

# *the* Southwest ECONOMY

THE FEDERAL RESERVE BANK OF DALLAS

MAY 1989

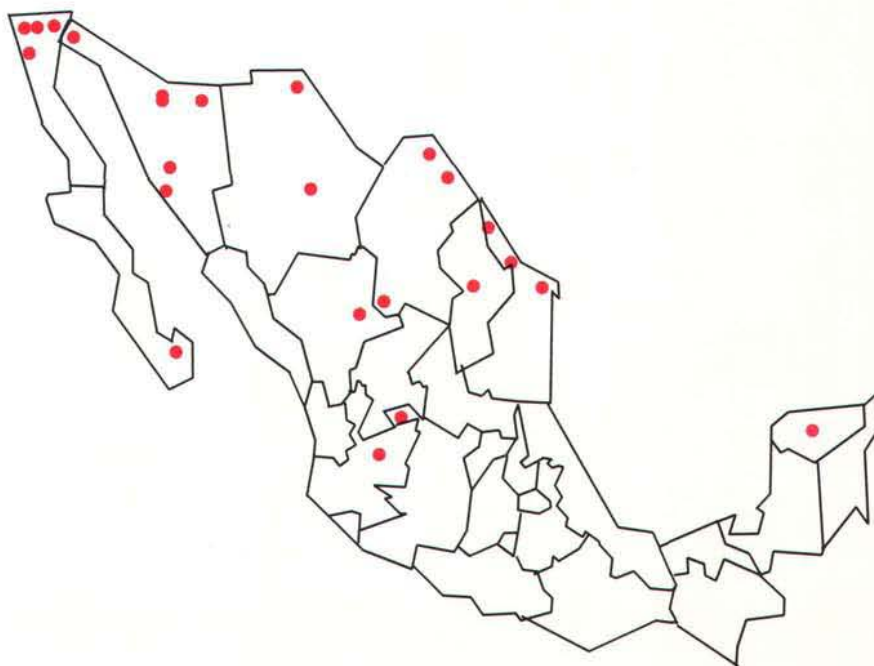
## Maquiladoras and the Southwest Economy

The Mexican maquiladora sector is a large and growing assemblage of foreign-owned companies that produce chiefly for export to the United States. Because more than 80 percent of maquiladora manufacturing plants are within a few miles of the U.S.-Mexico border, this industry has important implications for the Southwest economy.

The maquiladora program was developed in response to the cancellation of the U.S. bracero program. A

shortage of domestic farm labor during World War II led the United States to admit Mexican laborers to work in our country. This policy was formally sanctioned in the early 1950s. Many workers left the interior of Mexico and established permanent homes on that country's northern border, so they could take seasonal bracero jobs in the United States. These events caused significant population growth in northern Mexico, but they also caused U.S. labor groups to organize political

Maquiladora Centers  
All of Mexico



*"Maquiladora expansion has been particularly strong during the middle and late 1980s."*

pressure against the program. In 1964, when 185,000 Mexicans were working under the bracero program, the United States terminated the program.

To find jobs for the thousands of unemployed braceros, the Mexican government designed a program that used U.S. tariff laws to attract U.S. manufacturers to the border. One of these laws states that if a firm brings inputs from the United States, assembles them abroad, and returns the product to our country, only the value added by manufacture is subject to tariffs. The total value of the import is not taxed.

To benefit from this law, Mexico waived a number of its traditional restrictions on foreign investment. It allowed 100-percent foreign control of plant operations. It also permitted duty-free imports of materials and equipment, provided that all output would be exported from Mexico. These new rules made it easier for U.S. and other non-Mexican producers to use Mexico's low-cost labor to compete with Asian producers.

Even though the maquiladora program originally was designed to find new employment for farm workers, most of whom were male, the maquiladoras have usually hired females. During the 1970s, only about one-fifth of all workers were males. Since then, the share has risen to a little less than one-third.

The maquiladora program has also often been called the "twin-plant program." The idea was that a plant on the Mexican side would coordinate its operations with a twin just across the border in the United States. These

twins do exist, but they are the exception and not the rule. Less than 10 percent of the plants in Mexico have a twin along the U.S. border.

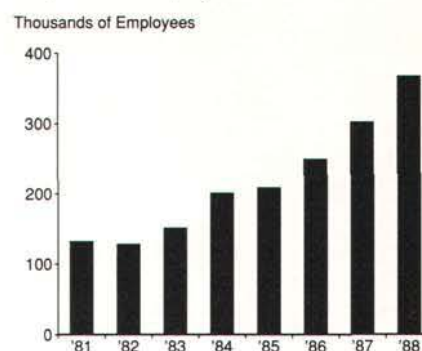
At first, Mexican law required maquiladoras to locate on the border. Later, Mexico allowed these plants into much of the interior (*See the map*). Despite Mexico's relaxation of locational restrictions, more than 80 percent of maquiladora employment is still on the border. Mexico also relaxed its restriction that all products of maquiladoras had to be exported. Now, 80 percent of total output has to be exported, but not all of it.

#### **What Made Maquiladoras Grow?**

Mexico's maquiladora employment growth has been rapid for some time, but expansion has been particularly strong during the middle and late 1980s. As Chart 1 shows, employment rose from a little more than 200,000 in mid-1984 to over 360,000 in mid-1988. This growth is a reaction, in part, to the devaluation of the Mexican peso in 1982 and to subsequent devaluations. Before 1982, the peso was persistently overvalued against the dollar.

While changes in the exchange value of the peso against the dollar are related to maquiladora growth, a more direct link is that between dollar-denominated labor costs in Mexico and those in other countries. Chart 2 compares U.S. dollar-per-hour manufacturing labor costs in Mexico versus three of the newly industrialized Pacific nations. These countries are among Mexico's major competitors for foreign-owned assembly plants. Despite some extreme fluctuations, Mexican labor

Chart 1  
Maquiladora Employment

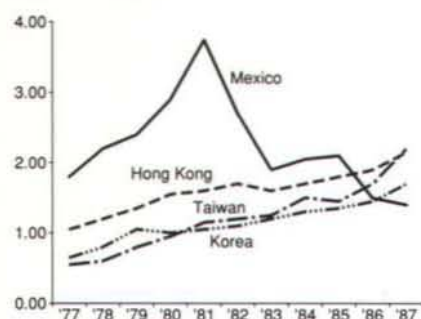




*"Electronics account for 42 percent of total value added by maquiladora plants."*

Chart 2  
Labor Costs for Selected Countries  
and Hong Kong

U.S. Dollars Per Hour



costs have fallen relative to those of other countries that have relied on low-wage, low-skilled labor to attract manufacturing industries. One of the reasons for this decline in relative costs has been the adjustment of the Mexican peso.

#### What Do Maquiladoras Make?

The mix of maquiladora products is narrowly focused. Electronics account for 42 percent of total value added by maquiladora plants. Shipping costs for electronics are low in relation to product value, so long distance transport expenses are less significant in determining plant location than they are for many other products. The electronics-producing maquiladoras are generally assembly plants. They take components that are manufactured elsewhere and they put them together. The tariff-saving characteristics of such operations were what originally helped to motivate firms to go to Mexico.

More recently, other types of operations have expanded. Currently, about 24 percent of total value added in maquiladora plants is in transportation equipment manufacture. Some of these plants, which manufacture parts that are used by U.S. and Japanese auto companies, do not qualify for the special U.S. value-added-only tariff treatment that originally helped to motivate maquiladora activity. These plants do more than simply assemble components. Nevertheless, the labor savings are significant enough so that companies will start maquiladoras anyway.

#### Who Owns Maquiladoras?

Other factors also motivated the recent expansion of maquiladora activity in Mexico. A fairly recent phenomenon has been the growth of maquiladora plants that are not owned by U.S. firms. These plants represent only a small minority of total maquiladoras. Of the 1,125 maquiladora plants operating in Mexico in 1987, 53 were owned by firms that were not of U.S. origin, including 5 French plants, 5 British plants, 4 Dutch plants, and, most significantly, 31 Japanese plants. In 1988, the Japanese added eight more plants.

Labor costs and access to U.S. markets are important motivations for these maquiladoras, but protectionists in the United States argue that the Japanese also use the maquiladora program to avoid quotas imposed on products that originate in Japan. Whether or not this is true, anticipation of further anti-Japanese protectionist legislation in the United States may be motivating the establishment of Japanese plants in Mexico. Nevertheless, a number of the Japanese maquiladoras coordinate their operations with Japanese manufacturing activity that already takes place in the interior of the United States. Regardless of the relative importance of each of these motivations, foreign maquiladoras have a more positive impact on U.S. economic activity than if they were located in their home countries.

#### Maquiladoras' Impact on Texas

In mid-1987, when employment in the great majority of Texas cities was

*"Rapidly rising maquiladora wages, in dollar terms, would slow maquiladora growth."*

below a year earlier, all four major Texas cities on the Mexican border were growing. And over the previous 24 months, maquiladora employment in every one of the Mexican cities across from these Texas communities had grown by 25 percent or more.

Though much is unknown about the impact of maquiladoras on the United States, an estimate of some of the effects of maquiladoras on Texas is possible. First, workers in the Mexican maquiladoras spend some of their income just across the border in the United States. I estimate that Mexican maquiladora workers spend about \$65 million annually on purchases in Texas. These expenditures mean about 4,000 additional jobs in the state.

A second impact involves the Texas workers in Texas-based twin plants. I estimate that about 16,000 Texas workers hold jobs in Texas twins of the Mexican maquiladoras. The impact of purchases in Texas by these plants and their workers result in an additional 25,000 jobs in the state, so that the total impact of the U.S. twin plants is about 41,000 jobs.

Third is the direct impact that Mexican maquiladora operations have on Texas. We know these Mexican operations require Texas-based customs brokers and transport services, but the plants also purchase inputs from many Texas companies. A study of maquiladoras showed they annually use about \$6 billion of inputs from the United States. Though Texas firms supply only part of the inputs, purchases from Texas suppliers could mean as many as 10,000 additional jobs for the state.

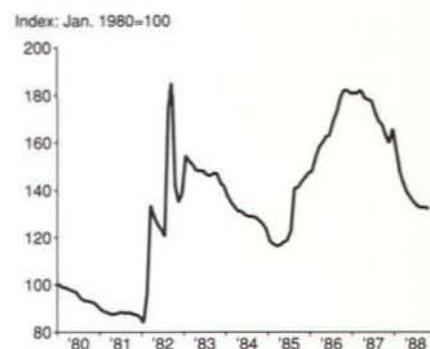
### Future Growth

While it is clear that the maquiladora sector has been growing rapidly, the outlook for future growth is less clear. What clouds this outlook is that, even though Mexican wages are still far below U.S. wages, Mexican monetary and exchange rate policy is causing the dollar cost of a Mexican worker to rise faster than the cost of a U.S. worker. Mexico has taken strong steps to reduce its rate of inflation from over 100 percent in 1987 to about 60 percent in 1988. But even though the rate of price increase in Mexico slowed substantially last year, prices there have increased considerably faster than in the United States.

In a market of freely fluctuating exchange rates, we would expect devaluations of the peso to bring the relative buying power of the dollar back into adjustment. The peso-dollar exchange rate, however, has changed very little since late in 1987, because the Mexican government has been defending the peso by purchasing it with foreign currency. The result has been a substantial decline in the real peso dollar exchange rate (See Chart 3). This means that a dollar now buys much less of most Mexican products than it did a year ago.

So far, the Mexican government has acted to hold wage increases well below the rate of inflation, so the dollar cost of workers in Mexico has not risen by as much as overall prices have. Even so, the average dollar wage and benefit cost per Mexican maquiladora employee rose by more than 21 percent between mid-1987 and mid-1988.

Chart 3  
U.S. Real Exchange Rate with Mexico  
(Pesos Per Dollar)



A more serious concern is the potential for further wage pressures in response to recent inflation and the possibility that these pressures will be expressed through increases in dollar cost per worker. A wage adjustment would not destroy the maquiladora industry; it has existed and even grown when the dollar cost of wages in Mexico was above that in Far Eastern countries. But rapidly rising maquiladora wages, in dollar terms, will slow growth.

### Summary

In recent years, relatively low dollar wages have stimulated growth in maquiladora employment—with a significant impact on the Texas economy. Last summer, overall average monthly wages and salaries were less than \$300 per employee. But if Mexican rates of wage growth outpace those elsewhere, the potential for maquiladora expansion will diminish.

—William C. Gruben



## ECONOMIC COMMENTARY

by Robert H. Boykin, President  
Federal Reserve Bank of Dallas

*Excerpted below are highlights from testimony given by Robert Boykin at a special hearing of the Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, on March 11, 1989 in San Antonio, Texas. In his testimony, Mr. Boykin discussed the thrift crisis and the legislation recently proposed by President Bush to address this critical issue.<sup>1</sup>*

The Federal Reserve Bank of Dallas supports, in principle, the legislation proposed by President Bush for the reform and recovery of the thrift industry. *A satisfactory solution to the problems plaguing the thrifts is essential to ensure the economic well-being of the nation as a whole and particularly the Dallas Federal Reserve District (Texas, Louisiana, and New Mexico).* It is imperative that a solution to this crisis be reached as quickly as possible; the threat this situation poses cannot be allowed to continue. Removing this threat could contribute substantially to broadening the region's two-year old economic recovery.

### The Impact of the Thrift Crisis on Banks and Healthy Thrifts

The thrift crisis has significantly increased the cost of funds for financial institutions in the District.<sup>2</sup> In Texas, interest premiums on deposits averaged 28 basis points for banks and more than 50 basis points for thrifts in 1988. Even sound, healthy Texas banks have paid an additional 10 to 20 basis points for funds in 1988, compared to banks in similar financial condition elsewhere.

The so-called Texas premium on deposits can be attributed to two factors. The first is the large volume of nonperforming real estate loans held by banks and thrifts. Banks have not yet managed to fully write down their real estate loan portfolios to current values. Consequently, questions persist regarding the value of these assets, making the financial condition of these institutions unclear. The second factor driving up the cost of funds at District institutions has been the aggressive pursuit of funds by insolvent thrifts. Insolvent thrifts bid up deposit rates to attract funds, forcing the healthy members of the industry to raise their own deposit rates in order to compete.

The Texas premium on deposit rates has affected the bottom line for commercial banks. This is illustrated by the negative return on assets at Texas banks for the past two years. As losses have mounted, the equity capital position of the District's banks has also fallen—from an average of 6.9 percent of assets in 1985 to an estimated 4.9 percent in 1988. Moreover, over the same period, the banks' primary capital position has declined from 7.8 percent of assets to 6.6 percent in 1988. This compares to the current regulatory standard of 5.5 percent for primary capital and suggests that District banks are approaching regulatory minimums. In fact, many banks have fallen below the regulatory minimum.

The upshot of this situation is that otherwise healthy banks and thrifts have been negatively affected by the continued operation of insolvent thrift institutions. It is likely that the District's

financial sector will continue to deteriorate until the situation is resolved.

### The Need for Both Public and Private Capital

One aspect of the President's proposal is particularly important for the Southwest—namely, the need for both public and private capital in any successful restructuring of the thrift industry. Private capital provides a cushion for the deposit insurance funds and is essential if risk to those funds is to be kept within reasonable bounds. In the current environment, however, private capital cannot be attracted to the thrift industry without sufficient public capital. In short, there is a symbiotic relationship between those two components of capital. If the infusion of public capital falls short of what is necessary to attract private capital, the effectiveness of the public infusion will be nullified in the long run.

We have seen that point illustrated in the Southwest Plan. The recapitalizations undertaken thus far have resulted in a disappointingly small infusion of private capital into the thrifts. Consequently, the restructuring has been too dependent on federal assistance.

Another point should be addressed. Under the proposed legislation, thrifts are to be brought up to commercial bank capital standards over time. A large number of thrifts are currently solvent but not in robust health. Presumably, the worst of the thrift problems will be addressed under the plan now in Congress. But additional thought should be given to how these moderately healthy and barely solvent thrifts (and, to some extent, banks as well) can raise the required capital and, at the same time, compete with *publicly* recapitalized institutions.

### Summary

The prolonged operation of insolvent thrifts constitutes an immediate threat to the deposit insurance fund, to solvent banks and thrifts, and to the stability of the financial system itself. Strategies that have been employed by insolvent institutions could both compound the problems of currently solvent institutions and lead to a new generation of bankrupt thrifts and commercial banks. Any delays in resolving the current crisis will only serve to increase the cost to taxpayers, to further undermine the public's confidence in the financial system, and to endanger the fragile economic recovery currently under way in the Southwest. We view the President's plan as one which can resolve the crisis, and we urge its prompt enactment.

<sup>1</sup> A copy of Mr. Boykin's complete testimony is available by writing the Public Affairs Department, Federal Reserve Bank of Dallas, Station K, Dallas, Texas 75222, or by calling (214) 651-6289.

<sup>2</sup> See Genie D. Short and Jeffery W. Gunther, *The Texas Thrift Situation: Implications for the Texas Financial Industry*, Federal Reserve Bank of Dallas, Financial Industry Studies Department (Dallas, September 1988), for a complete discussion.



## The 1989 Drought: An Update

During February and March, rain and snow improved soil moisture conditions in parts of Texas. But soils remain abnormally dry throughout most of the state. Rainfall is unlikely to end drought conditions before the end of summer.

In 1988, drought, or abnormally dry soil, devastated agricultural production across the country. By midsummer, much of the nation was roasting in extreme drought. At that time the Southwest was experiencing only moderate drought conditions, and most farmers in the region completed the year with good crop and livestock production.

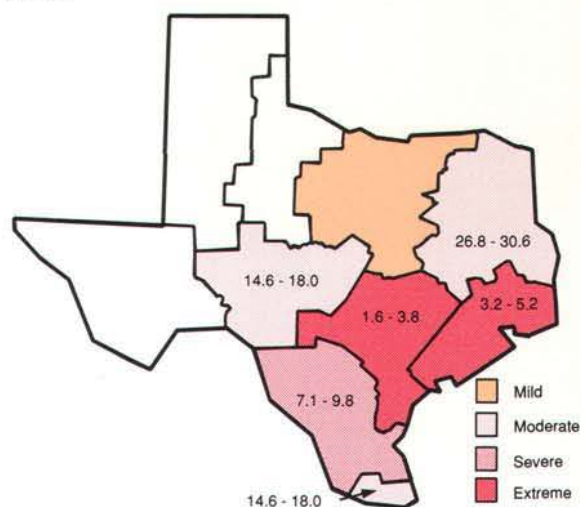
During the fall of 1988, soil moisture conditions worsened in Texas. By December, a large portion of the state was in severe drought. Historical rainfall indicated a low probability that dry soil conditions would improve by spring or midsummer.<sup>1</sup> Insufficient soil moisture began to threaten 1989 agricultural production.

Since January, rain and snow provided sufficient moisture to encourage some spring planting. Much of Texas remains in drought, however, and plantings of corn and sorghum are below average. In the Rio Grande Valley, dry weather is discouraging some planting. Farmers will need additional rain soon to ensure good crop development.

While soil moisture conditions have improved in north-central and west Texas, conditions remain very dry throughout most of the state (*See the map*). The drought is now extreme in central and coastal Texas. In the panhandle, soil conditions have deteriorated from wet to near a mild drought in the past two months. Soil moisture has also declined around Brownsville, pushing that area into moderate drought.

Given historical rainfall, dry soil conditions are likely to persist through the summer. In the drought-afflicted areas of

Probability of Drought Conditions Ending by Mid-September  
(Percent)



the state, the probability of the drought ending by mid-September ranges from 1.6 to 30.6 percent.<sup>2</sup>

Dry soil does not guarantee poor crop and livestock production, but dry soil puts Texas agricultural income at risk. Well-timed rainfall remains essential for good crop and livestock production.

—Fiona Sigalla

<sup>1</sup> See *The Southwest Economy*, March 1989.

<sup>2</sup> See Thomas R. Karl, Richard W. Knight, D. S. Ezell, and Frank T. Quinlan, *Probabilities and Precipitation Required to End/Ameliorate Droughts*, Historical Climatology Series 3-16, (Asheville, N.C.: National Oceanic and Atmospheric Administration, National Climatic Data Center, 1986).

Technically, a drought ends when soil moisture improves to mild drought.

## Oil Price Gains Likely to Be Sustained

Market conditions suggest that recent gains in oil prices will likely be sustained in the near future. And by year's end, oil prices may rise further.

Although renewed OPEC solidarity has accompanied recent gains in oil prices, growing oil demand is driving the increases. Recent data indicate that world oil consumption increased by more than 3 percent during 1988. Previous estimates were closer to 2 percent. Solid economic growth and continued adjustment to lower oil price expectations appear to be the main factors boosting world oil demand. Besides boosting prices, increasing demand is helping OPEC achieve solidarity.

Because changes in crude oil inventories are inferred from estimates of production and consumption, the data revision also means that current oil inventories are much lower than analysts previously thought. With low inventories and continued growth in demand, oil prices are unlikely to drop in the spring, when demand typically takes a seasonal decline. When demand begins its seasonal rise in the fall, strong demand and the current degree of OPEC cooperation could mean rising oil prices.

Higher oil prices and changing perceptions of oil market conditions have increased oil field exploration and development. On a seasonally adjusted basis, the U.S. and Texas rig counts were about 10 percent higher in the first half of March than in February. Further gains in drilling are likely.

—Stephen P. A. Brown

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