the Southwest
ECONOMY

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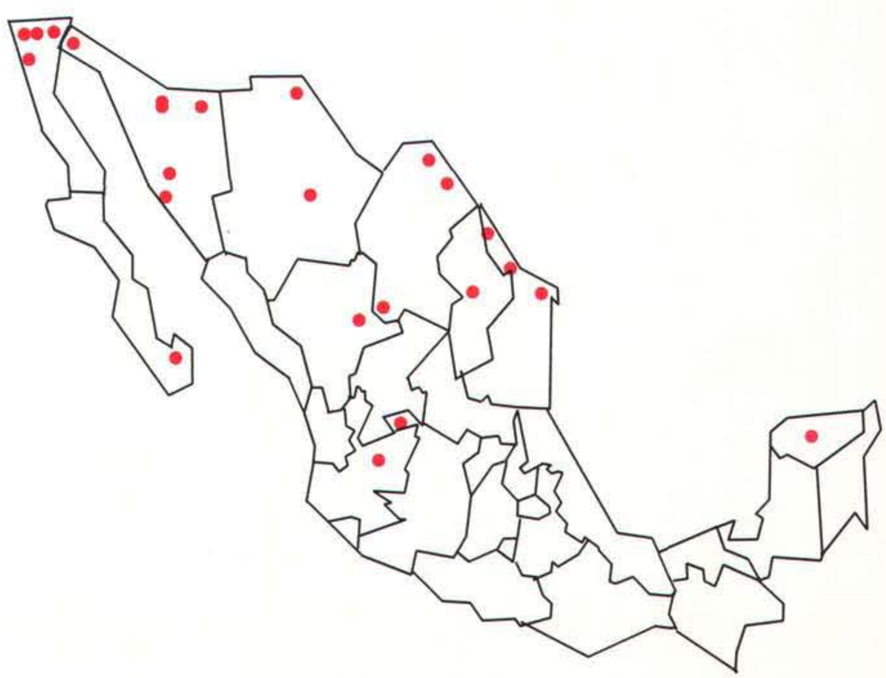
# Maquiladoras and the Southwest Economy

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.

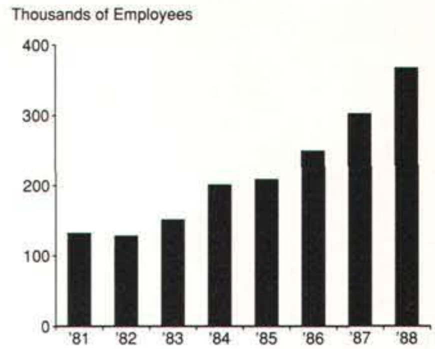
At first, Mexican law required maquiladoras to locate on the border. Later, Mexico allowed these plants into much of the interior *(See the map)*. Despite Mexico's relaxation of locational restrictions, more than 80 percent of maquiladora employment is still on the border. Mexico also relaxed its restriction 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.

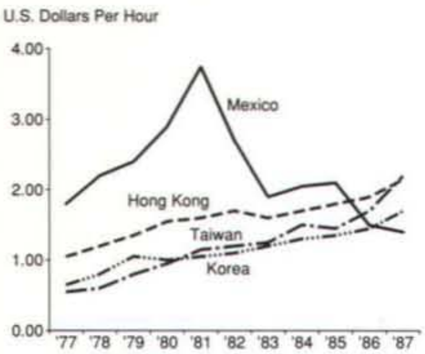
While changes in the exchange value of the peso against the dollar are related to maquiladora growth, a more direct link is that between dollar-denominated labor costs in Mexico and those in other countries. Chart 2 compares U.S. dollar-per-hour manufacturing labor costs in Mexico versus three of the 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




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.

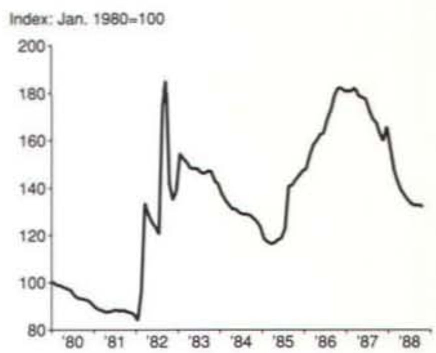
**Future Growth**

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