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Maquiladora Prospects in a Global Environment

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The Mexican in-bond assembly, or maquiladora, manufacturing sector has taken its fair share of lumps in recent years. Beset by currency market fluctuations, the industry has also experienced a business cycle downturn in the United States, intermittent border closures due to international terrorism, higher tax burdens, fiscal uncertainty, competition from offshore assembly plants in China, and national legislative gridlock. Collectively, these factors have led to shrinking payrolls in this export-oriented segment in recent years (see figure 1). Nevertheless, with double-digit rates of expansion less likely to occur as often as they did in the past, overall prospects for maquiladora operations remain generally favorable but far from optimal.

Although frequently overlooked by many, the December 1994 devaluation of the peso—or the "Tequila Effect" devaluation, as it is popularly known—can be cited as the primary source behind much of the recent boom in direct foreign investment flows to maquiladora plants. In fact, in-bond assembly industrial parks in northern Mexico fared much better than similar plants throughout much of Latin America and other developing regions. The number of factories in operation in Mexico increased from approximately 2,100 in 1994 to more than 2,700 in 1997 (figure 2). Strong growth continued even after the peso strengthened, at least partially as a consequence of greater investor confidence in

Figure 1
Total Maquiladora Employment

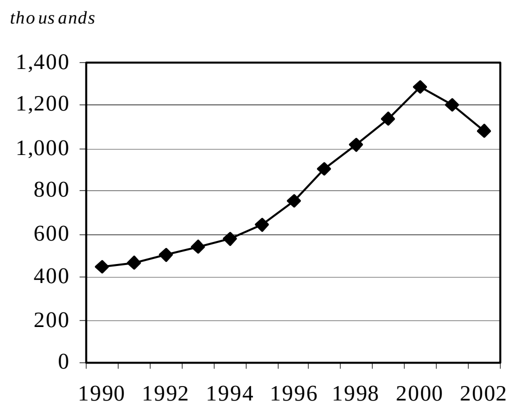
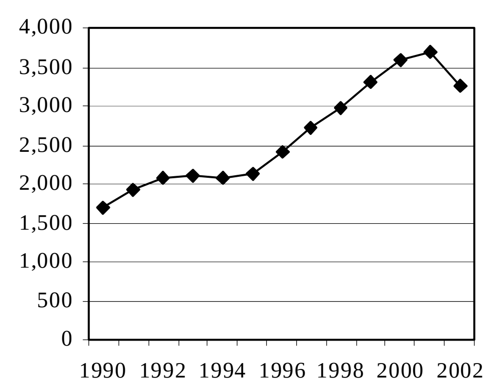


Figure 2
Number of Maquiladora Plants



Source: Instituto Nacional de Estadística Geografía e Informática.

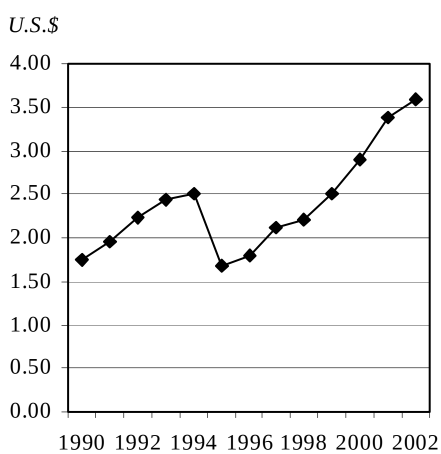
Mexico and its status as a member of the North American Free Trade Agreement (NAFTA).

Peso Performance

Although maquiladora wages are paid in pesos, manufactured products from those plants are sold for dollars. Sharply lower dollar-denominated wage bills spurred direct foreign investment in this sector during the mid-1990s. As detailed in figure 3, average hourly wages dropped by nearly 35 percent in dollar terms in 1995 and remained below $2.50 per hour until the peso strengthened substantially in 1999. Since then, the dollar wage rates for maquiladora workers have climbed substantially above the levels observed in 1994, when the number of plants in operation fell by nearly 4 percent. Consistently strong performance by the peso against the dollar has reinforced that trend.

As soon as the recession hit north of the border, the ubiquitous “Help Wanted” banners that flew outside major maquiladora industrial parks disappeared without a trace.

Figure 3
Maquiladora Hourly Wages



Sources: Instituto Nacional de Estadística Geografía e Informática and Banco de Mexico.

Note: Maquiladora hourly wages are reported in nominal dollar equivalents and include benefits.

Given the real appreciation of the peso versus the dollar, it is no surprise that the industry did not sustain the rapid rates of expansion that characterized the mid- to late 1990s. A number of other problems also hampered industrial performance during this period and contributed to the well-publicized offshore movements of some companies away from Mexico. Infrastructure overload in areas such as housing, public transportation systems, and the water and sewer system grids contributed to high rates of employee absenteeism and workforce turnover. Continually changing fiscal rules and import regulations, plus additional tax treatment threats, also complicated matters during the late 1990s.

Recession, Terrorism, and Red Tape

In early 2001, the U.S. economy slid into a recession. That development had a chilling effect on the maquiladora sector for the simple reason that almost all of its output is produced for sale and distribution in the United States. Once U.S. industrial activity subsided in early 2001, it was quickly followed by a “Michigan echo” effect throughout many of the in-bond assembly industries in Mexico. As soon as the recession hit north of the border, the ubiquitous “Help Wanted” banners that flew outside major maquiladora industrial parks disappeared without a trace.

The events of September 11, 2001, complicated matters further. The border closures and subsequent security inspections caused innumerable delays at border crossings from Brownsville to San Diego. In response, many warehouse operations began to send cargo shipments north in trucks carrying only 20 or 30 percent loads, well below the 100 percent loads that helped reduce transportation costs before the slowdown. In addition to higher operating costs, the delays and intermittent closures wreaked havoc on a number of just-in-time inventory management systems and produced ongoing headaches for logistics managers. These complications generated large-scale changes in cross-border traffic patterns in El Paso and other ports-of-entry (figures 4 and 5).

Figure 4
El Paso Bridge Crossings

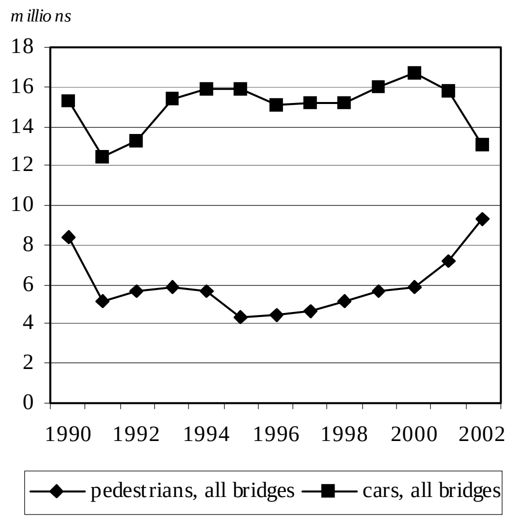
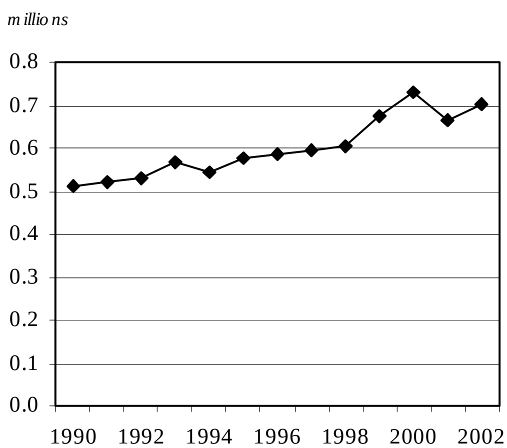


Figure 5
El Paso Cargo Vehicle Crossings, All Bridges



Source: UTEP Border Region Modeling Project.

In addition to the obvious difficulties caused by international business cycles and global terrorism, maquiladora managers have been forced to deal with the specter of fiscal uncertainty. In recent years, many different tax proposals have floated through federal, state, and municipal levels of government in Mexico. Some of the most worrisome have been measures that would have resulted in double taxation at the federal levels in Mexico and the United States. In several cases, tax laws enacted since 1997 have produced substantially higher collections. Examples include federal social security taxes, federal retirement taxes, and state payroll taxes in Chihuahua. During this same period, transfer price accounting regulations in Mexico have also varied enormously.

Although large numbers of tax code changes have been adopted, revoked, proposed, changed, and distorted in recent years, surprisingly little has occurred in other regulatory areas that affect the private sector in Mexico. The national labor code, dating from the presidency of Lazaro Cardenas in the late 1930s, was nominally designed to protect worker rights. However, the rigidity it imposes on the labor market increases underemployment and causes the economy to fail to reach its potential in terms of output and incomes.

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Similar to the labor code in Mexico, municipal regulatory burdens also make it difficult for maquiladoras and other businesses to operate efficiently. Navigating the enormously complex business registration red tape is both tortuous and tricky. Once an operation is legally registered as part of the "formal economy," costs of operations remain higher than necessary due to the impacts of other administrative regulations that in-bond assembly plants must satisfy. Ultimately, the failure to obtain congressional approval for those and other market-oriented, structural adjustment reforms has increased the attractiveness of other geographically distant markets.

The China Syndrome

A principal source of Mexico's traditional comparative advantage in global production sharing is the country's geographic proximity to the United States. Relatively low wages made labor-intensive manufacturing in Mexico a natural extension for many industries facing import competition in the United States. As managerial

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experience with offshore assembly management grew, multinational corporations began to seek other potential plant sites in low-wage countries such as Honduras, El Salvador, or the Dominican Republic. Eventually, China began to attract attention as well.

Mexico still enjoys important competitive advantages with respect to merchandise transit time, transportation costs, labor force quality, communications infrastructure, intellectual property protection, and access to the United States market. Nonetheless, direct foreign investment in maquiladoras slowed in the early 2000s as it accelerated in the Chinese manufacturing sector. Are more than just cyclical factors at play?

China has undeniably low wages. However, the fact that a nominally communist country could trigger plant closures in Mexico caught many by surprise. A major factor in this turn of events has been the ongoing deregulation of the Chinese economy during a multi-year period of congressional gridlock in Mexico. Essentially, Mexico's failure to continue introducing market-oriented, structural adjustments has allowed China to play catch-up and shrink the erstwhile regulatory gap between the two economies. To a certain extent, excess regulatory burdens in Mexico have negated its geographic edge. Even if congressional refusal to allow Mexico's economy to operate more efficiently remains intact, maquiladoras are not necessarily headed into an East Asian sunset.

There are several reasons for that assessment. One, for relatively heavy products with high transportation costs, Mexico is still hard to beat. Two, in-bond assembly work has given way in many segments to more skilled manufacturing processes that rely upon an experienced labor force such as that in Mexico. And three, Mexico has relatively good physical transportation and telecommunications infrastructure. It should be noted, however, that Mexico's self-inflicted erosion in the regulatory gap will only serve to increase the relative attractiveness of China for products that are not bulky and for which warehousing requirements are fairly easy to predict.

An additional cause for limited maquiladora optimism is the prospect for an eventual business cycle recovery in the United States. Payrolls in Ciudad Juárez, home to the largest concentration of maquiladora activity in Mexico, historically begin responding within sixty days of changes in industrial activity on the northern side of the border. Although a return to rapid growth in the United States is not currently forecast, any type of cyclical acceleration will almost assuredly generate an expansionary "Michigan echo" effect. The slow recovery currently projected for the United States is projected to result in roughly 15,000 new maquiladora jobs, five additional plants, and nearly $260 million of increased value-added in Ciudad Juárez and Chihuahua alone in 2003.

Fears of the so-called "China Syndrome" are probably exaggerated and dire predictions of the immediate demise of the maquiladora industries in Mexico are greatly exaggerated, not to mention clearly premature. In-bond assembly and maquiladora export service companies do, however, remain hampered by excessive red tape and fiscal uncertainty. Given the fractious natures of both chambers of the national legislature in Mexico City, that situation is not likely to improve measurably at any point in the foreseeable future. Unfortunately, that circumstance is likely to cause Mexico's economic dynamo to perform at less than full capacity for many years to come.◆

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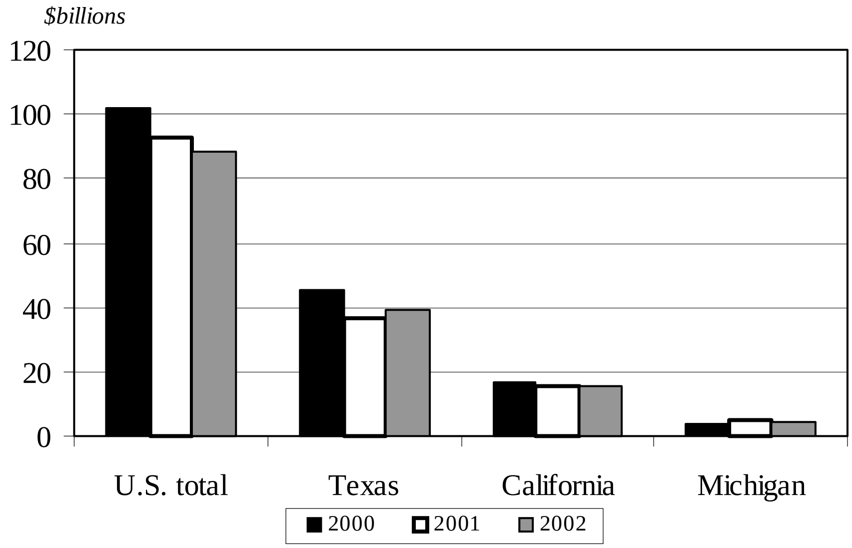
Exports of Manufactures to Mexico

(U.S. total and top three states)



Source: Office of Trade and Economic Analysis, U.S. Department of Commerce.

Exports from Texas to Mexico, 2002

Product	Value *($billions)*	Percentage of total
computers and electronic products	10.6	25.3
transportation equipment	6.4	15.2
electronic equipment, appliances, and parts	3.5	8.3
chemical manufactures	3.1	7.3
all others	18.2	43.6
total	**41.6**	**100**

Note: Numbers do not equal total due to rounding.

Source: Office of Trade and Economic Analysis, U.S. Department of Commerce.

Fast Facts

- The term "maquiladora" derives from the Spanish word *maquilar*, "to process (grain, oil, etc.) in exchange for a portion of the product."
- Maquiladoras originated as part of the 1965 Border Industrialization Program.
- Maquiladoras import more than 90 percent of the components they use.
- Maquiladoras account for 49 percent of Mexico's exports.

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Texas Top Import Activity by Port, January-December 2002

Port city	Product description	Trade value *(U.S.$)*
Brownsville	radiobroadcast receivers, operating with an external power source as in motor vehicles	582,210,738
Del Rio	parts of seats	357,063,228
Eagle Pass	trousers, bib & brace overalls, breeches & shorts of woven textile materials	312,973,778
El Paso	ignition wiring sets & other wiring sets of a kind used in vehicles, aircraft, or ships	2,398,020,651
Hidalgo	transmission apparatus for radiotelephony, radiotelegraphy, radiobroadcasting or television, incorportating reception apparatus	483,664,569
Laredo	motor vehicles for the transport of persons (other than public transport)	8,669,033,175
Presidio	bovine animals, other than purebred breeding animals, live	54,086,788
Progreso	paper sacks & bags (including cones)	5,142,241
Rio Grande	articles of jewelry & parts thereof, of precious metal or metals clad with precious metals (except watches & watch cases)	35,236,297
Roma	vegetable materials & vegetable products	4,608,352

Source: Texas Center for Border Economic and Enterprise Development, Texas A&M International University, (http://texascenter. tamiu.edu).