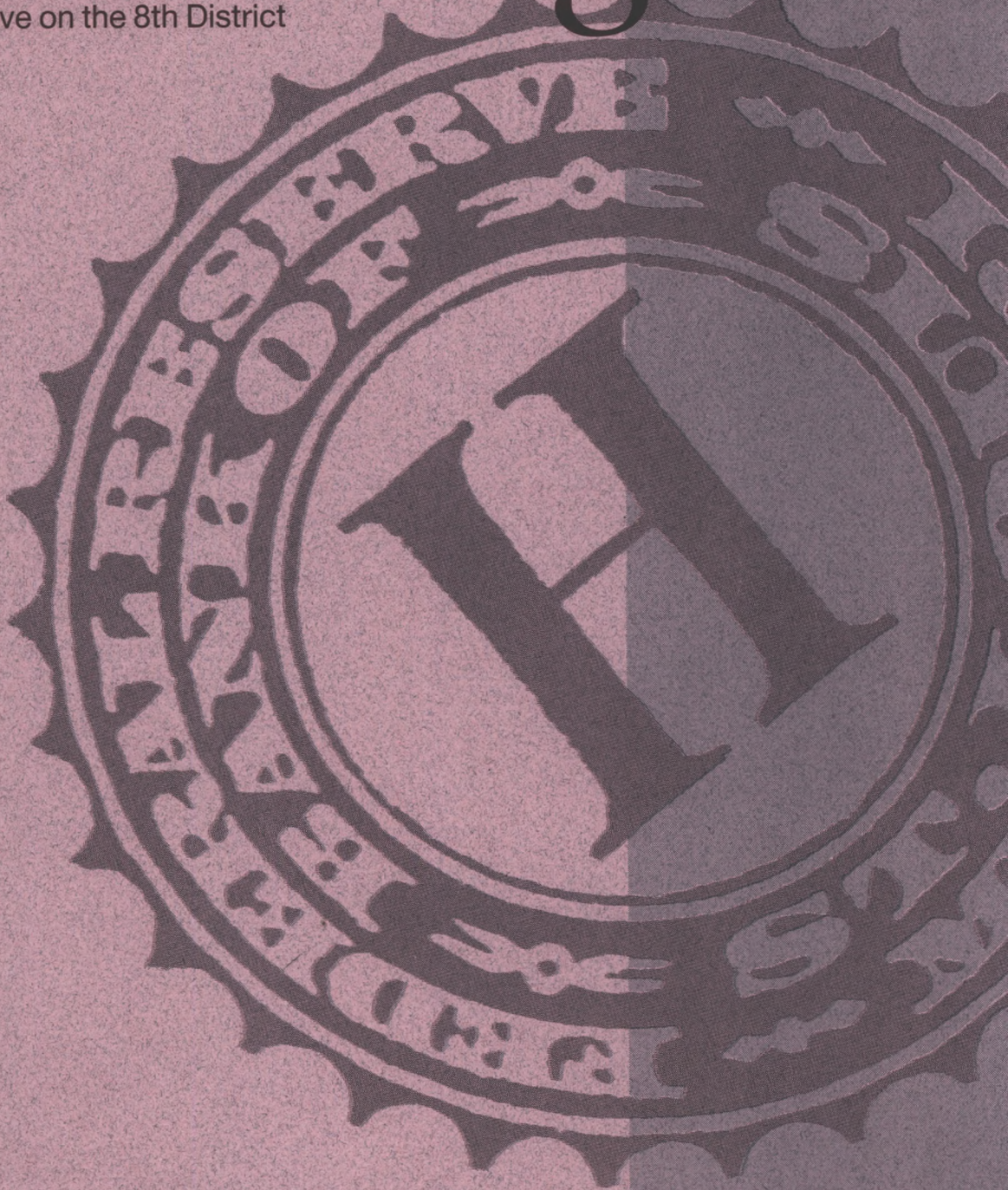
March 1990

Pieces of Eight

An Economic Perspective on the 8th District



THE FEDERAL RESERVE BANK of ST. LOUIS

THE EIGHTH FEDERAL RESERVE DISTRICT

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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.

1980s St. Louis Economy: Still Growing Slowly After All These Years

by Thomas B. Mandelbaum

Thomas A. Pollmann provided research assistance.

Times have changed since the 1940s when St. Louis earned the distinction of being "first in booze, first in shoes, and last in the American League." Anheuser-Busch's beer production allows St. Louis to claim the first title, but the latter two assertions have been false for decades. The transformation of the St. Louis economy, however, has involved much more than a decline in the shoe industry and the relocation of a professional baseball franchise. This article highlights the major changes in the St. Louis economy during the 1980s and identifies some of the changes likely to occur in the 1990s.[1]

Nonfarm Employment Grows Slowly

St. Louis nonfarm employment rose at a 1.4 percent annual rate in the 1980s, matching the rate of the previous decade (1970-79). At the national level, the expansion of employment slowed in the 1980s to a 1.9 percent rate rate compared with a 2.7 percent rate in the 1970s.

Nonfarm employment grew more slowly in St. Louis than nationally in the 1980s because of the relatively longer and more severe recession in St. Louis early in the decade. The number of jobs in St. Louis fell each year from 1980 through 1982, while national employment fell only in 1982. Area unemployment rates almost doubled in the early 1980s, from 5.4 percent in 1979 to 10.7 percent in 1983. By 1989, steady employment growth allowed unemployment rates to return to near the 1979 rate.

Manufacturing Employment Continues to Decline

Manufacturing was especially hard-hit by the recession. As the nation's employment growth slowed and unemployment rates began rising, consumers postponed purchases of manufactured goods, particularly of durables, causing area producers to curtail operations and lay off workers. St. Louis manufacturing employment declined by 44,100, or by 17 percent, between 1979 and 1983, with most of the lost jobs in durables industries. The most severely affected were producers of primary and fabricated metals, together losing approximately 15,000 workers during the period; electric and nonelectrical machinery, losing approximately 12,000 workers and motor vehicle producers with a decline of about 11,000 jobs. Smaller losses were posted by some nondurables sectors such as textiles and apparel, chemicals and leather.

The loss of manufacturing jobs between 1979 and 1983 would have been even greater if not for a 3,300 job expansion in aircraft production. McDonnell Douglas Corporation, which produces military aircraft and missile systems in the St. Louis area, captured a substantial portion of the rising federal defense budget in the first half of the decade and rapidly expanded operations. The value of defense contracts received by St. Louis firms peaked at $7 billion in fiscal 1985, making the metropolitan area the nation's largest recipient of federal defense dollars for that year.

Manufacturing employment has trended upward since 1983, with a sharp post-recession rebound in 1984 and steady gains in 1988 and 1989. Nonetheless, in 1989, manufacturing employment was more than 35,000 below its 1979 peak. While manufacturing employment also contracted nationally during the 1980s, the decline was steeper in the metropolitan area. Between 1979 and 1989, factory jobs declined by 13.5 percent in St. Louis compared with 6.8 percent nationally.

To a slight extent, this more severe local decline was due to St. Louis' unfavorable industry mix. In other words, St. Louis manufacturing tended to be concentrated in industries that experienced slow growth at the national level. At the beginning of the decade, St. Louis had relatively large concentrations in several industries, including the production of primary metal products, motor vehicles and footwear, that declined rapidly at the national level during the decade. The effect of these concentrations was offset partially by the area's small concentrations in the nonelectrical machinery and textile/apparel industries, both of which experienced sharp declines nationally. Also, St. Louis manufacturing had a comparatively large aircraft production sector which experienced rapid national growth.

Most of the slower-than-national growth of St. Louis manufacturing was due to the fact that the majority of the area's individual manufacturing industries grew more slowly than their national counterparts. Employment in electrical machinery

factories in St. Louis, for example, fell by 6,500 jobs, a third, between 1979 and 1988 compared with a 2 percent national decline. Employment in motor vehicle assembly and equipment fell by 6,600, or 28 percent, more than twice the national rate of decline. Taken together, area producers of primary and fabricated metal products lost almost 16,000 jobs, more than a third of their 1979 workforce. In comparison, the national decline was 26 percent.

Nonmanufacturing Expands Steadily

The slower job growth of the St. Louis economy was not due entirely to a sluggish manufacturing sector. Although St. Louis gained more than 183,000 nonmanufacturing jobs between 1979 and 1989, the 2.2 percent annual rate of growth during the period trailed the 2.4 percent national average slightly. As the table shows, except for construction, each of the major sectors of the St. Louis economy grew slower than the national average during the period.

The slower nonmanufacturing growth is not entirely independent of the weaker manufacturing sector. As manufacturers expand, they purchase more services, especially legal, maintenance, accounting, computer and data processing services. Increasingly, manufacturers find it is more profitable to purchase such services rather than using their own personnel. Also, as the number of relatively well-paid factory workers increases, so does the demand for local personal and financial services, as well as for retail outlets and other service-producing firms.

Research on this relationship by Beyers and Hull (1989) reveals that in large metropolitan areas in which producer services employment grew the most rapidly in the 1974-85 period, manufacturing employment growth was well above average. Meanwhile, slow growth of producer services occurred in those areas with rapidly declining manufacturing employment.[2]

On the other hand, services are not totally dependent on the area's manufacturing base or other sources of local demand. If average production costs of some services decline as the scale of production rises, and the scale of production to minimize these costs is greater than the needs of the producing city, then specialization and trade of services among regions will be beneficial to all regions. A recent study indicates that, while the majority of producer services in the nation's 183 Bureau of Economic Analysis economic areas is consumed locally, approximately 12.5 percent was sold outside of the economic region.[3] In large metropolitan areas, such as St. Louis, it is likely that the proportion of "exported" services is somewhat higher, as nonmetropolitan communities often purchase some services from firms in metropolitan areas.

Compounded Annual Growth Rates of Employment, 1979-89

	St. Louis Metropolitan Area	United States
Total nonfarm employment	1.4%	1.9%
Construction	1.8	1.7
Manufacturing	−1.4	−0.7
Transportation and public utilities	0.5	1.1
Wholesale/retail trade	2.1	2.5
Finance, insurance and real estate	2.6	3.2
Miscellaneous services	3.8	4.6
Government	0.2	1.1

NOTE: Growth rates are based on data from the Missouri Division of Employment Security and the U.S. Department of Commerce.

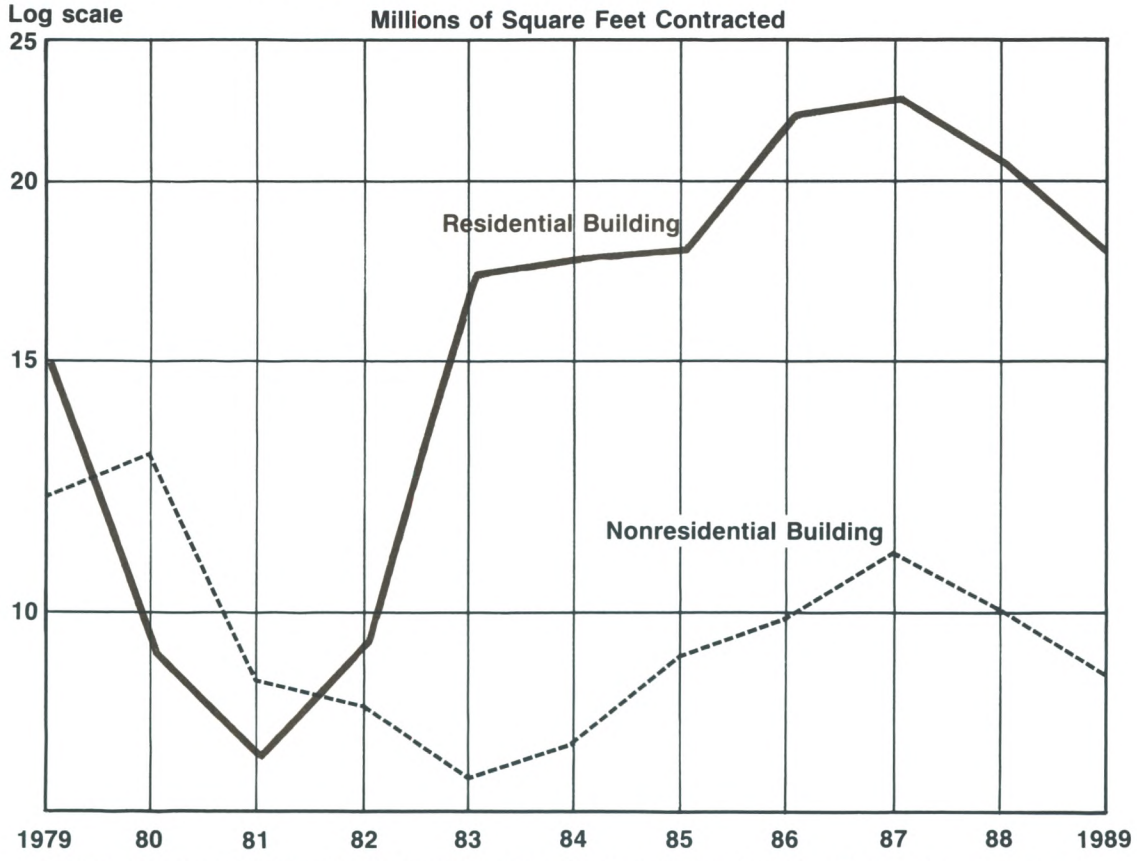
Construction Activity Slows in Recent Years

The table shows that construction employment rose at a moderate 1.8 percent rate in St. Louis between 1979 and 1989. This rate obscures a boom in construction activity that occurred in the mid-1980s. Area construction employment peaked at 56,600 in 1986, 35 percent higher than the 1982 trough; however, construction employment declined slightly in 1987 and 1988 and fell 5.1 percent last year. The figure shows that both residential and nonresidential building activity expanded strongly after the early 1980s recession and weakened only after 1987.[4] In terms of the number of square feet built, residential and nonresidential building declined since 1987 at annual rates of 12 percent and 9.4 percent, respectively. Despite the recent declines, the levels of both residential and nonresidential building activity remain stronger than in the 1981-83 period.

Residential building in the middle years of the decade was stimulated by a construction boom of multi-family dwellings. The elimination of federal tax provisions encouraging such construction and widespread increases in vacancy rates contributed to the sharp multi-family construction declines since 1987.[5] Much of the decline in residential construction activity since 1987 has been concentrated in this sector.

Figure 1

Construction in the St. Louis Metropolitan Area



NOTE: Chart created by the Federal Reserve Bank of St. Louis using Dodge Construction Potentials data. Excludes Jersey County, Illinois. Nonresidential excludes non-building construction.

The 1985 openings of St. Louis Centre and the restored Union Station were among the most dramatic retail construction developments during the decade. More recent developments include the opening of a mall in St. Charles County, the modernization and enclosure of Northwest Plaza and the construction of numerous strip shopping centers. In the office market, the one-million-square-foot Metropolitan Square office tower was completed in early 1989, causing area office vacancy rates to rise more than 2 percentage points in the first quarter to 17.9 percent. The area's vacancy rate was 17.6 percent at the end of 1989 compared with approximately 16 percent at the end of the previous three years.[6]

Income and Population Gains

Mirroring the area's slower employment growth, personal income received by St. Louisans grew more slowly than the national average. Real personal income rose at a 1.9 percent annual rate between 1979 and 1988, compared with a 2.3 percent rate for the United States. Despite some out-migration, population also grew, rising at a 0.4 percent annual rate in the 1979-88 period. Nationally, population rose at a 1 percent rate during the same period.

The preceding income and population gains combined to allow average income per resident of St. Louis to rise during the decade. In constant (1982-84) dollars, per capita incomes rose from $13,202 in 1979 to $15,054 in 1988, a 1.5 percent rate of increase. This compares with a 1.3 percent national rate of increase during the period to $13,961 in 1988. The rise in per capita income occurred despite the area's substantial loss of manufacturing jobs, which pay well above the all-industry average.

Outlook: More Slow Growth

Projections by governmental agencies and private forecasters, shown in the table indicate that population, employment and income are expected to increase slowly through the end of the century, at a rate slightly less than the national average. The projection of slow population growth reflects an anticipation of continued slow economic growth, as shown in the employment projections. The Missouri Division of Employment Services (MDES), in projections released in late 1989, estimates that nonfarm employment will grow at a 1.3 percent annual rate during the 1990s, a rate similar to the 1980s' pace. MDES foresees moderate growth in health, business and professional services and in wholesale and retail sectors. Health services are expected to provide the most new jobs by the year 2000, approximately 35,000, and will be the area's largest sector with more than 132,315 jobs at the end of the century.

The employment deceleration to a 0.8 percent annual rate anticipated by DRI/McGraw-Hill reflects less rapid growth in nonmanufacturing sectors than in the 1980s. DRI analysts suggest that what they consider to be St. Louis' strengths—its central location, superior distribution capabilities, low cost of living, diversification toward services and large number of major corporate headquarters—will allow the area's economy to continue to expand, but growth may be limited by a slowing national economy and problems related to manufacturing.

Many aging, inefficient plants within St. Louis' manufacturing sector were replaced by state-of-the-art operations in the 1980s. The productivity gains made possible by this modernization have eliminated some factory jobs, but have created a manufacturing base more likely to withstand the competition of the increasingly global market in the 1990s. Consistent with this view, both DRI and MDES project a stabilization in St. Louis' manufacturing workforce, after at least two decades of contraction.

Both expect jobs to decline slightly in nondurables sectors, particularly in industries like food products, textiles, apparel and leather products, but expect durables manufacturing employment to increase marginally by the end of the century. DRI expects that the weakening of the auto sector, as dramatically evidenced by the planned closing of Chrysler Plant 1, will continue through most of the current year, but as car sales strengthen in subsequent years, the durables sector will grow. MDES projections suggest motor vehicle production jobs will decline through 2000, but suggest gains in sectors such as instruments and aircraft manufacturing will allow the durables sector to expand.

The preceding projections were developed before the dramatic Eastern European developments led some analysts to predict deep defense spending cuts. Such cuts could cause substantial contraction of defense-related activity in St. Louis, most notably in the production of military aircraft and missiles which directly employs approximately 40,000 St. Louisans. Most analysts agree, however, that it is unlikely that cuts in the nation's defense budget will have any substantial local impact in the next few years. Recently announced developments may mitigate any adverse effects of defense spending cuts in the mid-1990s. McDonnell Douglas Corporation will shift production of Navy trainer jets and MD-11 commercial jet parts from California to the St. Louis area during the next few years. In addition, if approved by the federal government, the corporation will begin local production of F-18 Hornet aircraft and aircraft kits for export to South Korea in 1992 or 1993.

Summary

Despite severe declines in manufacturing activity early in the decade, the St. Louis economy expanded in the 1980s. To the extent that projections of the St. Louis economy are correct, the area's economic growth in the 1990s will be similar to that of the past decade. Area population and employment will continue to expand slowly, led by service-sector growth. But unlike previous decades, no further decline in manufacturing employment is anticipated. Increasing uncertainties regarding the defense and motor vehicle industries, however, obscure the future of the St. Louis economy.

FOOTNOTES

[1]The following discussion refers to the entire St. Louis metropolitan area, that includes the City of St. Louis, the four surrounding Missouri counties and five Illinois counties.

[2]See William B. Beyers and Theodore J. Hull, "Explaining the Growth of Producer Services in the United States, 1974-1985," presented at the North American Regional Science Association Meetings, Santa Barbara, California, November 10-12, 1989.

[3]See Beyers and Hull (1989). Erica L. Groshen, "Can Services be a Source of Export-Led Growth? Evidence from the Fourth District," *Economic Review,* Federal Reserve Bank of Cleveland (Third Quarter 1987), pp. 2-15, also found evidence of substantial exporting of services in U.S. metropolitan areas.

[4]Data excludes Jersey County, Illinois. Nonresidential building excludes non-building construction such as highways, bridges and utilities.

[5]See Thomas B. Mandelbaum, "The Nation and the Region: Home Building in the 1980s." *Pieces of Eight An Economic Perspective on the Eighth District,* December 1989, pp. 5-8.

[6]Vacancy rates from Turley Martin Company.

1990 Agricultural Outlook

by Jeffrey D. Karrenbrock
David H. Kelly provided research assistance.

The U.S. agricultural economy will likely show continued strength in 1990.[1] This article discusses some of the factors that will allow the agricultural economy to remain relatively strong in 1990. The article begins by focusing on the general U.S. farm economy and then provides an outlook for several commodities important in the Eighth Federal Reserve District.

U.S. Farm Finances

The United States Department of Agriculture's (USDA) current forecast of 1990 U.S. net farm income is between $44 billion and $49 billion, close to the preliminary estimate of 1989 net farm income of $48 billion (see the table). Factors that will tend to boost net farm income in 1990 include higher crop production, lower feed prices and higher total cash receipts. These gains, however, will be counteracted by lower fall crop prices, higher crop expenses and lower government payments.

Strong livestock receipts and higher crop receipts, largely due to increased crop production, may push total commodity receipts past $160 billion for the first time ever. As crop production increases and grain stocks build, crop prices will likely fall 5 percent to 10 percent this fall, hurting crop farmers, but making livestock feed cheaper. Farmers will spend about $1 billion more for fertilizer, chemicals and fuel in 1990, offsetting some of the expected increase in total commodity receipts, which could rise as much as $5 billion. Direct government payments may fall as much as $3 billion as the combination of lower deficiency payments for rice and cotton and lower disaster payments will likely outweigh higher wheat and feed grain deficiency payments during 1990.

Farm asset growth, together with a moderate increase in farm debt, will allow the balance sheet of the farm sector to improve again in 1990. The value of U.S. farm assets increased about 4.8 percent in 1989 and is expected to increase another 3.7 percent to 4.8 percent in 1990. The increased asset values are expected to encourage farm borrowings to increase $1 billion to $2 billion, following six years of declining farm debt. The total rate of return on farm assets, including returns from current income and real capital gains, was about 5.9 percent in 1989 and will range from 4 percent to 5 percent in 1990.

Livestock

Beef

U.S. beef production will increase about 1 percent in 1990, less than the anticipated increase in demand stemming from U.S. population growth and exports. This continued tightening of beef supplies relative to demand will push retail beef prices 1 percent to 2 percent higher in 1990, after rising 5 percent in both 1988 and 1989. Larger supplies of poultry and pork will help moderate the increase in retail beef prices.

Similar to the changes at the retail level, beef producers will receive higher prices in 1990, although the rate of price increase will be slower than in 1988 and 1989. Net returns on cow/calf operations will average about $5 to $10 per head more in 1990 than in 1989, aided by strong feeder calf prices and lower feed costs. Consequently, 1990 is expected to be the fifth consecutive year of positive returns for cow/calf operations. While fed beef prices may be as much as $5 per hundredweight higher in 1990, higher feeder cattle prices may limit feedlot profitability.

U.S. international trade in live beef and beef products will increase in 1990. A lower export tariff on Mexican feeder calves will help increase U.S. live imports in 1990. U.S. exports of beef will increase in 1990, due largely to a relaxation of import quotas in Japan. While U.S. beef and veal exports increased about 46 percent in 1989, export growth will be limited to between 12 percent and 15 percent in 1990.

Pork

Pork producers will likely see another profitable year in 1990 as average barrow and gilt prices may rise a dollar from 1989 to around $45 per hundred weight and feed costs will fall. Profits will be strongest in the first two quarters of the year although margins may become negative toward year-end. The strength in early 1990 will stem from limited production expansion and stronger demand factors. Retailers aggressively discounted pork in the fall of 1989, helping to reduce current pork supplies. Pork exports from the United States rose 23 percent in 1989 and will remain relatively strong into 1990, with total exports likely to be slightly below 1989 levels. Adding to pork demand is the re-introduction of the McRib at McDonalds restaurants. If industry projections are correct,

Farm Income Outlook for 1989[1]

Receipts ($ billions)	1988	Preliminary 1989	Forecast 1990
Livestock (total)	$ 79	$ 83	$ 80-83
Cattle/Calves	36	37	37
Hogs	9	9	10
Poultry/Eggs	13	14	14
Dairy	18	19	18
Other	3	4	1-4
Crops (total)	73	75	77-80
Wheat	6	7	8
Corn	10	11	13
Soybeans	12	11	10
Fruits/Vegetables	19	19	19
Other	26	27	27-30
Direct Payments from Government Programs	14.5	11	8-11
Cash Expenses	111.7	121	119-122
Inventory Change	– 4.3	6	1-3
Net Farm Income	45.7	48	44-49
Net Cash Income	59.9	53	52-57

[1]This partial table, compiled from speeches at the USDA Outlook Conference, does not include all income and expense items necessary to derive the Net Farm Income and Net Cash Income figures.

sales of the sandwich could account for 1 percent to 1.7 percent of commercial pork production. Potential increases in fall pork production could push prices lower in the third and fourth quarter, squeezing producer margins. Overall, however, 1990 should be a profitable year for pork producers.

Poultry

Poultry producers' profit margins will be squeezed in 1990 as broiler prices will likely fall 4 cents to 11 cents per pound, due to an expected 7 percent increase in production. Lower feed costs and continued expansion of demand, however, will help keep profit margins positive throughout the year. 1990 will mark the sixth consecutive year of positive average net returns to poultry producers.

Rapidly expanding demand has been the main factor allowing for continued profits in the industry. During 1980-1989, per capita consumption of poultry increased from 42 pounds in 1980 to around 65 pounds in 1989. Consumption in 1990 is expected to increase another 5 pounds per capita. Much of the increase in domestic demand has stemmed from increased health consciousness of consumers and an increased selection of value-added poultry products from which consumers may choose. Export demand for U.S. broilers will also continue to be strong in 1990 at about 900 million pounds, or almost 5 percent of production. This will be down slightly from last year's record exports of about 940 million pounds. Despite these strong demand factors, the increased production will lower both producer and retail poultry prices in 1990, with retail prices expected to fall 7 cents to 10 cents per pound to around the low-to-mid 80 cent to 85 cent level.

Crops

Corn

Increased domestic use and continued strong export demand will partially offset the price impact of the rebound in the 1989 corn harvest. For the 1989/90 marketing year that started September 1, the USDA is forecasting a season average price in the range of $2.00 to $2.40 per bushel, down from the season average of $2.54 in the 1988/89 marketing year. Domestic corn use is expected to increase about 6 percent during the marketing year and exports are forecast to rise 4 percent. Total U.S. corn use is expected to be about 7.6 billion bushels, close to the 1989 production level. Therefore, ending stocks of corn in August 1990 will be close to last year's.

With corn stocks stable, the question may rise as to why prices are forecast to fall in 1989/90. Part of the explanation lies with farmers' selling patterns in 1989. Movement of corn to elevators was slow in the fall of 1989, perhaps due to several factors: ample on-farm storage, farmers speculating on higher prices due to Soviet purchases and/or relatively high farm income in 1989. Regardless of the cause, movement to elevators was slow and there was very little seasonal downward movement in prices last fall, helping to boost the overall marketing year price. The timing of sales in 1990 will be determined by several factors, but with the heldover stock coming on to the market next year and with a likely seasonal decline next fall, overall corn prices are expected to be lower in 1989/90 than the year before.

Soybeans

Increased U.S. production in 1989 and potential record-breaking harvests in South America in 1990 will push soybean prices lower in the 1989/90 marketing season as total soybean use will increase only slightly. Similar to corn, the 1988 drought sharply lowered beginning U.S. soybean stocks in 1989, helping boost soybean prices. The increased 1989 soybean yields helped lower prices and consequently, domestic crush and exports are expected to rise slightly in 1989/90. Part of the expected increase in crush is a result of lower availability of cottonseed meal, due to fewer acres of cotton planted in 1989. Export growth will be limited by an abundant supply of South American beans coming on the market in 1990. As U.S. soybean stocks return to pre-drought levels, soybean prices are expected to fall into the $5 to $6 per bushel range during 1989/90.

Tobacco

Tobacco production may rise for the fourth consecutive year in 1990. Since the enactment of legislation in 1986 that significantly altered the quota setting procedure, altered price support levels and instituted the no-net-cost assessments for burley and flue-cured tobacco, production has been held below 1986 levels and surplus stocks have been depleted. While U.S. cigarette consumption has continued to fall, increased exports enabled manufacturers to increase cigarette production in 1987 and 1988. Cigarette consumption in the United States will likely continue to decline an average of 2 percent to 3 percent per year for the next several years as health concerns, increased taxes and smoking restrictions further curtail smoking. Cigarette exports are expected to continue to increase, but not enough to offset declining domestic consumption. Contrary to cigarette consumption, U.S. snuff consumption likely rose in 1989 and will probably rise again in 1990. Snuff consumption perhaps is gaining popularity as smokers maneuver around smoking restrictions.

Wheat

U.S. wheat production will likely expand again in 1990 in response to continued high wheat prices. Prices received by farmers for wheat are predicted to range from $3.85 to $4.00 per bushel during the 1989/90 marketing year, the highest price since the record $4.09 per bushel in the 1974/75 marketing year. U.S. wheat supplies in the 1989/90 marketing year (June 1, 1989 to May 31, 1990) are down about 11 percent from a year ago. The quantity of wheat demanded during 1988/89 was larger than the quantity produced that year, leaving smaller beginning wheat stocks for the 1989/90 marketing year. By the end of May 1990, U.S. wheat stocks are expected to be down 37 percent from May 1989. Total use of U.S. wheat is expected to decline slightly in the 1989/90 marketing year as increased domestic consumption will not quite offset declining exports. The summer wheat crop harvest should increase supplies by about 10 percent.

Several unknowns exist in the wheat market that could have significant impact on the price of wheat. With supplies extremely tight, modest changes in production or consumption could cause wide price swings. One of the most important factors will be whether or not the drought continues in the Plains states and lowers wheat yields again in 1990. Another important unknown is how much other countries, including Canada and the European Community, will expand production in response to high world prices. How aggressively the Soviets enter the wheat market as purchasers will also be a key factor in determining wheat prices this year.

Consumer Food Prices

Retail food prices rose about 6 percent in 1989, the largest increase since 1981. Food prices in 1990 are expected to increase at a slower rate of about 3 percent to 5 percent. Food categories expected to rise faster than the overall food category include fresh fruits and cereals and bakery products, both expected to rise 5 percent to 7 percent. Commodities putting downward pressure on food prices include poultry and eggs, which are expected to drop about 6 percent to 8 percent and 14 percent to 18 percent, respectively.

Summary

The overall agricultural economy in 1990 should show continued strength. As always, the aggregate income figures mask the differences in the profitability of different commodity enterprises. Cow/calf operations and wheat farmers will likely enjoy continued strong returns in 1990, while corn and soybean producers might generate lower returns. Pork and poultry producers will likely experience strong returns early in the year with margins shrinking late in the year. As farmers become more specialized in their operations, the forecast of the general agricultural economy becomes less relevant to describing their financial stability and individual commodity forecasts take on increased significance.

FOOTNOTE

[1]Data in this paper was obtained from presentations at the American Farm Bureau Federation Fall Industry Outlook Conference in Chicago, IL, on November 9, 1989 and the USDA Agricultural Outlook Conference in Washington, D.C., during November 28-30, 1989.

Competition Heats Up in the Home Mortgage Market

by Michelle A. Clark

Thomas A. Pollmann provided research assistance.

The residential mortgage market is changing dramatically, as the traditional domination of this market by savings and loan institutions (thrifts) is being challenged by commercial banks. This increased competition from banks is occurring at the same time that thrifts are facing tougher regulations, including a requirement that assets associated with residential mortgages make up a larger share of thrifts' portfolios. Recent trends in the home mortgage market in the United States and the Eighth District are examined below.

Mortgage Origination Trends

For the first time in 19 years of U.S. Department of Housing and Urban Development (HUD) record-keeping, U.S. commercial banks closed more permanent loans on one- to four-family residential properties (termed mortgage originations) than thrifts in June and September of 1989. Preliminary data from HUD indicate that commercial banks increased their share of the home mortgage origination market from 24 percent in September 1988 to 38 percent in September 1989, while the nation's thrifts' share fell from 43 percent to 36 percent during the same period. These changing shares reflect an absolute decline in originations by thrifts and a rise in originations by banks at a time when total originations fell.

The general decline in originations by thrifts from the first three quarters of 1988 through the first three quarters of 1989 is outlined in the figure. The value of mortgage originations at all U.S. thrifts declined 17.5 percent during the period, from $120.01 billion to $99.02 billion. Total mortgage originations at thrifts located in Eighth District states followed the national trend, falling from $9.83 billion for the first nine months of 1988 to $8.50 billion for the first nine months of 1989, a decline of 13.5 percent. Although thrifts in Indiana, Kentucky and Tennessee showed slight gains, Illinois and Missouri thrifts, which account for more than half of the originations for the seven states, experienced declines of 20.3 percent and 25.1 percent.

Two major forces are behind the recent trend in home mortgage originations. The first is the shrinkage of the thrift industry. The Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) has contributed to this shrinkage by imposing tougher capital requirements. For example, traditional types of intangible capital such as goodwill will gradually be phased out in regulatory definitions of capital. Under this legislation, thrifts are required to meet three capital-to-asset ratios. In addition, by July 1991, the majority of thrifts' assets (70 percent) are required to be composed of mortgage-related instruments, such as mortgage loans and mortgage-backed securities (MBSs), if the institutions wish to keep their thrift charters.[1]

Although the stricter capital requirements will not be fully implemented until 1995, a number of thrifts are struggling to meet the 1.5 percent tangible capital-to-assets ratio and the 3 percent core capital-to-assets ratio (leverage ratio) which went into effect December 7, 1989. Raising the leverage ratio requires either increasing capital for a given amount of assets or decreasing assets while keeping the amount of capital constant. Raising capital is not an option for many troubled thrifts, as the industry's problems have made potential investors wary; for most thrifts, asset shrinkage has proved to be the only practical way to meet the new capital requirements.

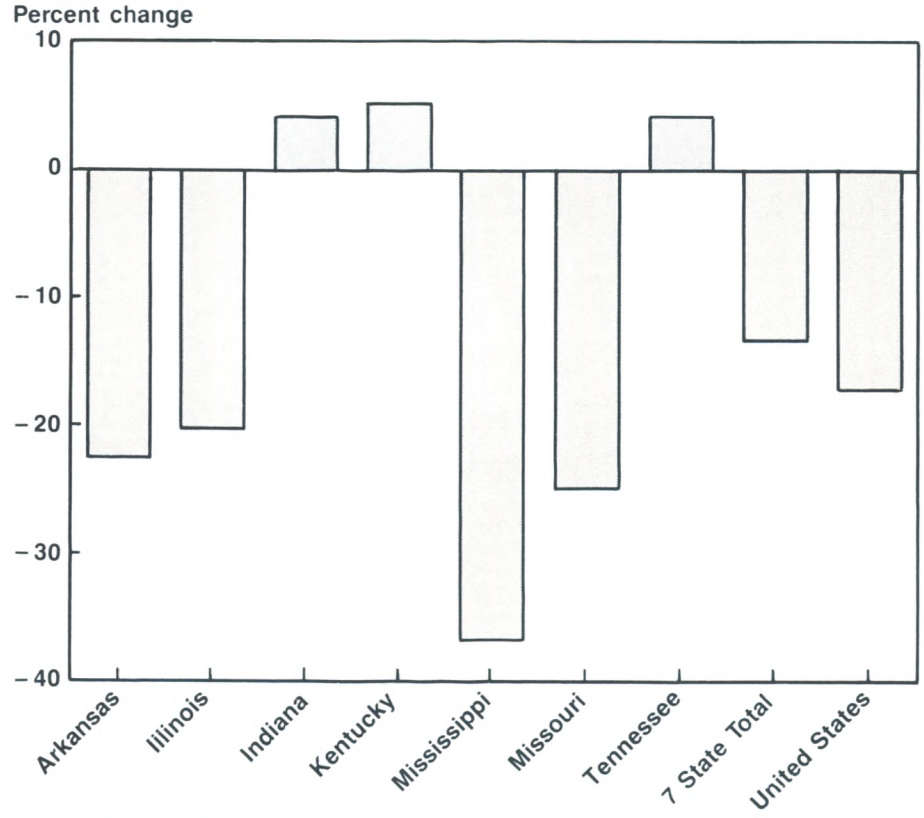
Some of this shrinkage is beyond the thrifts' control, as huge deposit outflows at a number of institutions have slowed lending of all types. Many thrifts, however, are deliberately paring deposits and selling off assets in an attempt to boost their leverage ratios. According to the Office of Thrift Supervision (OTS), the combined assets of the nation's thrifts declined $48.4 billion, or 3.6 percent, from December 1988 to September 1989. Holdings of permanent mortgage loans and MBSs fell $21.8 billion, or 2.3 percent, during the same period.

The second force at work is the increased aggressiveness of commercial banks in originating, holding and servicing mortgages and MBSs, as expected profits in traditional markets have fallen relative to home mortgages. For example, nonfinancial U.S. companies are increasingly turning toward the bond and commercial paper markets for funds, eliminating a major source of lending for many U.S. banks. Increases in problem loans by many banks arising from third world and commercial real estate lending and leveraged buyout deals have prompted the industry to return to the residential mortgage market as a relatively stable source of income.

With interest rates falling below 10 percent, fixed rate mortgages are currently more popular with consumers than adjustable rate mortgages (ARMs), and that too has helped commercial banks win customers from thrifts, which predomi-

Figure 1

Changes in Mortgage Originations at Thrifts: First Three Quarters of 1988 vs. First Three Quarters of 1989



SOURCE: State data from Federal Home Loan Banks of Chicago, Cincinnati, Dallas, Des Moines and Indianapolis; U.S. data from Office of Thrift Supervision. Due to overlapping Federal Reserve and Federal Home Loan districts, data are for whole state.

nantly offer ARMs. Many bankers have expressed a desire to expand their consumer lending in general; they see the home mortgage as a key product in attracting customers who may then buy a bank's other products, such as automobile and home equity loans, as well as establishing checking and savings accounts.

The new risk-based capital requirements that all financial institutions will have to meet by the end of 1992 are a further inducement for banks to hold mortgage-related instruments. The amount of capital a financial institution will be required to hold against its assets will depend on the riskiness of the assets in its portfolio as determined by bank supervisors. Regulators have assigned loans secured by one- to four-family residential property a 50 percent risk weight versus a 100 percent risk weight for assets such as commercial loans.

The changes in the home mortgage origination market are already showing up in the balance sheets of the nation's commercial banks.[2] As indicated in table 1, U.S. bank holdings of residential mortgages rose from 9.42 percent of total assets at year-end 1987 to 10.44 percent of total assets as of September 30, 1989, an increase of almost 11 percent. For Eighth District banks, the increase during the period was even sharper, 15.7 percent, with residential mortgages growing from 11.11 percent of assets to 12.85 percent. Moreover, commercial banks in four of the District's seven states experienced double-digit increases in the share of residential mortgages held, with Kentucky banks' share rising almost 35 percent.

The ratio of residential mortgages to total assets at District banks increased across all asset size categories. Banks with assets of less than $300 million, which make up 96 percent of total District banks, held between 15.4 percent and 16 percent of their assets in residential mortgages at the end of September compared with 14 percent to 14.5

Table 1
Residential Mortgages to Total Assets at Commercial Banks by Location and Asset Size

	12/31/87	12/31/88	9/30/89
United States	9.42%	10.00%	10.44%
Eighth District	11.11	12.14	12.85
Arkansas	11.85	12.33	12.77
Illinois	12.73	13.48	13.86
Indiana	14.14	14.81	14.89
Kentucky	8.22	9.90	11.01
Mississippi	9.88	11.13	11.68
Missouri	12.74	14.10	15.01
Tennessee	8.42	8.90	9.67
District Banks			
< $25 million	13.94	15.05	15.99
$25 million-$50 million	14.53	15.32	15.52
$50 million-$100 million	13.96	14.86	15.60
$100 million-$300 million	14.47	15.44	15.39
$300 million-$1 billion	9.67	10.33	13.27
$1 billion-$10 billion	6.20	7.59	8.12

NOTE: Residential mortgage data include permanent loans secured by one- to four-family residential property and second mortgages but exclude home equity loans. Data are for that portion of the state located within the Eighth District. Banks with assets greater than $10 billion have been excluded from the U.S. ratios to make them more directly comparable with Eighth District averages, as there are no banks in the District of that size.

SOURCE: FFIEC Consolidated Reports of Condition and Income, 1987-1989

percent at year-end 1987. The District's largest banks increased their holdings of residential mortgages even more; both categories of banks with assets of more than $300 million increased their shares of residential mortgages more than 30 percent during the period.

The Secondary Mortgage Market

The existence of a secondary market for mortgages (or mortgage-backed securities) is also a key factor in the changes in the residential mortgage market. The process of bundling a portfolio of assets with similar characteristics, such as 30-year fixed rate residential mortgages, and selling them on the capital market is called asset securitization. Securitization started in the 1970s, and residential mortgage loans were among the first types of assets securitized; today credit card receivables, home equity loans and auto loans, among other assets, are also securitized and sold in secondary markets.

Prior to the 1970s, mortgages were not considered liquid enough to trade as securities because of their different terms and interest rates. In 1970, the Government National Mortgage Association (Ginnie Mae), an agency chartered to promote mortgage lending and backed by the full faith and credit of the U.S. government, effectively opened a secondary market for mortgages by developing a "pass-through security." Mortgage originators can put together a package of mortgages in denominations such as $1 million (called a pool) and then sell this pool to Ginnie Mae, which in turn issues securities to be purchased by a third party, usually an institutional investor. Ginnie Mae guarantees the timely payment of interest and principal of the mortgages in the pool.

Mortgage securitization is especially appealing because loan sales remove these assets from the balance sheet and thus reduces the need for capital, provided the institution holds no recourse on the underlying loans. Loan sales also reduce the need for funding liabilities, as well as generating cash with which more mortgages and other loans can be made. When homeowners make their monthly mortgage payments to their banks or savings and loans, the institutions "pass through" or forward the total payments on that bundle to the owner of the security. Because of the Ginnie Mae guarantee, these pass-through securities have a very low default risk. Pass-through securities owners, however, still face interest rate and prepayment risks.[3]

A financial institution thus has several options regarding participation in the residential mortgage market: (1) originating and holding mortgages in

its asset portfolio; (2) pooling mortgages and selling them to the secondary market; (3) providing mortgage servicing to other institutions; and (4) swapping mortgages for or purchasing MBSs, earning fee income as it would from any other investment. Which combination of options an institution chooses depends to a large extent on the composition of the rest of its asset portfolio and the profitability of each activity given the institution's resources. Many commercial banks are finding mortgage-related activities more profitable now than ever.

The success of the Ginnie Mae pass-through security prompted the development of other types of MBSs. Both the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae), U.S. government-chartered mortgage corporations, offer MBSs as do a number of large banks and private mortgage institutions such as Citicorp. Since 1983, a number of MBS derivatives have been developed to make MBSs even more marketable by eliminating some of the interest rate and prepayment risk associated with residential mortgage pooled securities.[4]

The volume of MBSs issued and the number of players in the market have grown rapidly in recent years, with thrifts now holding less than $200 billion of the $1 trillion in MBSs outstanding. The MBS market is undergoing roughly the same transformation as the mortgage origination market: thrifts are shedding MBSs, often the most liquid assets in their portfolios, to meet the new leverage ratios while banks are beefing up their MBS portfolios even more aggressively than their holdings of residential mortgages.

The push by commercial banks to increase their holdings of MBSs, in particular those issued by U.S. government-chartered agencies, is showing up on the balance sheet. As indicated in table 2, U.S. commercial banks increased their holdings of U.S. agency MBSs from 6 percent of assets at year-end 1987 to 8.28 percent of assets on September 30, 1989, a 38 percent increase. District banks, which held 8.04 percent of their assets in these MBSs at year-end 1987, increased their holdings more than 30 percent during the period, to 10.58 percent of assets. Each District state experienced double-digit increases in their MBSs-to-assets ratios. Kentucky registered the largest gain during the period, with MBS holdings to assets increasing 51 percent. Among asset size categories, District banks with $1 billion or more in assets showed the greatest increase in holdings, with MBSs to assets increasing from 4.64 percent to 7.32 percent during the period, a 57.8 percent jump.

Analysts cite a number of factors in explaining the growing role of MBSs in the securities port-

Table 2
U.S. Government Agency Mortgage-Backed Securities and Other Obligations to Total Assets at Commercial Banks by Location and Asset Size

	12/31/87	12/31/88	9/30/89
United States	6.00%	6.94%	8.28%
Eighth District	8.04	9.48	10.58
Arkansas	9.40	11.32	12.05
Illinois	11.73	13.24	14.56
Indiana	8.06	9.10	10.36
Kentucky	6.88	9.29	10.41
Mississippi	13.12	14.48	15.01
Missouri	5.64	6.28	7.43
Tennessee	7.93	9.25	10.56
District Banks			
< $25 million	13.65	15.74	15.59
$25 million-$50 million	12.20	14.48	15.47
$50 million-$100 million	10.91	13.47	15.32
$100 million-$300 million	8.54	10.35	11.20
$300 million-$1 billion	5.19	5.76	6.19
$1 billion-$10 billion	4.64	5.52	7.32

NOTE: U.S. government obligations include U.S. government agency issued or guaranteed certificates of participation in residential mortgage pools and their derivatives and obligations of other government agencies or corporations, but exclude Treasury securities. Data are for that portion of the state located within the Eighth District. Banks with assets greater than $10 billion have been excluded from the U.S. ratios to make them more directly comparable with Eighth District averages, as there are no banks in the District of that size.

SOURCE: FFIEC Consolidated Reports of Condition and Income, 1987-1989

folios of commercial banks. Many MBSs, even after adjusting for prepayment risk, offer higher yields than U.S. Treasury securities. Commercial banks are also attracted to MBSs because municipal bonds, in the wake of the Tax Reform Act of 1986, no longer offer as much of a tax break to profitable banks.

The new risk-based capital guidelines, however, appear to be the most important factor driving up MBS holdings by commercial banks. Because they are guaranteed by the U.S. government, Ginnie Mae and U.S. Treasury securities have been assigned a risk weight of zero, meaning no capital will be required for holding these assets.[5] Participation certificates and collateralized mortgage obligations issued by Freddie Mac and Fannie Mae, in addition to some privately-issued MBSs, will carry 20 percent risk weights, while other MBSs will carry 50 or 100 percent risk weights.

Conclusion

For a variety of reasons, Eighth District and U.S. commercial banks are competing successfully in the residential mortgage market previously dominated by thrifts. How long the Catch-22 that many thrifts currently find themselves in—having to shed assets like MBSs to meet stricter capital requirements but also being required to hold more mortgage-related instruments in their portfolios—will last is uncertain and depends in part on any changes to FIRREA. For the short term, many analysts expect banks to continue to increase their holdings of mortgage-related instruments, but the long-term outlook depends to a large extent on how quickly the thrift industry recovers.

FOOTNOTES

[1]See "Resolving the Thrift Crisis" by Lynn M. Barry in the December 1989 issue of *Pieces of Eight* for a detailed explanation of the new regulatory requirements for thrifts under FIRREA.

[2]Under current regulatory rules, commercial banks are not required to report mortgage origination data, only the value of mortgages held; therefore, a direct comparison with mortgage originations at thrifts is not possible. Previously cited mortgage origination data for commercial banks are estimated by HUD and are not available at the detail desired for this analysis.

[3]Interest rate and prepayment risks are the risks assumed by the owner of an asset stemming from interest rate changes. Assuming different term structures of assets and liabilities, as interest rates rise, holders of long-term fixed rate assets receive less return on these assets than they have to pay out on liabilities such as short-term deposits (called interest rate risk). When interest rates fall, holders of long-term assets may receive a lower-than-expected return if the underlying asset is repaid faster than expected because of the ability to refinance the asset (called prepayment risk).

[4]Mortgage-backed bonds, collateralized mortgage obligations (CMOs), real estate mortgage investment conduits (REMICs) and stripped MBSs consisting of interest-only (IOs) and principal-only (POs) strips are just some of the MBS derivatives issued by U.S. government agencies and private financial institutions today. For a detailed explanation of these instruments, see "Asset Securitization: A Supervisory Perspective," *Federal Reserve Bulletin*, October 1989, pp. 659-69.

[5]In addition to the risk-based requirements, all institutions will have to meet a leverage ratio based on total assets, currently proposed to be at least 3 percent.

Statistics

Eighth District Business

	Level	Compounded Annual Rates of Change			
	IV/1989	III/1989-IV/1989	IV/1988-IV/1989	1989[1]	1988[1]
Payroll Employment (thousands)					
United States	109,390.0	1.7%	2.4%	2.8%	3.3%
District	66,553.0	1.7	1.2	1.5	2.5
Arkansas	891.7	3.0	2.7	2.9	2.8
Little Rock	244.8	3.7	1.9	2.6	3.2
Kentucky	1,404.1	1.3	1.7	1.9	3.2
Louisville	463.0	6.1	2.0	1.7	3.1
Missouri	2,276.6	2.4	0.9	1.4	1.8
St. Louis	1,162.6	3.2	1.3	1.4	1.5
Tennessee	2,082.9	0.7	0.4	0.7	2.7
Memphis	444.6	4.3	1.6	2.1	2.7
Manufacturing Employment (thousands)					
United States	19,514.3	−2.1%	−0.2%	1.1%	2.0%
District	1,453.0	−1.2	0.3	1.2	2.6
Arkansas	232.9	−1.4	0.6	2.5	4.0
Kentucky	281.7	1.4	1.6	2.6	4.5
Missouri	429.3	−2.4	−0.5	0.6	1.3
Tennessee	509.1	−1.6	0.1	0.5	2.2
District Nonmanufacturing Employment (thousands)					
Mining	49.4	−3.9%	−2.9%	−4.7%	−4.4%
Construction	280.8	6.1	−0.8	−1.8	−1.4
FIRE[2]	340.0	1.5	0.9	0.8	0.5
Transportation[3]	385.1	−0.7	0.7	1.5	3.5
Services	1,472.1	7.8	3.0	3.0	4.5
Trades	1,581.0	0.7	0.9	1.4	2.4
Government	1,092.6	−0.9	1.4	1.5	1.7
	III/1989	II/1989-III/1989	III/1988-III/1989	1988[1]	1987[1]
Real Personal Income[4] (billions)					
United States	$3,557.9	4.9%	3.6%	3.4%	3.2%
District	195.9	1.7	3.0	2.8	3.0
Arkansas	25.3	−6.1	2.0	2.9	1.3
Kentucky	41.7	1.0	2.7	2.8	2.6
Missouri	69.3	2.9	3.1	2.1	2.2
Tennessee	59.6	4.1	3.5	3.6	4.9
			Levels		
	IV/1989	III/1989	1989	1988	1987
Unemployment Rate					
United States	5.3%	5.3%	5.3%	5.5%	6.2%
District	5.5	5.4	5.8	6.5	7.2
Arkansas	6.5	6.6	7.1	7.6	8.1
Little Rock	5.6	5.9	6.2	6.4	7.2
Kentucky	5.7	6.2	6.4	7.8	8.7
Louisville	5.2	6.1	5.7	6.3	6.9
Missouri	5.6	5.3	5.5	5.7	6.3
St. Louis	5.7	5.2	5.5	6.0	6.5
Tennessee	4.8	4.5	5.1	5.8	6.6
Memphis	4.0	4.0	4.6	5.1	5.7

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			
	IV/1989	III/1989-IV/1989	IV/1988-IV/1989	1989[1]	1988[1]
Consumer Price Index (1982-84 = 100)					
Nonfood	125.4	3.9%	4.4%	4.7%	4.0%
Food	127.4	4.9	5.4	5.8	4.1
Prices Received by Farmers (1977 = 100)					
All Products	147.0	7.7%	2.1%	6.5%	8.8%
Livestock	165.7	17.1	8.8	6.6	2.7
Crops	127.7	−3.1	−5.4	6.5	18.3
Prices Paid by Farmers (1977 = 100)					
Production items	165.0	−2.4%	1.9%	5.3%	6.9%
Other items[2]	178.0	0.0	2.9	4.4	4.4

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 September 30, 1989 *(by Asset Size)*

	Less than $100 million	$100 million - $300 million	$300 million - $1 billion	More than $1 billion
SELECTED ASSETS				
Securities	−4.4%	10.6%	8.5%	18.0%
U.S. Treasury & agency securities	−1.2	16.9	14.5	31.2
Other securities	−15.4	−30.8	−33.9	−35.4
Loans & Leases	−3.7	14.7	21.0	7.9
Real estate	−2.6	17.2	35.9	18.1
Commercial[1]	−15.2	6.5	17.8	1.1
Consumer	−1.7	13.8	8.7	7.1
Agriculture	−4.5	34.9	13.7	−23.7
Loan loss reserve	−3.0	20.7	30.0	20.1
Total Assets	−4.0	13.8	18.4	7.8
SELECTED LIABILITIES				
Deposits	−4.0%	14.4%	18.4%	5.3%
Nontransaction accounts	−2.6	17.1	21.2	10.2
MMDAs	−22.1	−4.8	9.6	16.6
$100,000 CDs	4.1	18.8	17.6	−3.6
Demand deposits	−8.3	5.2	10.3	−5.1
Other transaction accounts[2]	−7.4	8.9	14.7	−1.9
Total Liabilities	−4.1	13.8	18.4	8.7
Total Equity Capital	−2.4	13.3	18.5	8.1

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		
	III/89	III/88	III/87	III/89	III/88	III/87
EARNINGS AND RETURNS						
Annualized Return on Average Assets						
Less than $100 million	.83%	.80%	.74%	.85%	.74%	.64%
$100 million - $300 million	.81	.76	.75	1.00	.85	.80
$300 million - $1 billion	.78	.80	.72	.89	.68	.58
$1 billion - $10 billion	.43	.64	.45	.81	.75	.60
More than $10 billion	—	—	—	.06	.91	−1.08
Agricultural banks	1.21	1.15	.90	1.12	1.01	.76
Annualized Return on Average Equity						
Less than $100 million	8.87%	8.67%	8.28%	9.23%	8.26%	7.28%
$100 million - $300 million	9.75	9.12	9.20	12.28	10.86	10.33
$300 million - $1 billion	9.81	10.10	9.09	12.23	9.80	8.21
$1 billion - $10 billion	6.74	9.60	6.68	12.52	11.84	9.36
More than $10 billion	—	—	—	1.31	18.85	−24.50
Agricultural banks	12.12	11.68	9.42	11.42	10.44	8.09
Net Interest Margin[1]						
Less than $100 million	3.00%	2.96%	3.01%	4.28%	4.25%	4.32%
$100 million - $300 million	2.98	2.91	3.00	4.44	4.25	4.24
$300 million - $1 billion	3.09	3.03	3.09	4.38	4.15	4.24
$1 billion - $10 billion	2.70	2.79	2.80	4.14	4.06	4.01
More than $10 billion	—	—	—	3.39	3.30	3.26
Agricultural banks	3.92	3.83	3.87	4.14	4.07	4.04
ASSET QUALITY[2]						
Nonperforming Loans[3]						
Less than $100 million	1.66%	1.82%	2.27%	2.15%	2.43%	2.90%
$100 million - $300 million	1.72	1.72	2.07	1.95	2.01	2.45
$300 million - $1 billion	1.38	1.33	1.84	2.49	2.20	2.54
$1 billion - $10 billion	2.18	2.03	2.45	2.26	2.15	2.51
More than $10 billion	—	—	—	4.87	5.53	5.53
Agricultural banks	1.87	2.08	2.84	2.22	2.69	3.81
Loan Loss Reserves						
Less than $100 million	1.47%	1.46%	1.48%	1.56%	1.63%	1.62%
$100 million - $300 million	1.43	1.36	1.39	1.46	1.51	1.52
$300 million - $1 billion	1.42	1.32	1.36	1.62	1.64	1.72
$1 billion - $10 billion	1.79	1.82	1.95	1.80	1.79	1.85
More than $10 billion	—	—	—	4.24	4.18	4.22
Agricultural banks	1.74	1.76	1.75	2.04	2.08	2.12
Net Loan Losses[4]						
Less than $100 million	.23%	.27%	.46%	.42%	.52%	.72%
$100 million - $300 million	.32	.32	.41	.38	.45	.53
$300 million - $1 billion	.34	.29	.51	.51	.56	.68
$1 billion - $10 billion	.59	.83	.46	.62	.74	.52
More than $10 billion	—	—	—	.80	.77	.60
Agricultural banks	.19	.25	.69	.32	.47	.86

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, nonaccrual, and restructured loans.
[4]Loan losses are adjusted for recoveries.