

Economic Review



FEDERAL RESERVE BANK OF KANSAS CITY

December 1988

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An Uncertain Outlook

The Tenth District Economy:
Trailing the Nation

U.S. Agriculture Shrugs Off the Drought

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The U.S. Economy in 1989: An Uncertain Outlook

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By J. A. Gacy and Richard Roberts

The Federal Reserve's monetary policy in **1989** will likely focus on countering emerging inflationary pressures. As these pressures are contained, the good economic performance shown by the economy in recent years is likely to continue.

The Tenth District Economy: Trailing the Nation

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By Tim R. Smith

Despite improvements in agriculture and manufacturing, weakness in energy and construction left the economies of most Tenth District states with only slight gains in **1988**. The district still lacks a strong, dominant sector to help it catch up with the nation in **1989**.

U.S. Agriculture Shrugs Off the Drought

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By Mark Drabentstott and Alan Barkema

Bolstered by strong crop prices and some continued federal assistance in **1988**, U.S. agriculture effectively shrugged off the worst drought since the **1930s**. The farm outlook for **1989** remains bright. Overall, U.S. agriculture should enjoy a third straight year of broad-based recovery.

The U.S. Economy in 1989: An Uncertain Outlook

By J. A. Cacy and Richard Roberts

After completing a sixth year of uninterrupted expansion, the U.S. economy enters **1989** in remarkably good condition. The nation's output of goods and services is expanding at a moderate pace, employment is showing strong growth, and unemployment appears to have stabilized at a relatively low level. Inflation, moreover, remains within a moderate range, even though it is high by historical standards.

Generally good economic performance is likely to continue throughout **1989**, although a number of factors could cause the economy's performance to deteriorate. An important, potentially threatening factor is that the economy is operating at increasingly high capacity levels, raising the possibility that strong inflationary pressures could develop in the period ahead. Unless checked, these pressures could lead to sharply rising interest rates, falling equity prices, and economic

recession. With the economy expected to continue growing in **1989**, monetary policy will likely focus on preventing rising inflationary pressures from emerging.

After reviewing developments in **1988**, this article discusses the economic outlook for **1989** and the uncertainties facing the economy in the coming year.

Strong economy in 1988

The economy performed much better than expected in **1988**, especially during the first half of the year, as the anticipated negative fallout from the October **1987** stock market collapse did not materialize. Economic output grew moderately in **1988**, employment expanded rapidly, and the unemployment rate declined. Inflation picked up somewhat during the year compared with **1987**.

The strong **1988** economy, despite the stock market shock, was due in part to rising export demand, which helped maintain growth in domestic production and income. Also, timely postcollapse monetary and fiscal policy actions

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TABLE 1

Real gross national product and components
(percent change at seasonally adjusted annual rates)

	1987	1988		
	Q4	Q1	Q2	Q3
GNP	6.1	3.4	3.0	2.5
Final sales	0.4	3.6	6.3	2.0
Gross domestic demand	5.4	1.6	1.3	2.5
Personal consumption expenditures	-2.1	4.5	3.0	3.9
Nonresidential fixed investment	1.7	7.6	15.0	4.0
Residential fixed investment	1.3	-6.5	0.2	4.3
Government purchases	5.0	-7.9	3.9	-5.2
Exports	17.7	25.7	9.1	14.5
Imports	9.9	6.9	-3.7	13.1
Addenda				
Inventory investment*	67.1	66.0	35.3	39.5
Net exports*	-126.0	-109.0	-92.6	-93.9
*Level, billions of 1982 dollars				
Source: Commerce Department, Bureau of Economic Analysis				

helped repair the damage to consumer and business confidence administered by the plunge in stock prices.

Monetary policy maintained an accommodative stance in early 1988, but concern about inflation resulted in some policy tightening as the year progressed.

Potential stock market effects

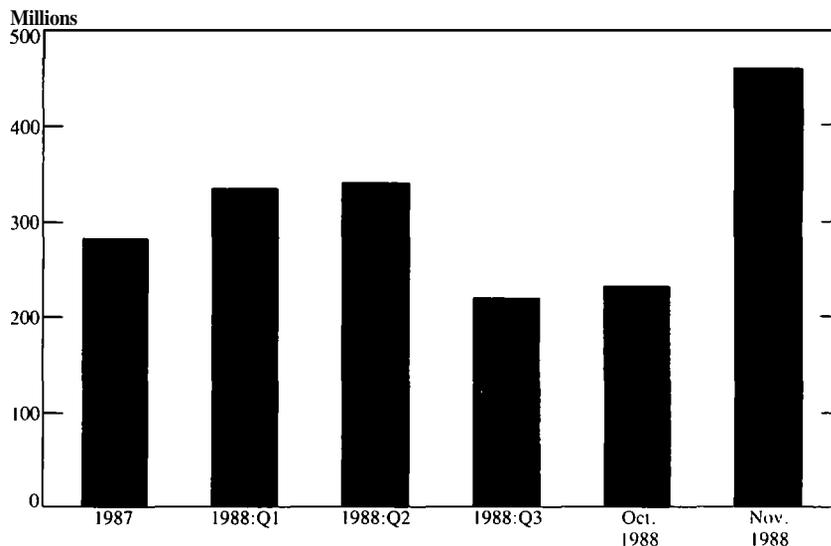
A sudden, sharp drop in stock prices can theoretically affect economic activity in a number of ways. Falling stock prices might precipitate a widespread financial crisis, which in turn would adversely impact the economy. In the absence of a financial crisis, a stock market collapse could directly affect the economy by causing a decline in consumer and business spending. The effect

on consumer spending could result from a decline in household wealth, or a drop in consumer confidence about future economic conditions. The effect on business spending could result from an increase in the cost of raising equity capital as well as from a decline in business confidence.

These theoretical linkages between stock prices and the economy are supported by historical experience. While the historical connection between stock prices and the economy is not as close as many contend, past experience shows that stock market declines are frequently followed by economic weakness.

It is not surprising, then, that the stock market collapse generated widespread expectations that economic weakness would develop in late 1987 and early 1988. These expectations appeared highly warranted given the unprecedented magni-

CHART 1
Average monthly change in employment



Source: Labor Department, Bureau of Labor Statistics

tude of the drop in stock prices.

First-half economic strength

Contrary to expectations of economic weakness, real gross national product (GNP) increased at a healthy annual rate of 3.2 percent during the first half of 1988 (Table 1). In addition to strong net exports, economic growth was bolstered by robust consumer spending and sharply rising outlays for capital equipment by the nation's business sector.

The first half's strong economic growth rate was accompanied by large employment gains and a decline in unemployment. Monthly increases in nonfarm payroll employment averaged 343 million during the first two quarters of 1988, up from 286 million in 1987 (Chart 1). These large employment gains were more than enough to absorb ongoing increases in the nation's labor

force. As a result, the unemployment rate declined from 5.8 percent in December 1987 to 5.3 percent in June 1988.

Economic strength was also accompanied by signs of rising inflationary pressures, as most price indexes increased more rapidly than in 1987. The Consumer Price Index (CPI) less food and energy, a good measure of underlying inflationary pressures, rose at an annual rate of 4.9 percent in the first two quarters of the year, compared with 4.2 percent in 1987 (Table 2). Labor costs also increased more rapidly in the first half of 1988, with the employment cost index increasing at an annual rate of 4.2 percent during the period, up from 3.3 percent in 1987.

Growth continues after midyear

The economy continued to expand after midyear, although the pace of real GNP growth

TABLE 2

Measures of inflation

(percent change from prior period at seasonally adjusted annual rates)

Period	Consumer price index		Producer price index		Employment cost index*	GNP	
	All items	All items less food and energy	All items	All items less food and energy		Fixed weight index	Implicit price deflator
1987	4.4	4.2	2.4	2.2	3.3	4.0	3.1
1988							
Q1	4.2	5.4	2.7	4.6	3.9	3.5	1.7
Q2	4.5	4.3	3.8	2.4	4.5	5.0	5.5
Q3	4.8	4.0	6.5	6.7	4.5	5.3	4.7
Sept.	4.1	4.9	4.5	7.4	—	—	—
Oct.	5.1	5.9	0.0	-1.0	—	—	—
Nov.	3.0	3.9	3.3	3.1	—	—	—

*Percent change from year earlier in the wages, salaries, and benefits of private industry employees, not seasonally adjusted

Source: Labor Department, Bureau of Labor Statistics and Commerce Department, Bureau of Economic Analysis

slowed to 2.5 percent in the third quarter, compared with 3.2 percent in the first half (Table 1). Net exports declined slightly in the third quarter, as export growth slowed from the rapid first-half pace and import growth picked up. Also, business fixed investment grew less rapidly than earlier in the year. Much of the slower **GNP** growth in the third quarter was due to a decline in agricultural production caused by widespread drought conditions during the summer months. The drought effect held down economic growth even more in the fourth quarter.

Employment growth continued strong after midyear, although less so than earlier, and unemployment stabilized. Monthly increases in nonfarm payroll employment averaged 276 million during the July-November period, down from 343 million in the first half (Chart 1). The unemployment rate was 5.4 percent in November,

about the same as in June.

Inflationary pressures remained fairly strong after mid-1988. While the CPI less food and energy increased somewhat less rapidly than in the first half, other price indexes grew more rapidly (Table 2).

Economy bolstered by net exports

An important factor countering the effects of the stock market collapse and bolstering economic growth in 1988 was the strength of the economy's foreign sector. During the first three quarters of the year, real net exports increased a total of \$32 billion. As a result, the international sector accounted for about 37 percent of the total growth in real GNP during the three-quarter period. The rise in net exports reflected a combination of surging exports, which increased at an annual rate of

16 percent during the period, and subdued growth in imports, which rose at a rate of only about 5 percent.

The strength in net exports was due importantly to the lagged effects of past declines in the value of the U.S. dollar, which made U.S. exports more competitive in world markets, while reducing the competitive position of goods imported into the country. Also, U.S. export growth was aided by continued expansion in most foreign economies.

The U.S. dollar's foreign exchange value trended upward during much of 1988, but declined in October and November (Chart 2). The somewhat surprising strength in the dollar was due in part to increases in U.S. interest rates and to the strong rise in net exports, which bolstered international confidence that the large U.S. trade imbalance was being redressed. The dollar weakness in the fall of 1988 reflects in part renewed concern about the long-run outlook for the trade deficit.

Policy actions strengthen confidence

Another factor contributing to economic strength in 1988 was the Federal Reserve's monetary policy. The System's timely actions in the wake of plunging stock prices helped avert widespread financial instability and bolstered consumer and business confidence. Timely fiscal policy actions in the fall of 1987 also helped shore up confidence in the economy.

The most urgent danger immediately following the stock market collapse was that a widespread financial crisis would develop. The Federal Reserve responded to this danger by announcing on October 20, 1987 its readiness "to serve as a source of liquidity to support the economic and financial system."¹ Also, in

¹ See press release, Board of Governors of the Federal Reserve System, October 20, 1987.

telephone conferences held daily in the last two weeks of October, the Federal Open Market Committee (FOMC) agreed on the need to meet promptly any unusual liquidity requirements of the economic and financial system. In the process of meeting these liquidity requirements, the Federal Reserve used open market operations to reduce the degree of pressure on bank reserve positions shortly after October 19 and again late in the month.²

As a result of these actions, nonborrowed reserves held by the banking system rose sharply in late October and **short-term** interest rates declined. Long-term interest rates also dropped following the stock market collapse, as funds withdrawn from the stock market were placed in the bond market.

While monetary policy actions helped steady financial markets in the immediate postcollapse period, widespread concern remained that the economy could be entering a period of weakness, a concern that was shared by the Federal Reserve and supported by ongoing developments.³ Consequently, from early November through late January, the FOMC sought to maintain the reduced degree of pressure on reserve positions that was sought in late **October**.⁴ In late January

² Record of Policy Actions of the Federal Open Market Committee, meeting held on November 3, 1987, *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, February 1988, pp. 113-14.

³ Record of Policy Actions of the Federal Open Market Committee, meeting held on November 3, 1987, *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, February 1988, p. 115.

⁴ Record of Policy Actions of the Federal Open Market Committee, meeting held on November 3, 1987, *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, February 1988, p. 119; and Record of Policy Actions of the Federal Open Market Committee, meeting held on February 9-10, 1988, *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, May 1988, p. 319.

and early February, moreover, some further easing was sought in the degree of reserve-position pressure.'

Short-term interest rates remained at the immediate postcollapse levels in late 1987 and early 1988 (Chart 3). Long-term interest rates also remained below precollapse levels in the latter part of 1987 and declined further in early 1988 (Chart 4).

The continued accommodative monetary policy, along with the lower interest rates, apparently bolstered consumer and business confidence in the economy. Confidence was likely buoyed as well by some rebound in stock prices and reduced stock price volatility, and by the continued growth in employment and income. An important fiscal policy development occurred in late 1987 that also helped bolster confidence in the economy. The Administration and the Congress agreed to take action reducing the budget deficit for fiscal years 1988 and 1989.

Inflation concerns emerge in spring and summer

By the spring and early summer of 1988, evidence mounted that the economy was remaining strong and the prospect of economic weakness was diminishing. At the same time, greater concern emerged that inflationary pressures were increasing. At the March FOMC meeting, members generally agreed that recently available information pointed to a stronger expansion in business activity than earlier anticipated. Also, most members agreed that the risks of more inflation stemming from capacity pressures had

⁵ Record of Policy Actions of the Federal Open Market Committee, meeting held on February 9-10, 1988, *Federal Reserve Bulletin*. Board of Governors of the Federal Reserve System, May 1988. p. 320.

increased, and the economy might be near the point where faster growth in business activity would induce greater inflation. In addition, some concern was expressed about the inflationary potential of recent rapid growth in the broader monetary aggregates.⁶

Given the improved economic outlook, and, in view of the increased concern about inflation, the FOMC decided at its March meeting to increase slightly the degree of pressure on bank reserve positions.⁷ Due to continued concern about inflation, reserve-position pressure was increased further in late May, in late June, and in early July.⁸ Then, on August 9, the Federal Reserve Board approved an increase in the discount rate from 6 to 6½ percent. In announcing this action, the Board of Governors said, "The decision reflects the intent of the Federal Reserve to reduce inflationary pressures. The action also was taken in light of the growing spread of market interest rates over the discount rate."⁹

After midyear, FOMC members continued to express concern about the possibility of rising inflation. In view of the tightening steps taken

⁶ Record of Policy Actions of the Federal Open Market Committee, meeting held on March 29, 1988, *Federal Reserve Bulletin*. Board of Governors of the Federal Reserve System, July 1988. pp. 470-72.

⁷ Record of Policy Actions of the Federal Open Market Committee, meeting held on March 29, 1988, *Federal Reserve Bulletin*. Board of Governors of the Federal Reserve System, July 1988, p. 473.

⁸ Record of Policy Actions of the Federal Open Market Committee, meeting held on June 29-30, 1988, *Federal Reserve Bulletin*. Board of Governors of the Federal Reserve System, October 1988, p. 655; and Record of Policy Actions of the Federal Open Market Committee, meeting held on August 16, 1988, *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, November 1988, p. 755.

⁹ See press release, Board of Governors of the Federal Reserve System, August 9, 1988.

CHART 2

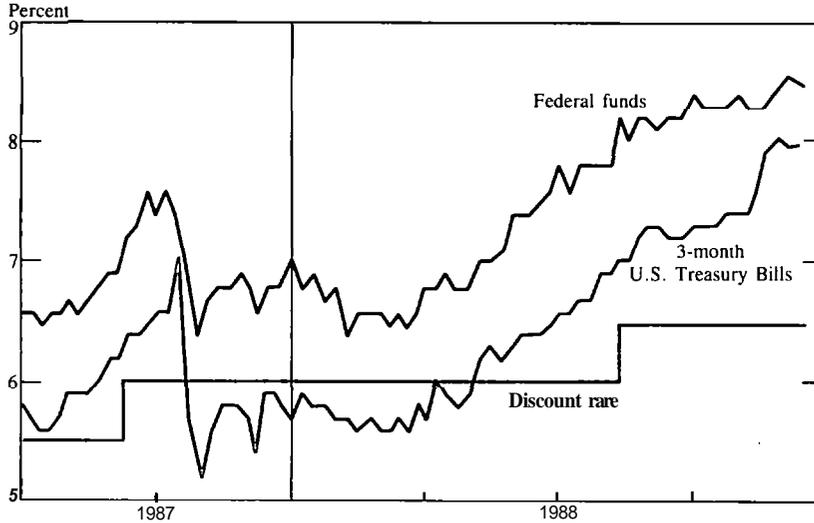
Exchange value of the U.S. dollar, 1987-88



NOTE: Weighted average of the exchange value of the dollar against currencies of other G-10 countries plus Switzerland
Source: Board of Governors of the Federal Reserve System

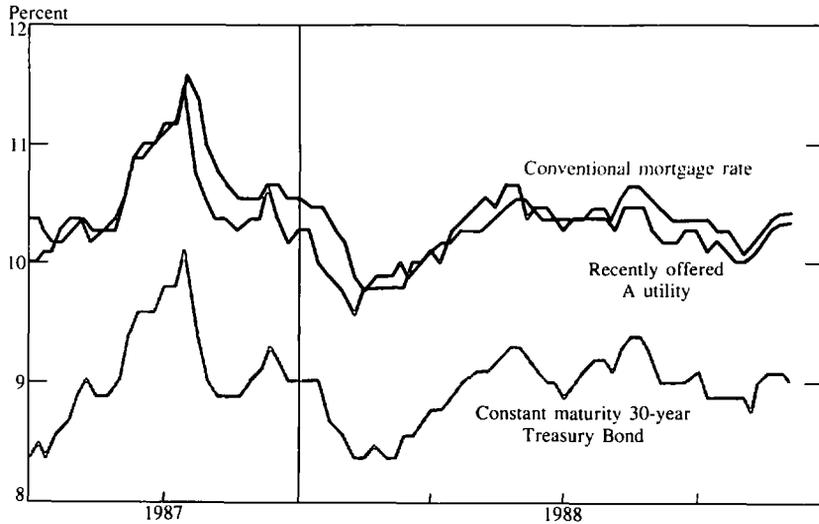
CHART 3

Selected short-term interest rates, 1987-88



Source: Board of Governors of the Federal Reserve System

CHART 4
Selected long-term interest rates, 1987–88



Source: Board of Governors of the Federal Reserve System

earlier, however, and, with the economic growth rate apparently slowing somewhat, the FOMC sought to maintain an unchanged degree of reserve-position pressure during the late summer-fall period.¹⁰

Short-term interest rates, after easing slightly in early 1988, trended upward throughout most of the year (Chart 3). Long-term interest rates increased in the spring, but subsequently trended downward, due perhaps in part to a lowering of inflation expectations in light of the display of

Federal Reserve resolve to contain inflation. Long-term interest rates rose again in the fall, due to concerns about the dollar and the U.S. budget deficit (Chart 4).

The economy in 1989

Generally good economic performance is likely to continue throughout 1989. Several factors, however, could adversely affect the economy's performance during the year. In addition to the possibility of rising inflation, threats to good economic performance are posed by continued large budget and trade deficits, and by the high and growing debt levels carried by the nation's households and businesses. The overhang of international debt and the poor condition of many of the nation's financial institutions could also cause macroeconomic problems.

¹⁰ Record of Policy Actions of the Federal Open Market Committee, meeting held on August 16, 1988, *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, November 1988, pp. 756-57, 759; and Record of Policy Actions of the Federal Open Market Committee, meeting held on September 20, 1988, pp. 5, 7, 12.

Economic growth to continue

Moderate economic growth is likely to continue in **1989**. Real GNP growth will be strengthened by a recovery of farm output to normal levels compared with **1988's** drought-reduced output. Excluding this factor, the nonfarm economy is likely to grow within a range of 2 to 3 percent. Rising net exports are again expected to provide some strength, as the **1986-88** downward trend in the dollar continues to spur export growth and contain import expansion. Business fixed investment also will help bolster the economy, as businesses invest to alleviate capacity constraints. Residential investment, however, will add little to economic growth in **1989**. Heavy debt burdens and only modest growth in incomes, moreover, will result in slow growth in consumer spending.

Moderate economic growth in **1989** will be accompanied by continued growth in employment. Unlike **1988**, however, employment growth may be less than labor force growth, so the unemployment rate may increase slightly.

The outlook is for relatively stable inflation in **1989**. Increases in industrial capacity and labor-force growth likely will allow moderate economic growth to proceed without greatly spurring underlying inflationary pressures. Overall inflation will be affected by the behavior of oil prices, which will depend importantly on whether the Organization of Petroleum Exporting Countries (OPEC) is able to enforce constraints on oil production. Due to the ongoing impact of the **1988** drought, food price increases are expected to boost inflation in **1989**.

Inflation could accelerate in 1989

An important troublesome factor in the economic outlook is the possibility of unexpectedly strong inflationary pressures. The economy appears to be operating at or near full capacity, in both labor and product markets. As a result,

demand and supply forces are delicately balanced, so that a shock to the economy could strengthen inflationary pressures. For example, a sharp rise in the economic growth rate could quickly create excess demand in product and labor markets, and place sharp upward pressure on labor costs and prices.

In judging the extent that the economy may be operating near full capacity, economists often focus on the behavior of the capacity utilization rate in industry. Rising capacity use rates indicate increasing pressure on the economy's resource base. Higher utilization brings less efficient, higher cost capacity into production and is often accompanied by tighter labor markets that put further upward pressure on wages.

Capacity utilization rates in industry have increased considerably over the past year. Utilization rates have increased in all three major industrial categories—manufacturing, mining, and utilities. For industry as a whole, the increases pushed the utilization rate in November **1988** to 84.2 percent, more than two percentage points higher than a year earlier (Table 3).

Comparison of current capacity utilization rates with average rates over the last 20 years shows that the important manufacturing sector is experiencing the greatest capacity pressures. The utilization rate for manufacturing of **84.5** percent in November **1988** was **3.9** percentage points above its **1967-87** average (Table 3). The capacity utilization pressures in manufacturing have arisen due to strong export demand for manufacturing output as well as to firm domestic demand.

Not only is the manufacturing capacity utilization rate noticeably above the 20-year average, it appears to be near a level that in the past has been associated with rising inflation. Sustained acceleration of inflation typically has occurred when the manufacturing utilization rate has risen past a threshold level. While the threshold level is generally consistent with stable inflation, rates of utilization above the threshold are associated

TABLE 3
Capacity utilization rates for major industrial sectors
 (percent of capacity, seasonally adjusted)

	<u>Nov.</u> <u>1988</u>	<u>Dec.</u> <u>1987</u>	<u>Nov.</u> <u>1987</u>	<u>1967-87</u> <u>Average</u>
Total industry	84.2	82.4	82.1	81.5
Manufacturing	84.5	82.6	82.2	80.6
Durable	83.1	80.1	79.9	78.7
Nondurable	86.5	86.4	85.6	83.5
Mining	82.2	81.5	81.5	86.7
Utilities	81.0	80.0	81.2	86.9

Source: Board of Governors of the Federal Reserve System

with increasing inflation. Econometric studies suggest that the threshold rate of capacity utilization for manufacturing is within a range of 78.5 to 83.5 percent.¹¹

The recent rise of the rate of capacity utilization in manufacturing to a level slightly above the upper end of the estimated threshold range justifies concern about the possibility of rising inflation. The extent that capacity constraints contribute to greater inflation in the period ahead depends on the strength of demand for manufactured goods and on the growth of capacity. Rapid growth of domestic demand for manufactured goods in 1989, combined with rapid growth in exports, would place further pressure on

industrial capacity and threaten higher inflation. But the expected, more moderate domestic demand growth will likely allow manufacturers to expand their export volumes without raising the utilization rate much further. Moreover, growth in business fixed investment has been strong recently and is expected to continue moderately strong in 1989. New investment will increase capacity over time and alleviate inflationary pressures emanating from capacity constraints.

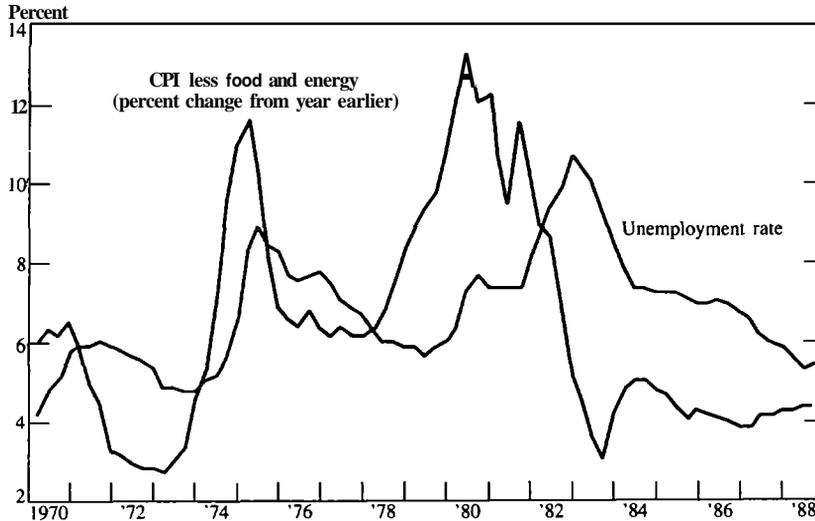
Another measure often used in judging the extent that the economy is operating at full capacity is the unemployment rate. A declining unemployment rate indicates that the supply of labor is growing more slowly than labor demand, which tends to place increasing upward pressure on wages and the economy's overall inflation rate.

Historical experience supports the notion of a linkage between the rate of inflation and the rate of unemployment. As shown by Chart 5, declines in unemployment tend to be followed, after a time lag, by increases in inflation, while increases in unemployment tend to be followed by declines

¹¹ See Rose McElhattan, "Estimating a Stable-Inflation Capacity-Utilization Rate," *Economic Review*, Federal Reserve Bank of San Francisco, Fall 1978, pp. 20-30; and Rose McElhattan, "Inflation, Supply Shocks and the Stable-Inflation Rate of Capacity Utilization," *Economic Review*, Federal Reserve Bank of San Francisco, Winter 1985, pp. 45-63. For a further discussion of capacity utilization rates, see C. Alan Gamer, *Financial Letter*, Federal Reserve Bank of Kansas City, June 1988.

CHART 5

Consumer Price Index (less food and energy) and unemployment rate, 1970–88



Source: Labor Department, Bureau of Labor Statistics

in inflation. A straightforward interpretation of Chart 5 implies that a rise in the inflation rate can be expected in **1989** because unemployment declined over the past year. Moreover, if unemployment continues to decline, inflation will accelerate further. But, if unemployment remains stable, inflation will stabilize following the **1989** upward movement.

Most economists agree that the linkage between inflation and unemployment is more complicated than indicated by a straightforward interpretation of Chart 5. In analyzing the true relation between inflation and unemployment, economists use the concept of the full employment rate of unemployment, also referred to as the natural rate of unemployment. According to this approach, as with the threshold capacity utilization rate, there is a particular natural rate of unemployment that is consistent with stable inflation. When the actual

unemployment rate falls below this natural level, the rate of inflation tends to accelerate.

The implications of this theory for inflation in the period ahead depend on the value of the natural unemployment rate. For example, if the natural rate of unemployment were 6 percent, which is above the actual unemployment rate of 5.4 percent in late **1988**, the theory implies that inflation would accelerate in **1989**. Moreover, inflation would continue to accelerate until the unemployment rate increased to 6 percent. On the other hand, if the natural unemployment rate were around the current level of 5.4 percent, inflation would not accelerate unless unemployment declined further.

Economists have made numerous attempts to measure the natural rate of unemployment. It has been variously estimated to lie between 5 and 7 percent, although a wider range is possible. Most

economists would probably agree that the natural rate is likely not below 5 percent.¹²

As with the manufacturing capacity utilization rate, therefore, the current unemployment rate appears to be near a point that indicates an economy operating very close to full capacity. Thus, the danger of inflation accelerating is relatively high, particularly if unexpectedly vigorous economic growth pushes the capacity utilization rate sharply higher and the unemployment rate sharply lower.

The dollar and the trade deficit in 1989

Another concern about the outlook for 1989 is the future course of the nation's international trade deficit and the foreign exchange value of the U.S. dollar. Lack of progress in reducing the trade deficit could lead to dollar weakness and adversely impact the U.S. economy.

Considerable progress has been made in the past year in reducing the trade deficit. In nominal terms, the merchandise trade deficit averaged \$11.3 million per month during the first ten months of 1988, down from \$14.3 million during the comparable period in 1987. The improvement has been due mainly to strong export growth spurred by a lower dollar and economic growth abroad. Somewhat slower import growth has also contributed to the decline in the trade deficit.

A further improvement in the trade deficit is likely in 1989. It is unclear, though, whether continued growth in net exports and improvement in the trade deficit will require further declines in the dollar. In any event, most economists agree that long-run progress in reducing the trade deficit

¹² See Stuart E. Weiner, "The Natural Rate of Unemployment: Concepts and Issues," *Economic Review*. Federal Reserve Bank of Kansas City, January 1986, p. 23.

TABLE 4
U.S. budget deficit, national debt,
and interest on debt as percent
of gross national product,
selected periods

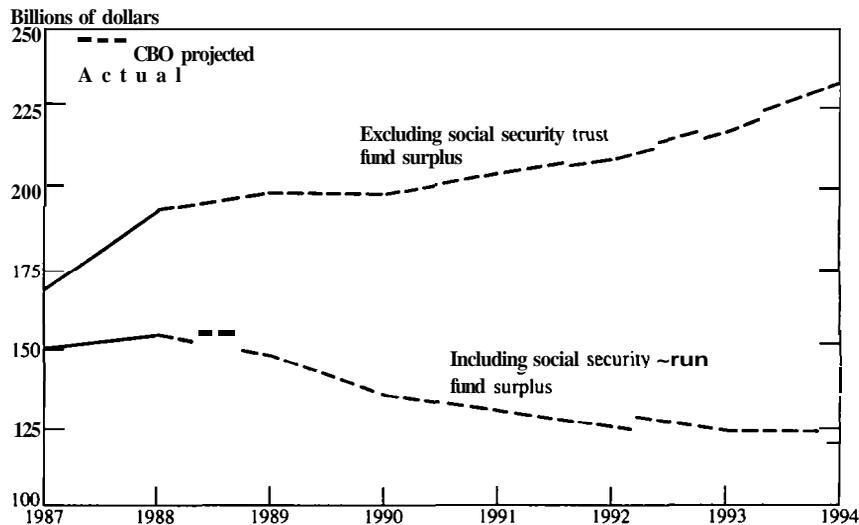
<u>Period</u>	<u>Percent of GNP</u>		
	<u>Deficit</u>	<u>Debt*</u>	<u>Interest on debt</u>
1980	2.8	26.8	2.0
1987	3.3	43.0	3.1
1988	3.2	42.6	3.2
1989 projection	2.9	42.7	3.2
1994 projection	1.7	40.1	2.9

*Debt held by the public
Source: For the years 1980, 1987, and 1988, "Historical Tables—Budget of the United States Government, Fiscal Year 1989," Office of Management and Budget; for the projected years 1989 and 1994, "The Economic and Budget Outlook: An Update," Congressional Budget Office, August 1988

hinges importantly on progress in reducing the U.S. budget deficit. A lower budget deficit would reduce domestic demand, thereby freeing resources for exports and reducing the need for imports.

For this reason, any perceived lack of progress toward reducing the budget deficit could cause investors to lose confidence in the nation's ability to redress the trade imbalance. Loss of confidence could lead to sharp downward pressure on the dollar and higher U.S. interest rates, as foreigners withdraw their funds from dollar-denominated assets. The rise in interest rates, along with inflationary pressures emanating from the declining dollar, could then weaken the U.S. economy.

CHART 6
Federal budget deficits, 1987–94



Source: Congressional Budget Office

The need to reduce the budget deficit

The budget deficit is a third area of concern about the economic outlook. In addition to generating doubts about the future of the trade deficit and creating dollar weakness, failure to make credible progress in reducing the budget deficit could fuel inflationary expectations, placing further upward pressure on interest rates. Continued large budget deficits also constrain the use of stimulative fiscal policy in the event of recession, reducing the flexibility of the federal government's economic stabilization efforts. Over the longer run, continued large budget deficits hinder economic growth by reducing the flow of savings available for private investment and add to the debt-servicing burden of future generations.

As shown in Chart 6, the budget deficit increased in fiscal year 1988 to \$155 billion, up from \$150 billion in 1987. As a percent of GNP,

the deficit was 3.2 percent in 1988, about the same as in 1987 (Table 4). According to estimates made by the Congressional Budget Office (CBO), if no further efforts are made to reduce the deficit, it will decline to \$148 billion in fiscal year 1989 and decline further to \$121 billion by 1994 (Chart 6). The budget deficit excluding the social security trust fund was significantly higher in 1988 than the deficit including the fund and is estimated to increase rather than decline over the CBO projection period. These CBO deficit estimates assume continued moderate economic growth and some decline in interest rates.¹³ Assumptions of

¹³ The Congressional Budget Office projections assume an average real GNP growth rate of 2.4 percent during the 1989-94 period. Also, the projections assume that the three-month U.S. Treasury bill rate declines from an average of 7.1 percent in 1989 to 5.9 percent in 1994. See "The Economic and Budget Outlook: An Update," Congressional Budget Office, August 1988.

rising interest rates or of a recession would result in higher deficit projections.

The 1988 deficit boosted the national debt to \$2.0 trillion at the end of the year, placing the debt at 43 percent of GNP, slightly less than in the previous year, but sharply higher than the 27 percent of 1980 (Table 4). Due to this sharp rise in national debt, interest on the debt has skyrocketed in recent years, amounting to \$155 billion, or 3.2 percent of GNP in 1988, up from 2.0 percent in 1980. According to the CBO projections, if no further efforts are made to reduce the deficit, the **interest-on-the-debt/GNP** ratio will remain near the relatively high current level during the projection period, even as the deficit declines.

Private debt burdens

The heavy debt burdens carried by the private sector provide an additional source of concern for the economy in 1989. Private debt has increased sharply in the 1980s, both absolutely and relative to GNP. By 1987, the **private-debt/GNP** ratio had reached a record high level of 122 percent, up from 101 percent in 1980 (Table 5). The rise in debt emanated from both households and businesses. While the **private-debt/GNP** ratio declined slightly in the first half of 1988, it remains near a record level.

For a significant portion of households and businesses, the unusually heavy debt burdens could become unmanageable during a period of rising interest rates or a recession period of declining revenues and incomes. This in turn could prolong and deepen any period of economic weakness that develops. Another possibility is that, during a period of uncertainty about the economy that develops for any reason, a significant number of households and businesses could simultaneously attempt to reduce their debt burdens, thereby precipitating economic weakness that would exacerbate their debt-reducing task.

TABLE 5
Private debt outstanding, as
percent of gross national product,
selected periods

Period	Percent of GNP		Total rate
	Households	Businesses	
1980	50.9	50.1	101.0
1987	59.6	62.1	121.7
1987 Q3	59.4	62.0	121.4
Q4	59.6	62.4	122.0
1988 Q1	60.1	63.1	123.2
Q2	59.4	62.1	121.5

Source: Board of Governors of the Federal Reserve System

Monetary policy in the new year

Given the threat of rising inflation, the Federal Reserve in 1989 will likely continue to focus on dampening emerging inflationary pressures, while continuing to provide sufficient money and credit expansion to support moderate economic growth. Over the longer run, the Federal Reserve seeks reasonable price stability, implying an inflation rate below that experienced in recent years.

In accordance with the long-run goal of price stability, and with the need to contain near-term inflationary pressures, the FOMC set tentative growth rate ranges for the monetary and credit aggregates for 1989 that were lower than the 1988 ranges. **M2's** range was reduced to 3 to 7 percent, one percentage point lower than 1988's range. The ranges for **M3** and domestic **non-financial debt** were reduced one-half percentage point to 3½ to 7½ and 6% to 10½, respectively (Table 6). The Federal Reserve was able to achieve its monetary growth objectives in 1988,

TABLE 6
FOMC growth rate ranges
 (percent change at seasonally adjusted annual rates)

<u>Period</u>	<u>M1</u>	<u>M2</u>	<u>M3</u>	<u>Domestic non-financial debt</u>
1988 actual*	4.0	5.4	6.4	8.8
1988 FOMC growth ranges	—	4-8	4-8	7-11
1989 tentative ranges	—	3-7	3.5-7.5	6.5-10.5

Fourth-quarter 1987 through November 1988
 Source: Board of Governors of the Federal Reserve System

as the actual growth rates of all three aggregates were well within their specified ranges.

In implementing policy in 1989, the Federal Reserve will continue to be guided by a number of factors, including the evolving outlook for inflation, the strength of business conditions, developments with regard to the dollar, and the behavior of the monetary and credit aggregates. Unexpected strength in business conditions, signs of greater inflationary pressures, and pronounced or sustained dollar weakness are developments that may call for greater pressure on bank reserve positions and increases in the discount rate. An easing in the pressure on reserve positions and a downward adjustment in the discount rate may occur in the event of weaker-than-expected economic growth, accompanied by an improved outlook for inflation and stability of the dollar.

Summary

The generally good performance exhibited by the U.S. economy in recent years is likely to continue throughout 1989. Continued moderate economic growth, rising employment, and little marked change in unemployment and inflation appear to be the most likely prospects for the 1989

economic scene.

A number of factors, however, could cause the economy's **performance** to deteriorate. A perceived failure to make progress in reducing the U.S. budget deficit could **fuel** inflationary expectations and cause a loss of confidence in the nation's ability to redress its large trade imbalance. These developments could result in a further decline in the U.S. dollar, higher interest rates, and, perhaps, a recession. Alternatively, an unexpected spurt in the pace of economic growth, given the extant capacity constraints, could fuel inflationary pressures, boost interest rates, and lead to economic weakness. Problems created by rising interest rates and recession would likely be exacerbated by the large debt burdens currently carried by households and businesses, the overhang of international debt, the poor condition of many of the nation's financial institutions, and fiscal policy's reduced recession-fighting flexibility brought on by the large budget deficit.

Given the threat of rising inflation caused by capacity constraints, the Federal Reserve will likely continue in 1989 to focus on dampening any inflationary pressures that emerge, while continuing to provide sufficient money and credit

expansion to support moderate economic growth.

As inflationary pressures are contained in 1989, continued moderate economic growth and generally good economic performance will provide the opportunity to make progress in reducing the U.S.

trade and budget deficits and to deal with other national economic problems. Utilization of this opportunity would reduce the threat of near-term economic instability while contributing to a healthy economy in the long run.

The Tenth District Economy: Trailing the Nation

By Tim R. Smith

Economic performance in the states of the Tenth Federal Reserve District—Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, and Wyoming (Figure 1)—continued to lag significantly behind U.S. economic performance during 1988. Key sectors of the district economy turned in a mixed performance in 1988. Despite improvements in agriculture and manufacturing, ongoing weakness in energy and construction left most district states with only slight gains.

The outlook for 1989 suggests more of the same slow growth across the region. Additional improvements in agriculture and manufacturing will be partly offset in the year ahead by renewed problems in the district's important energy industry. The district still lacks a strong, dominant sector to help it catch up with the nation.

This article reviews recent economic performance in the district and explores the 1989

outlook. The first section of the article surveys the district's 1988 economic performance and summarizes the economic trends in the individual states. The second section focuses on the district's important sectors and presents a brief outlook for employment in those sectors. The third section discusses the contributions of the sectors to recent and prospective economic growth in each of the Tenth District states.

Recent performance in the district

The overall performance of the district economy improved modestly in 1988.¹ The gains were evident in many economic indicators. Average employment in the district increased 0.7 percent in the first three quarters of 1988, compared with

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¹ This article assesses the Tenth District's 1988 economic performance using the most recent data available at the time of writing. For most economic concepts, such as employment, data for the third quarter were available. For some concepts, however, data were not as recent. The various treatments of economic concepts and historical comparisons are discussed in other footnotes.

FIGURE 1
Tenth District states

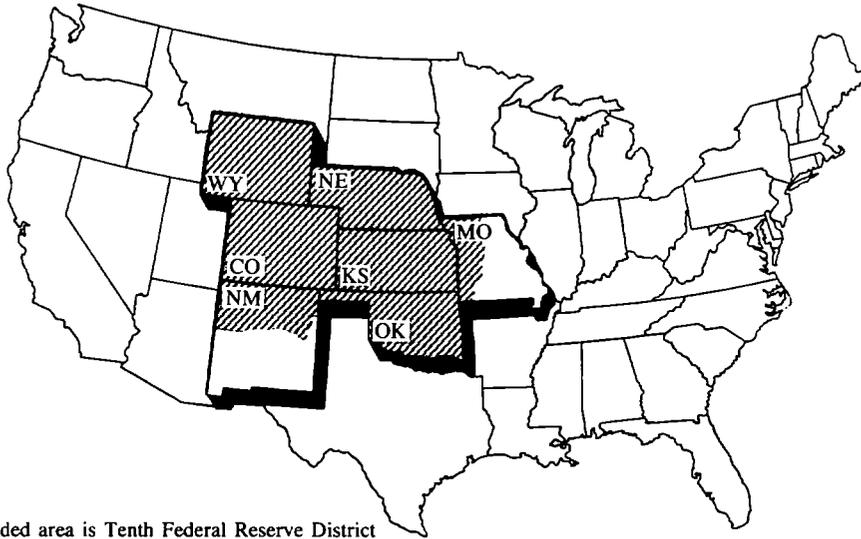
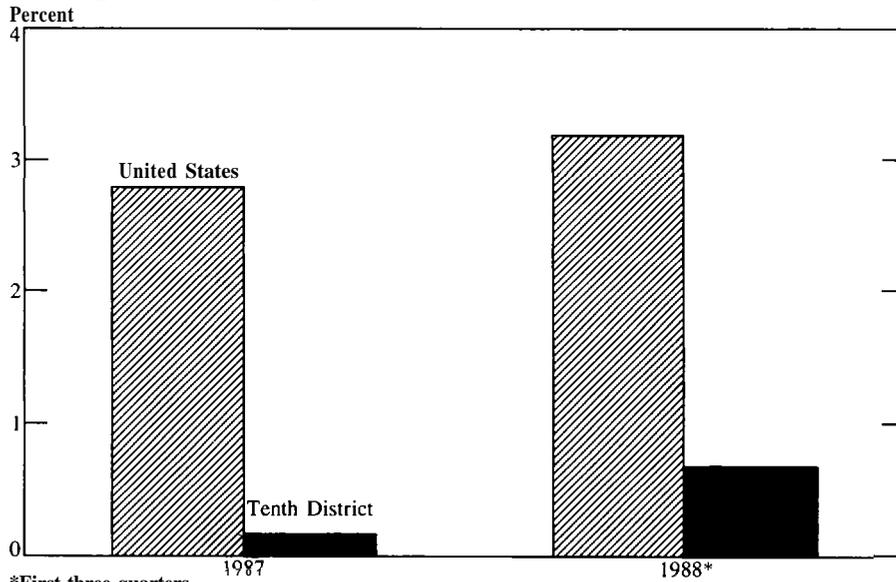
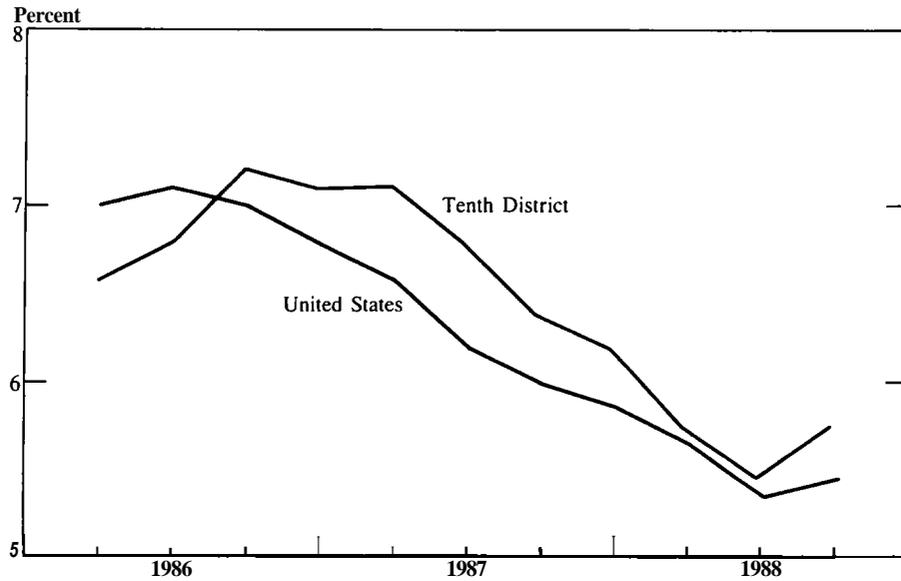


CHART 1
Growth in nonagricultural employment, U.S. vs. Tenth District



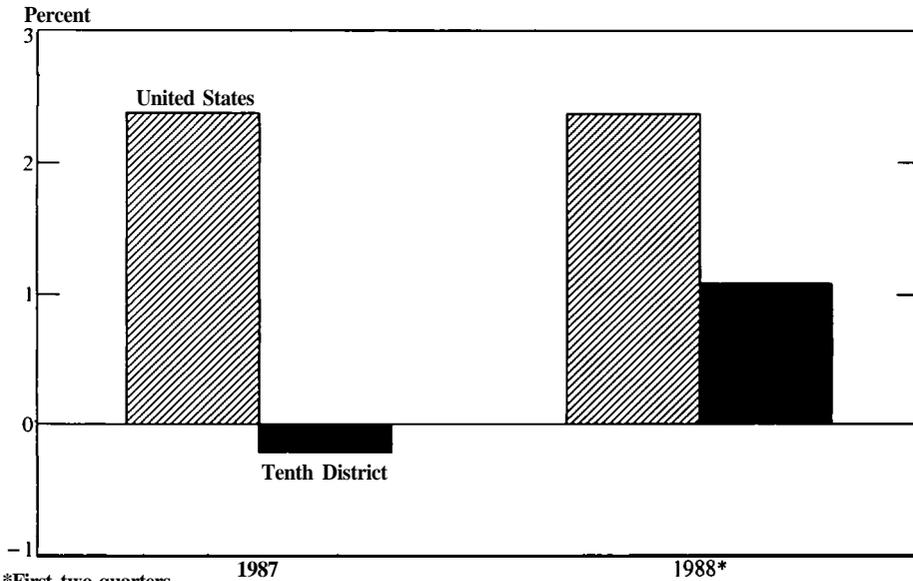
*First three quarters
 Source: Data Resources, Inc.

CHART 2
Unemployment rates



Source: Data Resources, Inc.

CHART 3
Growth in real personal income, U.S. vs. Tenth District



*First two quarters
 Source: Data Resources, Inc.

a **0.2** percent increase in **1987** (Chart 1). The small improvement in job growth and significant outmigration caused the district's unemployment rate to fall from 6.6 percent in **1987** to **5.7** percent in the first three quarters of **1988** (Chart 2).² Real personal income in the district rose 1.1 percent in the first half of **1988**, reversing the small decline in income recorded in **1987** (Chart 3).³ This pattern of limited improvement in employment and income growth is expected to continue in the final quarter of **1988** and into **1989**.

The gains achieved by the district economy in **1988** were rooted in a narrow base. District employment and income growth were propelled by only two sectors, manufacturing and agriculture. The district benefited from both the direct employment gains in manufacturing and the indirect effects of strong farm income on retail and wholesale trade.

The district economy continued to lag well behind the national economy in **1988**. The nation's total employment increased **3.2** percent in **1988**, much better than the **0.7** percent gain in district employment (Chart 1). Moreover, real personal income grew more than twice as fast in the nation as in the district during the first half

of **1988** (Chart 3). While some of the district's important employment sectors continued to improve in **1988**, other sectors weakened, causing the gap between U.S. and district employment growth to narrow only slightly.

Economic performance improved in most states of the Tenth District in **1988**. Employment declined in Colorado, Oklahoma, and Wyoming by smaller percentages in the first three quarters of **1988** than in the previous year (Chart 4). In the other district states of Kansas, Nebraska, and New Mexico, employment gains were larger in **1988** than in **1987**. Only one state, Missouri, showed a smaller increase in employment in the first three quarters of **1988** than in **1987**.

Real personal income in most district states increased more during the first half of **1988** than in **1987** (Chart 5). Real personal income growth improved in Colorado, Kansas, Nebraska, and Oklahoma. Wyoming income fell again in the first half of **1988**, but by a much smaller percentage than in **1987**. Real personal income in Missouri and New Mexico increased less in the first half of **1988** than in the previous year.

Review and outlook by sector

Performance was mixed in the key sectors of the Tenth District economy in **1988** and will likely remain mixed in **1989**. The sectors that contributed strength to the district economy in **1988** are expected to remain positive factors in **1989**. However, weak sectors will probably not gain much strength in the coming year.

Recent sector performance

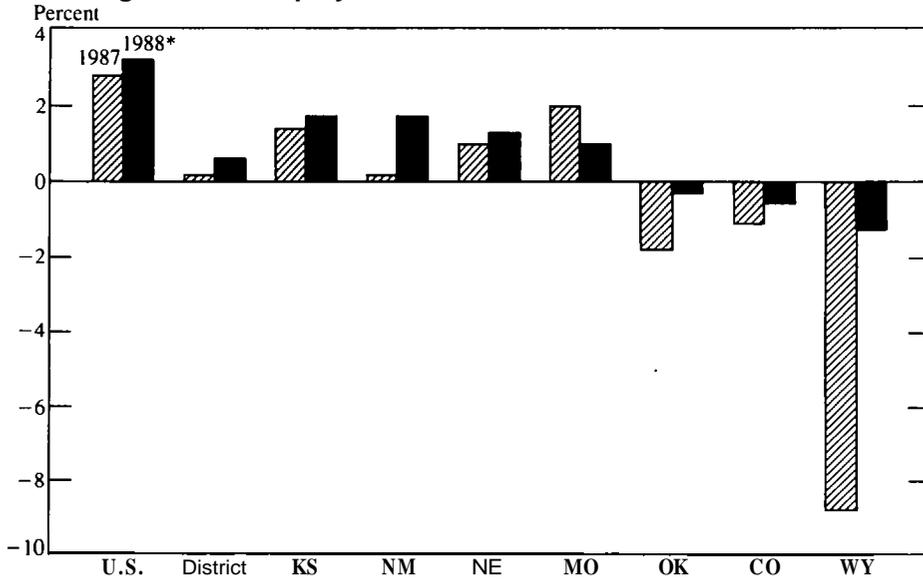
Improvements in agriculture and manufacturing were positive influences on district job growth. The important energy sector was stable but did not add strength to the district economy. On the negative side, construction remained weak and service job growth slowed.

² All employment growth rates in this article, including those for individual sectors, are calculated by comparing the average level of employment in the first three quarters of 1988 with the average level of employment for 1987 using seasonally adjusted, quarterly employment data from Data Resources, Inc. Data for the third-quarter of 1988 are estimates based on two months of historical data, the latest available at the time of writing. Irregularities in the third-quarter 1988 estimates made it necessary to average the quarterly employment data to provide a more accurate picture of economic activity during the year.

³ All income growth rates in this article are calculated by comparing the average real personal income in the first two quarters of 1988 with the average for 1987 using seasonally adjusted real personal income data from Data Resources, Inc. At the time of writing, the latest available personal income data were through the second quarter.

CHART 4

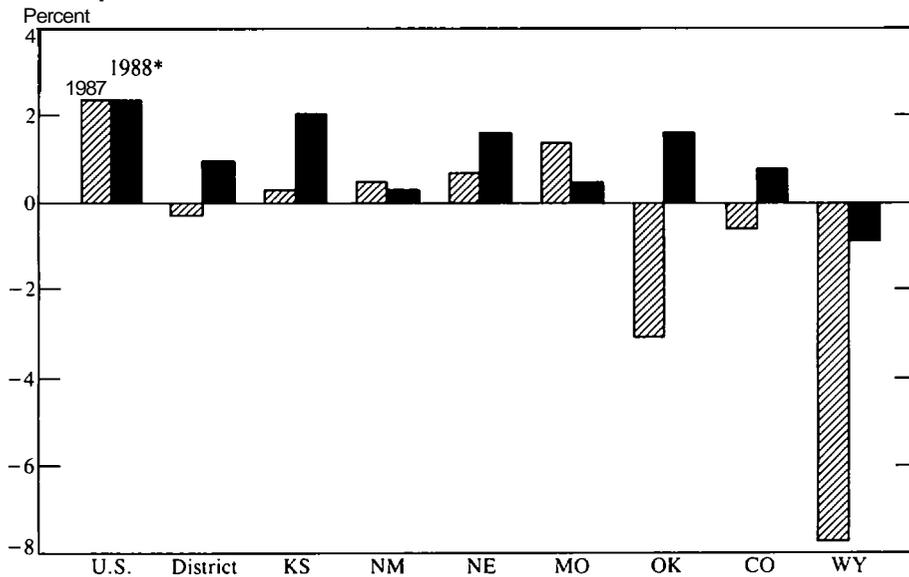
Growth in nonagricultural employment in Tenth District states



*First three quarters Source: Data Resources, Inc.

CHART 5

Growth in real personal income in Tenth District states



*First two quarters Source: Data Resources, Inc.

Agriculture. Conditions in the district's important agricultural sector improved in **1988**. The drought affected relatively few parts of the district, leaving many areas with average or above-average crops. Coupled with solid livestock profits, significantly higher crop prices brought another year of strong farm income and continued recovery for the district farm economy. In addition, higher **farmland** values across the region fueled a continuing financial turnaround for farmers and their lenders.

Manufacturing. The district's manufacturing sector began a slow turnaround in late **1987** and early **1988**. Improved international competitiveness resulting from the decline in the U.S. dollar appeared to be the major reason for the better performance of the industrial base. Manufacturing employment in the district increased **1.4** percent in the first three quarters of the year, weaker than the national increase of **2.2** percent.

High technology was a notable source of strength for the district's manufacturing sector. As a result of the decline in the dollar, district makers of high-tech products were able to compete more effectively with foreign producers in domestic and foreign markets. Although the pace slowed somewhat toward yearend, the semiconductor industry continued to expand at a healthy pace in **1988**.

The district's general aviation industry also benefited from the decline in the dollar and the resulting increase in foreign sales. Unit sales of new aircraft rose about **6** percent in the first three quarters of **1988** from the same period in **1987**, while the value of aviation production was up about **12** percent. Sales of big-ticket jet and turbo-prop aircraft continued strong, but sales of smaller piston-engine aircraft declined.

Automobile assembly weakened further in district states in **1988**. Layoffs at district plants continued, and the closing of the Leeds General Motors plant near Kansas City further reduced the district's share of U.S. auto production. Plants

in district states produced about **20** percent fewer units in the **1988** model year, pushing the district's share of total U.S. auto production below **15** percent.

Energy and mining. The stability established in the district's energy sector during **1987** continued into the first half of **1988**. Although oil prices trended downward through the first half of the year, they remained high enough to limit further energy-related job losses in the district. In the second half of the year, however, a large increase in OPEC production quickly pushed oil prices below **\$15** a barrel, jeopardizing the stable condition of the industry. Mining employment, which is mostly related to oil and gas extraction, fell only about **1** percent in the first three quarters of **1988** after falling more than **11** percent in **1987**.

Oil and gas exploration and development improved slightly in the Tenth District during **1988**. The weekly average number of drilling rigs in operation increased from **265** in the first three quarters of **1987** to **272** in the first three quarters of **1988**. This improvement in district drilling activity reflects an increase in the nation's rig count from **866** in the first three quarters of **1987** to **942** in the first three quarters of **1988**.

The district's energy production was mixed in **1988**. Production of oil and natural gas increased slightly. But coal production declined, and uranium mining made no significant improvements during the year. Other mining in the district generally improved due to higher metals prices. But even with more active mines, copper and molybdenum mining continued below capacity in **1988**. Both soda-ash and bentonite production remained stable during the year.

Construction. Continued weakness of construction activity in the district in **1988** was a principal factor in explaining the disappointing performance of the region's economy. District construction employment fell more than **4** percent in the first three quarters of the year. Generally higher mortgage interest rates and the

sluggish regional economy caused the value of residential construction to fall about 10 percent in the first three quarters of 1988 from the same period in 1987.⁴

Nonresidential construction also weakened in 1988. Improvement in the district's manufacturing sector helped reduce vacancy rates in industrial buildings, but high vacancy rates in office buildings persisted in many district cities. Through the third quarter of 1988, the value of nonresidential building contracts was down almost 6 percent from the same period a year earlier.

Services, retail trade, and wholesale trade. Growth in the district's service sector slowed significantly in 1988. Although the service sector drew some strength from tourism, service employment increased only 1.4 percent in the first three quarters of 1988, compared with an increase of 2.5 percent in 1987. The recent slowing of service employment growth in the district reflects similar slowing across the nation. However, district service employment growth was much slower than the 4.5 percent service employment growth in the nation.

Growth in the district's wholesale and retail trade sector improved slightly in 1988. Trade was generally strong in the region's metropolitan areas. An improving farm sector contributed to activity in medium and large trade centers across the district, but trade in the smallest rural communities remained weak. District employment in trade grew 1.1 percent in the first three quarters of 1988, compared with growth of 0.9 percent in 1987. By contrast, trade employment in the nation increased 3.6 percent during the first three quarters.

⁴ The value of construction in the first three quarters of 1988 is compared with the same period in 1987 because the construction data are not seasonally adjusted. Similar comparisons are made throughout this article whenever data are not seasonally adjusted.

Government. Federal government spending continued to be an important influence on the district economy in 1988, although government spending gave further signs of slowing. Total government employment in the district grew about 1 percent in both 1987 and 1988. Defense spending still accounts for more than a quarter of total federal government spending in the district. This component is especially important in Missouri, Colorado, and Kansas.

The fiscal condition of most district states improved in 1988, largely due to "windfalls" from federal tax reform and strong farm income. Nonetheless, state budgets remain tight compared with the late 1970s and early 1980s, especially in states that depend heavily on severance tax revenues. Most district states continued efforts in 1988 to broaden their tax bases by attracting new businesses and encouraging the growth of existing businesses. Those efforts met with limited success, and economic development remains a long-term objective across the region.

Sector outlook

Many segments of the district economy are likely to benefit from improvements in agriculture and manufacturing that are expected to continue in 1989. However, renewed problems in the oil-patch and ongoing weakness in construction will dampen the overall improvement in the district economy. The outlook for individual states will depend largely on their mix of sectors.

Recent increases in world oil supplies will likely depress oil prices and restrain drilling activity in the district in 1989. Despite an agreement by OPEC members to reduce output, the large crude-oil inventories built up during the last half of 1988 will take several months to work off, holding down oil prices for much of 1989. Other district mining will continue to benefit from higher metals prices and increased demand from the U.S. manufacturing sector.

The agricultural sector is expected to continue to improve in **1989**. Farm income will be strong for the district due to prospects for strong crop and livestock prices. Farm financial conditions will continue to strengthen as additional farm debt is paid down and farmland values move somewhat higher. Overall, a strong recovery appears likely to continue for the district's agricultural sector.

Manufacturing in the district should continue to benefit from improvements in the nation's trade balance. High-tech firms in the district are poised to take advantage of strong market opportunities both at home and abroad. Although defense spending will not be a source of growth to district manufacturing, increased foreign direct investment—especially by Japanese firms—will probably add some manufacturing jobs. District auto plants will continue to adjust to scaled-down production schedules, but the auto plants will benefit from any increase that might develop in domestic auto sales in **1989**. Further gains will accrue to general aviation aircraft manufacturers from increased foreign sales. The district's **oilfield** and farm-equipment manufacturing industries are expected to remain weak.

District construction activity will probably remain flat through **1989**. High vacancy rates in commercial buildings and the generally sluggish regional economy will continue to delay a rebound in nonresidential construction. Lower mortgage interest rates toward the end of **1988** could boost residential construction in some areas of the district during the first half of **1989**, but large housing inventories in many district cities, including Denver and Oklahoma City, will likely prevent a rebound in overall residential construction in **1989**.

Growth in district service and trade employment will likely remain very slow in **1989**. Further slowdown in national service employment growth and slow overall regional economic growth will limit gains in the district's service sector. Employment growth in financial services

is expected to remain especially weak in the coming year. Retail and wholesale trade may gain some jobs due to the improvement in agriculture and manufacturing, but regional trade growth is likely to continue lagging behind the nation's growth in trade.

The government sector will expand only slightly in **1989** and may begin to shrink in some states. Although expected to remain an important influence on the district economy in **1989**, federal government spending will probably add little additional strength to the region. Concern about the federal budget deficit will limit defense spending, which will affect many areas in the district. State governments will continue to seek new revenue sources to further improve their fiscal conditions.

Limited gains ahead for district states

Most Tenth District states made limited gains in **1988**. Looking ahead, improvement will likely continue in many states, with the size of gains determined largely by the mix of sectors in individual states. Despite the prospect for continued improvement, however, overall economic activity across the district will remain sluggish in **1989**.

Kansas

Kansas economic conditions improved somewhat in **1988**. The employment gain in Kansas during the first three quarters of **1988** was among the largest of all seven district states. But while the state's modest **1.8** percent increase in employment was well above the district average, it was also well below the nation's employment increase. The increase in Kansas real personal income during the first half of **1988** exceeded the districtwide increase in income and nearly matched the U.S. increase. A recovering farm economy was a positive influence on the Kansas economy during **1988**, while the performance of

other major sectors was mixed.

The state's manufacturing sector received a boost in 1988 from the increased sales of general aviation aircraft and defense-related aircraft production in the Wichita area. High-tech industries continued to strengthen during the year, especially the assembly of civilian jet-aircraft components. In contrast, automobile production in Kansas City continued to slide. However, a new, more automated plant will bring some stability to the long-term outlook for auto production in Kansas.

The weakening of oil prices in 1988 began to erode some of the stability established by the Kansas energy industry in 1987. Although production increased, exploration and development activity declined significantly. Oil production for the first half of 1988 was slightly higher than for the same period a year earlier, but natural-gas production increased over 13 percent. And the state's relatively small coal production doubled in the first eight months of the year, compared with the same period in 1987. Despite the improvement in energy production, however, the average number of active drilling rigs in the first three quarters of 1988 was nearly 20 percent below the level from the same period in 1987.

Continued gains in agriculture and manufacturing will probably contribute to another year of moderate economic growth in Kansas. High-tech and general aviation manufacturing stand to benefit further from favorable exchange rates. The energy industry, however, will likely weaken further as low prices force additional closings of the state's numerous high-cost stripper wells—those producing less than ten barrels of oil a day.

New Mexico

New Mexico's economy improved considerably in 1988. Employment increased 1.8 percent during the first three quarters of the year, compared with a small 0.2 percent increase in 1987. Income growth, however, slowed slightly in the first half

of 1988 from its already sluggish pace in 1987. The rural parts of the state continued to lag behind the metropolitan areas of Albuquerque and Santa Fe, which benefited from improvements in manufacturing and tourism.

New Mexico's mining and energy sector was stable in 1988. Despite the lower oil prices; crude-oil production and exploration activity remained stable throughout the first half of the year. Coal and natural-gas production increased in the state in the first part of 1988. Higher copper prices benefited the state's copper industry, but uranium mining remained depressed. Overall, mining employment increased almost 4 percent in the first three quarters, after falling almost 8 percent in 1987.

Manufacturing was the strongest employment sector in the state in 1988, due largely to continued improvements in high-tech industries. Manufacturing jobs increased 4.6 percent in the first three quarters of 1988, compared with a 2.4 percent increase in 1987. Defense-related research and manufacturing continued to be an important influence on the New Mexico economy, especially near the Sandia and Los Alamos research laboratories.

The service and trade sectors fared better in New Mexico than in most district states. The improvement in these sectors in 1988 was due largely to tourism. The gains in services and trade, however, were spread unevenly across the state. As in other parts of the district, larger service and trade centers benefited, while the smallest communities continued to decline.

The New Mexico economy should continue to outpace other district states in 1989. The state will benefit from stronger agriculture and manufacturing sectors. Tourism will sustain the comparatively strong growth in services and trade. However, only moderate overall growth can be expected because of the dim prospects for the mining sector and the leveling off of defense spending in the state.

Nebraska

Overall economic performance in Nebraska improved in **1988**. Employment increased **1.4** percent in the first three quarters, slightly more than in **1987**. Real personal income in the first half of **1988** grew **1.7** percent, almost twice as fast as in the previous year. Improvements in the state's important agricultural sector and significant improvements in manufacturing combined to bolster the state's economy. Other sectors failed to show much improvement in **1988**.

Nebraska's manufacturing sector was largely responsible for the improvement in the state's overall performance in **1988**. The food-processing industry contributed significant strength to the manufacturing sector. During the first three quarters of **1988**, manufacturing employment in Nebraska increased **4.5** percent, almost twice as much as in **1987**.

Growth in the service sector continued to slow in **1988**, reflecting a pattern repeated in most district states. Although telemarketing businesses continued to gain importance in the state, growth in finance and insurance slowed significantly. Despite the recent slowing in service sector employment, Nebraska was able to attract and retain businesses that export a large share of their services to customers outside the state. This growing base of service firms bodes well for long-run growth prospects for Nebraska.

The construction sector in Nebraska showed some improvement during **1988**. Both residential and nonresidential construction increased in the first three quarters of **1988** from the same period a year earlier. Construction employment continued to decline in the first three quarters of **1988**, but the decline was smaller than in **1987**.

Nebraska's economy should continue to improve modestly. The state's outlook is buoyed by the improved condition of the agricultural sector and the prospects for additional strength in the manufacturing sector. A favorable outlook for

food processing, coupled with Nebraska's aggressive economic development programs, will likely lead to further gains in manufacturing employment.

Missouri

The Missouri economy slowed slightly in **1988**, and the gap widened between the district's most diversified state and the nation. Employment growth in the state slowed from **2.0** percent in **1987** to **1.1** percent in the first three quarters of **1988**, due largely to poor performance in manufacturing, a slowdown in construction, and considerable weakening of the service sector. Real personal income also grew less in the first half of **1988** than in **1987**.

Missouri did not participate fully in the revival of U.S. manufacturing during **1988**. Manufacturing employment increased less than **1** percent in the first three quarters. While this small gain was an improvement from the manufacturing job losses incurred in **1987**, the export-led manufacturing recovery largely eluded Missouri. Most of the gains in exportdependent industries were offset by slowing in the state's automobile production and defense-related manufacturing.

Construction, a victim of the state's generally sluggish economy, continued to slow in **1988**. The value of residential construction in the first three quarters of the year fell about **4** percent from the same period in **1987**, and the value of nonresidential construction fell about **12** percent. Construction employment grew less than **1** percent in the first three quarters of **1988**, compared with an increase of **1.4** percent in **1987**.

Missouri's service sector slowed significantly in **1988**. Average service employment increased **1.5** percent in the first three quarters of the year, a job gain of less than half that of **1987**. Employment growth in finance, insurance, and real estate slowed even more. Employment in these industries together grew only **0.8** percent in the first

three months of **1988**, compared with an increase of **3.7** percent in **1987**.

The Missouri economy will probably continue to lag behind the nation in the year ahead. A weak construction sector will likely remain a drag on the state's economic performance. But business conditions will continue to improve for Missouri manufacturers as they participate more fully in the export-led rebound in national manufacturing. Although the drought affected Missouri more than other district states, it will probably cause only a short pause in the state's farm recovery. Solid livestock profits and generally strong farm income should benefit Missouri in **1989**.

Oklahoma

Despite some modest improvements, the Oklahoma economy failed to strengthen significantly in **1988**. During the first three quarters, employment fell **0.2** percent, a smaller job loss than in **1987**. Another positive sign for the Oklahoma economy was the turnaround in income growth. Real personal income in the state increased **1.7** percent in the first half of the year following a **2.9** percent decline in **1987**.

Oklahoma's energy industry proved somewhat resilient to the downward movement in oil prices during the first part of the year. The average number of drilling rigs operating in the first three quarters fell only 4 percent from the same period in **1987**. Although crude-oil production fell slightly in the first half of **1988** from the same period in **1987**, natural-gas production edged upward. Mining employment fell **4.3** percent in the first three quarters of **1988**, far less than the **11.5** percent decline in **1987**.

The manufacturing sector in Oklahoma began to turn around in **1988**. Despite little growth in the state's auto production during the **1988** model year and a weak oilfield equipment manufacturing industry, manufacturing employment increased in Oklahoma. The increase of 1.6 per-

cent in the first three quarters of **1988** is especially significant following a **3.8** percent decline in **1987**.

There is little chance that robust growth will be restored to Oklahoma in **1989**. Sharply lower oil prices late in **1988** may threaten the stability of the state's energy industry in the coming year. And renewed weakness in the energy industry could offset the potential gains from stronger agriculture and manufacturing sectors. The year ahead promises to be another difficult one for the Oklahoma economy.

Colorado

The Colorado economy was weaker than expected in **1988**. Nonetheless, small improvements were perceptible in the overall condition of the state economy. Although employment fell in the first three quarters of the year, the **0.4** percent decline was smaller than the **1.0** percent decline in **1987**. And real personal income growth in the state turned around from **-0.4** percent in **1987** to **0.9** percent in the first half of **1988**. Overall, some improvement in the manufacturing sector was offset by continuing weakness in construction and mining.

High-tech manufacturing continued its recovery in **1988**. Favorable international market conditions boosted sales of the state's restructured microchip and computer peripheral manufacturers. In total, manufacturing employment in Colorado rebounded from a **3.9** percent decline in **1987** to register a 0.5 percent increase in the first three quarters of **1988**.

Construction activity remained weak in the first half of **1988**, but began to improve in the last half of the year as a large retail project and the new convention center in Denver got underway. However, high office-vacancy rates continued to restrain office construction in Denver. The value of nonresidential construction increased **7** percent in the first three quarters, compared with the same

period in **1987**. All of the increase in the value of nonresidential construction occurred in the third quarter. Residential construction was considerably weaker, falling 22 percent in value terms in the first three quarters from a year earlier.

Colorado's mining sector began to stabilize in **1988** at a much lower level of activity than before the **1986** oil price decline. Drilling activity in the first three quarters improved slightly from the same period in **1987**. The production of crude oil and natural gas also increased in the first part of the year. Metal mining in the state was aided by higher prices, but mines generally continued to operate below capacity. Overall, mining employment fell **2.0** percent in the first three quarters of **1988**. This reduction in mining employment was a big improvement over the **17.6** percent reduction in **1987**.

Substantial improvement will probably elude the Colorado economy again in **1989**. Recently lower oil prices will limit further gains in the mining sector, and construction is expected to remain weak. These problems will likely continue to offset gains in manufacturing, curbing overall economic growth in the state.

Wyoming

Although Wyoming turned in the weakest performance of the seven Tenth District states in **1988**, some significant improvements were evident in the state's economy. Employment declined 1.1 percent in the first three quarters of **1988**, a dramatically smaller loss than in **1987**. Wyoming real personal income fell **0.8** percent in the first half of **1988**, comparing favorably with the **7.6** percent decline in **1987**. Although most sectors still lost jobs in **1988**, every sector improved from its **1987** performance.

After two years of wrenching decline, Wyoming's mining industry showed some signs of stability in **1988**. Production of crude oil and

natural gas remained constant in the first part of the year, and drilling activity improved in the first three quarters of **1988** from the same period in **1987**. Moreover, coal production in the state through August **1988** was almost a sixth higher than in the same period in **1987**. Non-energy mining, such as mining of soda-ash and bentonite, remained relatively stable. Together, these factors contributed to a **2.3** percent increase in mining employment in the first three quarters of **1988**, a substantial turnaround from the decline of over **10** percent in **1987**.

Wyoming's construction sector continued to weaken in **1988**. The values of both residential and nonresidential construction in the first three quarters fell from the values in the same period in **1987**. The number of construction jobs fell almost **17** percent in the first three quarters of **1988**. The decline, though disappointing, was far less than the decline of more than **38** percent in **1987**.

Agriculture was a positive influence on the Wyoming economy in **1988**. Solid livestock profits brought continued improvement to the financial conditions of the state's ranches. Strong farm income helped shore up general economic conditions across much of the state.

The Wyoming economy is unlikely to stage a recovery in **1989**. Even so, the worst employment losses are over. The state will likely continue putting in place the foundation for a smaller, more stable economy. Declining oil prices late in **1988** promise to threaten the stability of the Wyoming oilpatch, but further recovery in agriculture should allow improvement to continue at a slow pace.

Conclusion

Economic performance in the seven-state region of the Tenth Federal Reserve District continued to lag behind national economic performance in **1988**. Nonetheless, the sluggish growth in most

district states was an improvement from growth in **1987**. The performance of individual states varied according to the mix of industries in each state. Improvements in agriculture and manufacturing were the most positive factors influencing the district in **1988**.

The district's economic performance will probably continue to improve in **1989**, but it is unlikely that the gap between district performance and

national performance will narrow substantially. The district's important energy sector may lose some of the stability achieved in **1988**, diluting potential gains in agriculture and manufacturing. As in **1988**, the performance of the individual district states will be determined largely by their industrial **mix**. Each of the seven states is expected to continue trailing the nation in **1989**.

U.S. Agriculture Shrugs Off The Drought

By Mark Drabenstott and Alan Barkema

U.S. agriculture began 1988 in the midst of a strong financial recovery. U.S. farm exports were on the move again. Farm incomes were at a record high in 1987 and, after adjusting for inflation, were the highest since the mid-1970s. Farmland values also were on the rise across much of the nation. And, agriculture was near the end of an historic financial restructuring that had taken nearly five years. In short, the industry was in the best financial shape of the 1980s.

Looking back at 1988, that financial strength was needed as agriculture encountered the worst drought in the last 50 years. The drought hit early and was broad in scope. As spring turned into summer and the drought tightened its grip on crops from the northern Plains to the mid-South, many feared the farm recovery would be derailed. But bolstered by strong crop prices and some continued federal assistance, U.S. agriculture effectively shrugged off the drought.

Entering 1989, U.S. agriculture remains in recovery. Thanks in large measure to the drought, farmers can expect strong crop and livestock prices in the year ahead. This article reviews the drought and other farm developments in 1988 and considers the farm outlook for 1989. The outlook is examined for farm finances, crop and livestock market conditions, agricultural exports, and farm policy.

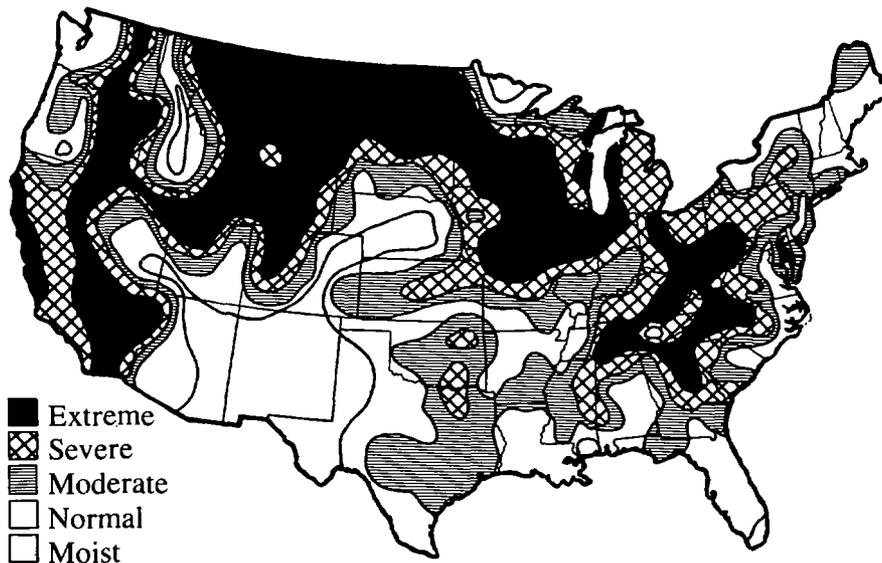
The year in review

The big story for agriculture in 1988 was the great drought. Winter and early spring precipitation had been below normal in some parts of the nation, but few in agriculture expected the severe drought that began in April and May. By early June, 20 percent of the nation was classified as having severe or extreme drought.¹ By late July,

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¹ Severe and extreme are the two worst categories of drought as measured by the Palmer long-term drought index. As developed by the U.S. Department of Agriculture, the index tracks long-term patterns in rainfall. Other categories are moderate drought, adequate rainfall, and moist.

FIGURE 1
Drought severity
August 20, 1988



Source: National Oceanic and Atmospheric Administration/U.S. Department of Agriculture Joint Agricultural Weather Facility

the drought had affected more than **40** percent of the nation.

Distinguishing the drought of **1988** were its early development and its extent to regions normally resistant to dry weather. The map in Figure 1 shows the regions in severe and extreme drought as of August 20, shortly after the drought reached its greatest extent. Two of the worst-hit areas were the northern Plains and Corn Belt—regions that normally receive generous rainfall. The United States had experienced mild droughts in **1980** and **1983**, but both were late season occurrences over limited areas. Quite simply, the **1988** drought was the worst since the mid-1930s.

The drought did ease slightly in late July and early August as scattered rains fell across portions of the Corn Belt. For some areas, the rains helped improve soybean yields. But the rains developed too late to help many corn fields, since

the corn crop had already passed its critical tassel stage under hot, dry conditions.

Weather remained generally dry through the harvest season, allowing farmers to harvest their crops at a rapid pace. But the continued dry weather pattern also raised concerns for the winter wheat crop being seeded. Many began to worry that dangerously low subsoil moisture might not be renewed before the 1989 crop is planted.

Crops

The drought hurt the production of three major crops in **1988**. Compared with **1987** production, the corn crop was cut 34 percent, the soybean crop **21** percent, and the spring wheat crop more than **50** percent. Because spring wheat is only about a fourth of total U.S. wheat output, total wheat production fell much less. The drought's

TABLE 1
U.S. average crops yields
(bushels per acre)

	<u>Wheat</u>	<u>Corn</u>	<u>Soybeans</u>
1980	33.5	91.0	26.5
1981	34.5	108.9	30.1
1982	35.5	113.2	31.5
1983	39.4	81.1	26.2
1984	38.8	106.7	28.1
1985	37.5	118.0	34.1
1986	34.4	119.3	33.3
1987	37.7	119.4	33.7
1988*	34.0	82.3	26.6

*Projected

Source: U.S. Department of Agriculture, *Agricultural Statistics; World Agricultural Supply and Demand Estimates.*

effect on crop production was amplified because farm programs had already idled over a fifth of U.S. cropland.

The drought accelerated a **drawdown** of grain and **oilseed** stocks that was well under way before the rain stopped. A weaker dollar, cuts in U.S. support prices, and direct U.S. export subsidies all had contributed to a significant turnaround in farm exports in 1987. The resulting drawdown, followed by the drought, led to grain and **oilseed** stocks at the end of 1988 that are the lowest since 1980. The smaller stocks, in turn, produced the highest grain and **oilseed** prices in many years.

U.S. wheat production, which equals harvested acreage times crop yield per acre, fell 14 percent, due mainly to the sharp shortfall in spring wheat output. The winter wheat harvest was unaffected by the drought but suffered from a disease problem, wheat streak mosaic. Overall, wheat yields, a better indicator of crop growing conditions than production, fell 10 percent from the year before (Table 1). Despite higher market prices, wheat exports were strong due to aggressive use of the

Export Enhancement Program (EEP) and generally strong demand abroad. Wheat prices averaged \$2.57 in the 1987-88 marketing year, up only modestly from the previous year (Table 2). The wheat marketing year ended June 30, about the time that the drought was beginning to have its greatest effect on crop prices. That means the higher wheat prices brought on by the drought will be more evident in the 1988-89 marketing year.

Corn production fell sharply due to the drought's grip on most Corn Belt states. Corn yields were off a third from the previous year and were the lowest since 1974. The 4.7 billion bushels harvested was the smallest crop since 1983 when the Payment-In-Kind (PIK) program reduced the corn crop. Like wheat exports, corn exports remained strong in the face of sharply higher market prices. Continued robust foreign demand was the main reason. Corn prices moved up sharply in mid-summer as the drought hit the crop at its critical reproductive stage, and then prices began to slide in August as scattered rains fell across the Corn Belt. Prices averaged \$1.94 a bushel for the 1987-88 marketing year, up nearly a third from the previous year.

Soybean production fell less than corn production, but prices reacted even more sharply due to the **small** U.S. stocks as 1988 began. Late rains helped the soybean crop, but yields still fell 21 percent, equal to the percentage cut in total production. The 1.5 billion bushel crop was the lowest since 1976. Soybean stocks were relatively low as 1988 began due to strong domestic and foreign demand. The drought cut projected stocks to bare pipeline levels. Soybean prices moved up accordingly, averaging \$6.15 a bushel for the 1987-88 marketing year, up sharply from the year before.

Cotton production essentially escaped the drought. Production in 1988 was 15.2 million bales, up 3 percent from 1987. While yields fell slightly, planted acreage was higher this year.

TABLE 2
U.S. farm product price projections

Crops	Marketing Years		Percent Change
	1987-88	1988-89	
Wheat	\$2.57/bu.	\$3.60-3.75/bu.	+43
Corn	\$1.94/bu.	\$2.40-2.80/bu.	+34
Soybeans	\$6.15/bu.	\$7.00-8.50/bu.	+26
Cotton	\$0.642/lb.	N/A	N/A
Livestock	Calendar Years		Percent Change
	1988	1989	
Choice steers	\$69-70/cwt.	\$71-77/cwt.	+6
Barrows & gilts	\$43-44/cwt.	\$42-48/cwt.	+3
Broilers	\$.55-.56/lb.	\$.51-.57/lb.	-3
Turkeys	\$.61-.62/lb.	\$.63-.69/lb.	+7
Lamb	\$68-69/cwt.	\$63-69/cwt.	-4
Milk	\$12.10-\$12.20/cwt.	\$11.95-\$12.75/cwt.	+2

Source: U.S. Department of Agriculture, *World Agricultural Supply and Demand Estimates*.

Higher U.S. prices cut export demand by about 2 million bales, although domestic demand remained strong. Cotton prices averaged 64.2 cents a pound, up more than 10 cents from the previous year.

Overall, the drought led to strong crop markets in 1988. Cuts in corn, wheat, and soybean production accelerated a **drawdown** in crop inventories that was well-established as the year began. Crop prices peaked in mid-summer before softening as some rains fell. Still, crop producers enjoyed much higher prices than the previous year, and the much smaller grain stocks have set the stage for strong prices entering 1989.

Livestock

The drought was expected to markedly affect livestock production and prices since producers

were forced to liquidate herds. But that effect proved much smaller than expected. In the end, cattle were moved from parched pastures to areas with better range conditions, keeping liquidations to a minimum. The biggest effect of the drought was to boost feed grain prices sharply and thereby discourage any expansion in livestock supplies despite strong livestock market prices.

Beef production fell 1.5 percent in 1988 as cattle inventories continued to decline. The cattle industry had been contemplating an expansion since late 1987 due to favorable profit margins, but the drought lifted feed costs and stopped any incentives to expand. Still, fed-beef supplies remained large in 1988 as feedlot operators reacted to strong profits in late 1987 and early 1988. Nonfed slaughter fell due to ongoing declines in the nation's cattle inventory.

Cattle prices were strong in 1988. Prices for

choice steers at Omaha averaged **\$69.50** a hundredweight, up **\$5.00** from the year before. Fed-cattle profits were much narrower than in **1987**, however, as rising corn prices cut margins. Many feedlots probably lost money in the fourth quarter. Strong fed-cattle prices resulted in active bidding for feeder cattle throughout most of **1988**. Kansas City prices for feeder steers averaged **\$83.00** a hundredweight, matching the record level of **1979**.

Pork production rose more than **8** percent as producers responded to the extraordinary profit margins of **1987**. The rising pork supplies weighed heavily on market prices for hogs, even as the drought pushed corn prices sharply higher. Many producers had negative margins in the second half of the year. Prices for barrows and gilts at the seven major markets averaged **\$43.50** a hundredweight, down nearly **15** percent from the year before.

Poultry production continued its long-term expansion in spite of eroding profit margins due to the drought. Broiler output increased **4** percent, while turkey production rose **5** percent. Consumers continued a trend toward greater poultry consumption; per capita consumption of poultry rose to **81.8** pounds even as beef consumption slipped to **72.2** pounds. Broiler prices averaged **55.5** cents a pound at the **12** city markets in **1988**, up **9** cents from the previous year. Higher feed costs, however, left most producers with limited gains in profits. Turkey prices averaged **61.5** cents a pound, up moderately from **1987**. Turkey profits also were cut by the much higher feedstuff prices.

Farm financial conditions

Despite the great drought, a strong financial recovery continued for most farmers and ranchers in **1988**. Crop prices were high enough to offset some decline in production, and livestock profits were solid, though off from **1987's** record

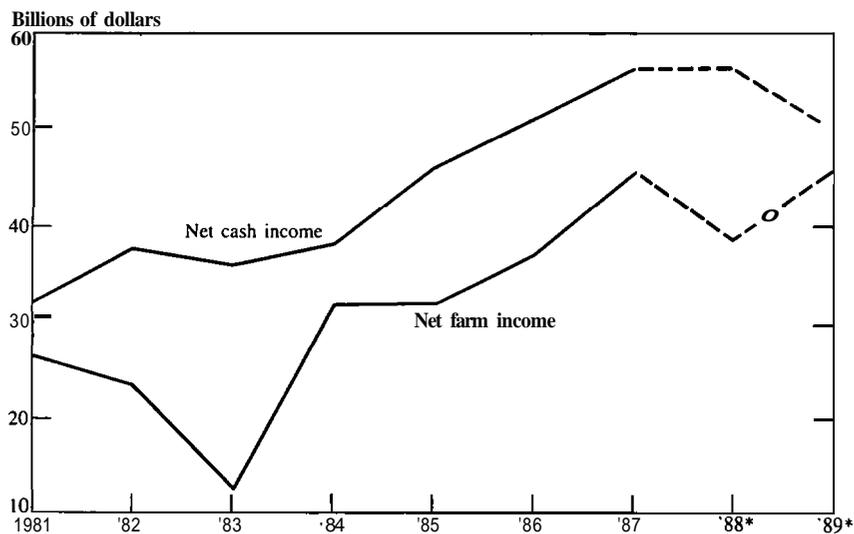
levels. Farmland values rose strongly in most regions, although values did pause in midyear due to the drought. Farm loan problems remained low, reinforcing the conclusion that agriculture's financial restructuring is past.

Farm incomes are likely to remain high in **1988**. Most farmers sold large quantities of their grain stocks at the higher prices. As a result, net cash farm income, a broad cash flow measure of farm earnings equal to the difference between cash receipts and cash expenses, is estimated at **\$57** billion, equal to **1987's** record level (Chart 1). But net farm income, a production-based measure, which takes into account the drawdown in farm inventories, is estimated at **\$39** billion, down more than **15** percent.² Government payments fell sharply as the drought raised crop prices—Commodity Credit Corporation outlays were **\$13.1** billion compared with **\$22.4** billion in **1987**. Farm expenses were up modestly in **1988**, due mainly to higher feeder livestock prices.

While aggregate U.S. farm income was strong, the drought created an uneven pattern of income gains and losses. Crop reductions caused by the drought varied widely, with a quilt-like pattern of winners and losers. Winter wheat producers benefited from the higher wheat prices caused by the shortfall in the spring wheat crop. Irrigated crop producers in states like Nebraska harvested near normal crops, while nearby Corn Belt states saw sharp cuts in yields. Range conditions were excellent in some southern Plains states, such as New Mexico, while cattle across the northern

² Net cash farm income and net farm income both are useful measures of the farm sector's financial performance. Net cash farm income measures the sector's ability to meet annual financial obligations on time. But sales from inventories of crops and livestock produced in previous years can boost net cash farm income. By adjusting for these inventory changes, net farm income measures farm earnings from the current year's production.

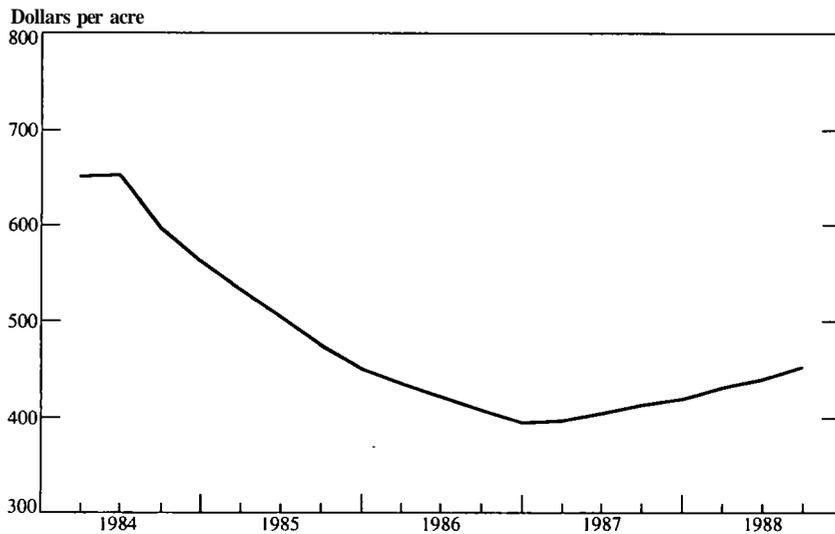
CHART 1
Farm income



*forecast

Source: U.S. Department of Agriculture, *Agricultural Outlook*.

CHART 2
Tenth District nonirrigated cropland values



Source: Federal Reserve Bank of Kansas City, *Agricultural Credit Survey*.

TABLE 3

**Farm balance sheet excluding operator households and CCC loans on December 31
(billions of dollars)**

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988*</u>	<u>1989*</u>
Assets							
Real estate	739.6	639.6	558.6	510.1	522.6	553.0	566.0
Non-real estate	205.7	208.9	190.4	181.5	186.3	188.0	194.0
Total assets	945.3	848.5	749.0	691.6	708.9	741.0	760.0
Liabilities							
Real estate	104.8	103.7	97.7	88.5	80.8	77.0	78.0
Non-real estate	87.9	87.1	77.5	66.8	61.9	63.0	65.0
Total liabilities	192.7	190.8	175.2	155.3	142.7	139.0	143.0
Proprietors' equity	752.6	657.7	574.8	536.3	566.3	602.0	617.0
Debt-to-asset ratio	20.4	22.5	23.4	22.5	20.1	18.8	18.8
* forecast							
Source: U.S. Department of Agriculture. <i>Agricultural Outlook</i> .							

Plains states were sold as pastures became scorched.

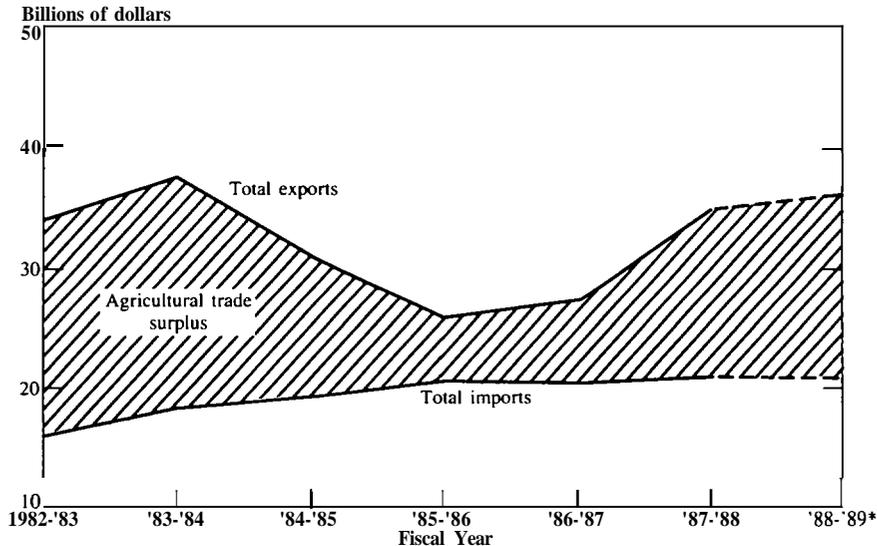
Farmland values moved higher in 1988. The drought may have made buyers more cautious during the summer but, for the year as a whole, land prices showed continued solid gains. In the seven states of the Tenth Federal Reserve District, prices of nonirrigated farmland increased 8 percent during the first three quarters, while prices of irrigated land and ranchland were both up 9 percent (Chart 2). Land values also showed strong gains in the Corn Belt states of the Chicago Federal Reserve District (up 8 percent). Most land buyers in 1988 appeared to be commercial farmers, and many sales included a substantial cash down payment.

The farm sector balance sheet for December 31, 1988 is expected to reveal further gains in assets and reductions in debt (Table 3). Farm debt is estimated at \$139 billion, the lowest level since

1978. The sector's debt-to-asset ratio is estimated at 19 percent, marking three years of improvement and the lowest ratio since 1981. Farm debt may move higher in the next few years, however, as farmers, encouraged by the strong farm recovery, invest more borrowed funds in their businesses.

Agricultural lenders have shared in the financial turnaround evident in the farm sector's overall balance sheet. Agricultural banks reported strong earnings in 1988 and appeared to take drought-related losses in stride. Earnings of the Farm Credit System (FCS) improved, but the FCS still faced a daunting task of restructuring nearly \$10 billion in problem loans under the fairly stringent requirements of bailout legislation passed in January. The concentration of drought-related crop losses in the northern Plains states and parts of the Corn Belt could pose greater loan problems for a few FCS districts.

CHART 3
U.S. agricultural trade



*forecast

Source: U.S. Department of Agriculture, *Agricultural Outlook*.

U.S. farm exports

U.S. farm exports in **1988** continued the expansion begun the year before. The value of farm exports in fiscal **1988** rose to **\$35.2 billion**, a **26 percent** increase from the previous year (Chart 3). About half the increase was attributed to higher prices on U.S. farm products, while increased volume accounted for the other half. Export volume totaled **145.5 million metric tons**, the highest in several years. Farm exports continued to gain from the lower dollar, economic growth abroad, and direct export subsidies under the Export Enhancement Program. The drought appears to have had no significant negative effect on exports.

The agricultural trade surplus jumped to **\$14.2 billion** in fiscal **1988** as imports remained fairly

steady. The agricultural trade surplus bottomed at about **\$5.4 billion** in fiscal **1986** and has since shown marked improvement. The U.S. appetite for agricultural imports remains strong at about **\$21 billion**. With only slow growth in imports, however, the substantial gains in exports the past two years have quickly translated into the widening U.S. farm trade surplus.

The year ahead

The lingering effects of the **1988** drought will play a significant role in agriculture's outlook for the year ahead, even with the likely return of normal weather. After falling gradually in recent years, carryover stocks will be much lower at the close of the **1988-89** crop marketing year. Crop prices are likely to remain strong to ration the

diminished inventories. Farm incomes, buoyed by high crop prices, are expected to be solid. But high crop prices will also mean high feed costs for livestock producers. Profit margins for cattle and hog feeders are expected to be narrow if not turn to losses during much of the year. Consumers are likely to find more poultry and less beef at the supermarket in 1989. High crop prices have also curtailed the momentum for international farm and trade policy reform. This indirect effect of the drought in the farm policy arena may prove to be the most damaging of all.

Farm income and financial conditions

Agriculture's buoyant recovery is expected to continue in 1989. Farm income is expected to be strong again due to increased crop output and high crop and livestock prices. Large plantings, encouraged by high market prices and fewer acres idled under government programs, will lead to greater input use at higher input prices, pushing farm expenses higher. Livestock expenses also will be high due to strong prices for feeder livestock and generally high feedstuff prices. Crop cash receipts may increase slightly, with greater output at somewhat lower prices. Livestock cash receipts may be even stronger than 1988's record level. On balance, net cash farm income may decline 10 to 15 percent as farmers begin replenishing crop inventories sold in 1988. That positive inventory accumulation could be substantial, pushing up the net farm income measure about 15 percent.³

Farmland values probably will continue their advance in 1989. Strong commodity prices and high incomes kept cash rents strong in the fall of 1988. That suggests that buying interest in

farmland is likely to remain active in the coming year. **Anecdotal** evidence suggests that land values in some markets have been bid to levels that are higher than cash flow fundamentals would support. Still, farmers appear to have a lot of cash they are willing to invest in land. The active bidding of land values above market fundamentals may be disturbing, but the concern is offset by the fact that most purchases are being heavily financed by cash. A coming reassessment of farm policy in 1990 may introduce some additional uncertainties in the land market in 1989, but that may prove a relatively unimportant factor in the face of strong crop markets.

Farm lenders can expect another good year in 1989. Loan demand should be up after six years of decline. Increased spring plantings will boost production credit demand, while strong land purchases will lead to continued growth in mortgage credit. Farm lenders may encounter some difficult credit extension decisions during the spring credit season. Only a small advance deficiency payment is expected in 1989, a sharp break with the pattern of generous payments in recent years. Farm borrowers, therefore, will be using credit more heavily to plant the 1989 crop. The drought's ultimate effect on the financial condition of farmers is likely to be learned as spring credit decisions are made.

Food prices outlook

The drought will have a marked effect on the outlook for food prices, though smaller than expected. The drought will probably raise food prices, as measured by the Consumer Price Index (CPI) food component, 6 to 8 percent from July 1988 to July 1989. After only modest food price inflation in the first half of 1988, the CPI food component increased only 4 percent for the year as a whole. For calendar year 1989, retail food prices are expected to rise 3 to 5 percent, with smaller increases in the second half.

³ See footnote 2.

Farm policy outlook

Further implementation of two pieces of legislation already enacted—the Disaster Relief Act of 1988 and the Food Security Act of 1985—dominate the farm policy outlook for 1989. In addition, the outcome of the ongoing Uruguay round of General Agreement on Tariffs and Trade (GATT) negotiations promises to play a major role in determining the direction of U.S. farm policy well into the 1990s.

The Disaster Relief Act of 1988 and the 1989 crop provisions of the Food Security Act of 1985 (the 1985 farm bill) together form the farm policy response to the 1988 drought. In response to drought-shortened crop inventories, the 1989 version of the farm bill will encourage larger crop plantings. And the Disaster Relief Act will increase flexibility to switch plantings among crops in 1989 while providing immediate financial assistance to farmers with large crop losses in 1988. This two-pronged policy response was designed to blunt the immediate impact of the drought on farm finances and to minimize the longer term impact of the drought on crop supplies.

In the face of plummeting inventories of wheat and feedgrains, the acreage set-aside requirement for participation in the wheat and feedgrains programs was cut back to allow larger plantings in 1989. Wheat producers participating in the program are required to idle only 10 percent of their base acres for the 1989 crop, down from 27.5 percent in 1988. Similarly, the acreage set-aside requirement for participating corn producers was cut back to 10 percent of base acres for the 1989 crop, down from 20 percent in 1988. Still, producers of both crops must weigh larger planting allowances against lower guaranteed prices under the 1989 program provisions. For crops harvested in 1989, the wheat target price will be \$4.10 a bushel and the corn target price will be \$2.84 a bushel, a 3 percent cut in both prices from 1988

levels. Despite the lower price guarantee, program participation is expected to remain high for both wheat and corn producers. In short, high participation in programs with relaxed acreage control provisions point to larger plantings and, with a return to normal weather, to sizable 1989 crops.

The Disaster Relief Act of 1988, signed into law on August 11, provides additional policy adjustments for 1989 crop plantings. High price supports for wheat and feedgrains under the 1985 farm bill have made several other crops relatively less profitable and more risky. The additional planting flexibility written into the new drought relief legislation is designed to amend the policy distortions that have caused soybean, oat, and sunflower production to fall since the 1985 farm bill went into effect. The drought's impact on already diminished inventories of these non-program crops simply underscored the need for adjustments in the current farm bill.

One provision of the new law allows producers to plant soybeans or sunflowers on 10 to 25 percent of the acreage that would otherwise be planted to wheat, feedgrains, cotton, or rice under the 1985 farm bill. After producers state their planting intentions in the initial sign-up period, the Secretary of Agriculture will limit soybean plantings on permitted program acreage to ensure that the average soybean price stays at least 15 percent above the 1988 loan rate, or \$5.49 a bushel. Similarly, producers will be allowed to plant oats on any portion of their farm acreage base, without affecting their base-acreage history. Together, these provisions will help correct inadvertent, policy-induced distortions of otherwise clear market signals, allowing plantings of soybeans, oats, and sunflowers to increase.

The primary objective of the remaining provisions of the Disaster Relief Act is to ameliorate financial losses farmers suffered due to drought and other natural calamities during 1988. Producers of both crops and livestock are eligible for benefits under the new legislation. In general,

producers who lost at least 35 percent of 1988 crops due to drought or other natural disasters are eligible for disaster assistance payments. The payment level depends on the crop involved, the extent of the producer's loss, and whether the producer was a participant in the farm program. The law also allows livestock producers who suffered substantial losses in farm-grown feed production to purchase Commodity Credit Corporation (CCC) feed inventories at discount prices or to be reimbursed for a portion of the cost of purchased feed. In sum, these and other provisions of the Disaster Relief Bill are expected to channel about \$3.9 billion of financial assistance into areas hit hardest by the 1988 drought.

From a public policy perspective, the quick passage of the drought relief legislation last summer is both laudable and troubling. The new law was an astonishingly quick response to an immediate threat. The disaster relief bill's rapid passage into law suggests strong public support for assisting farmers who suffer from natural disasters. In addition, the new legislation is commendable for targeting financial assistance where it is needed most, an improvement over some programs in the 1980s that have made benefits available to farmers whether the assistance was needed or not. But in another sense, Congress' quick provision of billions of dollars of financial assistance is disturbing. Farmers are aware of the risks of their enterprise and can elect to insure against those risks. But a record of federal assistance whenever disaster strikes is likely to discourage producers from taking advantage of federally sponsored all-risk crop insurance. Although the new legislation requires some recipients of disaster payments to purchase crop insurance for 1989 crops, the Disaster Relief Act sends producers another signal that taxpayers are willing to bear some private farm business risks.

With farm program costs soaring on both

sides of the Atlantic, reduction in agricultural subsidies around the globe has become a focal point of the current round of international trade—or GATT—negotiations. Three sets of policy reforms have been proposed during the negotiations. At one extreme is the European Community's market-sharing proposal, a plan that would essentially preserve the status quo. At the opposite extreme is the **U.S.** plan to phase out all trade-distorting farm subsidies in ten years. Only bona fide food aid and direct income subsidies that do not affect production decisions would be allowed under the **U.S.** plan. The Cairns Group—13 agricultural producing countries including Canada, Australia, New Zealand, Argentina, and Brazil—has staked out middle ground between the EC and **U.S.** proposals. Under the Cairns Group plan, an ultimate goal of total agricultural trade liberalization would be pursued by first freezing current subsidy levels and then using the GATT framework to gradually remove trade restrictions.

The United States maintained its commitment to total liberalization of agricultural trade at the early December, midterm review of the current round of negotiations held in Montreal. But the EC, firmly wedded to its Common Agricultural Policy, steadfastly rejected that notion, and no progress was made in closing the gaps separating the three proposals. Although another attempt to resolve the stalemate has been scheduled for April 1989, prospects for meaningful farm and trade policy reform in the current GATT round remain uncertain.

The 1988 drought is at least partially to blame for the continued deadlock in the GATT negotiations. Just as momentum for international farm policy reform was building, the drought struck **U.S.** crops and sent world grain prices soaring. By reducing the cost to the EC of maintaining its current subsidies, higher market prices have reduced pressure on the Europeans to negotiate meaningful farm policy reform. Additional **Euro-**

pean intransigence to farm and trade policy reform is potentially the longest lasting and most unfortunate result of the **1988** drought.

The protracted stall in the GATT negotiations is occurring just as Congress prepares to rewrite domestic farm policy in the **1990** farm bill. A new GATT agreement to wind down farm subsidies would, in itself, write a portion of any new domestic farm legislation. But if no breakthrough in the GATT negotiations appears likely when Congress pursues its own farm policy debate, the United States is likely to maintain its position in the international farm subsidy gridlock with new farm legislation similar to the **1985** farm bill. In that event, agriculture at home and abroad will continue to struggle with expensive subsidies that may result in a chronic excess supply.

Export outlook

U.S. agricultural exports for **1989** are likely to be smaller in volume but larger in value, another reflection of the **1988** drought. Higher prices of drought-diminished supplies of U.S. crops and larger foreign production could restrict export volume to 136 million metric tons, down about 6 percent from last year. The decline in export tonnage is highlighted by an expected **30** percent reduction in soybean exports caused by drought-tightened U.S. supplies and a sharp expansion in South American production. As a result, the U.S. share of world soybean trade could fall to only **35** percent, down from **49** percent in **1988** and the smallest share on record. Despite the reduction in total U.S. farm export volume in **1989**, higher crop prices are likely to push up the total value of U.S. farm exports to about \$36.5 billion, up about 4 percent from a year ago. With nearly stable agricultural imports of about \$21 billion, the U.S. agricultural trade surplus could total \$15.5 billion, up nearly **10** percent from last year and nearly triple the industry's trade surplus in 1986.

Crop outlook

The outlook for crops in **1989** is colored by the lingering effects of the **1988** drought. The drought struck when crop inventories were already declining under government programs that reduced production and encouraged export. Crop inventories will be squeezed further in the **1988-89** crop year because the **1988** harvest of most crops will fall far short of expected use in **1989**. As a result, crop prices during the **1988-89** marketing year are likely to remain strong to ration dwindling crop supplies.

Under normal weather conditions, U.S. crop yields and production are likely to rebound. A return to normal weather patterns is the most likely scenario for the **1989** growing season. But due to below normal rainfall in the fall, much of the nation remains in severe to extreme drought. In the driest areas of the nation, including much of the Corn Belt and the northern Great Plains, depleted soil moisture reserves have not been recharged by autumn rains. In the absence of adequate soil moisture reserves, development of **1989** crops will be especially dependent on plentiful spring rains and timely rainfall throughout the remainder of the growing season.

Wheat inventories will be drawn down sharply during the **1988-89** marketing year, the third consecutive year of decline. Due to a smaller beginning inventory and the drought-diminished crop, the total wheat supply, at about 3.1 billion bushels, is more than a fifth smaller than a year earlier (Table 4). Wheat use is expected to slip only slightly from this year's level. Domestic use will likely exceed this year's level, but higher wheat prices could reduce export volume nearly **9** percent from a year earlier. In sum, total wheat use is expected to be about 2.6 billion bushels, a year-over-year decline of about 5 percent. On balance, drought-reduced production and heavy expected use will cut wheat **carryover** inventories by nearly **60** percent to **533** million bushels, the

TABLE 4

U.S. agricultural supply and demand estimates on December 12, 1988

(millions of bushels, metric tons, or bales)

	Corn (bu)		Feedgrains (mt)		Soybeans (bu)		Wheat (bu)		Cotton (bales)	
	Sept. 1-Aug. 31 1987-88	1988-89	June 1-May 31 1987-88	1988-89	Sept. 1-Aug. 31 1987-88	1988-89	June 1-May 31 1987-88	1988-89	Aug. 1-July 31 1987-88	1988-89
Supply										
Beginning stocks	4,882	4,260	152.1	133.6	436	302	1,821	1,256	5.03	5.80
Production & imports	7,068	4,676	216.3	143.1	1,923	1,512	2,107	1,812	14.76	15.20
Total supply	11,950	8,936	368.4	276.8	2,359	1,814	3,945	3,088	19.79	21.00
Demand										
Domestic	5,959	5,715	182.1	172.3	1,255	1,124	1,097	1,105	7.62	6.90
Export	1,732	1,775	52.6	52.5	802	565	1,592	1,450	6.58	5.00
Total	7,690	7,490	234.8	224.8	2,057	1,689	2,689	2,555	14.20	11.90
Ending stocks	4,260	1,446	133.6	52.0	302	125	1,256	533	5.77	9.20
Stocks-to-use ratio	55.4	19.3	56.9	23.1	14.7	7.4	46.7	20.9	40.6	77.3

Source: U.S. Department of Agriculture, *World Agricultural Supply and Demand Estimates*.

smallest carryover since 1974. Cash wheat prices are likely to remain much stronger than a year earlier. Farm-level prices may average \$3.60 to \$3.75 a bushel in the 1988-89 marketing year, well above this year's average price of \$2.57 a bushel but still below the farm program target price of \$4.23 a bushel.

The drought also exacted a heavy toll on feedgrain supplies for the coming crop year. At 276.8 million metric tons, **feedgrain** supplies will be a fourth smaller than this year. The sharp reduction in feedgrain supplies is due primarily to a 34 percent decline in production of corn, the principal feedgrain. The drought-reduced corn crop and a smaller beginning inventory will lower the total corn supply more than a fourth to 8.9 billion bushels. Despite the sharp draw-down in the corn supply, however, total corn use in the 1988-89 marketing year is expected to be off only 3 percent from this year. Corn use is expected

to be supported by nearly stable exports of about 1.8 billion bushels. Domestic use could fall about 250 million bushels as high prices trim feed consumption.

With only a slight reduction in corn use and a huge decline in corn supplies, corn inventories are expected to plummet. Corn stocks could fall two-thirds to only 1.4 billion bushels, the smallest inventory since 1983-84, the year of the PIK program. Prices have already risen sharply to ration smaller corn supplies, and prices are likely to remain strong in the year ahead. Farm-level corn prices could average \$2.40 to \$2.80 a bushel during the 1988-89 marketing year, a range well above this year's average price of \$1.94 a bushel and approaching the \$2.93 a bushel target price.

Soybean stocks will also be drawn down during the 1988-89 marketing year. A small beginning inventory, caused by strong demand and the inadvertent effects of the 1985 farm bill, and a

drought-reduced crop are expected to limit the **1988-89** soybean supply to only **1.8** billion bushels, nearly a fourth smaller than a year earlier. Total soybean use is also expected to fall during the **1988-89** marketing year as higher prices constrain export demand for soybeans and for the primary soybean products, meal and oil. Soybean demand by domestic crushers is expected to fall about **13** percent below a year earlier. Domestic soybean meal demand is expected to edge down about **6** percent, as pork producers cut back feed use. Higher soybean meal prices are expected to push meal exports a third lower than a year earlier. Similarly, a large drop in soybean oil exports is expected to lower total soybean oil use by about 3 percent. High U.S. soybean prices will discourage soybean exports overall. Soybean exports are expected to be only **565** million bushels, the smallest quantity since **1976** and **30** percent less than this year. In total, soybean use could be down about **18** percent.

Despite reduced overall demand, soybean use will still be larger than soybean production, leading to a further decline in inventories. Expected ending stocks of only **125** million bushels are the smallest since **1973** and are considered to be minimum pipeline supplies. To ration the dwindling soybean stocks, farm-level soybean prices are expected to average **\$7.00** to **\$8.50** a bushel, up from an average of **\$6.15** this year. Soybean meal prices could average **\$240** to **\$270** a ton compared with this year's average of **\$222**. Soybean oil prices could range from **21** cents to **25** cents a pound, up from an average of **22.65** cents a pound this year.

In contrast to the outlook for inventories of the grains and soybeans, cotton inventories are expected to grow during the **1988-89** marketing year. Another big crop, combined with larger beginning stocks, is expected to boost the total cotton supply available for the **1988-89** marketing year to 21 million bales, the largest beginning supply since **1967**. Total cotton demand, on the

other hand, is expected to fall more than **2** million bales. Domestic mill demand will likely slip **700,000** bales under the pressure of continued large textile imports and smaller domestic per capita cotton consumption. And higher foreign production is likely to curb U.S. cotton exports. On balance, stable production and smaller demand suggest that ending stocks could jump **60** percent to **9.2** million bales, the largest ending inventory since the **1985** farm bill went into effect. The average farm-level cotton price is likely to range from **52** to **55** cents a pound, just above the **51.8** cent loan rate but down sharply from this year's average price of **64.2** cents a pound.

In summary, the effects of the **1988** drought linger in the crop outlook for **1989**. Relatively stable demand for droughtdiminished **1988** crops will pull crop inventories down sharply. Crop prices are likely to remain stronger than a year ago to ration smaller crop supplies. A rebound in crop production with a return to normal weather conditions in **1989** would allow crop inventories to stabilize. But depleted soil moisture reserves may leave crops especially vulnerable to adverse weather developments in the year ahead. In that event, already diminished crop inventories would be rationed by still higher crop prices.

Livestock outlook

The effects of the **1988** drought also play a major role in the livestock outlook for **1989**. Withered pastures and higher feed costs may temporarily delay a long-awaited expansion in the beef industry. And a rapid expansion in pork production may grind to a halt as already narrow profit margins are squeezed even more by higher feed costs. The result could be a 4 percent decline in total red meat production. Poultry producers are likely to view these developments in the red meat industry as another window of opportunity. Total red meat and poultry output may be off only

1 percent from a year ago, as smaller red meat production is partially offset by continued expansion in the broiler and turkey industries. In brief, the drought's impact on cyclical trends in the beef and pork industries may temporarily accelerate the consumer's shift from red meat to poultry consumption.

The answers to two key questions are likely to determine the outlook for the cattle industry in the year ahead: When will the cattle herd finally reach a bottom and begin to rebound? And, will retail demand be strong enough to support record-high retail beef and live cattle prices in the presence of large competing supplies of pork and poultry? Though the answers to these questions are not yet clear, the beef industry outlook likely includes smaller beef production, record-high cattle prices, and tight profit margins for cattle feeders.

Beef production is expected to fall nearly 7 percent next year after declining about 1.5 percent in 1988. The expected decline in beef production in 1989 is due in part to the limited supply of feeder cattle that is being produced by the nation's shrunken cattle herd. At about 33 million head on January 1, 1988, the national beef cow herd was the smallest since records began in the mid-1960s. But cattle numbers may be approaching a bottom after a six-year decline. As that bottom approaches, 1989 beef production is expected to dip as animals that would otherwise be fattened for slaughter are retained for breeding herds.

Encouraged by strong profits earned from sales of feeder cattle at extremely high prices during most of the past two years, cattle ranchers may have already begun the slow process of rebuilding breeding herds. Beef cow slaughter was down about 9 percent in the first half of 1988, and the number of heifers entering cow herds has risen, both pointing to rebuilding inventories. This summer's scorched pastures may have temporarily delayed the rebuilding effort, and high-priced feed

may limit ranchers' efforts to maintain larger herds through the winter months. But preliminary signals suggest that cattle numbers are nearing a bottom after a long decline. As the turnaround in cattle numbers begins, smaller near-term beef production can be expected.

On the demand side, continued strength in consumer incomes is likely to support demand for beef and other meats. But beef consumption may slip due to record-high retail beef prices and large competing supplies of pork and poultry. Per capita beef consumption is likely to plummet nearly 8 percent to about 67.2 pounds in 1989, the fourth consecutive year of smaller per capita beef consumption.

Continued strength in retail beef prices and a limited supply of fed beef moving to market are likely to push live cattle prices to record levels by mid-1989. Fed cattle prices could rise to the \$80 a hundredweight level in the second quarter of 1989 before slipping to the mid-\$70-a hundredweight later in the year. Choice steers at Omaha could average \$71 to \$77 a hundredweight for the year, up from an average of \$69 to \$70 per hundredweight in 1988. But the strong fed-cattle market will probably not be all windfall for cattle feeders. Strong fed-cattle prices are likely to be bid into prices of the limited number of feeder cattle. Kansas City feeder steer (600 to 700 pound) prices could average in the upper \$70s to lower \$80s a hundredweight, even higher than the 1988 record average. On balance, expensive feeder cattle and feed will likely lead to narrow or negative returns for cattle feeders in 1989 despite extraordinarily high fed-cattle prices.

In sharp contrast to the preliminary signs of expansion emerging in the beef industry, pork production appears to be nearing a cyclical downturn after nearly two years of rapid expansion. Although pork production through the first half of 1989 is expected to remain above this year's level, negative producer returns are already dampening enthusiasm for further expansion. The

September 1, 1988 hogs and pigs inventory suggests that pork production in the first quarter of 1989 will be up about 2 percent from a year ago. In addition, a 3 percent increase in the size of the breeding herd over the past year and increased farrowing intentions for the December-to-February period both suggest that modest year-over-year gains in pork production will continue into the summer months of 1989. But the pace of expansion is slowing. Negative producer returns resulting from higher feed costs and market hog prices below \$40 a hundredweight appear to be discouraging plans for further expansion.

Consumption of pork is likely to be strong in the year ahead. During the past year, wholesale and retail pork prices have fallen in relation to beef and poultry prices. As a result, pork has become a more attractive choice for the consumer. In addition, retail pork prices have not fallen as much as farm-level prices since midyear. The near record farm-to-retail price spread is likely to encourage retailers to market pork more aggressively. Smaller pork supplies combined with strong consumer demand may lift market hog prices above break-even levels by mid-1989. Barrow and gilt prices at the seven regional markets may average \$42 to \$48 a hundredweight during the year, slightly above the 1988 average of \$43 to \$44 a hundredweight.

The long expansion in broiler production is likely to continue in 1989. Doubts about the extent of the drought's impact on feed prices and about the duration of stronger than expected broiler prices slowed the industry's expansion during the last half of 1988. But continued strong consumer demand and smaller red meat supplies may help boost expansion to the longer run pace of 5 percent a year in 1989. Per capita broiler consumption could jump to 65 pounds in 1989, nearly 4 percent above per capita consumption in 1988. As red meat supplies edge lower during the year, broiler prices are likely to trend higher from a

first-quarter average of 50 to 56 cents a pound. For the year, broiler prices could average 51 to 57 cents a pound, little changed from the 1988 average.

Turkey producers are likely to expand production cautiously in 1989. During the second half of 1988, producers reduced production 5 percent below year-earlier levels following a full year of losses. Positive returns realized in the latter half of the year, however, are likely to encourage producers to resume a modest expansion. Turkey production is now expected to increase about 1 percent in 1989. Continued strong consumer demand is likely to support prices of the modestly larger turkey supplies. After a more than 9 percent increase in per capita turkey consumption in 1988, per capita consumption in 1989 is likely to be little changed at about 16.5 pounds. Turkey prices may average 63 to 69 cents a pound, above this year's average of 61.5 cents a pound.

Trends in milk production in 1989 will likely be determined by the lingering effects of the drought on dairy profitability and by related adjustments in dairy policy. Monthly milk production has been above the previous year's level every month since the mid-1987 end of the herd liquidation phase of the Dairy Termination Program, a program designed to reduce excess capacity in the dairy industry. Rising milk output, despite fewer cows, reflects gains in productivity per cow. Recently, however, drought-induced boosts in feed costs have trimmed profit margins and appear to be slowing productivity gains. At least partially offsetting the effect of higher feed costs on dairy profit margins are two adjustments to the milk support price included in the federal drought relief package. The first eliminates a 50 cents a hundredweight cut in the support price that likely would have occurred on January 1, 1989. And the second increases the support price by 50 cents a hundredweight from April through June 1989. Unless these drought-related dairy policy revisions fully offset the

effects of higher feed prices on profitability, little expansion in **milk** production is likely in 1989. With little expansion in milk production and continued strong commercial demand, milk prices could average \$11.95 to \$12.75 a hundredweight during the 1988-89 marketing year.

Conclusions

U.S. agriculture continued its strong recovery in 1988, shrugging off a severe drought in the process. The drought cut crop production sharply, especially in the northern Plains states and in parts of the Corn Belt. But crop prices soared as supplies dwindled, keeping incomes high overall. Although farm income remained near record levels, the drought created wide regional variation in **farm** finances. **Farmland** values continued to advance in 1988, in part because the high farm incomes of the past three years have given farmers big cash positions with which to purchase land. Strong crop prices also led to active interest in land purchases. U.S. farm exports stayed quite strong in the face of higher crop prices as

economic growth abroad and the weaker U.S. dollar kept demand strong for U.S. grain. As total grain stocks declined to the lowest level since 1980, the surplus problem of the early 1980s waned. Still, U.S. agriculture's productive capacity remains huge, and many unknowns—future world economic growth and the pace of **biotechnology** advance, among others—will determine whether surplus recurs in the 1990s.

The farm outlook for 1989 remains bright. Tighter grain stocks promise strong crop prices throughout most of the year. The livestock industry also expects strong prices. The cattle industry will begin the year with the smallest herd in nearly 30 years, setting the stage for possible record prices for finished cattle. But the high feedgrain prices will keep livestock profits narrow. Although farm expenses will rise as farmers plant more acres, increased crop production and high commodity prices will keep farm incomes strong in 1989. Farmland values are expected to continue to advance at a moderate pace. Overall, U.S. agriculture should enjoy a third year of **broad-based** recovery.

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