

The Limits of the Mexican *Maquiladora* Industry

Emilio Pradilla Cobos

ABSTRACT: This paper analyzes the growth of the *maquiladora* industry on Mexico's northern border. The concentration of capital, its productive structure, wages, working conditions and structural problems are analyzed. Its deleterious effect on the region and its major cities and the environment only exacerbate the unequal and subordinated pattern of Mexico's integration into the U.S.

The development of the *maquiladora* export industry¹ in Mexico began in 1965. It was a response to unemployment and economic paralysis in the northern Mexican border states, resulting from the termination in 1964 of the U.S. "bracero" program, which previously regulated the legal flow of labor to the United States. Since then the *maquiladora* industry has gone through various stages of development (Carrillo 1989). The most recent stage began in 1983, characterized by continuing growth and structural changes. The *maquila* began as a solution to a particular regional economic situation, but then became one of the key strategies of economic restructuring for Mexico as a whole, as a result of the change in government ideology and economic policy toward *neoliberalism* and "structural adjustment," beginning in 1988.

In the mid-1980s, a new phase of restructuring the *maquiladora* industry, based on technological developments in large companies, reduced the labor-intensive nature of the work force, and made labor relations more flexible (Carrillo and De la O 1992). Since 1990, the U. S. recession led to a tendency toward stagnation in Mexico. Together with the signing of NAFTA, these developments could herald a significant change in the *maquila* sector.

AN APPARENTLY SUCCESSFUL STRATEGY

There has been a rapid growth of the *maquiladora* industry in Mexico, especially on the northern border. Between 1975 and 1990, the number of plants increased from 454 to 2,033 (1,758 in the border states), while

Coordinator of the Doctoral Program in Social Sciences, Division of Social Sciences and Humanities, Metropolitan Autonomous University at Xochimilco, P.O. Box 70380, Ciudad Universitaria, C.P. 04510, Mexico D.F. México.

© 1993 Union for Radical Political Economics.

Published by Blackwell Publishers, 238 Main St., Cambridge, MA 02142, USA, and 108 Cowley Rd., Oxford, OX4 1JF, UK.

the number of employees increased from 67,214 to 465,800 (430,300 in the border states) (Instituto Nacional de Geografía e Informática 1992) (See Figure 1). From 1985 to March of 1990, 88% of the growth in industrial employment was in the *maquiladora* industry (*La Jornada* 8-X-1990), most of which was located in the six states bordering the U.S. (Baja California, Sonora, Chihuahua, Coahuila, Nuevo León and Tamaulipas) (INEGI 1990). Its growth has been closely tied to the U.S. economy.

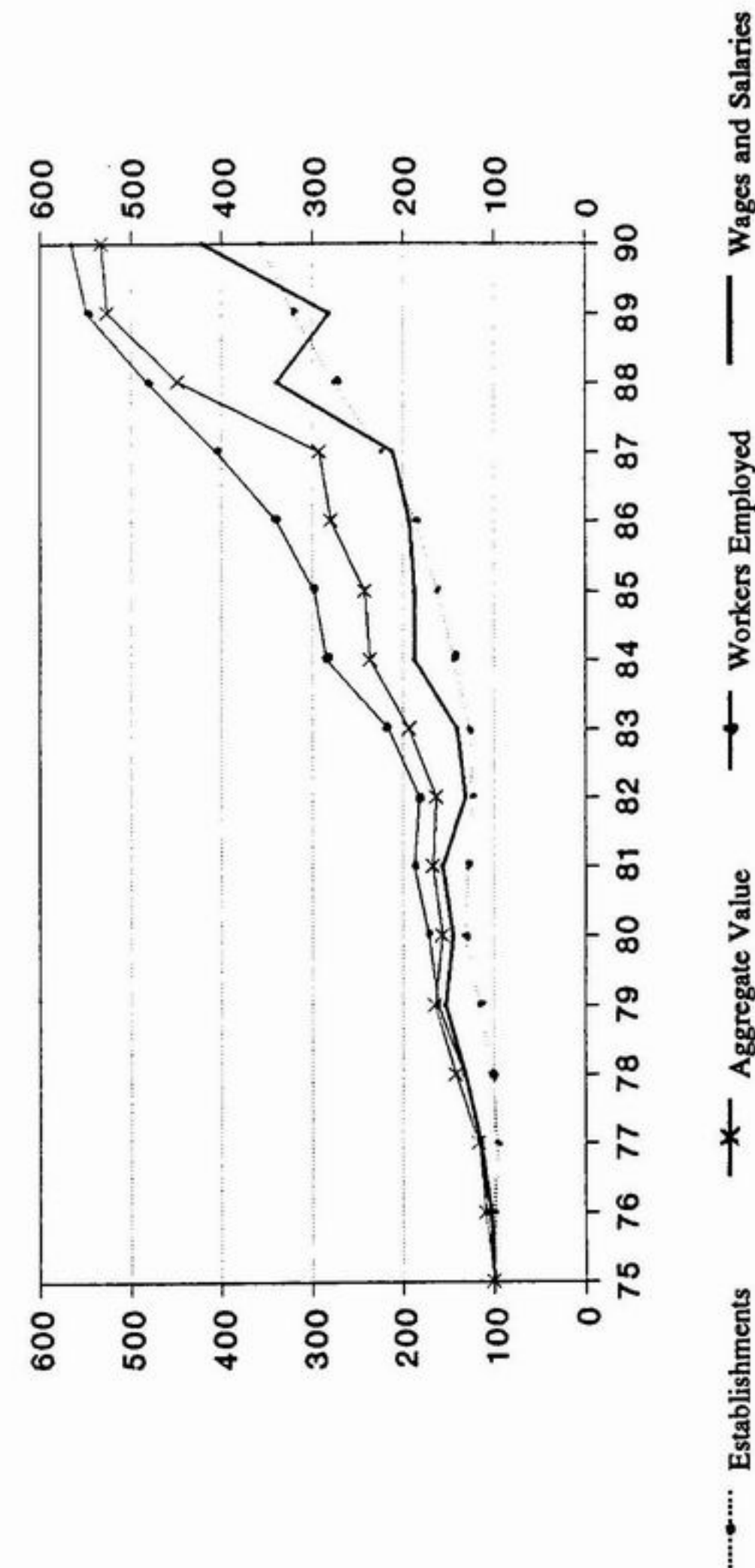
The differences among the various indicators shows some characteristics of *maquiladora* industry development. The smaller increase in the number of plants with respect to other indicators shows their increasing size (Carrillo and De la O. 1992: 55). A greater growth in jobs than in aggregate value indicates a shrinkage in labor productivity between 1984 and 1987, which is currently recovering. Salaries are growing less than either the number of jobs or the aggregate value of output, which demonstrates a reduction in real salaries, an increased exploitation of the work force and a rise in company earnings.

The figures for growth in the *maquiladora* industry explain the optimism of Mexican business and government although the affected population *and* the national economy might be less favorably impressed. For border cities and regions the *maquiladora* industry represents a process of industrialization combined with fundamental change in economic structures, but at a national level its role in employment, total production and its effects on the rest of production are modest.² On the other hand, the costs borne by society through state policies of subsidies to *maquiladora* industry, as well as costs paid by the *maquiladora* workers, are high in relation to the benefits. Working and living conditions for the *maquiladora* workers are deplorable, as are the spatial impacts.

REASONS FOR EXPANSION IN THE MAQUILADORA INDUSTRY

For foreign corporations there are many conditions which favor expansion in the *maquiladora* industry. Principally, there is the intense exploitation of the labor force in Mexico and the border area, in comparison to the conditions of labor both in the countries supplying capital and materials and in the countries where the goods will be sold. The hourly wage of Mexican workers is much lower than that of the U.S., Europe, Southeast Asia and other Latin American countries.³ More troubling, wages have continued to decline in absolute and relative terms since 1976 due to several factors, including the drop in real direct

Figure 1. *Maquiladora* Export Industry on the Northern Border of Mexico 1975 = 100



Sources: 1976 to 1986, INEGI: *Estadística de la Industria Maquiladora de Exportación 1975-1986*. Mexico, Aguascalientes, Ags. 1988; 1987 to 1990, SEGOFI, Dirección General de la Industria Mediana y Pequeña y de Desarrollo Regional: *Información Sobre Industria Maquiladora*, Mexico, D.F.

wages resulting from the government's "wage austerity" program (which has kept hourly wage increases lower than the rise in prices of wage goods), the indirect wage cuts resulting from the reduction in public expenditure on infrastructure and the elimination of subsidies and the devaluation of the peso. All three measures are key parts of the neoliberal program of economic "adjustment."⁴

Examining wages in dollar equivalents, a *maquiladora* industry worker's wage dropped from 1.00 in 1976 to 0.82 in 1986, while the U.S. worker's wage rose from 4.81 to 9.75; the relation between the two went from 1 to 4.81 to 1 to 11.1; companies were able to save 79.2% in 1976 and 84.8% in 1986 of their labor costs compared to production in the U.S. The fall in real salaries (measured in \$U.S. terms) has continued since 1986, although at a more moderate rate. If we assume that producers sell their goods in the U.S. at prices determined by production in that country, then we can estimate that businesses received accumulated profits of \$46.6 billion dollars during this period as a result of their operations in the *maquila* (Amozurrutia 1989).

The differential in wages is increased by: the greater number of hours than in the U.S. work week; the large number of Mexican laborers remaining at minimum wage (a situation which differs from the multiple job and salary categories in the U.S.); the lack of job seniority due to high turnover; and the inferiority of non-wage job benefits received by Mexican workers. This is possible thanks to the exceptional labor law status awarded to the *maquiladora* industry, attempts by foreign companies to undermine the labor movement, the low percentage of organized labor, and the control imposed by union bureaucracies who cooperate with the state in "official" unions (Carrillo and Ramírez 1990) or are even subject to the interests of capital in company-controlled unions.⁵

The *maquiladora* industry is still dominated by parts assembly, which is labor-intensive. These assembly plants employ a work force which is unskilled, young (16 to 25 years), largely female,⁶ without family commitments and with little union awareness or experience. These characteristics have begun to change since 1985, with partial, unequal and heterogenous restructuring, reflected in an increase in the ratio of technicians to unskilled workers, the encouragement of technicians and skilled workers to continue working for the company and increased technician salaries.

There is a relative shortage of labor at times of economic expansion, due to: the fact that population growth does not correspond to the variability of need for labor in the *maquiladora* industry, the narrow "ideal age" range employed to take advantage of young workers' sensitivity for detail work and their ability to work long days, and the much

smaller wages compared to that earned by undocumented workers in the U.S. (though the latter earn less than U.S. citizens). The supply of jobs in *maquiladora* industries might seem to indicate a permanent shortage of laborers, but it is actually an expression of company policies of high turnover in the work force. Unemployment exists in the older age ranges and in the male population, which is evidenced by the increase in illegal emigration and the proliferation of street vendors and people living by scavenging in industrial landfills.

Turnover rates in the industry, between 10% and 15% monthly, relate to the low wages, exhausting work conditions, or employer evasion of legally mandated job benefits (seniority, yearly bonuses, enrollment of workers in the Mexican Institute for Social Security — IMSS — and the Mexican Institute of the National Fund for Workers' Housing — INFONAVIT —) by employing workers for a period of time shorter than that which gives workers the legal right to these benefits, generating a constant movement of the work force from one company to another. The use of overtime and double shifts, to make up for the relative shortage of laborers or variations in demand, is accepted by workers as a means of compensating for low wages.

The relation between constant and variable capital is very unequal and heterogenous. At the extremes are the sewing of garments and manual parts assembly, and the large automobile production companies (in the cities of Chihuahua, Ramos Arizpe, Gómez Palacio, Aguascalientes and Hermosillo), which consist of a high organic composition of capital and low employment. In order to achieve adequate levels of production and labor-intensiveness, to compete with the producers of the home countries and in other countries to which the goods will be sold, there is an unequal process of modernization of the assembly processes, with robots, computers, numerical control machines, automated assembly lines and flexible systems of manufacture and labor relations which will tend to reduce the number of jobs in relation to total production (Del Castillo 1987; González-Aréchiga and Barajas 1989: 25; Carrillo and De la O. 1992). The reduction in jobs will permit the achievement of a combination of modern technology and high work productivity, and with very low wages, which is "optimal" for capital.

Almost all materials for the *maquiladora* industry come from abroad — 98.2% nationwide and 99.0% in the border states in 1991 (INEGI 1992: 15). This lack of integration into the rest of Mexican industry is frequently noted, but remains unchanged. Capital in the *maquiladora* industry pays subsidized prices, lower than in its country of origin, for some goods services purchased in Mexico: raw materials, water, electricity, industrial gas and other sources of energy; general conditions for production and circulation of merchandise (Pradilla 1984) such as

communications, roads, ports and transport by trucking or rail; adequate streets (50 times less than in the U.S. and 25 times less than in Hong Kong), construction of factories and offices (3.5 and 2.5 times cheaper, respectively) and rental of buildings. The oversupply of available sites and equipped factories in industrial parks accentuates these benefits.

The Mexican government has given ample support to the *maquiladora* industry. Those subsidies include donation of land, development of sites and supply of infrastructure and services in industrial parks, and a socialization of private costs, which are transferred to taxpayers by means of the government budget. In times of "fiscal austerity," government investment in general conditions for reproduction of the work force (education, medical care) decreases accordingly. The government supplies facilities and tax breaks and, before privatization, the national bank provides cheap preferential credit.⁷

In relation to producing countries (Japan and the European countries) and other countries with their own *maquiladora* industry (Southeast Asia and the other Latin American countries), Mexico enjoys a privileged location because of its proximity to the United States, which reduces both cost and transport time for the parts used and for finished merchandise. It also accelerates the turnover of capital, allows for just-in-time manufacturing methods and increases the rate of profits. Capital used in the *maquiladora* industry located in Mexico earns monopolistic superprofits, thanks to the superexploitation of the work force, the transfers of value and rents offered by the Mexican government and the advantages of location.

THE LIMITS OF DEVELOPMENT OF THE MAQUILADORA INDUSTRY

Since the De la Madrid administration (1982-1988), the orientation toward exporting has been a key policy, with the *maquiladora* industry of pivotal importance. This policy has been accentuated by the current Salinas administration, which placed the North American Free Trade Agreement (NAFTA) at the center of its program. NAFTA makes the role of the *maquiladora* industry and its implications for Mexico's trade partners quite controversial. The thorniest issues are the emigration of factories to Mexico, the loss of jobs in the U.S. and Canada and the possibility that wages in these countries will be pushed downward toward the disadvantaged position of the Mexican workers.

The Mexican government has poured significant public investment, fiscal incentives and preferential credit into the border area,⁸ in greater proportion than to other regions, including cities where industries have

traditionally been located, or to disadvantaged agricultural areas. The government has also had a policy of labor, tax and fiscal guidelines which favor capital in the *maquiladora* industry. This regime of special treatment toward the border areas was recently broadened to include the whole country.⁹ The new regime complements the liberalization of foreign commerce, the deregulation of foreign investment, the privatization of the banks and state-owned corporations and mechanisms for the negotiation of the foreign debt (such as "swaps"). In spite of all this, the leading role assigned to the *maquiladora* industry in the policies of growth and modernization faces real contradictions which cloud the panorama that the government and national and transnational business would like to present.

The Mexican *maquiladora* industry faces heightened world capitalist competition. In the struggle for economic hegemony, Japan, Europe and the U.S. use it as a means of cutting costs, evading U.S. protectionist legislation and controlling the market. The *maquiladora* industry is used in the competition between businesses located in the United States and those located abroad, such as Japanese and European firms. In the *maquiladora* industry, Mexico successfully competes with other semi-industrialized countries in Southeast Asia and Latin America and with countries of Eastern Europe and the former Soviet Union because of its geographical location, its greater exploitation of labor and the greater governmental support. However, nothing guarantees a permanent victory in this competition, nor is there any assurance that the transnationals will maintain this strategy faced with alternatives such as establishing plants in their own territories, either directly or in association with U.S. capital. They could choose to give greater priority to investment in other areas such as the old "real socialist" countries, or to a return and redeployment of the exported processes of production in the countries of origin.

The *maquiladora* industry is subject to the cycles of the hegemonic economies, whose growth has fallen since 1988. It is incorrect to think that a negative change in the world economic situation would lead to its dismantling, but in the short and long terms the recessionary cycles have caused (1974-1976, 1981-1983 and since 1991) and will continue to cause serious fluctuations in *maquiladora* industry production. The impact of a deep recession in the United States would be a diminishing of demand, of production, of new jobs, of capital flow and of foreign currency obtained by Mexico.¹⁰

The most apparent advantages of the *maquiladora* industry to Mexico are the creation of new jobs and the wages they pay. Technological change tends to continually reduce these benefits, at least in relative terms. In 1992, 64.5% of Mexico's *maquiladora* industry production was

concentrated in the areas of construction and assembly of transport equipment (28.2%), electrical and electronic supplies (26.4%) and assembly of electrical machinery, equipment and apparatuses (9.9%) (INEGI 1992), areas where technological change tends to be most rapid. The predominance of the minimum wage keeps costs low, producing poor living conditions and small multiplier effects for the weak domestic economy. In 1989, out of the total expenditure of the *maquiladora* industry, only 15.8% remained in the country, in the form of wages materials, rental of buildings and services (*El Financiero* 21-VIII-1990). The slight rise in wages due to the shortage of young, female and temporary labor has created a movement of the more labor-intensive *maquiladora* industries to small cities and rural areas with lower wages and a less organized labor force. Migration into the *maquiladora* cities is more than proportional to the increased supply of jobs and tax revenues, creating new pressures in the form of unemployment and demand for infrastructure, services and public spending. The expansion of the *maquiladora* industry is overtaking the capacity of infrastructure and services in border cities, at the same time that public spending is contracting due to fiscal austerity, which imposes a limit to growth and reduces the economies of production and circulation.

The dependency on imported materials reduces the entry of foreign currency to that corresponding to wages some national materials and various other expenditures, while profits are repatriated without paying taxes or strengthening domestic investment or the internal market. Exports by the *maquiladora* industry occupy second place among total exports, but if the temporary imports are excluded, this advantage decreases significantly. In 1989 the "positive balance" rose to only \$2,929 million, and for 1990 it is estimated at \$3,500 million (8% of total exports). The drop in real wages reduces the amount of foreign currency obtained by this means. The lack of integration of the *maquiladora* industry into the regional or national industry minimizes the multiplier effect of its investment. The impact on local agriculture, industry and commerce has been minimized by the purchase of products in the North American twin cities and the invasion of border markets by foreign products.

The superexploitation of the work force, a fundamental condition for the *maquiladora* industry, generates three limits: a) its ability to withstand the growing depression in living standards; b) the barrier to the increase in work productivity arising from its appalling conditions of housing, health, education, level of job skills and recreation; and c) its excessive turnover rates which impede the improvement of skills and increase in productivity in the different production processes. Decisions on investment and geographical location are beyond the control of the

state. Instead, these are determined by the agents and policies of transnational capital.

MONOPOLISTIC CONCENTRATION AND TRANSNATIONALIZATION

Monopolistic concentration and transnationalization have been structural characteristics of the *maquiladora* industry since its origin; in the current phase they are reinforced as a result of government and business owners' policies of industrial reconversion and economic modernization. Almost all these businesses belong to transnational capital by virtue of special legislation which permits foreign companies to control such businesses as "subsidiaries" holding 100% of the stocks of the 100 largest *maquiladora* factories, and of the majority of the small and medium-size *maquiladoras* as well (*Expansión* 1990f). Recently this law was modified, and the doors were opened to foreign capital in all areas of economic activity; the exception which had been made for the *maquiladora* industry became the general rule. The majority of the *maquiladora* factories belong to U.S. companies, but in recent years Japanese ownership has grown, as well as ownership by other Asian countries and European countries. To the degree that NAFTA would allow these countries to more easily evade U.S. protectionism, they would accelerate their installation of new plant sites.

In 1989, the 100 largest *maquiladora* industries, 7.5% of the total, controlled 21.6% of the workers employed and 43.7% of the aggregate value of the sector. They were mainly located in Ciudad Juárez, Tijuana, Matamoros and Nogales, and their production was principally destined for the states of California, Texas, Arizona, Michigan and Illinois. The new generation of *maquiladora* industries, whose areas of production are at the boundaries between assembly and production (exemplified by the six large factories producing automobile motors and the final assembly of automobiles) constitute a new level of technical, social and territorial concentration of *maquiladora* industry capital.

THE TERRITORY OF THE MAQUILADORA INDUSTRY

Territorial Concentration

The *maquiladora* industry is principally concentrated on the border of Mexico with the U.S., it is unequally distributed and its rates of development are differentiated. In 1992, the cities of Tijuana, Mexicali, Ciudad Juárez, Chihuahua, Nogales and Matamoros concentrated 62.4% of the employment and 65% of the aggregate value of the national

maquiladora industry (INEGI 1992). This tendency toward territorial concentration reproduces that of *maquiladora* capital.

The official definition of "*maquila*" excludes processes such as the production of motors and the assembly of automobiles for export which are located in other northern cities very far from the border; but from the point of view of transnationalization, and integration, which is subordinated to the United States, these are included in our analysis. Thus we could speak of a "second border," that of the *maquiladora* industry, with its ties to these cities in the Mexican interior.

Urban Growth and the Poverty of Housing and Social Services

The most direct impact of growth in the *maquiladora* industry has been the demographic growth of the cities. These cities also act as stages in the transit of immigrants to the United States, and as buyers of U.S. commerce and places of tourism from both countries, which adds to a floating population, difficult to quantify. After population growth accelerated between 1950 and 1960, it tended to decrease until the 1970s. The 1990 census shows a new impulse to growth starting in 1980, which would coincide with the expansion of the *maquiladora* industry.

The *maquiladora* cities suffer from extreme poverty resulting from: a) the rapid demographic growth; b) low wages of the *maquiladora* laborers, unemployment in other segments of the work force, and lack of affiliation with the Social Security and Housing Systems, impeding workers' ability to claim their rights or to receive credit from social service sectors or the public or private institutions which produce housing; c) the limitations of government spending in housing, infrastructure and social services, and the priority given to mid-level technicians in business and corporativized unions; d) the concentration of public and private investment supporting the *maquiladora* industry and its general conditions; and e) the orientation of the private sector in the construction industry toward those buildings linked to the *maquiladora* industry and to the housing and other material providers for the high-income sectors. This has given rise to a great scarcity of housing and services, obliging the majority of workers to build their own precarious homes, without infrastructure or services, on inadequate terrain. Poverty is greater for workers in the *maquiladora* industry, particularly those recently employed, than for traditional workers. The *maquiladora* cities have living conditions inferior to those of other cities in the country; they are rapidly reproducing the contradictions suffered in the great metropolis, to which it was supposed to be an alternative (Hiernaux 1986, Guillén 1990, Sánchez 1990).

Preferential Development of Conditions for the Maquiladora Industry

In recent decades, an important part of national investment has been directed toward support for the transnational capital of the *maquiladora* industry in the northern border cities. Starting in 1980, the industrial parks (land developments provided with infrastructure and services) were taken to be an essential part of the policy of territorial decentralization and regional development. The public sector played a dominant role played in their construction; it controlled 60.1% of the total area and gave a large number of credits to those constructed by the private sector. Thus, public investment was one of the biggest promoters of private industrial growth, in regard to the adequate provision of land and productive infrastructures, and in this way it played an important role in the territorial concentration of the industry.

Though they were proposed as instruments of territorial decentralization, the industrial parks were concentrated in two areas: the states bordering on the U.S., with 35.7% of the total; and the country's central area (the Federal District, the states of Mexico, Morelos, Hidalgo, Querétaro, Puebla and Tlaxcala) with 29.0%. This concentration reproduces and broadens the two basic tendencies in the location of the industry and of capitalistic accumulation during that period: a) the concentration in the central urban system formed in the metropolitan area of Mexico City (Pradilla 1993); and b) the expansion of the *maquiladora* industry in the northern border cities, in a process of integration into U.S. urban systems. The construction of industrial parks has three characteristics: a) it is a mechanism of transferral of public resources, coming from the whole society by means of taxes, and going to private capital; b) it does not correspond to the objectives of the decentralization policy for economic activity, to achieve a "harmonic" development of the various regions; c) it does not reverse the structural tendency toward territorial concentration caused by monopolization of capital.

Industrial parks have shown a high degree of underutilization of developed land and of the infrastructure and services of the social investment made to create them. Many sites have not been used by their owners (1989). There are no statistics for the industrial parks in the border states, but their underemployment is very notable, since entrepreneurs of the building and construction sector — eager to make a fast profit from the *maquiladora* industry's growth and the government's preferential policies favoring investment in infrastructure and services, as well as credit to promote exports and attract foreign capital — develop land and construct factories, though these may remain for long periods without buyers or users. In addition to speculation, the financial costs of nonproductive public and private investment are great, making the prices of sale or rental greater in the border area than in the

rest of the country, in spite of the fact that investment in infrastructure is assumed by the state. But land, infrastructure and buildings are cheaper in Mexico than in any industrialized countries or in Southeast Asia, with advantages for *maquiladora* capital. The contrast between the *maquiladora* parks, completely equipped but underutilized, and the poor neighborhoods, saturated but lacking infrastructure and services, shows the nature of this form of production.

To the direct costs of the industrial parks must be added the costs for construction of the large infrastructures connecting them to existing networks, which are charged to their operation costs. In recent cases, such as the installation of the Ford-Toyo Kogyo assembly plant in Hermosillo, public investment in infrastructure and services, construction and donated sites, fiscal and tariff stimuli, and credits granted by the state, were disproportionately large in relation to the investment made by the transnational company involved. In 1989 there were 20 projects being studied, in process or completed, for bridges, ports of entry, roadways and other projects for improving the infrastructure communicating with the United States, financed by the public and private sectors (SEDUE 1989) whose undertaking was fundamentally determined by the expansion of the *maquiladora* industry, and which consumed a considerable part of the public budget assigned to the region.

There is a lack of statistics on public investment in this infrastructure, and on subsidies offered in the form of low-priced energy, water, transport, communications, port and warehousing services, etc., to the *maquiladora* industry capital; but these hidden payments are very high. They are buried in the normal budget and financed by deficits of service companies or by the taxpayers in general. Being aware of the low wages of *maquiladora* industry workers, their appalling living conditions, including the infrastructure and social services available to them, would make the cost paid by society to support *maquiladora* capital seem truly exorbitant, especially if we consider the scant benefits obtained. Transnational capital should cover these costs, which are a source of extraordinary private profits. Otherwise, the costs continue to be transferred to society, socializing private costs whose benefits are reaped by agents of foreign capital other than by society. This is yet another way in which wealth is transferred from poor countries to rich countries.

Binational Urbanization

Statistics and cartography do not reveal the nature of the process of urbanization at Mexico's northern border. Next to every Mexican city a U.S. "twin" city develops, or vice versa. The two form a territorial and economic unit with different specializations: the Mexican city contains the *maquiladora* factories and the precarious housing of their workers,

while on the U.S. side there are commercial centers, centers for transportation and commercialization and the offices of the companies which own the *maquiladora* industries. The physical integration does not eliminate the economic and social differences between the two parts of the urban unit. Mexico's public policies and the actions of the real estate companies of both countries are accelerating this process of binational co-urbanization: the Columbia International Bridge is the hub of the development of Nuevo Leon's *maquiladora* industry, which includes the Anáhuac-China industrial corridor, and the development of four cities, each with a population of 500,000, containing four industrial parks. Real estate and banking capital of both countries promote a binational integrated urbanization project for the cities of Santa Teresa-San Jerónimo (near Ciudad Juárez, for 800,000 inhabitants, with the majority living on the Mexican side, which has as a central element a *maquiladora* industrial area) and Mesa de Otay in San Diego (near Tijuana, including industrial areas employing Mexican laborers).

In every case, Mexican taxpayers assume the cost of providing sites, infrastructure and services for the transnational *maquiladora* industry and the reproduction of the work force — though this last is not guaranteed either in plans or in reality. Mexico receives in exchange only the jobs which are directly generated and the scant tariffs and the foreign currency corresponding to the aggregate value of the imported materials. Subsidized by Mexican society through state action, the costs of land and industrial shipping, construction and the provision of infrastructure are ridiculously low for foreign capital. At the same time, the policy of reducing public spending for housing, infrastructure and services for Mexican workers and their growing privatization translates into greater costs for consumers. It is the socialization of the private costs of transnational capital and its distribution among Mexican taxpayers, which generates private superprofits for the transnationals, profits which will be repatriated into their countries of origin, to support their accumulation of capital.

Environmental Pollution

The deterioration of the environment on the Mexican side of the border has grown with the expansion of the *maquiladora* industry and the population. Agriculture has receded, relinquishing land, water and people to the industrial parks, to commerce, to infrastructure, or to the housing necessary for immigrants and the swelling urban population.

Relocation to the Third World of highly polluting industries in order to avoid environmental controls in the countries of origin is a very common company policy in the internationalization of capital. The *maquiladora* industry pollutes the water, the soil and the air (Sánchez

1989a, 1989b and 1990). Industries located north of the border dump pollution into the air or the water of common streams, or they transport solid wastes to the Mexican side. Hundreds of clandestine dumps of solid or liquid toxic industrial wastes, lacking in safety measures, are scattered around the urban peripheries and in areas outside cities in the Mexican border states. The high levels of pollution cause gastrointestinal illnesses, skin problems, cancer and damage to the nervous and respiratory systems of the *maquiladora* industry workers and the general population. The dumps are a source of a miserable subsistence (and also of illness) for thousands of garbage collectors and scavengers. The lack of garbage collection, sewer systems and drinking water in the poor neighborhoods leads to the dumping or burning of wastes, resulting in air-borne fecal matter and the surface dumping of raw sewage. The lack of sewage treatment in drainage systems pollutes the scarce fresh water streams.

The ecocide generated by the *maquiladora* industry has the following causes: a) the permissive Mexican environmental protection legislation; b) the insufficiency or corruption of government officials in charge of enforcing the legislation; c) the low level of development of Mexican businesses specializing in the treatment of wastes; d) *maquiladora* industry management policies which tend toward receiving profits derived from evading the costs of treatment for their wastes; e) the priority given to foreign investment, above any concern for environmental protection.

NAFTA has made ecological protection the order of the day, given the dangers generated by the indiscriminate proliferation of *maquiladora* industries. The three countries' governments make declarations saying that the ecology will be preserved, but their speeches are contradicted by reality. The corporatized Mexican labor unions keep a complicitous silence. Social and political organizations, intellectuals in the Mexican opposition and labor unions and other social organization in the U.S. and Canada have emphasized the risks and the certainty that environmental deterioration will result. The press has printed statements criticizing the situation and articles about movements organized against construction of nuclear waste dumps in the southern U.S., very close to the Mexican border, which would seriously damage the ecology on both sides, and which demonstrate the U.S. policy of getting rid of its dangerous wastes by transporting them to underdeveloped countries, or depositing them in places in its own territory where, though they may affect Mexican interests, there will be relatively little effect on its own.

TRANSNATIONAL TERRITORIAL REINTEGRATION

Not being integrated into the rest of the country, the Mexican border area is undergoing a process of reintegration into the economic and urban system of the southern United States. The linking of processes of production and the relation of assembled products with the markets which characterize the *maquiladora* industry have created north-south industrial corridors joining the Mexican *maquiladora* cities to U.S. industrial and market centers (Barajas 1989). The "twin cities" and their infrastructural intercommunication have created the formation of binational co-urbanizations which constitute a high degree of urban concentration and play a pivotal role in the territorial integration of the corridors. On the other hand, territorial, economic and cultural integration of the Mexican border areas into the rest of the country is not advancing.

The Mexican productive apparatus is increasingly subordinated to the needs of the high-tech industry and the consumers of the U.S. "sun belt" states, whose economic cycles determine the production, employment and earnings of the Mexican areas. The fields and cities of the United States are the labor market — badly paid, segregated and oppressed both politically and in terms of union organization — of the surplus Mexican work force, and they are also the market for the intermediate and final products of the *maquiladora* industry. U.S. commerce is the supplier for the greater part of the border area purchasers, due to the lack of a Mexican industrial sector oriented toward the domestic market or an inadequate commercial structure. To the extent that poverty increases among Mexicans, commerce in North American used or defective products invades the streets, absorbing part of the unemployed as vendors, and displacing the products produced by Mexican industry. In a dubious reciprocity, there are weekly invasions of Mexico's cities and beaches by U.S. citizens to "do here what they don't let them do there" at low cost.

The border is experiencing a process of transnationalized capitalist homogenization (Pradilla 1991) due to the increasing density and quality in the network of general conditions for production and exchange developed to support the flow of capital, raw materials, supplies and assembled products, consumer items, the work force and purchasers between the two countries. This process of reintegration and homogenization is, at the same time, a regional fragmentation, a growing interregional differentiation and a disarticulation from the rest of Mexican territory and society.

The border territory expresses the transnationalization of its economy, which surpasses its subordination to the United States. The growing

presence of Asian and European capital in the *maquiladora* industry, as well as in tourism and commerce, makes it one of the battlegrounds where hegemonic capitalist countries fight for a share of the U.S. market. The Pacific Coast is economically integrated as a subordinate to the Asian countries by means of the flow of capital, manufactured goods and tourists. This territorial homogenization, produced and appropriated from the outside by transnational capital, is sustained by the growing fragmentation of the Mexican border area, produced by the absence of processes of economic integration on the Mexican side which would be at least equivalent to the transnational forces and their subordination to the North American subregions. This area is now looking abroad, at the same time that its economic and territorial links with the rest of Mexico stagnate or weaken.

CONCLUSION

The approval of NAFTA will lead to the expansion of the *maquiladora* industry, especially along the northern border. U.S. firms will seek lower labor costs and other advantages. U.S. workers will suffer job losses, lower wages and a deterioration in working conditions. But, employment growth in Mexico cannot compensate for the losses due to the negative effects on agriculture and domestic manufacturing which are unable to compete with U.S. imports.

This *maquila* expansion and the resulting migration will create an anarchic pattern of urban growth in the border cities, with poor living conditions for workers. Further ecological destruction will result, and the intensification of cross-border trade and migration will continue the subordinated pattern of economic and spatial integration of Mexico into the U.S.

With NAFTA, the winners will be large industrial, commercial and financial capital from the U.S. and Mexico real estate interests on both sides of the border.

NOTES

1. The "*maquiladora*" industry consists of assembly plants which use materials and parts from abroad to produce merchandise for export; Mexican law contains special provisions for this type of plant.
2. According to private analysts, the *maquiladora* industry generates 1.5% of Mexico's GDP, 13.4% of exports and 24.3% of manufactured goods sold abroad (*El Financiero* 9-X-1989 and 5-III-1990).

3. Salaries in dollars per hour for were: 1.29 in Mexico, 16.83 in West Germany, 13.70 in the U.S., 11.02 in Japan, 3.15 in Taiwan, 2.95 in South Korea, 2.90 in Singapore, 2.60 in Hong Kong, 2.40 in Jamaica, 2.00 in Costa Rica, 1.80 in the Dominican Republic and 1.78 in Brazil (*Expansión* 1989).
4. Between 1980 and July of 1989, the Mexican minimum daily wage fell, in dollar equivalents, from 7.09 to 3.71: from an index of 100.0 to 52.3. (*Expansión* 1989).
5. The causes for the low percentage of organized labor include: frequent job rotation; business pressures; and the youth and lack of union consciousness in laborers. For more on these issues, see Quintero (1990).
6. The recent tendency is to increase male employment. Nevertheless, the proportion of women in *maquiladora* industries remain high.
7. The nationalized Mexican bank made loans to Ford-Toyo-Kogyo equivalent to 25% of the total investment for their Hermosillo assembly plant. The newer regulations on the *maquiladora* industry (December 1989) extended these benefits (*La Jornada* and *El Financiero* 22-XII-1978).
8. Between January and September of 1990, almost all credit given by the government-owned *Nacional Financiera* bank for industrial infrastructure was directed toward the border *maquiladora* industry (*El Financiero* 5-X-1990).
9. The Mexican government proposes to develop the *maquiladora* industry in 26 industrialized areas located in 14 states. However only Jalisco, Yucatán and Aguascalientes have taken the initiative to develop the industry (*El Financiero* 6 and 11-X-1989). 1992 saw the beginning of a promotion of the *maquiladora* industry in Mexico City, through the construction of an industrial park for this purpose (*La Jornada* 21-III-1992).
10. Exports produced by the *maquiladora* industry fell by 8% between January and May of 1989 (*El Financiero* 2, 4 ad 9-X 1989, 31-VIII-1990).

REFERENCES

- Amozurrutia, Jesús. 1989. Ahorro de las empresas *maquiladoras* por empleo de mano de obra mexicana. In, González-Arechiga ...
- Barajas Escamilla, Rocío. 1989. Complejos industriales en el sur de los Estados Unidos y su relación con la distribución espacial y el crecimiento de los centros *maquiladores* en el Norte de México. In, González-Arechiga ...
- Carrillo V., Jorge. 1989. Transformaciones de la industria *maquiladora* de exportación. In, González-Arechiga ...
- Carrillo V., Jorge y de la O, María Eugenia. 1992. La reestructuración en la industria *maquiladora*. *El Cotidiano*. No. 46 (March-April), Universidad Autónoma Metropolitana, Unidad Azcapotzalco, México.
- Carrillo V., Jorge and Miguel Ángel Ramírez. 1990. *Maquiladoras en la frontera norte*. Opinión sobre los sindicatos. *Frontera norte* Vol. 2(4) (July-December), El Colegio de la Frontera Norte, Tijuana, México.
- Del Castillo, Gustavo. 1987. Modernización Industrial y crecimiento *maquilador*. In, *El Cotidiano*, núm. especial, Universidad Autónoma Metropolitana, Unidad Azcapotzalco, México.
- Expansión. 1989. Las *maquiladoras* más importantes de México. Las *maquiladoras* cambian de piel. *Expansión* Vol. XXI: 527 (October 25), México.
- _____. 1989. *Maquiladoras* Salario campeón. *Expansión* Vol. XXI: 527 (October 25), México.

- _____. 1990. Las maquiladoras más importantes de México. *Expansión* Vol. XXII: 552 (October 24), México.
- González-Arechiga, Bernardo y Rocío Barajas Escamilla, (eds.). 1989. *Las maquiladoras. Ajuste estructural y desarrollo regional*, El Colegio de la Frontera Norte, Fundación Friedrich Ebert, Tijuana, México.
- Guillén, Tonatiuh. 1990. Servicios públicos y marginalidad social en la frontera norte. *Frontera Norte*, Vol. 2: 4 (July-December), El Colegio de la Frontera Norte, Tijuana, México.
- Hiernaux, Daniel. 1986. Urbanización y autoconstrucción de vivienda en Tijuana, Centro de Ecodesarrollo, México.
- Instituto Nacional de Estadística, Geografía e Informática. 1987-1992. *Avances de información económica. Industria maquiladora de exportación*, Aguascalientes, México, 1987, 1988, 1989, 1990, 1991 and 1992.
- _____. 1988. *Estadística de la industria maquiladora de exportación: 1975-1986*. INEGI-SPP, Aguascalientes, México.
- Pradilla Cobos, Emilio. 1984. *Contribución a la Crítica de la "Teoría Urbana: "Del "espacio" a la "crisis urbana,"* Universidad Autónoma Metropolitana, Unidad Xochimilco, México.
- _____. 1991. Notas acerca de la cuestión regional en América Latina. In, *Nuevas tendencias en el análisis regional*, Ramírez, R. Blanca (ed.). Universidad Autónoma Metropolitana, Unidad Xochimilco, México.
- _____. 1993. *Territorios en crisis. México 1970-1992*. Universidad Autónoma Metropolitana, Unidad Xochimilco, Red Nacional de Investigación Urbana, México.
- Quintero Ramírez, Cirila. 1990. Sindicalización en la maquila. In, *Ciudades*, No. 5 (January-March), RNIU, México.
- Sánchez, Roberto. 1989a. Contaminación de la industria fronteriza: riesgos para la salud y el medio ambiente. In, González-Arechiga ...
- _____. 1989b. La negociación de conflictos ambientales entre México y Estado Unidos. *Frontera norte*, Vol. 1: 1 (January-June), El Colegio de la Frontera Norte, Tijuana, México.
- _____. 1990. Condiciones de vida de los trabajadores de la maquiladora en Tijuana y Nogales. *Frontera norte*, Vol. 2: 4 (July-December), El Colegio de la Frontera Norte, Tijuana, México.
- Secretaría de Comercio y Fomento Industrial. 1989. *Estudio sobre parques industriales*, photocopy, México.
- Secretaría de Desarrollo Urbano y Ecología. (SEDUE). 1989. *VII Reunión Binacional México-Estados Unidos*, June 30, photocopy, México.
- Sook Lee Kim, Hyun. 1992. Diversidad de los procesos de crecimiento económico de los cuatro tigres asiáticos. *Comercio Exterior*, Vol 42: 2, February.