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LA INDUSTRIA MAQUILADORA: EL CAMINO PARA EL DESARROLLO O LA VIA DE LA DEPENDENCIA

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LA INDUSTRIA MAQUILADORA: EL CAMINO PARA EL DESARROLLO O LA VIA DE LA DEPENDENCIA

(The Maquiladora Industry: The Road to Development or the Way to Dependency)

An Honor's Thesis
by
Joseph R. Martin

INTRODUCTION

Take a look at the back of that television set you just bought from Sears Roebuck & Company or that new Litton microwave oven. Often you will find a label that says, "Assembled in Mexico." That label, literally, is the reason why the American consumer can still buy a small black and white television set for about $100.00.

Although few products seem to be bargains in 1980, many would be more costly if it were not for Mexican labor. Mexican labor performs assembly/processing operations in the following fields: food, furniture and parts for furniture, transportation, electrical and electronics, services, and other light manufacturing. Some of the largest United States corporations operate plants in Mexico: the two already mentioned, Hughes Aircraft, Motorola, Magnavox, Kimberly-Clark, Samsonite, Republican Corporation, and Memorex.

The Mexicans call this assembly and processing industry the industria maquiladora, or Americanized, the maquiladora industry. The Americans usually refer to it as the "in bond" industry or the twin-plant industry.

This paper will give an overview of the maquiladora industry. The first section is a brief look at the historical dynamics of the United States-Mexican border where the origins of the maquiladora industry are rooted, and a summary of the programs and legislation of the Mexican and American governments that make the industry possible.

Of particular interest are the often conflicting views on the costs and benefits of the maquiladora industry held by Mexican economists on one hand and American economists on the other. Both sides of the issue will be aired. The title of this paper comes from this section.

Finally, with one eye on the history and nature of the maquiladora industry and the other on the Mexican-American dichotomy surrounding it, a long range outlook for the industry will be offered.

I. BACKGROUND OF THE MÁQUILADORA INDUSTRY IN MEXICO

Historical Background

The maquiladora industry can be viewed as the latest of many colorful developments along the United States-Mexican border. For comparison, look north to the United States-Canadian border -- 4,000 miles of peaceful and unfortified border, unique in the world. The Canadian border has not been entirely without incident. From 1965 to 1973 many young American men crossed the Canadian border to avoid the draft. In 1877, Chief Joseph of the Nez Perce' Indians led one of the most brilliantly executed retreats recorded by military history, and it took nearly half of the standing United States Army to stop him less than 20 miles from his objective -- the Canadian border.

But the United States-Mexican border is a different story. Several, often bloody, chapters of United States and of Mexican history have been written along our common border. The names of the people and places associated with the United States-Mexican border have a sometimes romantic, often lawless, but never dull image: Pancho Villa, Cochise, Sam Houston, The Alamo, Santa Ana, Geronimo, Zachary Taylor, General Pershing, bandoleros, Point Isabel, and even the Río Grande. These names and places are characters in an ongoing play -- a play about two diverse cultures that have interacted over several centuries.

The roots of the maquiladora industry can be traced to the <u>zona libre</u> (free zone). The Treaty of Guadalupe Hidalgo (1848) and the Gadsden Purchase (1853) fixed the United States-Mexican border.[1] Soon

1. These treaties, however, failed to settle the Río Grande. This river ranges from a muddy stream a few inches deep to raging white water, and it has a bad habit of changing courses. Sovereignty questions pop up regularly, and the over 100 year old Chamizal dispute was only settled in 1967.

after the border dispute was settled, different internal and external tariff policies established a marked price differential along the border. Mexico levied high intrastate taxes and high import tariffs while the United States levied none of the former and only minimal import tariffs.[2] To avoid the high prices south of the border, many Mexicans migrated to the United States. Those who remained were eagerly supplied by smugglers.

The emigration of Mexicans was large enough to prompt the Mexican government to allow importation of essentials through the state of Tamaulipas at much reduced tariffs. Then, in 1852, the United States passed an act which allowed foreign goods to be held under bond in warehouses along the border. If sent to Mexico, these goods were exempt from export duties.[3] This see-saw of tariff advantage caused the governor of Tamaulipas to declare his state a free zone for foreign goods used in the border towns. The Tamaulipas free zone of 1858 was fixed in 1861 at 12.5 miles south of the border and extended from the Gulf of Mexico to the Pacific Ocean.

As is usually the case when nations engage in tariff wars, the side effects were numerous and unintended. The Civil War made the free ports in Mexico crucial to the Confederacy. War materials flowed through Matamoros to the Confederate states. This contraband trade caused Matamoros to be one of the largest international ports of call between 1861 and 1865. The existence of the free zone also shifted the smuggling activity. The rest of Mexico retained high tariffs on

2. Raúl A. Fernández, The United States-Mexico Border: A Politico-Economic Profile (London: University of Notre Dame Press, 1977) p. 77.

3. Ibid., p. 78.

imports; therefore, instead of being smuggled across the border, goods were smuggled out of the free zone into the rest of Mexico. Furthermore, in 1891, Mexico levied import duties on goods manufactured in the free zone -- whether of domestic or foreign raw materials, thus introducing an impediment to industrial development in the free zone.[4]

Despite diplomatic pressure from the United States and filibustering adventures launched by American merchants, the free zone endured. But the tariff differential established by the free zone was not sufficient impetus to create the maquiladora industry.

The impetus was provided by the termination of an agreement unique among nations -- the Bracero Program. The Bracero Program had formalized the longstanding practice of importing Mexican workers. The Department of Agriculture estimates that employment of Mexican labor in American agriculture began as far back as the late 1800's. Although the flow of Mexican workers into the United States was sporadic during the early part of the 20th century, World War I and the resulting shortage of manpower brought about a substantial increase of temporary Mexican workers to the United States. Estimates given during Congressional hearings in 1963 placed the number of Mexican workers in the United States during the war years 1917 to 1923 at 73,000. These workers were admitted under the Immigration and Nationality Act of 1917. During the Great Depression few Mexican workers stayed in the U.S., but their numbers began to rise again early in the 1940's. World War II caused another manpower shortage in the U.S., and Mexico once

4. Ibid., p. 79.

more supplied the field hands while Americans were at war.[5] The United States and Mexico negotiated agreements during World War II eliminating virtually all barriers to the importation of temporary workers.[6]

These agreements expired at the end of World War II, but due to the Korean conflict the United States continued on a war footing. Therefore, in 1951, the Bracero Program was formalized by Public Law 82-78 which was an amendment to the Immigration and Nationality Act of 1949.[7] Public Law 82-78 weathered several attempts at repeal in the late 1950's and early 1960's. But in 1963, Public Law 82-78 received its last two year extension. A coalition of such diverse interest groups as the AFL-CIO, the Commission on Social Action of Reformed Judaism, and the Congregational and Christian Conference of Illinois proved too powerful for the few proponents (such as the State Department, The Farm Bureau Federation, and The California Growers Association) of the Bracero Program.[8]

Estimates of the number of Mexicans left unemployed by the termination of the Bracero Program range from 190,000 to slightly less

5. This statement grossly understates Mexico's war contribution. At least 200,000 braceros worked in the U.S. during W.W.II. Mexico supplied huge and uninterrupted supplies of war materials such as petroleum, zinc, lead, copper, and graphite. She shipped much needed domestic supplies of food and clothing to all of the Allied Powers. 14,000 Mexican nationals served under arms in the U.S. Army, and the Mexican Air Force fielded the Expeditionary Squadron 201 in the air war over the Pacific. Mexico and Brazil were the only two Latin American countries to field armed forces in combat zones. This brief capsule comes from The United States and Mexico, by Howard F. Cline.

6. Richard B. Craig, The Bracero Program: Interest Groups and Foreign Policy (Austin, Texas: University of Texas Press, 1971) p. 7.

7. Ibid., p. 8.

8. Ibid., p. 197.

than 300,000. Any estimate of the number of braceros actually unemployed understates the problem facing Mexico. For each bracero working in the United States there were at least four people in Mexico who depended on his income.

Thus, in 1965, Mexico faced a problem of severe unemployment in the border states. In October of that year President Gustavo Díaz announced the Border Industrialization Program (BIP) as a solution to the problem.

Mexican and American Legislation

Much of the framework for the BIP was already in place. The free zone had established an area with tariffs different from those in the rest of Mexico. The United States had established the practice of keeping merchandise in bond while awaiting shipment to Mexico. And, in 1962, Mexico had created the National Border Program (PRONAF) to build schools and to improve the general appearance and operation of the border cities. Thus, the initial function of the BIP was to rescind Mexican ownership requirements for factories operating in the free zone and to plan the construction of industrial parks. The former was the duty of the secretariat of Finance and Public Credit, and the latter function was delegated to PRONAF.

The BIP started actual operation in 1967 with 72 authorized American owned plants.[9] For four years the BIP was administered by

9. Fernández, p. 134.

formal and informal arrangements among various Mexican agencies. On March 17, 1971, the BIP was formalized into law.[10] In 1972 free trade areas were established in the interior of Mexico in an effort to lure maquiladoras into other areas of high unemployment.

There are two sections of the United States Tariff Schedules relevant to the maquiladora industry. Item 806.30 allows duty-free importation, except for value added, of nonprecious metal products that 1) are manufactured in the United States; 2) sent abroad for processing; and 3) returned to the United States for further processing.[11] Item 807.000 allows the deduction (for tariff purposes) of the value of United States manufactured components from the value of products which were assembled abroad. In effect, items 806.30 and 807.000 allow United States firms to send components or products out of the country to be assembled or processed and to return them to the United States paying import duties only on the value added abroad. The majority of maquiladoras perform operations on products that re-enter the United States under item 807.000. (See table I for details on number and location of maquilas.)

10. Reglamento del Párrafo 30. del artículo 321 del Código Aduanero de los Estados Unidos Mexicanos, promorer en El Diario Oficial en diecisiete de marzo., 1971.

11. Donald W. Baerresen, The Border Industrialization Program of Mexico (Lexington, Mass.: D. L. Heath & Co., 1971) p. 57.

TABLE I

LOCATION OF AUTHORIZED "MAQUILADORA"
INDUSTRY PLANTS IN MEXICO
(as of January 1979)

Frontier Zone States	Total 1976/1979	Type of Maquila (see note @ end of table) 1	2	3	4	5	6	7
BAJA CALIFORNIA NORTE	193/204	59	67	15	11	2	47	3
Tijuana	95/104	40	26	5	5	-	26	2
Mexicali	71/73	12	35	8	4	2	11	1
Tecate	na/19	7	1	1	2	-	8	-
Rosarito	na/3	-	2	-	-	-	1	-
Ensenada	na/5	-	3	1	-	-	1	-
SONORA	62/68	15	11	25	2	3	11	1
Agua Prieta	17/19	11	3	3	-	-	2	-
Nogales	34/38	-	8	22	1	-	6	1
Magdalena de Kino	na/1	1	-	-	-	-	-	-
San Luís Río Colorado	na/2	1	-	-	1	-	-	-
Caborca	na/1	-	-	-	-	-	1	-
Hermosillo	na/4	2	-	-	-	1	1	-
Naco	na/1	-	-	-	-	-	1	-
Navajoa	na/2	-	-	-	-	2	-	-
CHIHUAHUA	92/105	38	29	3	11	2	15	7
Ciudad Juárez	81/94	36	24	3	10	2	14	5
Chihuahua City	na/9	2	5	-	1	-	-	1
Rodrigo M. de Quevedo	na/2	-	-	-	-	-	1	1
COAHUILA	30/32	10	8	1	2	2	8	1
Ciudad Acuña	9/9	3	1	1	1	-	2	1
Piedras Negras	12/14	3	4	-	-	2	5	-
Allende	na/1	-	1	-	-	-	-	-
Morelos	na/1	1	-	-	-	-	-	-
Nava	na/3	2	-	-	-	-	1	-
Parras	na/1	-	1	-	-	-	-	-
Sabinas	na/1	1	-	-	-	-	-	-
Saltillo	na/1	-	1	-	-	-	-	-
Zaragosa	na/1	-	-	-	1	-	-	-
TAMAULIPAS	65/67	33	11	6	2	5	8	2
Matamoros	40/43	23	2	4	1	4	8	-
Nuevo Laredo	14/15	7	5	-	1	-	-	2
Reynosa	9/7	3	2	1	-	1	-	-
Río Bravo	na/2	-	2	-	-	-	-	-
San Fernando	na/1	-	-	1	-	-	-	-
Frontier States Total	406/476	155	126	50	28	14	89	14

TABLE I
LOCATION OF AUTHORIZED "MAQUILADORA"
INDUSTRY PLANTS IN MEXICO
(as of January 1979)

Interior Zone States	Total	Type of Maquila 1	2	3	4	5	6	7
BAJA CALIFORNIA SUR	3	2	1	-	-	-	-	-
La Paz	3	2	1	-	-	-	-	-
DURANGO	2	-	2	-	-	-	-	-
Gomez Palacio	2	-	2	-	-	-	-	-
DISTRITO FEDERAL	10	1	1	1	-	-	7	-
Mexico City	6	1	1	1	-	-	3	-
Metropolitan Area	4	-	-	-	-	-	4	-
GUANAJUATO	3	-	1	-	-	-	2	-
Celaya	1	-	-	-	-	-	1	-
Irapuato	1	-	-	-	-	-	1	-
León	1	-	1	-	-	-	-	-
JALISCO	8	5	1	-	-	-	2	-
Guadalajara	8	5	1	-	-	-	2	-
NAYARIT	2	1	-	1	-	-	-	-
Compostela	1	-	-	1	-	-	-	-
Tepic	1	1	-	-	-	-	-	-
NUEVO LEON	15	3	4	1	-	-	7	-
Ciudad Anahuac	1	-	-	-	-	-	1	-
Cerralvo	1	1	-	-	-	-	-	-
China	1	1	-	-	-	-	-	-
Lampazo	1	-	1	-	-	-	-	-
Montemorelos	1	-	1	-	-	-	-	-
Monterrey	4	-	1	-	-	-	3	-
Sabinas Hidalgo	1	1	-	-	-	-	-	-
San Nicolas Garza	1	-	-	-	-	-	1	-
Santa Catarina	2	-	-	1	-	-	1	-
Salinas Victoria	1	-	-	-	-	-	1	-
Villadama	1	-	1	-	-	-	-	-
QUERETARO	1	1	-	-	-	-	-	-
Queretaro	1	1	-	-	-	-	-	-
PUEBLA	1	-	-	1	-	-	-	-
Puebla	1	-	-	1	-	-	-	-
SAN LUIS POTOSI	1	-	-	1	-	-	-	-
San Luis Potosi	1	-	-	1	-	-	-	-

TABLE I

Interior Zone States,
Continued

	Total	Type of Maquila 1	2	3	4	5	6	7
SINALOA	1	-	-	-	-	1	-	-
Guasave	1	-	-	-	-	1	-	-
TLAXCALA	3	1	1	-	-	-	1	-
Calpulalpan	1	1	-	-	-	-	-	-
Panzacola	1	-	-	-	-	-	1	-
Tlaxcala	1	-	1	-	-	-	-	-
ZACATECAS	1	-	1	-	-	-	-	-
Zacatecas	1	-	1	-	-	-	-	-
YUCATAN	4	-	-	-	-	-	4	-
Merida	4	-	-	-	-	-	4	-
Interior States Total	55	14	12	5	0	1	23	0
NATIONAL TOTAL	531	169	138	55	28	15	112	14

Industries With "In-Bond" or "Maquiladora" Operations:

1. Electrical, electronic - machinery, equipment, etc.
2. Shoes, textiles, and/or wearing apparel
3. Transport machinery, material/equipment, not electrical
4. Metal or wooden furniture, and/or parts
5. Foodstuffs
6. Other manufacturers
7. Service companies

SOURCE: Secretariat of Patrimony and Industrial Development
Secretariat of Programming and Budget, Statistical Bureau

NOTE: Not all plants are necessarily in operation; at any one time approximately ten percent will be idle.

II. OPPOSING VIEWS OF THE MAQUILADORA INDUSTRY

The Mexican View

The very nature of the maquiladora industry breeds controversy. When a company opens a maquila plant -- in Mexico, Hong Kong, South Korea, or any other country -- it becomes a multinational corporation. As such it tends to draw criticism from both the host country and the country of origin. From the viewpoint of the host country, the multinational corporation introduces an exogenous factor to the national economy. To the country of origin, the multinational corporation can mean lost jobs and lost tax revenues. At the same time, the multinational corporation offers many tangible benefits to the host country and the home country. For both Mexico and the United States the maquiladora industry requires a trade-off between costs and benefits.

To understand Mexico's view of the maquiladora industry, one must first become acquainted with the views of Dr. Raúl Prebisch and the United Nations Economic Commission for Latin America (ECLA - or CEPAL in Spanish). Formed in 1948, the ECLA and Dr. Prebisch have had a pronounced effect on economic policies throughout Latin America. Import substitution, the dominant theme of Latin American economic planning, was first advocated by Dr. Prebisch in The Economic Development of Latin America and Its Principal Problems (1950). The basic thrust of the famous Prebisch theory and its corollary of import substitution is that the terms of trade between developing countries and industrialized countries are slanted in favor of the latter. And as technology

advances, the raw materials supplied by the developing countries constitute less and less of the value of a finished product. Thus the terms of trade for the developing countries deteriorate from an initially poor position. According to the Prebisch theory, the developing country must manufacture for itself those products that it has traditionally imported.

After two decades of dominance in Latin American economic planning, the Prebisch theory, particularly its corollary of import substitution, is losing its ubiquitous influence in the region.[1] However, central planning, which is another facet of the Prebisch theory, is still prevalent throughout Latin America. And to the centrally planned economy the exogenous factor is anathema.

Mexican economic policy has been greatly influenced by the Prebisch theory for the last two decades. Before the Prebisch theory was published in 1950, Mexico's ruling political party, the Partido Institucional Revolucionario (PRI), had nationalized much foreign investment. Cepalista (an adjective coined from the Spanish acronym for ECLA) thought in the 1950's led to further nationalization, and those foreign interests not nationalized were Mexicanized (i.e. forced to sell majority ownership to Mexicans). The Mexican government effects central planning primarily through credit allocation.

1. Implementation of the Prebisch theory has met with several problems. One major problem has been that with each Latin American country building its own import substitution industries, few firms have been able to obtain the necessary economies of scale to become profitable industries. Thus, Latin American governments have found that they were (and still are) subsidizing infant industries that never grew up.

Thus the maquiladora industry poses a dilemma to Mexico. The maquila plant is usually 100% owned by foreigners, and those foreigners make the decision to build or not to build in Mexico. Therefore, the maquiladora industry is in contraposition to Mexicanization and the centrally planned economy of Mexico. But the maquiladora industry offers benefits too great to be denied for the sake of ideological purity.

The performance of the maquiladora industry is best examined by weighing the data against the proposed goals, and the primary goal is creating new jobs. Toward this goal, the maquiladora industry has made a significant contribution. From 12 plants authorized in October, 1966, the maquiladora industry had grown to 455 plants in 1974.[2] The maquiladora industry employed 75,977 workers in 1974.[3] However, 1974 marked the beginning of the worst recession in the United States since World War II. Some of the maquilas operating along the border then were truly run-away sweat-shops (mainly in the textile industry). These maquilas were poorly capitalized and over-stocked with inventory. Thus in 1975 and 1976 there were decreases in the number of plants, but employment was close to its 1974 level again in 1976.[4]

One bright spot among the 1974 to 1976 figures is that maquilas located in the interior nearly doubled.[5] Also, the Mexican government became much more selective in granting permits for operation of maquila

2. José Luís Newman ("Mexico's Maquiladora Program," Business Mexico 1978, Laredo, Texas: American Chamber of Commerce of Mexico) pp. 291 and 293.

3. Ibid.

4. Ibid.

5. Ibid.

plants. The stricter criteria applied was aimed at precluding fly-by-night firms from operating in Mexico.

By 1978 the maquiladora industry had made a complete recovery. As of December, 1978, there were 457 maquila plants in Mexico employing 99,167 workers (see table II). The maquiladora industry had its best year in its 15 year history in 1979 with 540 firms at year's end employing 110,000 workers. Thus the maquiladora industry had made significant progress towards its primary goal of providing a large number of new jobs in the border area.

But the figures -- encouraging as they are -- reveal a new problem. Over 75% of the maquiladora employees in 1978 were women, and that trend continues (see table II). The Bracero Program employed roughly the same percentage of men. The maquiladora industry has in effect created a new labor force while leaving the old one untouched. This near inversion of the men to women ratio in the border labor force is not a problem in itself, for it can certainly be argued that replacing a male wage earner with a female wage earner within the same household is no problem. It should be noted that prostitution has too often been an alternative employment for women in the border towns.[6] It is undeniably preferable to have women assembling semi-conducters in a maquila plant than laboring in a red-light district of Tijuana or Juárez. Nevertheless, the maquiladora industry has done little to alleviate the plight of the unemployed male who lives in the border

6. Raúl A. Fernández, The United States-Mexico Border: A Politico-Economic Profile (London: University of Notre Dame Press, 1977) p.130.

TABLE II

MEXICO'S "IN-BOND" INDUSTRY
Statistics, 1976 to 1978
(as of December 31)

	1976	1977	1978	78/77
Total Plants (operational)	448	443	457	3.2+
frontier zone	406	398	420	5.5+
interior zone	42	45	37	17.8-
Type of Product Manufactured				
1) Electronic/electric machinery, articles, & parts	179	170	174	2.4+
2) Shoes, textiles, & wearing apparel and related items	126	128	121	5.5-
3) Machinery, equipment, ceramics, non-electric goods	33	32	28	12.5-
4) Metal & wooden furniture, and parts	14	16	23	43.8+
5) Foodstuffs	11	12	10	16.7-
6) Miscellaneous	76	76	91	19.7+
7) Service industries equipment	9	9	10	11.1+
Total Employment	74,496	78,433	99,167	26.4+
Factory workers	64,670	68,187	85,885	26.0+
female	50,984	53,188	65,913	23.9+
male	13,686	14,999	19,972	33.2+
%female	78.84	78.00	76.75	
Managerial/technical/ administrative	9,826	10,246	13,282	29.6+
Total Wages/Benefits (millions of pesos)	3,321	4,527	5,987	32.3+
Total Value Added in Mexico (millions of dollars)	535.7	524.7	713.4	35.9+
Value of Raw Materials & Packaging consumed (millions of dollars)	790.5	820.5	1138.1	38.7+
a) Imported	766.5	808.3	1121.5	38.7+
b) Domestic	24.0	12.2	16.6	36.1+
a/b	96.9	98.5	98.5	

SOURCE: Sec. of Prog & Budget: Gen. Stat. Bureau
Sec. of Patrimony & Industrial Development

zone. He still finds the demeaning task of shining shoes or selling lottery tickets his only means of employment.

One of the secondary goals of the maquiladora industry is to provide Mexico with a labor force well-trained in modern manufacturing techniques. One Mexican economist evaluates the maquiladora's contribution towards this goal thus:

> The utility of the technical training that comes out of the BIP is dubious, for if older equipment can remain temporarily competitive when used by cheap Mexican labor, a number of firms locating in Mexico may find it advantageous to put new equipment into their U.S. operations and to use the old equipment in the Mexican operations. What this means is that even if Americans train a significant number of Mexicans, and even if Mexican industry comes to be in a position to capitalize on a source of semiskilled workers, many Mexican workers will be trained to work only in obsolete production methods.[7]

This is a damning indictment, and it is partially true. The second largest group of plants in the maquiladora industry produces shoes, textiles, wearing apparel, and related items (see table II). The assumption that marginally productive capital stock is being used in this group of plants is valid. However, the use of such equipment in the wearing apparel industry is not unique to the maquila plants in Mexico. The rag industry of New York is well-known for its use of antique equipment, and the capital stock of the garment industry throughout the United States is not much better. The garment worker in Mexico is at least as well trained as the garment worker in New York, South Carolina, or South Korea.

7. Ibid., p. 144.

On the other hand, the largest group of plants in the maquiladora industry manufactures electronic/electric machinery, articles, and parts (see table II). An obsolete production method in the electronics industry is a contradiction in terms. Electronics is one of the leading growth industries in the world, and any production method in that industry must be up to date in order to be competitive in a world market. Such companies as Sears Roebuck & Company, Litton Manufacturing, and Centron do not retain their market shares by selling non-competitive products, and competitive products usually require the latest technology in their manufacture.

There is an advantage to this range of technology and capital equipment used in the maquiladora industry. One of the problems faced by developing nations is the duality of technology that sometimes arises during their industrialization. Mexico, as well as the other Latin American countries, has its share of primitive technology in agriculture and other industries. Mexico also has some of the most advanced steel foundries in the world. These foundries are so modern as to make those of its neighbor to the north look like museum pieces from the Industrial Revolution. Without the intermediate technology provided by such industries as the garment industry there would be a great gap in pay between the skilled and non-skilled worker, and these gaps tend to perptuate the income inequality in countries like Mexico.

Another complaint concerning the training received by Mexican workers is that an American firm brings most of its management personnel with it. But many firms are finding that the more Mexicans

that they have in management positions the fewer problems they encounter with customs clearance, permit issuance, tax exemptions, and labor relations. John Garner of the American Consulate in Monterrey reports that the practice of upper and mid-level Mexican management raiding has migrated from the "silicon valley" in California to the industrial parks of Mexico. Experienced managers in textile and electronics maquilas have reportedly been offered salaries at double what they are currently receiving.[8] It appears that the training received by at least some Mexican workers is of somewhat more than dubious value.

The maquiladora industry makes a substantial contribution to the current account of Mexico's balance of payments (see line 2, table III). From 1976 to 1978 there was a 24.8% increase, up from $535 million to $713 million. The 1979 contribution was $759 million, up $46 million.[9] The maquiladora contribution is the fourth largest entry in Mexico's current account and it is close to one-half as large as all other border transactions (see line 6, table III).

However, incomes earned in the maquiladora industry have a characteristic common to all other incomes earned in the border area -- about 50% of these incomes are spent in the United States. Thus the net contribution of the maquiladora industry to the current account is about one-half that shown in the balance of payments. This reversion of Mexican earnings to the United States is a longstanding defect of the border economy made more apparent by the maquiladora industry.

8. John M. Garner, "Maquiladora Outlook for 1980." Mimeographed. American Embassy, Monterrey, Mexico: United States Department of State, 1980.

9. Ibid.

TABLE III
ANALYSIS OF CURRENT ACCOUNT INCOMES
FROM MEXICO'S BALANCE OF PAYMENTS
(In Millions of Dollars)

CURRENT ACCOUNT INCOMES	1976	%	1977*	%	1978*	%
TOTAL INCOME	7,371.1	100.0	8,436.6	100.0	10,690.7	100.0
1. Export of goods	3,315.8	45.0	4,450.8	52.8	5,831.9	54.6
2. Services by transformation	535.8	7.3	524.7	6.2	713.4	6.7
3. Gold and silver	160.3	2.2	185.9	2.2	239.8	2.2
4. Transportation	176.6	2.4	199.5	2.4	247.6	2.3
5. Tourism	835.6	11.3	866.5	10.3	1,116.7	10.4
6. Border transactions	1,637.4	22.2	1,506.3	17.9	1,654.6	15.5
7. Investments	122.7	1.7	168.6	2.0	244.0	2.3
8. Other services	414.4	5.6	344.8	4.1	419.0	3.9
9. Transfers	172.7	2.3	189.4	2.2	223.7	2.1

*Preliminary figures

Source: Boletín Mensual de Información Económica
Coordinación General del Sistema Nacional de Información
Secretaría de Programación y Presupuesto
Vol. III, No. 4, Abril de 1979. Mexico.

Mexico has taken steps to stem at least a part of this outward flow of export earnings. In 1977, the Mexican government lowered import duties on many consumer goods coming into the border zone. This reduction should help Mexican merchants retain a larger share of the incomes earned in the border zone.

The location of a greater number of maquila plants in the interior of Mexico will help to retain a greater portion of the incomes earned in the industry. Maquilas have been able to locate in the interior since 1972, but the movement to the interior has been small and sporadic (see tables I and II). However, in 1979, there was a substantial increase in the number of maquila plants located in the interior. At the end of 1979 there were approximately 81 maquila plants in the interior.[10] Some of these maquilas are located as far as 200 miles south of the border, a distance that should be sufficient to keep most of these wages and salaries in Mexico.

Of all the costs that Mexico must weigh in evaluating the maquiladora industry, the most serious in its long-run implications is that the maquiladora industry provides one more incentive for the campesino to migrate to the border zone. As of 1975, 29.3% of the population of the border zone was from other states of Mexico.[11] Tijuana and Ensenada have growth rates of 7.5% and 5.9%, respectively, compared with 3.4% nationally.[12] The population of the following

10. Ibid.

11. "Economic and Social Conditions in Mexico," Comercio Exterior de México, Vol. 24, No. 5: May 1978, p. 203.

12. Ibid.

border cities is projected for 1990 thus: Ciudad Juárez: 1,116,000; Tijuana: 965,000; Mexicali: 841,000; Nuevo Laredo: 490,000; Matamoros: 464,000; Reynosa: 404,000 and Ensenada: 229,000.[13] The maquiladora industry, in 1979, employed only a little over one-half of the number of workers left unemployed by the termination of the Bracero Program in 1965. It cannot keep pace with such drastic rates of population growth.

Thus for Mexico, the maquiladora industry generates a cost for every benefit, and these costs are substantial. Any long-range solution to the Mexican unemployment problem must be couched in terms of stemming the tremendous population growth of the country. Mexico's development depends on further efforts to build a substantial base of human and physical capital -- not on short-run programs such as the BIP. The Mexican view that "las maquiladoras sólo constituyen un paliativo,"[14] (the maquiladoras only provide a palliative) is true, but it must be recognized that a palliative provides much needed relief from suffering.

13. Ibid.

14. Enrique Pérez Romero, et al. "La Industria Maquiladora en México." Mimeographed. Comisión De Desarrollo Industrial De México, December, 1979.

The American View

The benefits that the United States receives from the maquiladora industry are not as apparent as those that Mexico receives. The costs are even harder to determine.

Organized labor in the United States views the maquiladora industry as another example of "run-away plants." However, the number of jobs lost to "run-away plants" is hard to determine. The Trade Expansion Act of 1962 made possible the payment of trade readjustment assistance (TRA) to workers in industries which were adversely affected by any multilateral tariff reduction that allowed more imports into the country. In 1976, 1,000 employees of the Rohr Corporation, located in San Diego, received $3.9 million in TRA funds.[15] Employees of McDonnell Douglas Aircraft Corporation have filed a similar petition, but no determination has been made as of this writing.[16]

However, the criteria for qualifying for TRA have been relaxed over the last 18 years. At present, no link need be established between the injury suffered by an industry and a specific tariff reduction; an increase of imports may be sufficient to qualify for TRA.[17] In the Rohr and McDonnell Douglas examples it is safe to assume that items 806.30 and 807.000 of the United States Tariff Schedule caused part or all of the injury. But such cases are hard to find.

15. Ed Sylvester & Robert Montemayor, "U.S. Firms in Mexico -- Sharing or Stealing Jobs?" Los Angeles Times, 18 November, 1979.

16. Ibid.

17. Robert A. Flammang, from a lecture delivered at Louisiana State University on 19 June, 1980. (Verba debent intelligi ut aliquid operentur.)

On the other hand, a case study of the maquiladora industry in Ciudad Juarez identified 432 U.S. companies in 31 states that directly supply raw materials and components to the Juarez maquilas.[18] These companies represent both U.S. jobs and U.S. exports. Many maquila plants have twin-plants in U.S. border cities, and others have twin-plants located in the interior cities of the United States such as Fort Wayne, Indiana; Chicago, Illinois; and Portland, Oregon, to mention a few.[19] It is estimated that there are 50,000 jobs in U.S. industries directly related to the maquiladora industry.[20]

Items 806.30 and 807.000 have an indirect impact that reaches beyond the maquiladora industry. Mexico is only one country among many that perform assembly/processing operations under those items (see tables V & VI). Cancelling items 806.30 and 807.000 would have an adverse effect on those countries, and they would very likely retaliate with higher tariffs on imports from the U.S. Many of these countries are less developed countries (LDC's), and the LDC's constitute the fastest growing segment of the United States' overseas market.[21] Therefore, a tariff increase on their part would have a significant effect on U.S. export industries. The ill will generated by cancelling items 806.30 and 807.000 is impossible to quantify and it

18. Newman, p. 291.

19. Jacquelyn A. Mitchell, "A Preliminary Report on the Impact of Mexico's Twin Plant Industry Along the U.S.-Mexican Border." Mimeographed. Organization of U.S. Border Cities, 1980.

20. Newman, p. 289.

21. Ibid.

would extend beyond the economic to the military and political spheres as well.

While the impact of the maquiladora industry on Mexico's balance of payments is positive, its effect on the balance of payments of the United States is not clear. The $759 million earned in 1979 by Mexico from the maquiladora industry is a payment entry in the current account of the United States. But, that $759 million went into a finished product that is primarily American. If the same quantity of finished goods were totally imported, the payment entry on current account would be much greater than $759 million. As previously noted, about one-half of the incomes earned by Mexicans in the maquiladora industry reverts to the United States. In 1978, those incomes amounted to 5,987 million pesos, or about $263 million. That part of Mexican earnings comes back to the United States, and is a credit entry on current account. There is no way to quantify the indirect border transactions generated by the maquiladora industry. For example, if an American employee of a maquila takes a Mexican co-worker to lunch in Mexico, the United States receives a payment entry on unilateral transfer account, but if a Mexican takes an American co-worker to El Paso for lunch, the United States receives a credit entry on unilateral transfer account. There is also no way to quantify the good will generated by such transactions.

Finally, the American consumer receives a substantial benefit from the maquiladora industry. The estimated 1974 savings to American importers through items 806.30 and 807.000 was $2.6 billion.[22] Most

22. Ibid.

of the products from the maquiladora industry are sold in price competitive markets such as those for television sets, stereos, cassette tapes, calculators, etc. Price competition means that most of the $2.6 billion was passed on to the American consumer.

Both the Mexican view and the American view offer some strong criticisms of the maquiladora industry. But both views must be tempered by the question of what would the respective economies be like without the maquiladora industry? For Mexico, a severe unemployment problem would be exacerbated, and a large source of foreign exchange earnings would be lost. The United States might well realize a substantial loss of jobs if the maquiladora industry were to cease operation, for some firms now operating maquilas and twin-plants would move their entire operation offshore and others might stop production altogether. Merchants on both sides of the border would miss the wages and salaries earned in the maquiladora industry that are spent in their stores and shops. State and local governments on both sides of the border would miss the tax revenues earned directly and indirectly from the maquiladora industry. Neither the United States nor Mexico has ever viewed the border lands as a pocket of prosperity. The maquiladora industry makes a positive step in changing that view.

III. LONG RANGE OUTLOOK FOR THE MAQUILADORA INDUSTRY

By all but one account of those reviewed, the long range outlook for the maquiladora industry is good. Growing protectionism in America is the one threat to a prosperous future for the maquiladora industry. Japanese auto makers have gained large shares of the U.S. automobile market in the last decade, and America's steel industry has lost ground to imports from several countries (including Mexico). Already the auto industry has pressured the Carter Administration into raising tariffs on imported pickup trucks by 25%, and the steel industry is pressing for stronger enforcement of the trigger price mechanism. So far, items 806.30 and 807.000 have escaped protectionist attacks. On a positive note, Mexico has won the famous "tomato case". Florida vegetable growers accused Mexican farmers of dumping tomatoes in the U.S. during the winter months. They felt it was unfair to have plump, red, vine-ripened Mexican tomatoes next to the hard, green little balls that they were trying to pass as tomatoes on the same produce shelf. The Tariff Commission ruled in favor of American salad lovers and Mexican farmers. But items 806.30 and 807.000 remain vulnerable to pressure from organized labor. Those directly involved with the maquiladora industry are optimistic. The president of the Maquiladora Association predicts a 50% growth in the maquiladora work force between 1980 and 1982, or about 70,000 jobs.[1] Also political instability in Central America is prompting American firms to relocate maquilas to Mexico. Beckman Instruments of Fullerton, California, has moved from El Salvador to Mexicali, Baja California Norte, and is building a one

1. John M. Garner, "Maquiladora Outlook for 1980." Mimeographed. American Consulate, Monterrey, Mexico, United States Department of State, 1980.

million dollar facility there.[2] Other countries are building maquilas in Mexico as well. Japan's giant Matushita Corporation has a $10 million facility under construction in Mexicali, and a Japanese trade mission visited Mexicali in December, 1979, to study the possibilities of further Japanese investment in maquilas.[3] Korean businessmen have also become interested in Mexico as a site for maquilas.[4]

Labor relations in the maquiladora industry have been relatively smooth. Tamaulipas has a reputation as a strongly pro-labor state, and most maquilas in that state are organized by the Confederación de Trabajadores Mexicanos (CTM).[5] Coahuila has had some minor labor problems, and most of its maquilas are organized by CTM also.[6] Juarez is the major city in Chihuahua, and about 60% of its maquilas are organized. There are more unions in Juarez than elsewhere in Mexico as well as an excess of workers; therefore, labor-management conflicts there are not serious.[7] Sonora has 95% union maquilas in Agua Prieta, but none in Nogales. There have been no major problems in either city.[8] The maquilas in Baja California Norte on the West coast are

2. Ibid.

3. Ibid.

4. Ibid.

5. Ross Benson, et al, "The Development of the 'In-Bond' Industry in Mexico, 1977-1979." Mimeographed. Department of State Airgram, ref. no. A-24.

6. Ibid.

7. Ibid.

8. Ibid.

usually non-union.[9] (Further details on the location of maquilas are outlined in table I)

One area of the maquiladora industry that needs further promotion is the use of Mexican raw materials (see table II and table IV @ Mex. Val./Imp. Val.). As of December, 1978, the maquiladora industry used 1.5% Mexican raw materials (usually packaging). This is one area where the infant industry subsidy should work well for Mexico. With a small amount of assistance, Mexican firms could easily bring their product up to the quality standards desired by the maquilas. Mexican authorities feel that an increase in the use of Mexican raw materials would dampen some of the criticism of the maquiladora industry. It would also increase the flow of foreign exchange, spearhead Mexican production of internationally competitive goods,[10] and stimulate the infrastructure of the border zone.

The increase of maquilas located in the interior is another encouraging aspect for Mexico's infrastructure. Many of the interior towns lure maquilas with promises of increased and dependable services, and these promises mean new construction of public works in these cities. Also, the increased distance from the border requires that more transportation costs be paid in Mexico which would further increase foreign exchange earnings. And with increased transportation services needed in Mexico, there will be an incentive for that well known entrepreneur -- the independent trucker.

9. Ibid.

10. José Luís Newman ("Mexico's Maquiladora Program," <u>Business Mexico 1978</u>, Laredo, Texas: American Chamber of Commerce of Mexico) p. 294.

TABLE IV
VALUE ADDED BY[1]
MEXICO "IN-BOND"
PLANT RE-EXPORTS

Year	Value of Raw Materials Imported	Value Added In Mexico	Mexican Value / Import Value	Value Added Mex. / Mex. Mfgd. Exports	Value Added Mex. / Total Mex. Exports
1974	633.4	443.4	70%	23.6%	12.9%
1976	790.5	535.7	68%	31.0%	13.3%
1978	1138.1	713.4	63%	24.0%	10.5%
1979[2]	1416.7	850.0	60%	25.5%	10.6%

1. All Values in millions of dollars.

2. Estimate.

Source: SEPAFIN; American Chamber of Commerce, Mexico City, D. F.

The very long range outlook for the maquiladora industry is even better. Dr. Peter F. Drucker, the well known American philospher and management specialist, believes that "production sharing" will be the dominant force in international trade going into the 21st century. Demographic trends in the industrialized nations tend to support his prediction. Professor Clark Reynolds of Stanford's Food Research Institute predicts that America faces a shortage of five million workers by the turn of the century.[11] As America's population grows older, Mexico's grows younger, and America is approaching a zero population growth rate while Mexico's population is growing at 3.8% annually. America has a growing need for Mexico's oil and Mexico has a growing need for America's technology. All of these trends point toward further specialization and integration of Mexico's and America's economies. With further specialization and integration, the maquiladora industry will no doubt evolve to a state of true production sharing. Mexican capital will own more and more of the production process, and the multinational corporation will assume the function of a consulting firm earning its profits from fees and royalties rather than from "exploitation" of foreign workers. This is a very optimistic forecast, and one that this writer believes is inevitable. (See tables V & VI and figure 1 for details of maquiladora growth.)

11. "U.S. Labor Force Linked to Mexican Economy" The Baton Rouge Daily Legal News, 2 May, 1980, p. 1, cols. 1-5.

TABLE V
VALUE ADDED BY MAQUILADORAS
IN MEXICO AND WORLDWIDE
(In Millions of Dollars)

YEAR	Worldwide	Mexico	Mexico's % of Total
1966	953.0	7.0	0.7
1967	1,035.0	19.3	1.9
1968	1,576.0	12.0	0.8
1969	1,842.0	50.0	2.7
1970	1,674.0	80.9	4.8
1971	2,110.0	101.9	4.8
1972	2,544.0	164.7	6.5
1973	3,244.0	277.6	8.6
1974	4,064.0	443.5	10.9
1975	3,897.8	467.9	12.0
1976	4,178.0	535.7	12.8
1977	5,174.0	524.7	10.1
1978	7,163.0	713.4	10.0

Source: Banco de Mexico, S.A., Departamento de Comercio
The Flagstaff Institute, Flagstaff, Arizona

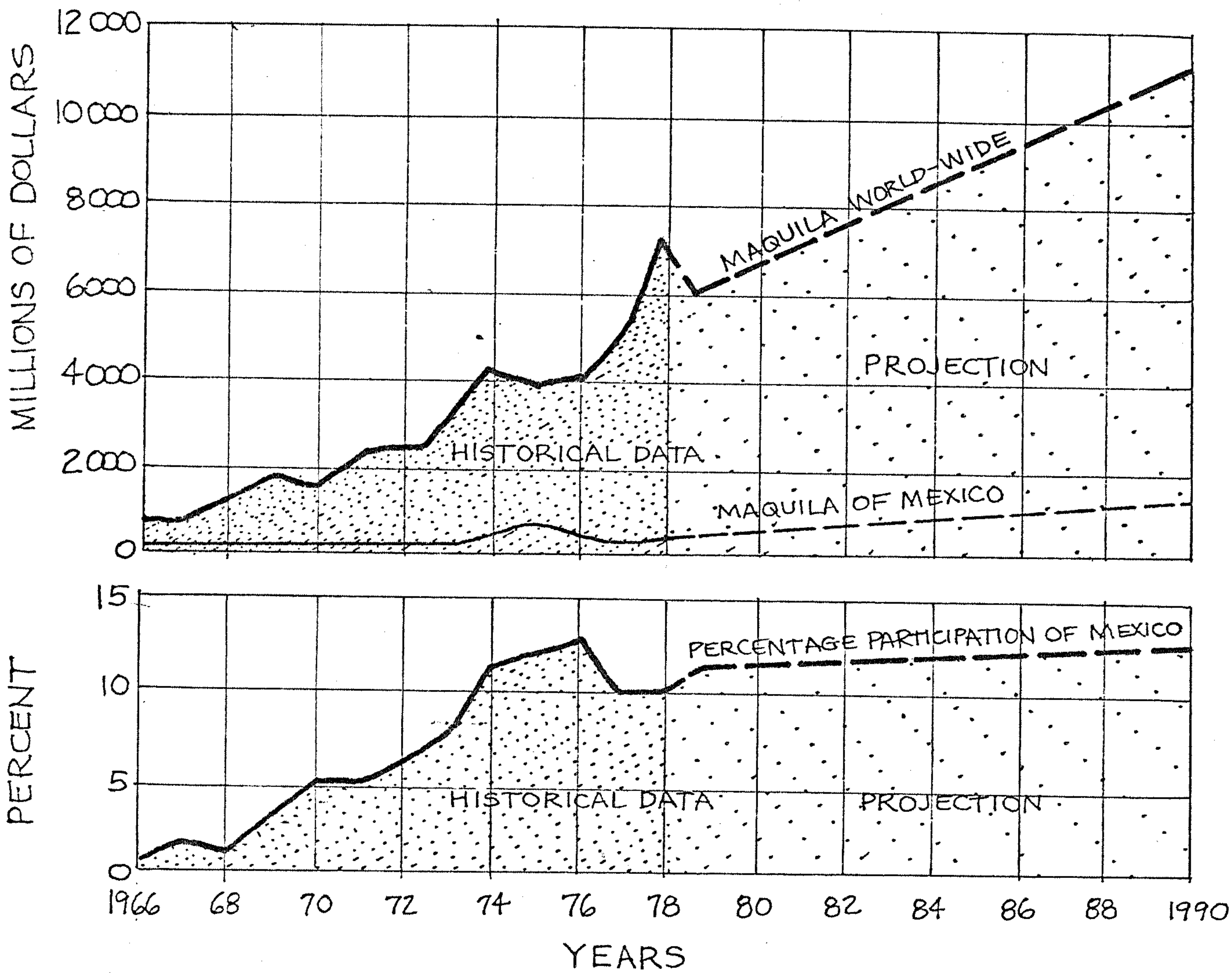
TABLE VI
VALUE ADDED BY COUNTRY TO
UNITED STATES PRODUCTS
(In Millions of Dollars)

COUNTRY	1971	1972	1973	1974	1975	1976	1977
W. GERMANY	962	986	1,236	1,428	1,260	914	1,487
JAPAN	131	149	115	200	335	729	899
MEXICO	105	171	287	465	468	536	524
CANADA	277	332	327	334	373	419	507
TAIWAN	86	163	212	271	224	270	305
BRITAIN	81	176	226	246	222	190	197
SINGAPORE	33	67	124	152	149	178	187
HONG KONG	54	75	104	149	102	132	166
MALASIA	–	–	12	65	96	126	140
FRANCE	15	21	24	33	28	42	140
S. KOREA	13	23	35	68	50	85	106
BRAZIL	1	4	12	47	52	64	103
HAITI	3	5	8	14	14	22	23
BELGIUM	141	114	206	227	158	71	10
OTHERS	208	258	316	365	367	400	427
TOTAL	2,110	2,544	3,244	4,064	3,898	4,178	5,221

Source: Panorama Económico Bancomer
Octobre 1978, Vol. 28, No. 10.

FIGURE 1

HISTORICAL DATA AND PROJECTION OF THE AGGREGATE* VALUE BY MAQUILADORA PLANTS ESTABLISHED IN DIFFERENT COUNTRIES AND MEXICO THAT EXPORT TO THE UNITED STATES.



SOURCE: Comision De Desarrollo Industrial De Mexicali.

* Translation error. Should read "added".

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