3 Maquiladorization as a Global Process
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INTRODUCTION

A maquiladora is an assembly plant set up under the Border Industrialization Program instituted by the Mexican government in 1965 to provide employment for Mexican citizens in the cities along the U.S.-border. An immediate reason for the government's action was the termination of the bracero (guest worker) program by the United States that left many Mexican workers idle in these cities. The new program allowed duty free importation into Mexico of production equipment and materials and allowed 100 percent foreign ownership of maquiladoras (Mobley, 1990, p. x). The United States supported the Mexican border policy by adopting legislation in the 1960s to introduce items 806.30 and 807.00 of the Tariff Schedules of the United States. These special trade provisions permit importation of products assembled abroad in export processing zones with the appropriate tariffs applied only to the added value associated with assembly (and not the total value of the products).

The Maquiladora Program has had a dramatic impact on the industrialization of Mexico, and especially Northern Mexico, since its beginning in 1965. There were 1,938 maquiladora plants in operation by 1990 (see Figure 3.1). These plants have created a source of employment and wealth for almost 400,000 Mexicans who might otherwise have been tempted to migrate illegally to the United States (see Figure 3.2). The maquiladoras have created an increasing number of jobs for technically trained Mexicans, as more and more firms placed state-of-the-art assembly technologies in the region. In addition, the maquilas have helped to support local supplier industries and infrastructure that might not have been built in the absence of the program.

The dynamism of the region has created strong support for opposition parties in Northern Mexico, which may lead eventually to institutional reforms that permit a competitive party system to emerge.
in Mexico. It has also increased support for the shift from import-substituting industrialization to export-led development strategies in Mexico,\(^2\) and hence for the negotiation and implementation of the North American Free Trade Agreement both in Mexico and in the United States.

However, work in the maquiladoras paid lower-than-average wages even in Mexico where wages were already low; working conditions were poor, many of the more unpleasant jobs were held by female workers, and environmental and safety regulations were poorly enforced. The Mexican unions have organized the workers of maquiladora plants in the usual way, with mixed results. Union leaders affiliated with the PRI (Partido Revolucionario Institucional) did not vigorously defend the interests of the rank and file. The PRI government was unable, because of general austerity, to provide adequate public services for the maquila worker communities. Thus, maquiladora workers were forced either to accept poor pay and working conditions or organize rival unions and face the attempts by the PRI unions and the government to suppress those rival labor organizations.

The results of the Maquiladora Program are similar to those of export processing zones (EPZs) set up in other countries.\(^4\) However, in many smaller and poorer Third World countries, like Mauritius and Jamaica, EPZs have not resulted in increased numbers of highly-skilled jobs, larger supplier industries, and improved infrastructure. The key difference between the Mexican experience and that of poorer countries appears to have been the amount of prior investment in human capital formation and the willingness to improve physical infrastructures. These poorer countries were likely therefore to be locked into a situation in which increases in wages for EPZ workers result in the closure of EPZ plants and their reestablishment in other lower-wage countries or regions. Thus, one important lesson from the histories of the Maquiladora Program and the EPZs is that developing countries should not expect long-term benefits from EPZ-driven inflows of foreign investment unless they are able and willing to invest in human and physical infrastructures.

The argument in this chapter proceeds as follows: (1) I summarize the actual performance of the Maquiladora Program in Mexico and compare it with the EPZs of a variety of other developing countries; (2) I put forward some general propositions about the comparative statics of investment decisions by managers of multinational corporations (MNCs) confronted with the decision of where to
locate labor-intensive processes; (3) I consider the mid- and long-term dynamics of the relationship between the MNCs and the EPZ host country; and (4) I provide some general conclusions about the 'maquiladoraization process.'

MAQUILADORAS IN MEXICO

In 1964, the United States ended the 22-year-old bracero program, which had legalized the flow of approximately four million Mexicans across the border to work on US farms. That same year, the Mexican Minister of Industry and Commerce toured production facilities in Asia, where US firms were setting up assembly operations in a variety of different countries and industries. The following year, the minister announced a new program called the Border Industrialization Program (BIP) to encourage inward foreign investment for the establishment of assembly plants called maquiladoras (Wilson, 1990, pp. 36-7). The main domestic supporters of this new program initially were the owners of the land which would be used for industrial development. Very little inward foreign investment followed the announcement of the BIP. Flows did not begin in an appreciable manner until the clarification of the program in laws issued in 1971. These laws permitted 100 per cent ownership of maquiladoras, in contrast to ownership limits of 49 per cent for firms 'producing for the internal market.' Maquiladoras could be established either as wholly-owned subsidiaries or as joint ventures with Mexican partners. In either case, the maquiladora was supposed to produce for export back to the foreign owner only. Mexican-owned firms wishing to participate in this market had to set up either a joint venture with a foreign firm or a separate maquiladora subsidiary.

Initially, maquiladoras tended to be restricted to sweatshops for the employment of low-paid female workers, and foreign investors were not perceived to have a long-run interest in Mexican development. A new labor law passed in 1970 under the Echeverría government improved the organization rights of maquiladora workers, and the subsequent reactions to a variety of managerial abuses resulted in a rise of maquiladora labor militancy and the withdrawal of support of the rank and file for the government-affiliated union, the Confederación de Trabajadores Mexicanos (CTM).

The recession of 1973-74 and the election of López Portillo created a climate of lower labor militancy and the return of the CTM as the official representative of the workers. This pattern was repeated during the recession of 1981-82. The biggest change in the Maquiladora Program since its establishment came with the reorientation of Mexican development strategy after the 1982 debt crisis.

The 1982 debt crisis convinced the Mexican political elite that the past policies of import-substituting industrialization could not be continued. Stable revenues from petroleum exports combined with increased debt service payments in the late 1970s and early 1980s resulted in a large increase in the balance-of-payments deficit. The Echeverría and López Portillo governments had adopted overly ambitious governmental spending programs on the basis of increased petroleum revenues and increased inflows in foreign loan capital after 1973. These programs were not cut back when the revenues stabilized and the debt servicing bills grew. Mexico faced the problem of a 'twin deficits' in both the balance of payments and government spending. After several unsuccessful attempts to use currency devaluation alone to reduce the balance-of-payments deficit and a massive debt rescheduling of 1982 to lengthen the payback period of foreign loans, the Mexican elite was ready to try something new.

The something new in this case was a switch to a more export-oriented development strategy; a sort of Mexican version of the export-oriented strategies adopted by the Asian newly-industrializing countries (NICs). The Mexican strategy included further devaluation of the peso, a tight monetary policy to reduce inflation and the lowering of tariffs with respect to manufactured goods, especially those which could be considered inputs for Mexican manufacturing. In addition, many state enterprises were privatized, and restrictions on inward foreign investment were eased.

The shift toward export promotion focused the attention of government elites on the role of the maquiladoras in generating exports. In 1982, accordingly, President Miguel de la Madrid declared the maquiladora sector a priority for the economy. De la Madrid established by presidential decree in 1983 a new set of rules for the sector, which included, among other things, the right of maquiladoras to sell up to 20 per cent of their output on the domestic market, a decentralization of maquiladora regulation, and a general easing of maquiladora regulation.

The government of President Carlos Salinas de Gortari issued a new maquiladora decree in 1989 which further simplified the process of certifying a maquiladora enterprise and encouraged establishment of maquiladoras in the interior of the country. Maquiladoras were now permitted to sell up to 50 per cent of their production in Mexico,
as long as they paid the regular duties on imported components. It is not surprising, therefore, that the number of maquiladoras and the number of workers in maquiladoras rose sharply after 1982 (Wilson, 1990, pp. 37–42; see Figures 3.1 and 3.2).

In addition, the value of maquiladora exports from Mexico to the United States under tariff items 806.30 and 907.00 increased from $2.9 billion in 1982 to $8.7 billion in 1987 (Scheinman, 1990, p. 24). Whereas initially maquiladora exports had tended to be mainly in unsophisticated, high labor-content industries like toys, apparel, and the assembly of printed circuit boards, by the late 1980s a significant portion of maquiladora exports had shifted toward more sophisticated automotive and electronics products. Assembly became more sophisticated with the introduction of advanced equipment and other types of factory automation. Work in the maquiladoras shifted toward a higher percentage of higher-value-added jobs, including those geared toward installing and maintaining the new automation equipment, and the lower value-added jobs in the older apparel and electronics factories were increasingly shunned by male workers (Scheinman, 1990, pp. 27–30; Wilson, 1990, chaps 3–4).

By the late 1980s, many non-US foreign firms were setting up maquiladoras to supply their markets in the United States, particularly in consumer electronics, as more and more US firms either sold out or exited the consumer electronics markets (Hart, 1993). Japanese firms in particular had a great incentive to set up maquiladoras because the exports of Japanese maquiladoras were likely to be less susceptible to anti-Japanese trade measures than exports from Japan or other Asian countries (Robber, 1987).

So far, I have presented the ‘up side’ of the maquiladora phenomenon in Mexico. There is, however, a ‘down side’ which figured prominently in the internal Mexican debate over the maquiladoras as well as in the North American Free Trade Agreement (NAFTA). First and foremost is the exploitation of young and unskilled female workers. Around 68 percent of the workers in maquiladoras are female, which is a reverse of the male/female ratio in Mexican industry. Turnover is high and working conditions remain very poor for female workers. Many are not represented by unions, CTS or otherwise. Many live in substandard housing areas without adequate sanitation, health care, educational facilities, or highways. Many have long commutes to work in unsafe jungle bays. The poor enforcement of anti-pollution regulations by the Mexican authorities leaves them and their children vulnerable to environmentally-caused illnesses (Soodar, 1987; Bassols, 1990; Baker, 1989).

Second on the list of negatives has to be the environmental problems created by the rapid and unregulated growth of maquiladora industries. There are severe problems of congestion and infrastructure insufficiencies in border cities like Ciudad Juarez, Nogales, Nuevo Laredo, Matamoros, and Tijuana. These cities do not have the fiscal resources to finance improvements in public services and physical infrastructure, so things have gone from bad to worse in those areas. Pollution of rivers in maquiladora border zones has become so bad in some cases that US authorities have proposed pumping Mexican river water back to Mexico. The pollution issue figured largely in the Clinton administration’s objections to the NAFTA treaty as negotiated by the Bush administration. Even though the NAFTA treaty was ratified by the US Congress in November 1993, there is likely to be further negotiation on the environmental and labor policy side agreements that went with the treaty.

Finally, one has to consider the costs connected with the failure to create linkages between the maquiladoras industries and local firms. This failure to link activities is not universal, but limited to certain industries and locations. The Maquiladora Program, unlike similar programs in Asian NICs (particularly Taiwan), has not emphasized the participation of local entrepreneurs or the development of indigenous technological capacities and infrastructures. The desire to stimulate exports in order to reduce unemployment and the balance of payments deficit has tended to eclipse other concerns. As a result, the Mexican Maquiladora Program and Mexican development strategy in general have a long way to go in matching the successes of the Asian NICs in building up indigenous technological strength and in fostering forward and backward linkages between the export sector and the rest of the economy.

Nevertheless, there are signs that things are moving in this direction. Investments in human capital are proving to be an important advantage for Mexico in attracting further EPZ-type investments. Some multinationalists, like Apple and IBM, have been donating funds to Mexican vocational schools to ensure that certain technical skills are included in their curriculum. In my own interviews with US semiconductor and consumer electronics executives, I have learned that they value Mexican technical skills highly, and increasingly transfer the latest product and process technologies to their Mexican plants rather than waiting first for the bugs to be ironed out in their US operations.

The indispensability of maquiladora operations for all businesses operating in North America is likely to increase with the successful
implementation of NAFTA. NAFTA will increase the competitiveness of Mexican supplier firms and will make it easier for successful Mexican firms to establish a presence in Canada and the United States. The maquiladora phenomenon, which had already begun to spread to the Mexican interior under the Salinas de Gortari regime, is likely to do so all the more rapidly after the NAFTA takes effect.

In short, I would argue that maquiladorization is now an ineradicable North American process if not a global one. Now I would like to consider the EPZs in other countries to see if one can generalize the maquiladorization process beyond North America.

EPZs IN OTHER COUNTRIES

As of 1984, there were 35 countries with a total of 79 export processing zones in operation. By early 1989, there were 200 EPZs in operation, and more than 100 under construction. In the 200 zones in 1989, over 1.5 million workers were employed. It was projected that employment would rise to as high as 3 million workers by the mid-1990s (Currie, 1984; United Nations Centre on Transnational Corporations, or UNCTC, 1990a). This is not an enormous proportion of the Third World’s workers, but the rate of increase has been rapid in recent years and it is highly likely that EPZs will spread to other parts of the world.

EPZs are to be found not just in the capitalist countries, but now increasingly in communist and formerly communist nations. The economic reforms adopted in 1988 in the People’s Republic of China and the leadership desire to accelerate growth through the adoption of an export-oriented development strategy resulted in the establishment of “special economic zones” in China. After 1989, Russia, Poland, Hungary, Bulgaria, and Vietnam were all in the process of either establishing EPZs or considering their merits.

Early discussion of the offshore assembly operations in EPZs, particularly in Asia, focused on a “new international division of labor” (Fröhler et al., 1980) and of “the global factory” (Grunwald and Flam, 1985). Reich (1991) spoke of the replacement of ‘national hierarchies’ in the organization of high value-added businesses with ‘global webs,’ where various parts of the production and commercialization process were done within any given firm in the most appropriate parts of the globe regardless of the nationality of the firm.

The Mexicans may have taken the EPZ concept farther than any other single country. Employment in their maquiladoras accounts for between a fourth and a third of the total employment worldwide in EPZs. Nevertheless, it is important to compare the experiences of different EPZ countries over time to understand both the dangers and opportunities presented by the global trend. Two particularly interesting cases of the potentially negative effects of maquiladorization can be found in Mauritius and Jamaica.

The Case of Mauritius

The EPZ in Mauritius began in 1970. Any factory on the island can be an EPZ if it manufactures exclusively for export. The growth of EPZ plants was almost as rapid in Mauritius as it was in Mexico (see Figure 3.1) and, as in Mexico, the most rapid growth came after a major debt crisis (1983) and a structural adjustment agreement with the International Monetary Fund. EPZ exports were $738 million in 1990 that is, 60 per cent of the total exports of the country and about 35 per cent of the gross domestic product. The EPZs employed more than 90,000 people in 600 factories in 1990. Almost all the EPZ factories established after 1970 were in the textile and apparel industries. Employment in EPZ factories was primarily low-wage jobs for female workers. Most of these workers were not unionized. Employment in EPZ firms helped to bring the unemployment rate down from around 20 per cent to under 3 per cent in the late 1980s (Roberts, 1991, pp. 53–60; Wong, 1990, p. 12).

There were very important differences, however, in the type of enterprises that invested in plants there and in the types of jobs created. Most of the enterprises established in Mauritius were in the textile and apparel business. Most of the jobs created were low-skilled and low-wage jobs. Unlike the Mexicans, the Mauritians did not have the resources to invest in human capital and physical infrastructure in order to increase productivity so that wages could rise. So the Mauritian case demonstrates the risks of pursuing a maquiladora/EPZ-based export-led development strategy for smaller and poorer developing nations (Roberts, 1991 , chaps. 4–6).

The Case of Jamaica

The Jamaican EPZs were created in 1976 under the Seaga government. There are three zones: Kingston EPZ began operations in
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1976: Montego Bay Free Zone in 1983; and Garmex in 1988. Kingston EPZ grew rapidly until 1981, when growth slackened off due mainly to the economic recession in the United States. After 1983, growth resumed until another downturn in 1987, this time induced by the combination of a destructive hurricane and labor militancy in the zone. The return to power of Michael Manley in 1989 resulted in some changes in Jamaican EPZ policies, including an attempt to put the EPZs under the control of the Jamaican port authority. This attempt created some confusion within the EPZ community about the future direction of state policies.

As in Mauritius, the greatest proportion of firms and employment in the Jamaican EPZs was in the garment industry. The main attractions for foreign investors were low wages and the proximity of Jamaica to US markets. The Seaga government adopted a very favorable attitude to foreign investors, in sharp contrast with the previous government of Michael Manley. Despite its extensive bauxite deposits, Jamaica is a poor country unable to invest extensively in physical infrastructure or human capital. Bauxite export revenues could not support an ambitious state-led development strategy. The defeat of Michael Manley by Edward Seaga in 1980 was at least partly due to the perceived failure of Manley's state-led industrialization strategies and hopes for an export-led development.

It is not surprising that the Jamaican EPZs did not contribute as much as either the Mexican maquiladora or the Mauritian EPZ to the growth of exports and employment. There was ambivalence in government policies and uncertainty about the continuity of those policies. Jamaica lacked the physical infrastructure and human capital base to move beyond simple assembly operations to more sophisticated manufacturing processes and to link EPZ activities to those of local firms. Thus, Jamaica's experience was less successful than that of Mauritius, which in turn was considerably less successful than that of Mexico.

THE COMPARATIVE STATICS OF MAQUILADORAS/EPZ INVESTMENT DECISIONS

Some of the studies cited above emphasized the importance of wage differentials in the decisions of MNC managers in locating production activities in maquiladoras and export processing zones. Wage differentials are obviously quite important in the US-Mexican maquiladoras, as Mexico's average wages in manufacturing are less than one fifth of those of the US and maquiladora wages are even lower. But wages alone cannot be the sole criterion, because lower productivity can cancel out the cost-reducing effects of lower wages. In addition, wage differentials should matter more for products in which the percentage of total manufacturing value-added attributable to wage labor is high relative to other inputs. Products for which this is true— for example, shoes, apparel, semiconductor and printed-circuit-board (PCB) assemblies—are more likely to be manufactured in low-wage countries or regions. Similarly, the costs of transporting the final product or subassembly back to its final market should be small relative to other commercialization costs. Thus, the production of bulky or fragile items like refrigerators, large television picture tubes, or elevators is not likely to be relocated from high-wage to low-wage regions if the maquiladora is in the high-wage region.

To summarize, the main factors in relocating production activities to low-wage regions would be:

- (a) the wage differential;
- (b) the productivity differential;
- (c) the percentage of value-added attributable to wage labor in the production process; and
- (d) transportation and other production or commercialization costs.

In addition, one would want to know if the low-wage region has an adequate transportation and communication infrastructure, a reliable set of local suppliers of needed goods and services, and a reasonably stable and favorable business climate.

A favorable business climate will include, among other items: (a) zero or low tariffs and no quantitative restrictions on imports of components or technology from the home country; (b) willingness to accept investments that involve 100 per cent ownership by the foreign firm; and (c) at least national treatment for the foreign firm (i.e., no discriminatory policies aimed at foreign versus domestically-owned firms).

Even these additional factors do not quite adequately characterize the current environment for relocation of labor-intensive processes, however. Recent evidence on maquiladoras and EPZs suggests that the availability of trained personnel—skilled workers and engineers—is also a consideration, especially for investments in more advanced production processes such as flexible automation and computer-integrated manufacturing (CIM) methods.
THE DYNAMICS OF MNC-HOST RELATIONS

Over time, the relations between MNCs and host countries in EPZs will change to reflect their different agendas. A pure policy of exploiting low wages for highly labor-intensive production of reexported goods will probably be bad for both the MNC and its host. The MNC will get the reputation of not caring about the communities in which it is located, of not being willing to relocate 'at the drop of a hat' to a lower-wage country; the host will not be able to justify the policy changes behind the formation of the EPZ in terms of observable long-term progress for the work force. The MNC will be tempted to sell some of the output of its EPZ factories on the domestic market of the host, as otherwise it can expect these goods to be stolen and sold on the black market. The host government will want to encourage this activity, as it will allow the government to claim that one of the benefits of the EPZ was to increase the supply of inexpensive but technologically-advanced consumer goods in domestic markets. Local manufacturers of competing products will oppose this, but they are not likely to prevail in the long run.

Thus, both MNCs and host governments will support moves to create backward and forward linkages between the MNCs and local firms and to deepen the industrialization that occurs in the zone. The firms and host governments will support efforts to upgrade the skill levels of zone workers, and may increase funding of local educational institutions to accomplish this. They may also agree to send local research and development efforts to strengthen the technology base for the region.

These theories about the statics and dynamics of MNC activities in EPZs are based on my reading of the history of the Mexican Maquiladora Program and the EPZs of Mauritius and Jasaica.

CONCLUSION

The maquiladoraization process is becoming increasingly global in the sense that MNCs in all the industrialized regions of the world are looking to the low-wage developing regions for the location of labor-intensive parts of their increasingly globalized businesses. This process is not fully 'global' in the sense that major countries and MNCs are completely indifferent about regional location. The maquiladoras of Mexico are dependent upon a US-Mexican regime which started with the Mexican Border Industrialization Program and the US 806.30 and 807.00 tariff legislation. They will be dependent in the future on the implementation of the NAFTA treaty. The maquiladoras are globalizing to the extent that non-US and non-Canadian MNCs want to locate in Mexico to gain access to North American markets under the NAFTA. But by the same token, EPZs in the Caribbean will be hurt, to some extent, by the focus of US, European, and Japanese MNCs on locating in Mexico. In other words, the tendency of the major industrial regions to regionalize their trading systems as a defense against other regions will limit the 'globalization' of the maquiladora process.

Similarly, EPZs in the developing world do not have the same access to the European or Japanese markets as they do now to the North American markets. Unless there is an extension and upgrading of the Generalized System of Preferences (or something like it) to make it resemble more the US 806.30 and 807.00 tariff scheme, there will not be the same incentives to establish EPZs aimed at European and Japanese markets. It is much more likely that regional agreements will be made or strengthened, along the order of the Lomé Agreements between the EC (European Community) and the ACP (African, Caribbean, and Pacific) countries or the association agreements between the EC and individual non-EC countries in Europe and the Mediterranean.

From the global standpoint, it would be better if these North-South trade regimes were both global and multilateral -- as the GATT (General Agreement of Tariffs and Trade) was intended to be -- so that industrialized countries would not be tempted to cut special deals for developing countries in their 'region.' But with the growing concerns over the decline in US relative competitiveness and over the rise of Japanese competitiveness in world markets, the political pressures are tending to go strongly in the other direction. Thus, we can conclude that maquiladoraization is a global process, but one which very much reflects the current trend toward increased regionalization of the world economy.
4 Japanese Foreign Direct Investment in East Asia: The Expanding Division of Labor and the Future of Regionalism

Kit G. Machado

This chapter shows that Japanese multinational corporations (MNCs) in concert with key ministries and agencies of the Japanese government are, attendant to the pursuit of their larger economic objectives, systematically promoting expansion of an East Asian division of labor and integration of regional production on a sector-by-sector basis. It also shows that Japanese foreign direct investment (FDI) is central to this process. The chapter begins with some brief comments on regionalism and globalization in the changing world political economy and a short analysis of Japan's global and regional FDI patterns to date and their future prospects. These are followed by an elaboration and explanation of Japanese official and corporate strategies and policies in promotion of regional integration and an assessment of their progress to date. Finally, the chapter assesses some of the likely consequences of the trends analyzed, particularly for other regional actors. It concludes that Japanese FDI is central to accelerating regional economic integration, but not of an exclusive kind; that Japanese celebration of the idea of expanding the regional division of labor, translated into an ideology of 'cooperation,' cannot serve as the basis for a widely acceptable regionalism; and that, in any case, the enormous asymmetry of economic power between Japan and its neighbors is a serious problem for the advance of a durable regionalism.