

Federal Reserve Bank of Dallas March 1985

Big Gains In Oil Field Machinery Employment

Employment in oil field machinery manufacturing has increased significantly in Texas. Total employment in the industry expanded more than 12 percent in 1984, rising to 47,000 by December. This is in sharp contrast to the experience in some other energy-related industries. For example, employment increased 4 percent in oil and gas extraction last year but actually fell in refining and chemicals.

The expansion in the oil field machinery industry can be tied to two major factors. First, the recovery in oil and gas drilling has worked off inventories of parts and equipment that accumulated during the industry's recession. Second, offshore drilling, which is more capital-intensive than onshore drilling, is in the midst of a vigorous recovery because of increased availability of suitable leases.

Recent Industry Performance

Manufacturing of materials and equipment for oil and gas extraction is an important source of employment in Texas. The extraction industry uses output from a variety of durable goods manufacturing sectors. The focus here is on employment trends in oil field machinery because data on the energy-related employment in other durable goods sectors cannot be disaggregated. Employment in oil field machinery manufacturing can be seen as a proxy for employment trends in these sectors.

The oil field machinery industry is emerging from a long recession. In February 1982, industry employment

peaked at 88,000. By December 1983, employment had dropped to just over 40,000. This drop was caused by a rapid decline in drilling, resulting in a significant buildup of oil field machinery inventories and surplus drilling rigs. Many of the surplus rigs were eventually scrapped for parts, further reducing orders for oil field machinery.

The recovery in the oil field machinery industry began in early 1984, about a year after the upturn in

both the Texas economy and drilling. The delayed recovery can be traced to the accumulation of machinery inventories. These inventories had to be worked off before production and employment expanded (Chart 1). Although the U.S. rig count did not grow much during 1984, demand for machinery still expanded because of the 20-percent increase in the Gulf of Mexico offshore rig count. Moreover, the industry's recovery is not linked

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Uneven Expansion In High Tech

The advantages of "high-technology" manufacturing industries for Texas have received much attention. In Texas during 1984, employment in electric and electronic equipment manufacturing increased at a rate of 8.4 percent, more than three times as fast as the 2.7-percent rate for total nonagricultural employment. But not all high-technology industries have been growing so rapidly. Employment in production of instruments grew at a rate of 3.0 percent in 1984. Electric and electronic equipment accounts for nearly five times as many jobs in Texas as the instruments industry so, on balance, this portion of high-tech manufacturing has contributed substantially to economic recovery in the state.

Strong Growth in Electronics

The electric and electronic equipment industry has recovered strongly

from the last recession (Chart 3). Beginning late in 1983, a strong rebound in orders led to rising output, spot shortages, strains on capacity, and increased hiring.

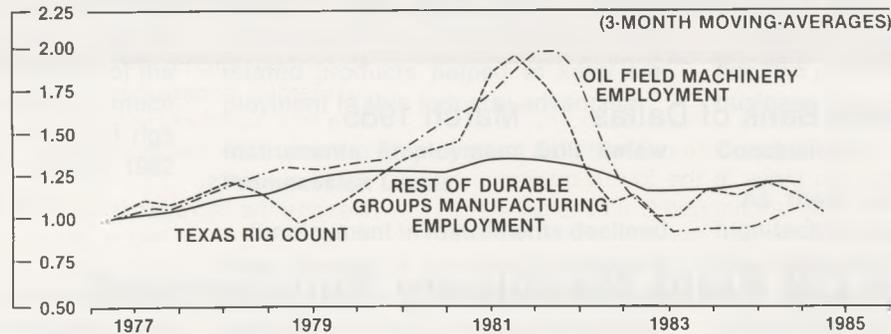
A large increase in production of semiconductors was an important contributor to this expansion. Semiconductors are important components of computers and telecommunications and robotic equipment. Their production absorbs more than one-third of the work force in the electric and electronic equipment industry in Texas. Unfortunately, the growth rate for sales of products containing semiconductors was about half the rate of increase in shipments of semiconductors, chiefly because of unexpected sluggishness in demand for personal computers.

The result was an unplanned accumulation of inventory. During the

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Chart 1

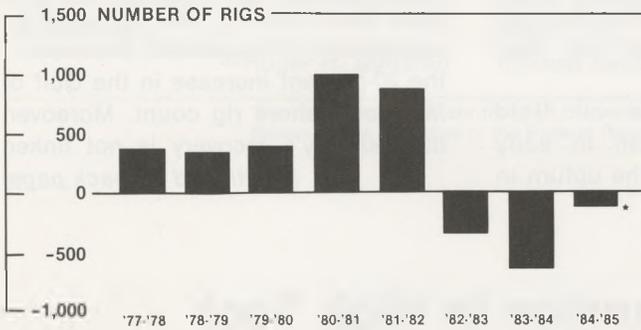
OIL FIELD MACHINERY AND REST OF DURABLE GOODS MANUFACTURING EMPLOYMENT AND TEXAS RIG COUNT



SOURCES: U.S. Bureau of Labor Statistics.
Hughes Tool Company.
Federal Reserve Bank of Dallas.

Chart 2

ANNUAL CHANGE IN TOTAL RIGS

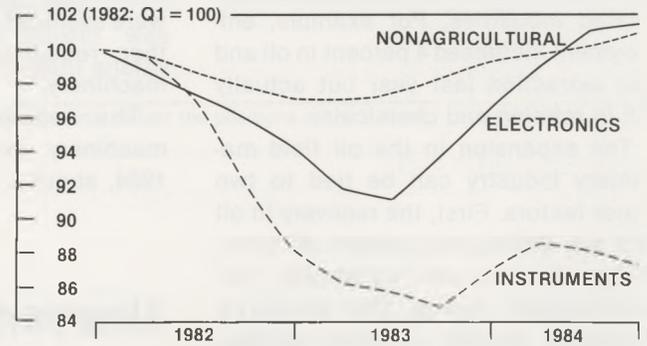


SOURCES: Federal Reserve Bank of Dallas.
Drilling.

NOTE: Census taken in August.
*Estimated based on historical relationship between change in total rigs, utilization rate, and change in active rigs.

Chart 3

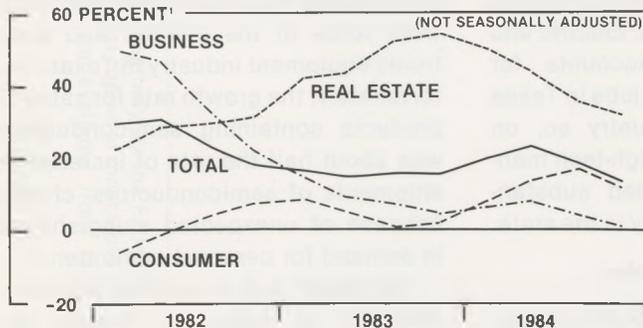
TEXAS EMPLOYMENT INDEXES



SOURCES: U.S. Bureau of Labor Statistics.
Federal Reserve Bank of Dallas.

LOANS—LARGE WEEKLY REPORTERS

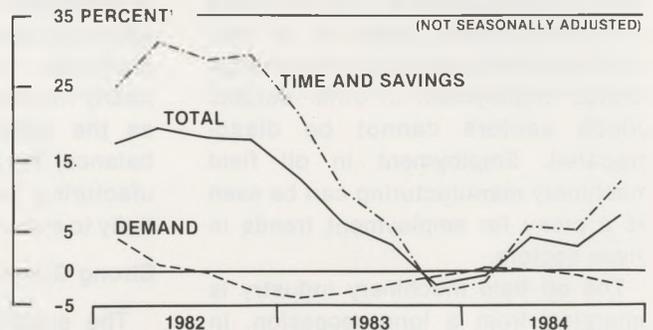
Eleventh Federal Reserve District



1. Percent change from same quarter in previous year.
SOURCE: Federal Reserve Bank of Dallas.

DEPOSITS—LARGE WEEKLY REPORTERS

Eleventh Federal Reserve District



1. Percent change from same quarter in previous year.
SOURCE: Federal Reserve Bank of Dallas.

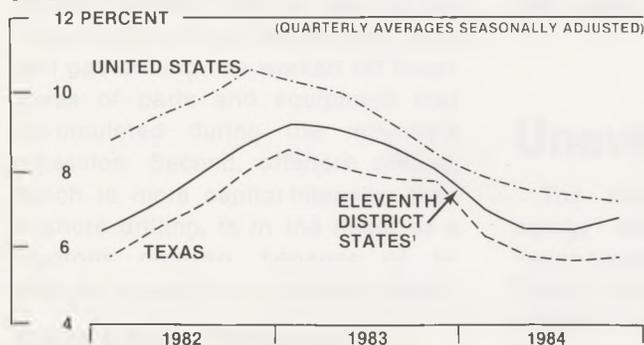
DISTRICT BRIEFS

- Continuing slow economic growth in Texas is evident from the rise in the state's unemployment rate in January to 6.5 percent. Although the labor force declined in January, total employment also fell and by a larger amount.
- The slow growth in the Texas economy is reflected in industrial production. The Texas industrial production index in the fourth quarter of 1984 was virtually unchanged from the third quarter, as was the comparable figure for the United States. The energy sector continues to slow economic growth in the state. The index for refining fell, and that for crude petroleum mining remained unchanged. The nation's production growth is still relatively stronger than the state's.
- Falling oil prices continue to depress the Texas energy industry. The state rig count is declining, on a seasonally adjusted basis, at an increasing rate. Refinery production and employment are still sliding, despite some firming of product prices.
- Construction in the Eleventh District is buoyed

by strong nonresidential activity but is hindered by rapidly declining residential building. The value of nonresidential construction contracts in the fourth quarter of 1984 was 40 percent higher than a year earlier, but the residential construction value fell 27 percent. The total value of construction contracts rose 8 percent, after declining in each of the previous three quarters.

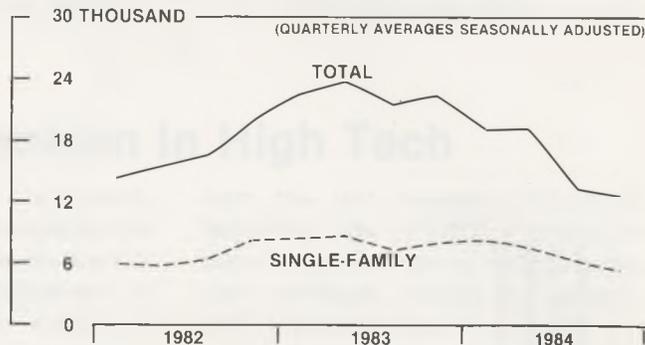
- Despite the increase in overall construction activity, growth in real estate lending at banks has slowed in recent months. The growth rate of real estate loans at large District banks fell to 25.6 percent in January, on a year-to-year basis. On this same basis, the average growth in 1984 was 40 percent. The average monthly growth rate for such loans in 1984 slowed to 2.6 percent, compared with 3.6 percent for 1983.
- Total deposits at Eleventh District financial institutions may foreshadow a pickup in economic activity. Year-to-year growth in these deposits rose from 18.8 percent in the third quarter of 1984 to 20.6 percent in the fourth quarter.

UNEMPLOYMENT RATE



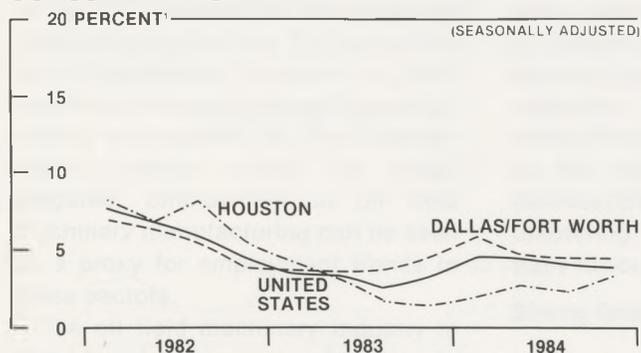
1. Louisiana, New Mexico, and Texas.
 SOURCES: Texas Employment Commission.
 U.S. Department of Labor, Bureau of Labor Statistics.
 Federal Reserve Bank of Dallas.

HOUSING PERMITS: TEXAS



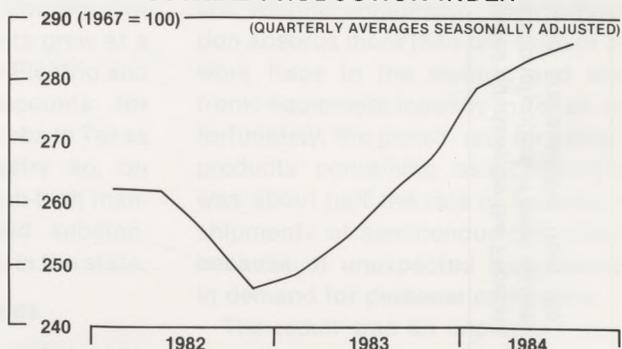
SOURCES: U.S. Department of Commerce, Bureau of the Census.
 Federal Reserve Bank of Dallas.

CONSUMER PRICE INDEX



1. Percent change from same quarter in previous year.
 SOURCES: U.S. Department of Labor, Bureau of Labor Statistics.
 Federal Reserve Bank of Dallas.

TEXAS INDUSTRIAL PRODUCTION INDEX



SOURCE: Federal Reserve Bank of Dallas.

Employment (cont.)

just to domestic drilling. Texas is a major world supplier of oil field machinery, and the rig count in the rest of the world increased 7 percent in 1984. Finally, the detrimental effect of the large number of surplus rigs is diminishing. Current projections of the August 1985 census indicate a much smaller decline in the number of rigs than occurred between August 1982 and August 1984 (Chart 2).

Outlook

The outlook for oil field machinery depends on drilling. Falling oil prices have resulted in precipitous declines in both the U.S. and Texas rig counts in early 1985 threatening the recovery of the oil field machinery industry. Any additional decreases in oil prices are likely to lead to further declines in drilling and, hence, in oil field machinery employment.

—Roger H. Dunstan

High Tech (cont.)

fourth quarter of 1984, layoffs at semiconductor plants across the country subdued the growth of employment in electric and electronic equipment in Texas. Nevertheless, strong demand for telecommunications and defense-related products helped to keep employment in this industry advancing.

Instruments Employment Still Below Prerecession Levels

Employment in instruments declined more sharply in the recent recession, and its recovery has been considerably weaker than that of electric equipment. In Texas, much of the output of instruments manufacturers is used in aircraft or for monitoring mining and manufacturing processes.

The large national increase in investment spending last year stimulated some growth in the instruments industry in Texas, but growth was modest because the important energy

and aircraft sectors have been weak. After a surge in growth during the first half of 1984, employment in this industry slipped during the second half. At the end of 1984, employment was 3.0 percent higher than a year earlier but 10.5 percent lower than at the last business cycle peak.

Conclusions

As these two examples illustrate, high-technology manufacturers are like other durable goods producers, in that demand for their products fluctuates sharply. Cyclical swings in high-tech manufacturing are larger than those for the economy as a whole, and longer-term trends for Texas firms are sometimes related to the fortunes of other prominent industries in the state.

—William C. Gruben

The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Dallas or the Federal Reserve System.
