

**The Impact of NAFTA on
Border Maquiladora and Industrial Activity**

Dr. J. Michael Patrick

April 1994

No part of this report may be used or reproduced in any matter whatsoever without written permission of the **Institute for International Trade**.

Forward

The Texas Legislature established the **Texas Centers for Border Economic and Enterprise Development** during its 70th Session. The **Texas Centers** program is a consortium effort between Texas A&M International University, the University of Texas - El Paso and the University of Texas - Pan American. The primary purpose of the **Texas Centers** is to provide leadership and support to Texas border communities in their economic development efforts.

The legislature provides funds to support the efforts of the **Texas Centers** in three principal activity areas:

- 1) Development and maintenance of an economic database;
- 2) The conduct of economic development research and planning; and,
- 3) The provision of technical assistance to industrial and governmental entities.

Texas A&M International University's **Texas Center** operates under the direction of the Graduate School for International Trade and Business Administration's **Institute for International Trade (IIT)**.

This report "*The Impact of NAFTA on Border Maquiladora and Industrial Activity*" by Dr. J. Michael Patrick contributes to the goals of the **Texas Centers**.

Requests for additional copies should be directed to:

Institute for International Trade
Graduate School for International Trade
& Business Administration
Texas A&M International University
Laredo Texas 78040

J. Michael Patrick
Director

The Impact of NAFTA on Border Maquiladora and Industrial Activity

Dr. J. Michael Patrick
Director, Institute for International Trade

Executive Summary

The North American Free Trade Agreement (NAFTA) calls for the staged elimination of the Maquiladora Program. NAFTA will not, however, eliminate the industrial organization practice of production-sharing that characterizes maquiladora activities. Quite to the contrary, NAFTA will promote industrial cooperation, business alliances, joint investments and production-sharing across national boundaries as the vehicle for promoting North American competitiveness in an increasingly competitive global economy. NAFTA will formalize the process of economic integration that has silently been taking place between Mexico and the U.S. for sometime under the Maquiladora Program and other industrial activities.

As NAFTA takes hold, manufacturing and economic activity in Mexico's northern border states are expected to increase. The Texas-Mexico border region's strategic location between the two nations' industrial centers and major commercial markets provides it with unique economic development opportunities, including the expansion of joint ventures and production-sharing activities. Future growth, however, in maquila and industrial activity along the U.S.-Mexico border will depend upon the cooperative efforts of companies, industrial park operators, and local governments to improve infrastructure in the region.

Origin, Growth and Change of the Maquiladora Program¹

The maquiladora program began in 1965 as part of Mexico's Border Industrialization Program (BIP). The program permits the establishment of wholly foreign owned subsidiary plants in Mexico for the assembly, processing, and finishing of duty free foreign materials and components into products for export. Initially limited to a 20 kilometer zone along the U.S.-Mexico border, the program was later expanded in 1972 to include the rest of Mexico.

The maquiladora program provides for the duty free importation of all machinery, equipment, raw materials, replacement parts and tools used by a foreign firm in the assembly/processing operation. Favorable tariff treatment (items 806.30 and 807 of the U.S. Tariff Schedule) permitting U.S. companies to import assembled/processed products from their

foreign based operations and pay duty only on the foreign value added portion of the finished product provides additional incentives to U.S. firms to establish maquila operations in Mexico.

Mexico's goals in establishing the Maquiladora Program included:

- a) providing employment for its growing population, particularly along the U.S.-Mexico border,
- b) stimulating industrial development and the use of Mexican materials and services in its border zone with the U.S.,
- c) attracting foreign investment and technology transfer,
- d) increasing Mexico's foreign exchange earnings through the promotion of exports.

U.S. companies have used the Maquiladora Program to increase their competitiveness in an increasingly competitive global environment. The program has brought economic growth and jobs to many U.S. border communities. And, U.S. policy makers have backed the Maquiladora Program as an important tool for promoting economic growth in Mexico, as well as opening new markets and investment opportunities for U.S. business interests in Mexico.

Mexico liberalized the Maquiladora Program in 1977 and again in 1989, when it allowed maquilas to sell 20 percent and later 50 percent of their production in the Mexico's domestic market, provided that several conditions were met. For example, the maquila product could not compete directly with a Mexican-made product, and the maquila product had to consist of at least 15 percent Mexican content (materials and parts).

By the close of 1993, the number of maquilas in operation had grown to 2,025 with employment totaling 465,261 (Table 1). Transportation equipment (\$1.6 billion), electronics (\$1.3 billion), and electrical equipment (\$0.6 billion) accounted for over 60 percent of the \$5.6 billion dollars in value added by maquiladora operations in 1993 (Table 2). According to the Banco de Mexico, the maquiladora industry accounted for 42 percent of total exports from

Mexico in 1993, and 79 percent of Mexico's exports of all manufactured goods. Imports for the maquiladora industry accounted for 25 percent of total Mexican imports during the period.

The first industries attracted to the border by the Maquiladora Program were involved in consumer electronics, printed circuit boards, toys, furniture, and apparel. Between 1980 and 1986, however, the transportation sector's share of total maquiladora production grew from 9 percent to 29 percent, and by 1991, the motor vehicle and parts industry accounted for 24 percent of total employment in the maquiladora industry. Electronic products accounted for 35 percent of employment, and apparel just 10 percent.

By the end of 1993, despite the opening up of almost all of Mexico to the Maquiladora Program in the early 1970s, over 80 percent of all maquilas remained on the U.S.-Mexico border (Map and Table 3). The Mexican states of Baja California (35.6 percent) and Chihuahua (17.9 percent) accounted for over fifty percent of the maquilas in 1993. Twenty-five percent of the maquilas were located in Tijuana, across from San Diego, followed by Cd. Juarez (13.5 percent), across from El Paso, and 6.8 percent in Mexicali (Table 4).

Although Mexican companies had controlling ownership in 48 percent of all maquilas in 1991, maquiladoras bought less than 2 percent of their parts and materials from Mexican firms. Three-fourths of the components used were imported from the U.S.; Japan and other Asian countries accounting for roughly 15 percent. U.S. companies had controlling ownership of 45 percent of the maquilas in 1991, Japanese companies 2 percent, and European and other Asian countries accounted for one percent. Most of the East Asian-owned maquilas are located in the Tijuana area and were involved in the assembly of televisions, stereos, appliances and auto parts. Tijuana is reported to be the preferred location because of direct flights from Tokyo and other

Asian cities as well as proximity to U.S. electronic companies in southern California.

The nature of the maquiladora industry has changed substantially. In recent years, the Maquiladora Program has attracted more sophisticated forms of production in automobile-related manufacturing and advanced electronics assembly. These "new" maquilas have made substantial investments in complex technology and have demonstrated that sophisticated, high quality exports can be produced in Mexican plants.

The maquilas have been a key force behind the expansion of U.S.-Mexico trade. They account for the major share of the growth in Mexico's exports to the U.S. over the past decade, and represent a principal source of Mexico's foreign exchange earnings. Beyond their numbers, the maquilas have contributed to an important qualitative transformation in Mexico's trade with the U.S., positioning Mexico to become a world-class exporter of sophisticated industrial products including electronics, electrical machinery, and transportation equipment.

Maquiladora and related industrial activity has contributed to the development of the U.S.-Mexico border region. Maquiladora activity along the Texas-Mexico border, for example, accounted for an estimated 25 percent and 52 percent of employment in Texas and Mexico border communities, respectively, in 1990. The maquilas are estimated to be responsible for 15-20 percent of Texas border region gross product, and 30-40 percent of Mexico border region gross product (Table 5).

Implications of NAFTA for the Maquiladora Program²

The North American Free Trade Agreement (NAFTA) calls for the gradual elimination of the Maquiladora Program. Beginning January 1, 1994, the maximum amount of product that a

maquila can sell in Mexico's domestic market increases progressively in five percent increments, until they face no restrictions in the year 2001. At the same time, the maquilas no longer face the requirement of not competing directly with a Mexican product and using Mexican materials and parts. "Duty drawbacks" will also be phased-out, eventually eliminating the ability of companies to avoid customs duties on goods that are imported into Mexico for processing and subsequent export.

The staged elimination of tariffs on goods under NAFTA will eventually result in little or no incentive to import products from Mexico containing U.S.-made components under the production-sharing provisions (items 806.30 and 807.00(old) and (new) HTS 9802.00.60 and 9802.00.80) of the U.S. Tariff Schedule. Goods likely to be imported from Mexico under the production-sharing provisions after 2001 are those assembled products that do not contain sufficient North American content to meet the rules of origin to qualify for NAFTA treatment.

The staff of the U.S. International Trade Commission recently interviewed numerous Mexican and U.S. industry and local officials regarding the likely effects that NAFTA's elimination of the Maquiladora Program would have on the maquiladora industry. The following observations were made:

1. In recent years, growth in the maquiladora industry has slowed considerably due to a narrowing of labor costs between Mexico and the U.S., and infrastructure constraints (housing, electricity, telecommunication, and transportation).
2. Future growth in maquila and other industrial activities along the U.S.-Mexico border will depend upon the cooperative efforts of companies, industrial park operators, and local governments to improve infrastructure in the region.
3. Since the U.S. market will likely remain the primary market for most companies operating maquilas along the U.S.-Mexico border, existing operations are likely to remain in the region. In addition, the lack of infrastructure and higher

transportation costs associated with interior sites in Mexico will serve to attract companies to the border region rather than to interior locations in Mexico.

4. Eventually, however, as companies expect to increase their sales in the Mexican market, many will move a portion of their operations into central Mexico.
5. The maquiladora industry will likely benefit from NAFTA-related trade diversion that will result from rules of origin that favor sourcing of North American parts and materials. The total cost of production-sharing operations in the maquiladora industry will be reduced because of staged elimination of tariffs on products destined for U.S. and Mexican markets. This will make North American maquila-made products more competitive causing many companies to relocate their assembly plants from Asia to Mexico and substitute North American components for non-North American components.
6. In addition, maquila companies relying on non-North American production equipment will see their costs rise under NAFTA because they will have to pay duty on such machinery. This will provide incentive to companies to use North American made equipment and machinery.

NAFTA formalizes the process of economic integration that has silently been taking place between Mexico and the U.S. for sometime. NAFTA will facilitate a managed integration approach to U.S.-Mexico economic relations. Investment and technology will be channeled to capitalize on each country's comparative advantages, resources complementaries, and natural markets. Intra-industry production-sharing will be encouraged and exploited wherever possible.

The U.S. is, by far, Mexico's largest trading partner, accounting for 70 percent of Mexico's total exports and imports. Trade in manufactured goods accounted for more 60 percent of the total trade taking place between Mexico and the U.S. in 1992 (Tables 6 & 7). A large percentage of Mexico's industrial activity takes place in its northern border states with the U.S. In 1990, 24.1 percent of Mexico's economically active border population was engaged in manufacturing, compared to 19.1 percent for Mexico as a whole.³

As NAFTA takes hold manufacturing and economic activity in Mexico's northern border

states is expected to increase. The Texas-Mexico border region's strategic location between the two nations' industrial centers and major commercial markets provides it with unique economic development opportunities, including the expansion of joint ventures and production-sharing activities.

Endnotes

1. United States International Trade Commission, "The Origin and Growth of Mexico's Maquiladora Industry", in *Production Sharing: U.S. Imports Under Harmonized Tariff Schedule Provisions 9802.00 and 9802.80, 1989-1992.* (USITC Publication 2729), Washington DC: USITC, February 1994, pp. 4.1 - 4.6.
2. United States International Trade Commission, "Implications of the North American Free-Trade Agreement for Mexico's Maquiladora Industry and the Use of the Production Sharing Tariff Provisions", in *Production Sharing: U.S. Imports Under Harmonized Tariff Schedule Provisions 9802.00 and 9802.80, 1989-1992.* (USITC Publication 2729), Washington, DC: USITC, February 1994. pp. 3.1 - 3.5.
3. Lorey, David E., "The Economic and Social Development of the U.S.-Mexican Border in the Twentieth Century." in David E. Lorey, (Ed.), *United States-Mexico Border Statistics Since 1900* (1990 Update), Los Angeles: University of California-Los Angeles Latin American Center Publications, 1993, p. 95 (Table S4).