the barrier reductions and whether U.S. beef producers will have to compete more openly with other grain-fed beef-producing countries. Any attempt to predict the amount U.S. beef exports to Japan will increase would be sheer speculation, but the possibility of only a small increase does exist.

In the short run, Japan's increase in beef imports possibly will raise the world price of beef. Rising beef prices in conjunction with rising beef exports would mean higher returns for U.S. beef producers. The extent that returns increase is, of course, dependent on the amount that exports grow as well as other factors such as production costs.

The long-run impacts of Japan's trade liberalization are not as clear. If prices rise in the short run, because of Japan's increased demand, U.S. ranchers will be induced to supply more beef. Not only will U.S. producers expand production, but so will producers in other countries such as Canada, Australia and Argentina. Once again, there is no guarantee that U.S. producers will capture a disproportionate share of this increase. To the extent that Japanese imports are no longer funnelled to the United States, the prospects for a substantial expansion of U.S. beef exports to Japan are not promising. In short, U.S. beef producers may not reap huge returns from freer trade with Japan.

Beef Exports' Role in the Trade Balance

Thus far, this article has only examined the importance of beef exports to Japan to the American beef producer. Reducing the trade deficit with Japan was one of the main reasons for attempting to get Japan to increase its beef imports. Therefore, this issue merits a brief analysis.

The United States had a $52.1 billion trade deficit with Japan in 1988. U.S. exports to Japan were valued at $37.7 billion and U.S. imports from Japan were valued at $89.8 billion. During that same year, U.S. beef producers exported a record 501 million pounds of beef to Japan. These beef exports were valued at $845 million, which means that beef exports accounted for about 2.2 percent of all merchandise exports to Japan in 1988. U.S. beef exports to Japan in 1987 were valued at $561 million, or, again, about 2 percent of total exports to Japan. While U.S. beef exports to Japan have been expanding rapidly, the removal of the import barriers will likely slow this expansion. Therefore, beef exports will probably continue to play a limited role in determining the United States trade deficit with Japan.

Conclusion

Because the effects of the beef trade liberalization are not yet known, Japan's overall role in determining future U.S. beef producers' returns is uncertain. Although U.S. beef exports to Japan as a percent of total beef production have been rising, it is unclear whether this trend will continue.

Even though large economic returns are unlikely, by expanding beef trade, both countries were able to say progress toward freer trade had been made. The movement toward freer trade between the United States and Japan could set the stage for future trade liberalization in other agricultural commodities. More importantly, if the Japanese will agree to reduce their agricultural barriers, reductions in barriers to manufactured goods may also be possible.

FOOTNOTES

[1]Many of the ideas and results used in this paper were taken from research performed by Francis Teal, Andrew Dickson, Darrell Porter and Diane Whiteford at the Australian Bureau of Agricultural and Resource Economics. Their work is published in an article entitled, "Japanese Beef Policies: Implications for Trade Prices and Market Shares."

[2]Much of the information in this section was taken from the *International Economic Review* (October 1988), p. 4.

[3]USDA, *Agricultural Outlook* (January/February 1989).

Eighth District Banks Rally in 1988

by Lynn M. Barry

For commercial banks in both the nation and the Eighth Federal Reserve District, 1988 was a year of recovery.[1] Propelled by stronger earnings and improved asset quality, aggregate bank profit ratios for the Eighth District as well as for most of its seven states improved in 1988. Details on the financial performance and condition of the banking industry in each District state are provided in this article.[2]

Statewide Performance

Arkansas

Arkansas banks, with assets totaling $18.5 billion, reported an average return on assets (ROA) and return on equity (ROE) of 0.96 percent and 11.35 percent, respectively, in 1988.[3] Of the 255 reporting banks in Arkansas, those with negative earnings fell from 17 in 1987 to 12 in 1988. As shown in table 1, the average net interest margin of 4.51 percent earned by Arkansas banks last year, while dropping slightly, was still 25 basis points higher than the District average. Noninterest sources of income fell from 1.17 percent of average assets in 1987 to 1.06 percent in 1988. Helping to improve noninterest margins was a decline in noninterest expense, which stood at 3.24 percent of average assets at year-end. As a boost to 1988 earnings, Arkansas banks reduced their loan loss provision account to 0.39 percent of average assets, a sharp drop from 0.65 percent in 1987.

The drop in loan loss provisions was consistent with the steadily declining levels of nonperforming assets. As reported in table 2, asset quality improved during the year at Arkansas banks as nonperforming loans fell from 2.94 percent of total loans in 1987 to 2.11 percent in 1988. Showing vast improvement were those banks with assets between $100 million and $300 million where the nonperforming loan rate fell from 3.40 percent in 1987 to 2.50 percent. Net loan losses also fell in 1988, averaging 0.74 percent of total loans compared with 1.24 percent in 1987.

Declining dollar levels of nonperforming assets were part of improved credit quality measures at Arkansas banks. Growing capital levels were also a factor. Primary capital ratios averaged 9.22 percent in 1988, up slightly from 1987. Showing notable improvement in their capital adequacy position were those banks with assets between $25 million and $50 million. For these banks, average primary capital ratios rose from 9.99 percent in 1987 to 10.21 percent in 1988. As of year-end 1988, only two of the state's commercial banks did not meet the minimum primary capital ratio guideline.[4]

Illinois

Among all District states in 1988, Illinois banks improved their earnings position the most dramatically. ROA for Illinois banks averaged 0.99 percent in 1988, up significantly from -0.23 percent in 1987. In addition, Illinois banks earned the highest ROE among District states in 1988 at 15.72 percent. The overall negative earnings for 1987 was caused by the state's largest banks which set aside huge sums for possible losses on loans to foreign borrowers. In 1988, the state's aggregate earnings rebounded strongly primarily due to lower loan loss provisions. Having added to their provision account in 1987, many banks saw little or no need to increase provision levels last year and, as of year-end, stood at 0.27 percent of average assets, a drastic departure from 1987's 1.45 percent.

Fifty-one banks reported negative earnings last year compared with 87 in 1987. The improvement in earnings took place despite the fact that the net interest margin, which averaged 3.70 percent in 1988, was the lowest among District states. At 9.56 percent, interest income as a percent of earning assets, was one of the lowest reported by the seven District states, and interest expense at 5.87 percent was the highest.

In addition to lower loan loss provisions, improved asset quality helped to boost 1988 profits. The level of nonperforming loans fell at Illinois banks in 1988, from 2.64 percent of total loans in 1987 to 2.40 percent. However, those banks with assets more than $10 billion, reported an increase in the average level of nonperforming loans. Primarily because of the LDC (less developed countries) exposure, nonperforming loans as a percent of total loans rose from 3.98 percent in 1987 to 4.10 percent in 1988. On average, net loan and lease losses improved in 1988; however, asset quality problems continued for the state's largest banks. For banks with assets between $1 billion and $10 billion, the loan loss rate rose from 0.50 percent in 1987 to 1.13 percent in 1988.

Also showing improvement last year was the capital adequacy position for Illinois banks. The average primary capital ratio rose to 8.04 percent in 1988, up from 7.86 percent in 1987. Banks

Table 1
Earnings Analysis
Eighth District States, 1985-1988

	Eighth District	AR	IL	IN	KY	MS	MO	TN
Return on assets								
1988	0.93%	0.96%	0.99%	1.03%	1.01%	0.84%	0.86%	0.81%
1987	0.80	0.92	−0.23	0.79	0.94	0.85	0.65	0.87
1986	0.87	0.55	0.74	0.84	1.02	1.01	0.83	0.96
1985	0.84	0.48	0.65	0.84	1.07	0.99	0.80	0.93
Return on equity								
1988	11.72	11.35	15.72	13.53	12.48	10.65	11.24	10.94
1987	10.28	11.03	−3.87	10.56	11.60	10.95	8.76	11.81
1986	11.26	6.94	10.71	11.31	12.52	12.72	11.08	13.07
1985	10.85	6.10	9.55	11.40	12.98	13.45	10.62	13.07
Net interest margin								
1988	4.26	4.51	3.70	4.23	4.21	4.52	4.24	4.62
1987	4.27	4.70	3.61	4.22	4.12	4.70	4.29	4.71
1986	4.40	4.63	3.81	4.30	4.43	4.74	4.31	4.82
1985	4.31	4.30	3.79	4.18	4.42	4.72	4.37	4.77
Loan loss provision								
1988	0.37	0.39	0.27	0.34	0.42	0.40	0.48	0.62
1987	0.60	0.65	1.45	0.55	0.51	0.53	0.76	0.55
1986	0.59	0.98	0.60	0.50	0.53	0.60	0.63	0.55
1985	0.59	0.78	0.66	0.49	0.46	0.52	0.64	0.60

NOTE: Data are for the entire state, not merely that portion of the state located within the Eighth District.

SOURCE: FDIC Consolidated Reports of Condition and Income

with assets between $1 billion and $10 billion, however, experienced a decline in the ratio, from 7.03 percent in 1987 to 6.74 percent in 1988. As of year-end, only five of the state's 1143 reporting banks had deficient primary capital ratios.

Indiana

Indiana banks reported the highest ROA (1.03 percent) and second-highest ROE (13.53 percent) among District states in 1988. The 335 reporting banks earned $530.5 million last year, an increase of $147.4 million from 1987. Eighteen banks reported negative earnings last year, down from 32 in 1987. Indiana banks earned an average net interest margin of 4.23 percent, an average similar to that of the District. Noninterest sources of income, at 0.90 percent of average assets, was the lowest ratio among District states.

The fall in nonperforming loans and loan losses contributed to improved profitability for Indiana banks in 1988. Nonperforming loans as a percent of total loans averaged 1.19 percent for the state's banks, down from 1.36 percent in 1987. Those banks with assets less than $50 million reported a significant improvement in their level of problem loans. Net loan losses also improved last year, falling from 0.65 percent to 0.54 percent of total loans.

Despite strong earnings and improved asset quality, capital levels remained virtually unchanged in 1988. The primary capital ratio for Indiana banks was steady at 8.29 percent, still well above regulatory standards. As of year-end, only one bank failed to meet the minimum regulatory primary capital standard.

Kentucky

Following Indiana, Kentucky banks earned the second-highest ROA among District states. Up from 0.94 percent in 1987, the state's 332 banks reported an average 1.01 percent ROA in 1988. The average net interest margin for banks in Ken-

Table 2
Asset Quality and Capital Adequacy Analysis
Eighth District States, 1985-1988

	Eighth District	AR	IL	IN	KY	MS	MO	TN
Nonperforming loans								
1988	1.62%	2.11%	2.40%	1.19%	1.52%	1.48%	1.67%	1.41%
1987	2.11	2.94	2.64	1.36	1.68	1.57	2.30	1.44
1986	2.16	3.35	2.46	1.45	2.00	2.00	1.98	1.52
1985	2.49	3.31	2.87	1.96	2.21	1.90	2.53	2.10
Net loan loss								
1988	0.72	0.74	0.83	0.54	0.60	0.65	0.90	0.93
1987	0.70	1.24	0.73	0.65	0.64	0.84	0.72	0.60
1986	0.88	1.49	0.78	0.73	0.72	0.85	0.92	0.74
1985	0.89	1.06	0.83	0.69	0.67	0.85	0.96	0.92
Primary capital								
1988	8.73	9.22	8.04	8.29	8.80	8.63	8.60	8.36
1987	8.73	9.15	7.86	8.28	8.86	8.55	8.46	8.34
1986	8.47	8.74	8.03	8.04	8.77	8.70	8.20	7.94
1985	8.38	8.67	7.84	7.98	8.92	8.02	8.26	7.70

NOTE: Data are for the entire state, not merely that portion of the state located within the Eighth District.

SOURCE: FDIC Consolidated Reports of Condition and Income

tucky, which rose in 1988, approached the District average of 4.26 percent. Noninterest sources of income averaged 0.95 percent of assets in 1988, slightly below the District average of 0.98 percent. On the other hand, noninterest expense, at 2.81 percent of assets, is better than the District average of 2.97 percent.

In addition to showing strong earnings, Kentucky banks also reported improved asset quality. As a percent of total loans, nonperforming loans averaged 1.52 percent in 1988, down slightly from 1.68 percent in 1987. Net loan losses as a percent of total loans also declined last year, from 0.64 percent in 1987 to 0.60 percent.

Despite its improved financial performance, Kentucky was the only District state reporting a decline in its primary capital ratio, falling from 8.86 percent in 1987 to 8.80 percent last year. Nonetheless, only one bank in the state failed to meet the minimum 5.5 percent primary capital guideline.

Mississippi

In 1988, an average ROA and ROE of 0.84 percent and 10.65 percent, respectively, were reported by 124 banks in Mississippi. The number of banks with negative earnings increased in 1988 from 9 to 11. Net interest margins averaged 4.52 percent for the state's banks, the second highest among District states. Interest income as a percent of earning assets averaged 10.04 percent, up from 9.79 percent in 1987. The largest banks in the state, those with assets between $1 billion and $10 billion, earned an average return of 10.27 percent on interest-earning assets, the highest among comparable-sized banks in the District and the nation. Noninterest sources of income averaged 0.95 percent of assets at Mississippi banks, slightly lower than the District average.

Reduced loan loss provision levels coupled with improved asset quality helped increase profits in 1988. Nonperforming loans dropped to 1.48 percent of total loans in 1988, down from 1.57 percent in 1987. The state's largest banks reported an average nonperforming loan rate of 1.05 percent, the lowest among similar-sized banks in each of the District states. Mississippi's smaller banks (assets between $25 million and $50 million) reported an increase in nonperforming loans, rising from 2.02 percent of total loans in 1987 to 2.59 percent in 1988, the highest ratio among peer institutions across the District.

With total year-end assets of $19 billion, Mississippi banks reported an average primary capital ratio of 8.63 percent, up from 8.55 percent

In 1987. As of December 31, 1988, only two banks in the state did not meet the minimum regulatory primary capital standard of 5.5 percent.

Missouri

Missouri banks earned $459.3 million in 1988, up 36 percent from 1987, for an average ROA of 0.86 percent and an average ROE of 11.24 percent. Total bank assets in Missouri totaled $54.8 billion at year-end, $1.5 billion more than in 1987. Forty-two banks across the state reported negative earnings in 1988, 23 less than in 1987. Net interest margin averaged 4.24 percent in 1988, slightly lower than 1987's average. As a percent of earning assets, interest income averaged 9.60 percent compared with 9.40 percent in 1987. Interest expense as a percent of earning assets increased during the year, from 5.11 percent to 5.35 percent. Noninterest income rose from 1.06 percent of average assets to 1.10 percent. Noninterest expense remained flat, averaging slightly more than 3 percent of average assets. The state's 576 banks set aside $254 million in their loan loss provision accounts in 1988 compared with $395 million in 1987, a decrease of more than 50 percent.

Asset quality continues to be a major factor influencing the earnings pattern at Missouri banks. In 1988, the state's banks reduced their level of nonperforming loans by 22.3 percent, to $541.5 million. These problem loans amounted to 1.67 percent of total loans, down sharply from 2.30 percent in 1987. Missouri's largest banks reported a drop in nonperforming loans from 3 percent in 1987 to 1.80 percent in 1988. Net loan losses at Missouri banks increased by $74 million, 34 percent, from 1987. In particular, the state's largest banks were hit by rising loan losses which at year-end stood at 1.48 percent of total loans, up from 0.81 percent in 1987.

The improved performance of Missouri banks had a favorable effect on their capital levels. The state's banks increased their average primary capital ratio to 8.60 percent, up from 8.46 percent at year-end 1987. At the same time, the number of banks with deficient primary capital ratios fell to three, seven fewer than in 1987.

Tennessee

The 269 banks in Tennessee reported the lowest ROA among District states in 1988. At 0.81 percent, the average ROA at banks in Tennessee was well below the District average of 0.93 percent. In contrast, net interest margin averaged 4.62 percent, well above the District average and highest among the District states. On average, banks in Tennessee earned 10.09 percent on interest-earning assets, up from 9.66 percent in 1987 and substantially higher than the District average of 9.63 percent. Banks with assets between $1 billion and $10 billion increased interest income as a percent of earning assets to 10.19 percent in 1988, 76 basis points higher than in 1987. Interest expense relative to earning assets rose substantially, from 4.95 percent in 1987 to 5.46 percent last year. Helping to boost earnings last year, noninterest sources of income averaged 1.21 percent of average assets, the second highest among District states following Illinois. Departing from not only the District but national trend, Tennessee was the only District state reporting an increase in their loan loss provision ratio. As a percent of average assets, loan loss provisions averaged 0.62 percent in 1988, up from 0.55 percent in 1987.

Asset quality at Tennessee banks, unlike most District states, did not show much improvement in 1988. As a percent of total loans, nonperforming loans fell slightly to 1.41 percent. Highest among the District states, net loan losses rose in 1988 to 0.93 percent of total loans, up from 0.60 percent in 1987. Tennessee's larger banks were primarily responsible for the overall increase as net loan losses rose from 0.62 percent of total loans in 1987 to 1.22 percent last year. The state's smaller banks, on the other hand, reported a sharp decline in the level of loan charge-offs. For banks with assets less than $25 million, net loan losses as a percent of total loans fell from 1.01 percent in 1987 to 0.48 percent in 1988.

With year-end assets of $43.5 billion, the primary capital ratio averaged 8.36 percent for Tennessee banks in 1988, up slightly from 1987. As of year-end, only one of the state's commercial banks did not meet the minimum primary capital ratio standard.

Conclusion

The 1988 financial performance of banks in the Eighth Federal Reserve District, like that of banks in the nation, was much improved from the lackluster earnings reported in 1987. Aggregate bank profit ratios improved in 1988 as many of the area's largest banks began to recoup from the negative earnings associated with increased loan loss provisions tied to foreign loans. The smaller banks also enjoyed higher earnings as loan losses as well as loan loss provision levels declined. Propelled by lower loan loss provisions and for some areas, higher net interest margins, many of the states within the District reported stronger earnings.

As with most of the banking industry, better asset quality helped to improve earnings at District banks last year. Nonperforming loans fell dramatically in 1988. Loan losses, while increasing for some states, were well below national averages. Finally, a majority of the District's banks im-

proved their capital position in 1988 and are positioned well above the minimum standards set by bank regulators.

FOOTNOTES

[1]The Eighth Federal Reserve District consists of the following: Arkansas, entire state; Illinois, southern 44 counties; Indiana, southern 24 counties; Kentucky, western 64 counties; Mississippi, northern 39 counties; Missouri, eastern and southern 71 counties and the City of St. Louis; Tennessee, western 21 counties. For the purposes of this article, data are for the entire state, not merely that portion of the state located within the Eighth Federal Reserve District.

[2]For specific United States and Eighth District bank performance statistics, see the Federal Reserve Bank of St. Louis' May/June 1989 issue of the *Review*.

[3]Refer to the shaded insert, Ratio Definitions, for a brief description of the ratios presented in this article.

[4]Given its importance, the regulatory agencies have set minimum standards of 5.5 percent primary capital to assets and 6 percent total capital to assets. These standards have been revised recently and, on December 16, 1988, the Federal Reserve Board approved new risk-based capital guidelines intended to encourage banks to make safer investments. The guidelines provide for a phase-in period through the end of 1992 at which time the standards become fully effective. Starting December 31, 1990, the level of capital that banks are required to hold will increase to 7.25 percent of qualifying total capital to weighted risk assets and finally, to 8 percent in 1992.

Ratio Definitions

Return on assets ratio: an indicator of how well a bank's management is using the company's assets, return on assets (ROA) is calculated by dividing a bank's net income by its average annual assets.

Return on equity ratio: an indicator to shareholders of how much the bank is earning on their investment, return on equity (ROE) is calculated by dividing a bank's net income by its equity capital. Equity capital includes common and perpetual preferred stock, surplus, undivided profits and capital reserves.

Net interest margin: an indicator of how well interest-earning assets are being employed relative to interest-bearing liabilities, net interest margin is the difference between what a bank earned on loans and investments and what it paid its depositors divided by average earning assets. On the asset side, this includes both interest income and fees related to interest-earning assets. Examples include: interest on loans, points on loans, income on tax-exempt municipal loans and bonds and income from holdings of U.S. government securities. On the liability side, interest expense includes: the amount paid on all categories of interest-bearing deposits, federal funds purchased and capital notes.

Noninterest margin: an indicator of the efficiency of a bank's operations and its pricing and marketing decisions, noninterest margin is the difference between noninterest income and noninterest expense as a percent of average assets. Sources of noninterest income (other) include fees for checking accounts, discount brokerage services, credit cards, fiduciary activities, mortgage loan servicing and safe deposit box rentals. Noninterest expense (overhead) includes all the expense items involved in overall bank operations, such as employee salaries and benefits, as well as expenses of premises and fixed assets. Noninterest expense also covers such items as director's fees, insurance premiums, legal fees, advertising costs and litigation charges. Since noninterest expense generally exceeds other income, the calculation yields a negative number; it is common practice, however, to report the noninterest margin as a positive number. Thus, smaller noninterest margins indicate better bank performance, holding all other things constant.

Loan and lease loss provision ratio: an indicator of expected loan and lease losses, the loan and lease loss provision ratio is calculated by dividing the provision for loan and lease losses by average assets. The provision for loan and lease losses is a negative income statement account which reduces current earnings.

Nonperforming loan ratio: an indicator of current and future loan problems, the nonperforming loan ratio is calculated by dividing the sum of loans 90 days or more past due, nonaccrual and renegotiated loans by total loans.

Net loan loss ratio: calculated by dividing loan losses (adjusted for recoveries) by total loans.

Primary capital ratio: calculated by dividing primary capital by average assets. The components of primary capital include: common stock; perpetual preferred stock; surplus; undivided profits; contingency and other capital reserve; qualifying mandatory convertible instruments; allowance for loan and lease losses and minority interests in consolidated subsidiaries, minus intangible assets excluding purchased mortgage servicing rights. (For the purposes of this article, only the goodwill portion of intangible assets was deducted.)

Statistics

Eighth District Business

	Level	Compounded Annual Rates of Change			
	I/1989	IV/1988-I/1989	I/1988-I/1989	1988[1]	1987[1]
Payroll Employment (thousands)					
United States	108,306.0	3.6%	3.5%	3.6%	2.8%
District	6,628.4	4.1	2.1	2.5	3.2
Arkansas	880.7	5.8	3.0	2.8	2.8
Little Rock	242.4	4.9	3.5	3.1	1.8
Kentucky	1,391.3	6.2	3.1	3.4	3.0
Louisville	460.0	5.3	2.6	3.1	3.9
Missouri	2,270.3	2.7	1.9	1.8	2.6
St. Louis	1,155.5	2.8	1.7	1.5	1.9
Tennessee	2,086.1	3.6	1.2	2.5	4.1
Memphis	442.3	6.2	1.7	2.9	4.6
Manufacturing Employment (thousands)					
United States	19,787.0	1.8%	2.0%	2.5%	0.5%
District	1,461.7	6.1	2.4	2.2	1.4
Arkansas	235.1	6.3	3.8	4.0	3.7
Kentucky	280.1	7.3	4.3	4.5	2.6
Missouri	434.2	2.6	1.0	1.3	−0.1
Tennessee	512.3	8.4	2.1	1.0	1.0
District Nonmanufacturing Employment (thousands)					
Mining	50.9	3.2%	−5.6%	−5.1%	−4.5%
Construction	286.6	0.6	−1.4	1.0	2.6
FIRE[2]	339.2	1.2	0.2	0.5	4.6
Transportation[3]	387.5	12.1	3.7	2.5	3.8
Services	1,440.4	6.3	3.9	3.9	5.2
Trades	1,590.3	6.2	2.2	2.7	4.0
Government	1,073.3	−2.9	0.7	2.1	2.0
	IV/1988	III/1988-IV/1988	IV/1987-IV/1988	1988[1]	1987[1]
Real Personal Income[4] (billions)					
United States	$3,468.7	5.0%	2.5%	3.0%	3.2%
District	191.6	4.3	2.1	2.6	3.1
Arkansas	25.0	1.6	2.9	2.5	1.7
Kentucky	40.5	0.9	1.0	2.3	2.9
Missouri	68.4	7.3	2.2	2.3	2.3
Tennessee	56.8	4.3	2.3	3.3	4.8
		Levels			
	I/1989	IV/1988	1988	1987	1986
Unemployment Rate					
United States	5.2%	5.3%	5.5%	6.2%	7.0%
District	6.2	6.2	6.5	7.2	7.8
Arkansas	7.2	6.9	7.6	8.1	8.8
Little Rock	5.8	5.8	6.4	7.1	6.9
Kentucky	6.9	7.1	7.8	8.8	9.3
Louisville	5.6	6.4	6.3	6.9	7.1
Missouri	5.8	5.6	5.7	6.3	6.1
St. Louis	5.9	5.8	6.0	7.0	7.0
Tennessee	5.5	5.9	5.8	6.6	8.0
Memphis	4.8	5.0	5.0	5.7	6.8

Note: All data are seasonally adjusted. On this page only, the sum of data from Arkansas, Kentucky, Missouri and Tennessee is used to represent the District.

[1]Figures are simple rates of change comparing year-to-year data.
[2]Finance, Insurance and Real Estate
[3]Transportation, Communications and Public Utilities
[4]Annual rate. Data deflated by CPI-U, 1982-84 = 100.

U. S. Prices

	Level	Compounded Annual Rates of Change			
	I/1989	IV/1988-I/1989	I/1988-I/1989	1988[1]	1987[1]
Consumer Price Index (1982-84=100)					
Nonfood	121.6	5.1%	4.5%	4.0%	3.6%
Food	122.8	6.4	6.1	4.1	4.1
Prices Received by Farmers					
All Products	148.7	13.7%	14.1%	8.8%	3.1%
Livestock	159.0	18.8	7.4	2.7	5.6
Crops	138.0	9.2	24.0	18.3	−0.8
Prices Paid by Farmers (1977=100)					
Production items	163.0	2.5%	7.2%	6.9%	1.9%
Other items[2]	175.0	4.7	6.1	4.4	1.9

Note: Data not seasonally adjusted except for Consumer Price Index.

[1]Figures are simple rates of change comparing year-to-year data.

[2]Other items include farmers' costs for commodities, services, interest, wages and taxes.

Eighth District Banking

Changes in Financial Position for the year ending December 31, 1988 *(by Asset Size)*

	Less than $100 million	$100 million - $300 million	$300 million - $1 billion	More than $1 billion
SELECTED ASSETS				
Securities	−3.2%	15.9%	11.5%	3.8%
U.S. Treasury & agency securities	−0.9	21.5	11.3	2.7
Other securities	−14.6	4.6	11.8	5.8
Loans & Leases	1.0	14.8	16.3	4.7
Real estate	2.9	19.7	23.9	16.8
Commercial[1]	13.9	5.9	9.7	4.3
Consumer	1.3	21.2	19.5	−6.0
Agriculture	−0.4	34.7	3.8	−7.3
Loan loss reserve	−1.1	20.1	21.3	10.8
Total Assets	−2.3	14.1	13.9	4.0
SELECTED LIABILITIES				
Deposits	−2.4%	13.9%	12.9%	5.8%
Nontransaction accounts	−1.6	15.7	14.4	8.4
MMDAs	−15.8	−3.2	6.9	11.7
$100,000 CDs	8.0	17.2	14.0	−1.8
Demand deposits	−6.7	4.4	8.4	0.7
Other transaction accounts[2]	−2.3	15.4	12.3	3.6
Total Liabilities	−2.4	14.0	14.0	4.6
Total Equity Capital	−1.0	15.0	12.7	6.3

Note: All figures are simple rates of change comparing year-to-year data. Data are not seasonally adjusted.

[1]Includes banker's acceptances and nonfinancial commercial paper

[2]Includes NOW, ATS and telephone and preauthorized transfers

Performance Ratios *(by Asset Size)*

	Eighth District			United States		
	IV/88	IV/87	IV/86	IV/88	IV/87	IV/86
EARNINGS AND RETURNS						
Annualized Return on Average Assets						
Less than $100 million	.97%	.89%	.87%	.65%	.51%	.45%
$100 - $300 million	.97	.95	.87	.79	.74	.70
$300 million - $1 billion	.99	1.07	.66	.68	.53	.59
$1 - $10 billion	.82	.51	.98	.77	.55	.77
More than $10 billion	—	—	—	.95	– .67	.54
Agricultural banks	1.04	.76	.66	.92	.66	.38
Annualized Return on Average Equity						
Less than $100 million	10.68%	10.04%	10.00%	7.40%	5.94%	5.37%
$100 - $300 million	12.03	11.76	11.09	10.15	9.66	9.34
$300 million - $1 billion	12.77	13.68	8.58	9.73	7.63	8.48
$1 - $10 billion	12.50	7.96	14.65	12.17	8.72	12.06
More than $10 billion	—	—	—	18.92	– 15.40	10.29
Agricultural banks	10.90	8.09	7.31	9.69	7.21	4.24
Net Interest Margin[1]						
Less than $100 million	3.89%	3.95%	4.01%	4.14%	4.24%	4.26%
$100 - $300 million	3.87	3.94	3.79	4.23	4.17	4.09
$300 million - $1 billion	3.90	3.96	3.82	4.17	4.15	4.08
$1 - $10 billion	3.66	3.64	3.54	4.04	3.96	3.84
More than $10 billion	—	—	—	3.63	3.35	3.24
Agricultural banks	3.78	3.80	3.89	3.99	3.95	3.98
ASSET QUALITY[2]						
Nonperforming Loans[3]						
Less than $100 million	1.69%	2.05%	2.49%	2.20%	2.62%	3.09%
$100 - $300 million	1.63	1.91	1.95	1.93	2.19	2.51
$300 million - $1 billion	1.28	1.50	2.31	2.26	2.39	2.49
$1 - $10 billion	1.66	2.47	1.85	1.99	2.40	2.13
More than $10 billion	—	—	—	4.59	5.42	3.44
Agricultural banks	1.93	2.55	3.42	2.34	3.17	4.33
Loan Loss Reserves						
Less than $100 million	1.44%	1.47%	1.43%	1.57%	1.65%	1.59%
$100 - $300 million	1.36	1.32	1.30	1.46	1.51	1.47
$300 million - $1 billion	1.35	1.29	1.49	1.61	1.72	1.59
$1 - $10 billion	1.60	2.18	1.41	1.74	1.88	1.52
More than $10 billion	—	—	—	3.76	4.39	1.85
Agricultural banks	1.80	1.82	1.75	2.04	2.11	2.03
Net Loan Losses[4]						
Less than $100 million	.49%	.73%	1.11%	.77%	1.09%	1.51%
$100 - $300 million	.49	.65	.97	.67	.78	1.01
$300 million - $1 billion	.43	.71	.89	.78	.94	.98
$1 - $10 billion	1.20	.69	.58	.96	.84	.81
More than $10 billion	—	—	—	1.10	.90	.85
Agricultural banks	.48	1.15	1.82	.74	1.35	2.52

Note: Agricultural banks are defined as those with 25 percent or more of their total loan portfolio in agriculture loans.

[1]Interest income less interest expense as a percent of average earning assets
[2]Asset quality ratios are calculated as a percent of total loans.
[3]Nonperforming loans include loans past due more than 89 days and nonaccrual.
[4]Loan losses are adjusted for recoveries.