Chapter 3

# Mexico's Needs:
## Growth and Development

# Contents



## *Boxes*



## *Figures*



## *Tables*

# Chapter 3
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## SUMMARY

This chapter gives a snapshot of Mexico's economy entering the 1990s, highlighting the differences between its export-oriented firms, many of them foreign-owned, and the much larger number of Mexican-owned companies that produce wholly or primarily for domestic consumption. The best companies are world class in productivity and quality; many of the rest have had trouble competing with the imports flooding into Mexico's markets since deregulation and the opening of the economy—fundamental changes in government policies responding to the devastating economic ''crisis' of the 1980s. The chapter concludes with a brief exploration of possible economic futures for Mexico, all tied to political choices.

The United States is the wealthiest nation the world has ever seen. Mexico, though not one of the poorer countries in the Third World, still is only partially industrialized. During the 1980s, Mexico's inflation averaged more than 70 percent per year, the peso lost 99 percent of its value against the dollar, and real wages dropped by some 40 percent. Low wages and underemployment drove growing numbers of Mexicans across the border into the United States. Today, per-capita income in Mexico is little more than one-tenth of that in the United States.

Despite the vast differences between Mexico and the United States, one part of Latin America, the other with its political heritage and legal traditions rooted in England, their futures are inseparable. Millions of Mexicans have crossed the border to work. Already, the United States is home to the second largest Spanish speaking population in the world. U.S. companies ship parts south to be assembled for sale in the United States. Polluted air and water cross even more easily than people and goods. These links will grow, with or without a North American Free Trade Agreement (NAFTA), as will debate over the possible outcomes of the pact for the people and the economies of the United States and Mexico.

The debate over NAFTA reflects diverging views of Mexico current industrial capabilities and future economic prospects. At one extreme are those who believe Mexico will soon be able to produce most manufactured products as well as the United States, and will suck investment south to the detriment of U.S. workers. At the other extreme are those who believe that competition will decimate the bulk of once-protected Mexican industry. The truth is more complicated.

Without too much oversimplification, Mexico's industries and economy can be divided into traditional and modem sectors. The traditional sector includes:

1. Farmers who produce for home consumption and the local market, many of them on small plots of *ejido* land that was formally owned by the state and could not be sold prior to reforms now underway.
2. A very large number of smaller enterprises, employing less than 250 people each and accounting for about half of total employment.
3. An informal sector including many self-employed workers and unregistered rnicro-enterprises (1-15 employees)---street vendors, garbage pickers who reclaim glass and metals for recycling, and small retailers and manufacturers who avoid dealings with the government.

In recent years, the modem sector has expanded, including:

1. Export-oriented farmers who ship winter fruits and vegetables to the United States.
2. A number of relatively large and sophisticated Mexican firm and industrial groups, the best-known based in Monterrey.
3. Mexican subsidiaries of U.S. and third-country fins, most of them labor-intensive assembly plants registered under Mexican law as export-oriented *maquiladoras. In* addition, companies including Ford, Nissan, and IBM operate *non-maquila* plants producing high-quality goods to world standards for sale in Mexico and for export.

Mexico's economic future will be determined by the evolution of both the traditional and modem sectors. Important factors include:

1. The ability of Mexico to move beyond *maquiladora-like* manufacturing. As Mexico climbs

the ladder of development, it will become attractive as a production site to a broader group of U.S.-based firms-so long as Mexican wages remain low.

2. Mexico's imports from the United States, of both capital goods for its factories and consumer goods for those Mexicans with rising living standards.
3. Mexico's ability to provide jobs for millions of today's unemployed and underemployed, and absorb refugees from agriculture.
4. Rising wages that could dampen emigration to the United States, particularly if accompanied by more equal distribution of the benefits of economic growth.
5. The resolve, financing, and technical ability to curb pollution of air, land, and water on both sides of the border.

For more than 50 years, Mexico sought to guide economic development through trade protection, subsidies, state ownership, and controls on foreign investment. Business agreed to stay out of politics in return for the profits available in a sheltered economy. Labor provided votes for the ruling political party, the *Partido Revolucionario Institucional (IRI); in turn,* government helped PRI-affiliated 'official' unions gain recognition from employers and gave them a share of PRI political positions. Agricultural workers were promised land.

Prospects for continued recovery from the 1980s economic crisis seem good, but Mexico still lacks many of the ingredients for a vibrant industrial economy. Shortages of skilled workers and experienced managers limit Mexico ability to absorb and utilize technology from abroad, as do poor transportation and communications. Longstanding accomodations among government, business, and labor shattered during the crisis. The government has opened the economy, but in the process many smaller firms have failed. Declining real wages and the growth of the largely nonunion *maquiladora* sector have diminished the influence of organized labor. The government has abandoned its former policies, but it is not clear what the new policies will be.

Continued *laissez-faire* policies and reliance on low wages to attract investment would suggest a future Mexican economy that looks much like the current *maquiladora* sector. A second future would draw more heavily on Mexico's past history of government guidance and traditional views of social justice to encourage integrated manufacturing networks linking domestic and foreign firms in the name of better jobs for more workers. That might also mean better jobs for U.S. workers because Mexico would become a more attractive market for U.S. goods and services, rather than a haven for low-wage plants supplying the United States.

## INDUSTRIALIZATION

Given rapid population growth, Mexico's labor force will double in the next 20 years. The birth rate has come down in recent years, but, as discussed in chapter 6, the Mexican economy will need to create more than a million jobs a year to stay even, and would need to grow even faster to make a dent in unemployment and underemployment. New jobs imply foreign investment, bringing technology, managerial skills, and linkages to the international economy through multinational fins. This is the fundamental reason Mexico's government seeks a NAFTA.

In 1990, Mexico's economy was the 13th largest in the world, slightly smaller than that of India, slightly larger than that of Korea, and about 4 1/2 percent as large as that of the United States.[1] The country's citizens live better than gross domestic product (GDP) figures and rankings suggest (box 3-A). But the averages also mislead. Large differences in quality of life separate rich and poor in Mexico, more so than in most countries, even the United States.

### *U.S.-Mexico Trade*

Mexico trades primarily with the United States, while U.S. trade is spread among many countries. As figure 3-1 shows, Mexico currently supplies 6 percent of U.S. imports of manufactured goods (accounting for two-thirds of all Mexican exports), while taking 9.2 percent of U.S. exports (likewise accounting for about two-thirds of Mexican im-

[1] *World Development Report 1992: Development and the Environment (New* York, NY: Oxford University Press, May 1992), pp. 222-223. Because India has about 10 times as many people as Mexico, and Korea about half as many, Mexico's gross domestic product (GDP) per capita was about $2,500 (putting it in the World Bank's upper-middle-income developing country group), compared with $350 in India and $5,400 in Korea. (The rankings by size exclude the former Soviet Union.)

### *Box 3-A—Measuring Quality of Life*

*In* recent years, the United Nations Development program (UNDP) has sought to define indicators of socioeconomic development going beyond such measures as gross domestic product (GDP) per capita, life expectancy, infant mortality, education, and nutrition. The aim: to develop measures of personal choice, political freedom, gender equality, income distribution, and environmental quality that can stand alongside the more familiar indicators.[1] Not all have yet been incorporated in the UNDP's quantitative rankings: the Human Development Index (HDI) is composed of life expectancy at birth, average educational level, and purchasing power parity (a measure of GDP per capita weighted by the relative basket of goods the national currency will buy).

**Table 3-l-Development Indicators**

| | Rank among 160 countries[a] | | GDP rank minus HDI rank |
|---|---|---|---|
| | Rank by GDP | Rank by HDI | |
| Japan | 3 | 1 | 2 |
| United States | 6 | 7 | -1 |
| Canada | 10 | 2 | 8 |
| (West) Germany | 11 | 14 | -3 |
| Hong Kong | 25 | 25 | 0 |
| Singapore | 26 | 37 | -11 |
| South Korea | 44 | 35 | 9 |
| Mexico | 65 | 45 | 20 |
| Thailand | 88 | 66 | 22 |
| Egypt | 104 | 114 | -lo |
| India | 132 | 123 | 9 |
| Nigeria | 138 | 129 | 9 |

[a]Based on data for 1988.

KEY: GDP= Gross Domestic Product; HDI-Human Development Index.

SOURCE: *Human Development Report 1991* (New York, NY: Oxford University Press, 1991), pp. 119-121.

HDI values have been compiled for 160 countries. As discussed below, Mexico ranks substantially higher on HDI than on income (table 3-l). In contrast, the United States has about the same ranking on both measures.

Comparing rankings based on GDP per capita to those based on HDI gives a rough indication of how well governments translate economic growth into quality of life. The UNDP's 1991 report notes, for example, that the HDI rank of 26 countries is 20 or more places below their rank as measured by per capita income, suggesting that these countries have the wealth to provide better lives for average citizens. As table 3-1 shows, Mexico ranks 20 places higher in terms of HDI, meaning that when factors such as education and life expectancy are considered, quality of life in Mexico exceeds the level that would be expected based solely on national income. However, adjustments for equity in income distribution, which the UNDP has not yet calculated for the full set of countries, depress Mexico's ranking more than that of the United States; the top quarter of Mexicans have per capita incomes averaging 20 times those in the bottom quarter, compared with a disparity of 10 to 1 here. On the UNDP's recently developed Human Freedom Index, the United States ranks high, while Mexico falls in the medium group.

[1]*Human* Development *Report 1990* and *Human Development Report* 1991 (New York NY: Oxford University Press, 1990 and 1991, respectively).

ports). Table 3-2 includes the trade figures for agricultural products and oil and gas, as well as manufacturing. These figures show that United States has had a growing surplus in manufacturing since 1988, but an overall deficit until 1991 because of oil and gas imports, Agricultural trade has been small compared to manufacturing trade, although imports from Mexico have accounted for more than 10 percent of all U.S. agricultural imports in recent years, and U.S. exports to Mexico 5 to 6 percent of all U.S. agricultural exports.

Figures **3-2** and 3-3 plot the constant dollar trends for the sectors covered in more detail later in OTA's report, with table 3-3 showing the actual figures for selected years. Trade in apparel and in motor vehicles and parts is growing substantially faster than total trade in manufactured goods. Increases occur on both the import (figure 3-2) and export (figure 3-3) sides because much of the trade involves exports of parts to Mexico for assembly, followed by shipment back to the United States for final sale.

## *State-Led Development*

Mexico's economy developed slowly before World War H and rapidly thereafter. Starting about 1940, Mexican industry grew behind a thicket of barriers to trade and foreign direct investment (FDI). Mexico sought to be self reliant, building its own industries and growing its own food. GDP grew faster than the population, with per-capita income rising at more

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**Figure 3-1(a)—U.S. Imports of Manufactured Goods by Origin**

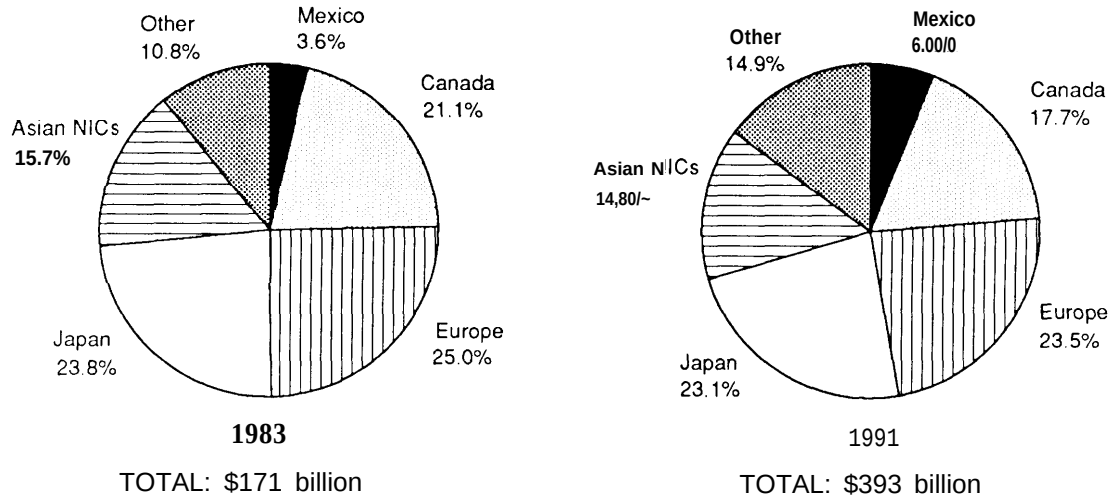
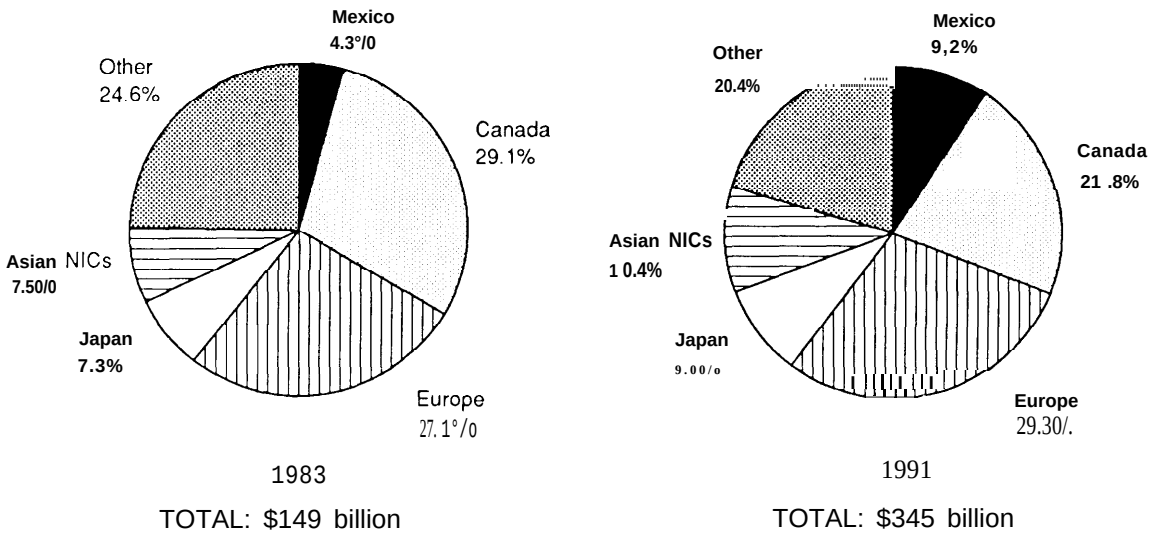



**Figure 3-l(b)—U.S. Exports of Manufactured Goods by Destination**




SOURCE: Office of Technology Assessment, 1992, based on official statistics of the U.S. Department of Commerce.

than 3 percent per year from 1940 to 1980 (about the same as the rate of population growth).[2] Sheltered businesses earned high profits, including foreign-owned companies (e.g., the major U.S. automakers) allowed to remain under grandfather clauses. If industries were inefficient, the government subsidized purchases of consumer goods including food and gasoline.

During the period of import substitution industrialization (ISI, box 3-B), millions of people moved from rural areas to cities, many of them taking jobs in manufacturing; more than 70 percent of Mexico's population now lives in urban areas.[3] As a stable working class emerged in larger cities, self- and family employment declined; the estimated fraction of the economically active population working in the

2 GDP increased at an annual rate of 6 1/2 percent from 1%5 to 1980, but from 1980 to 1990 averaged only 1 percent per year. *World Development Report 1992*, ibid., p. 221.

3 Defined as having more than 2,500 inhabitants. Saul Trejo Reyes, "Mexican-American Employment Relations: The Mexican Context," *U.S.-Mexico Relations: Labor Market Interdependence*, Jorge A. Bustarnante, Clark W. Reynolds, and Raúl A. Hinojosa Ojeda, eds. (Stanford, CA: Stanford University Press, 1992), pp. 257-268.

## Table 3-2—U.S.-Mexico Trade

| | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | First 4 months (January - April) 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Billions of current dollars | | | | | | | | | | |
| **U.S. Imports from Mexico** | | | | | | | | | | | |
| Manufacturing | $6.7 | $8.9 | $9.6 | $10.8 | $13.9 | $17.5 | $19.4 | $21.3 | $22.9 | $6.7 | $8.4 |
| Agriculture | 0.8 | 0.9 | 1.0 | 1.3 | 1.0 | 0.9 | 1.4 | 1.5 | 1.4 | 0.8 | 0.6 |
| Oil and gas | 8.0 | 7.0 | 7.1 | 3.4 | 3.6 | 3.0 | 4.1 | 5.0 | 4.5 | 1.5 | 1.2 |
| Other [a] | 1.2 | 1.2 | 1.5 | 1.9 | 1.8 | 1.9 | 2.3 | 2.5 | 2.4 | 0.8 | 0.8 |
| Total (all commodities) | $16.8 | $18.0 | $19.1 | $17.3 | $20.3 | $23.3 | $27.2 | $30.2 | $31.2 | $9.8 | $11.0 |
| **U.S. exports to Mexico** | | | | | | | | | | | |
| Manufacturing | $7.2 | $10.0 | $11.8 | $11.3 | $13.3 | $18.6 | $22.5 | $26.1 | $31.1 | $9.0 | $12.2 |
| Agriculture | 1.5 | 1.5 | 1.1 | 0.6 | 0.7 | 1.1 | 1.4 | 1.3 | 1.2 | 0.5 | 0.7 |
| Oil and gas | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| Other | 0.3 | 0.4 | 0.5 | 0.4 | 0.4 | 0.8 | 0.9 | 0,8 | 0.9 | 0.3 | 0.4 |
| Total (all commodities) | $9.1 | $12.0 | $13.6 | $12.4 | $14.6 | $20.6 | $25.0 | $28.4 | $33.3 | $9.9 | $13.3 |
| **Balance** [b] | | | | | | | | | | | |
| Manufacturing | $0.5 | $1.0 | $2.2 | $0.5 | $(0.6) | $1.2 | $3.0 | $4.8 | $8.2 | $2.4 | $3.8 |
| Agriculture | 0.7 | | | (0.7) | (0.3) | 0.2 | (0.0) | (0.1) | (0.2) | (0.3) | 0.1 |
| Oil and gas | (7.9) | (6.8) | (6.9) | (3.2) | (3.5) | (2.9) | (3.9) | (4.8) | (4.3) | (1.5) | (1.1) |
| Other | (0.9) | (0.8) | (0.9) | (1.5) | (1.3) | (1.1) | (1.3) | (1.7) | (1.6) | (0.9) | (0.8) |
| Total (all commodities) | $(7.7) | $(6.0) | $(5.5) | $(4.9) | $(5.7) | $(2.6) | $(2.2) | $(1.8) | $(2.1) | $0.1 | $2.3 |

NOTES: Data series used in this table and elsewhere in this report begins in 1983 because trade figures for earlier years are reported by the U.S. Department of Commerce on a different, noncompatible basis. Because Mexico's economic crisis began before 1983, data for the late 1970s, if available, would provide a more informative set of statistics.

Totals may not add because of rounding.

[a] Includes raw mining materials and livestock.
[b] Parentheses denote negative U.S. trade balance (imports from Mexico greater than exports to Mexico).

SOURCE: Office of Technology Assessment, 1992, based on official statistics of the U.S. Department of Commerce.

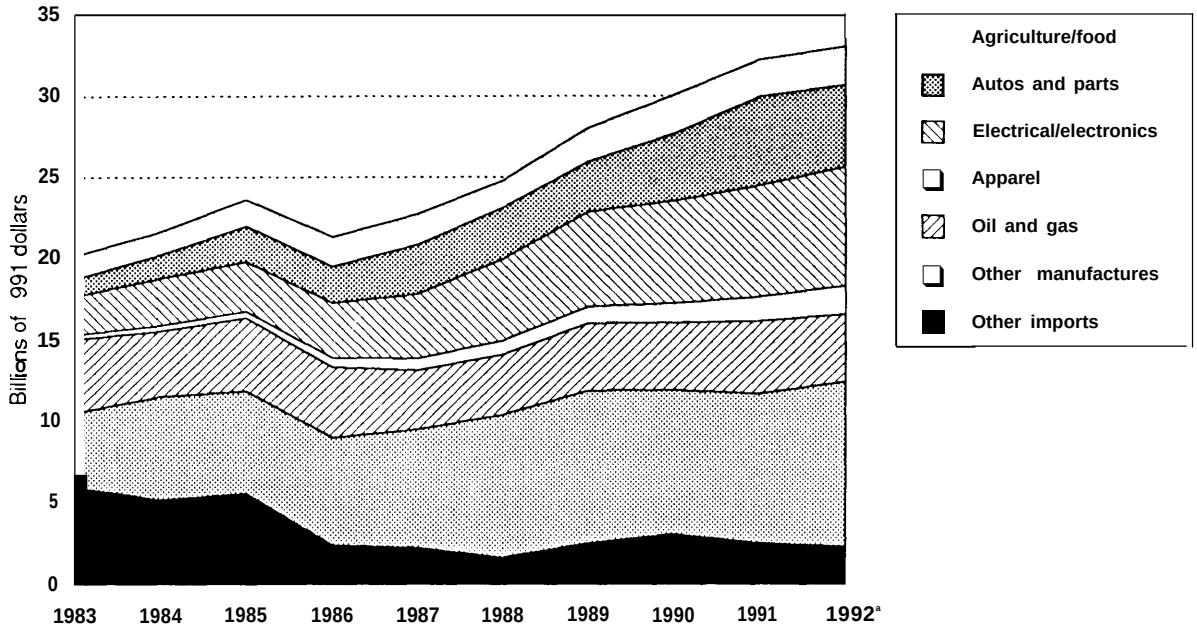
## Table 3-3—U.S.-Mexico Trade in Manufactured Goods

| | All manufactures | | | Autos and parts (SIC 37) | | | Electrical machinery, equipment, and supplies (SIC 36) | | | Apparel (SIC 23) | | | Food (Sic 20) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Imp. | Exp. | Bal. | Imp. | Exp. | Bal. | Imp. | Exp. | Bal. | Imp, | Exp. | Bal. | Imp. | Exp. | Bal. |
| | Billions of 1991 dollars | | | | | | | | | | | | | | |
| 1983... | $8.7 | $8.5 | $(0.1) | $1.0 | $1.1 | $0.0 | $2.3 | $1.6 | $(0.7) | $0.3 | $0.2 | $(0.1) | $0.4 | $0.4 | $0.1 |
| 1984... | 11.5 | 11.6 | 0.2 | 1.4 | 1.5 | 0.1 | 2.8 | 2.3 | (0.5) | 0.4 | 0.2 | (0.2) | 0.4 | 0.5 | 0.1 |
| 1985... | 12.5 | 13.8 | 1.3 | 2.2 | 2.0 | (0,2) | 3.0 | 2.3 | (0.7) | 0.4 | 0.2 | (0.2) | 0.5 | 0.6 | 0.1 |
| 1986... | 13.4 | 13.2 | (0.3) | 2.2 | 1.5 | (0.7) | 3.3 | 2.4 | (0.9) | 0.6 | 0.2 | (0.4) | 0.6 | 0.5 | (0.1) |
| 1987... | 15.7 | 14.8 | (0.9) | 3.0 | 1.8 | (1.3) | 3.9 | 2.8 | (1.1) | 0.7 | 0.2 | (0.5) | 0.8 | 0.4 | (0.3) |
| 1988... | 18.5 | 19.6 | 1.2 | 3.1 | 2.2 | (0.9) | 4.9 | 4.0 | (0.9) | 0.8 | 0.3 | (0.5) | 0.7 | 0.8 | 0.1 |
| 1989... | 20.1 | 23.1 | 3.1 | 3.1 | 2.9 | (0.2) | 5.8 | 4.7 | (1.0) | 1.0 | 0.5 | (0.5) | 0.8 | 1.2 | 0.4 |
| 1990... | 21.4 | 26.4 | 5.0 | 4.2 | 4.0 | (0.2) | 6.2 | 5.2 | (1.1) | 1.2 | 0.5 | (0.7) | 0.9 | 1.1 | 0.2 |
| 1991... | 22.9 | 31.1 | 8.2 | 4.5 | 4.3 | (0.2) | 6.8 | 5.8 | (1.0) | 1.5 | 0,7 | (0.8) | 0.9 | 1.6 | 0.7 |
| First four months: | | | | | | | | | | | | | | | |
| 1991.. | $6.6 | $9.0 | $2.4 | $1.2 | $1.0 | $(0.2) | $1,9 | $1.7 | $(0.2) | $0.4 | $0.2 | $(0.2) | $0.3 | $0.5 | $0.2 |
| 1992.. | 8.4 | 12.2 | 3.8 | 1.7 | 1.8 | 0.1 | 2.4 | 2.2 | (0.2) | 0.6 | 0.3 | (0.3) | 0.3 | 0.6 | 0.3 |

NOTE: Parentheses denote negative U.S. trade balance.
[a] Includes SIC (Standard Industrial Classification) categories 20-39.

SOURCE: Office of Technology Assessment, 1992, based on official statistics of the U.S. Department of Commerce.

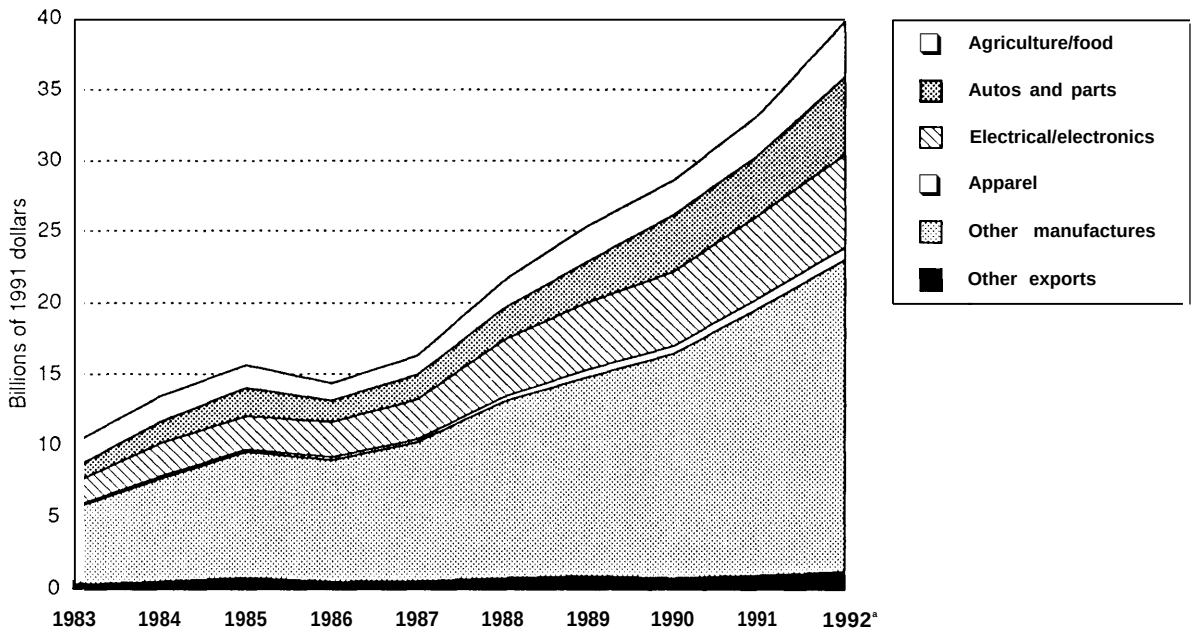
**Figure 3-2--U.S. Imports from Mexico**




a1992 annualized based on first four months.

SOURCE: Office of Technology Assessment, 1992, based on official statistics of the U.S. Department of Commerce.

**Figure 3-3—U.S. Exports to Mexico**




a1992 annualized based on first four months.

SOURCE: Office of Technology Assessment, 1992, based on official statistics of the U.S. Department of Commerce.

### *Box 3-B—Mexico's Industrial Policies: Import Substitution and After*[1]

Most of Mexico's industrial policies originate in the executive branch; neither legislature nor the courts have much influence. During the period of import substitution industrialization (ISI), Mexico generally provided higher levels of protection to consumer products industries, particularly nondurable, than to capital goods firms. Licenses were required for many imports (indeed for *all,* by 1982). These barriers began to come down after Mexico joined the General Agreement on Tarrifs and Trade (GATT in 1986.

Table 3-4 includes selected examples of policies during the era of ISI and state-led growth lasting through the middle 1980s. Mexico nationalized (" Mexicanized") many industries during the decades following the 1910-1917 revolution. In others, including automobile production, the government permitted foreign ownership under successive mandates, decrees, and plans. With few exceptions, foreign firms could enter only as minority partners in joint ventures with Mexican investors. Petroleum has been an extreme case, with prohibition of foreign ownership written into Mexico's constitution. Even here, however, downstream petrochemical production has been partially opened to foreign participation in recent years, as Mexico sought to tap foreign capital and know-how.

**Table 3-4-Sectoral Policies in Mexico**

| |
|---|
| ***Autos and parts*** |
| **Mexico began requiring import licenses for automobiles in 1944. The first auto decree, issued in 1962, prohibited imports as of 1964, forcing companies that wanted to sell in Mexico to assemble locally. Successive decrees modified various requirements, limiting entry by additional firms, requiring high levels of domestic content, controlling prices, and establishing performance requirements-e. g., exporting in proportion to local sales (after 1978). "Official" imports of used cars have been tightly limited to encourage domestic production. Since the mid-1970s, these regulations have led to steadily increasing exports to the United States of autos and parts (mostly engines and wiring harnesses) from the Big Three U.S.-based firms, along with Nissan and Volkswagen. The latest decree, issued in 1989, liberalized the rules substantially (see ch. 7).** |
| ***Electronics*** |
| **For many years, Mexico relied on trade barriers to encourage local production of TVs and other consumer products. These barriers began to come down in 1987. Policies toward the computer industry were more complex. The first computer decree, issued unofficially in 1981, sought foreign investment in some segments of the industry (e.g., small computers and peripherals) through a combination of import barriers, investment restrictions, local content requirements, and incentives including tax credits and low-interest loans. Starting in 1985, policies were progressively liberalized (ch. *8).*** |
| **TelMex, the monopoly telecommunications supplier, used its purchasing power to favor firms with domestic production facilities. Until 1987, TelMex's "Buy Mexico" policy was reinforced by a combination of tariffs and import licensing. At the same time, expansion of the telephone network and conversion to digital equipment created a market for advanced equipment. TelMex itself was sold by the government in 1991 to an international consortium.** |
| ***Petrochemicals*** |
| **Pemex, the state-owned oil monopoly, still has the exclusive right to produce "primary" petrochemicals (e.g., ammonia, propylene), but the definition of secondary products (e.g., polypropylene) has been expanded, permitting foreign firms up to 40 percent shares in joint ventures. By the end of 1991, the primary list, reserved for Pemex, had been cut to 19 products, compared with more than 100 in 1986. Wholly foreign owned firms can produce downstream tertiary products (such as antifreeze or molded polypropylene auto parts).** |
| ***Agriculture and Food*** |
| **Price supports and controls, production subsidies, and import barriers still apply to many food products, although government subsidies to agriculture (irrigation, low cost diesel fuel, fertilizers and pesticides) have been declining (ch. 10).** *CONASUP0 (Compañía Nacional de Subsistencias Populares),* **the government's agricultural marketing and food distribution arm, buys wheat and milk in the United States for sale at subsidized prices, purchases domestic production at supported prices, runs food processing plants, and distributes to nearly 2,000 retail food outlets. Despite the decline in subsidies, the costs for supporting production and consumption of corn and tortillas (staple crop of small farmers and staple food for lower income groups) came to about $1 billion in 1991.** |

**SOURCE: Office of Technology Assessment, 1992.**

[1] "Mexican Industrial Policy," report prepared for OTA under contract No. 13-0315 by Thomas H. Kelly, Dec. 28, 1991. Also see, in general, *Review of Trade and Investment Liberalization Measures by Mexico and Prospects for Future United States-Mexico Relations -Phase I: Recent Trade and Investment Reforms Undertaken by Mexico and Implications for the United States,* USITC publication 2275 (Washington, DC: U.S. International Trade Commission April 1990).

**Table 3-5-Distribution of Mexico's Non-Agricultural Urban Employment**

| | 1940 | 1960 | 1980 | 1989a |
|---|---|---|---|---|
| Higher nonmanual | 4.5% | 9.4% | 13.4940 | 14.OYO |
| Employers, independent professionals | 3.3 | 1.4 | 3.5 | NA |
| Managers, technical/professional employees | 1.2 | 8.0 | 9.9 | NA |
| Lower nonmanual | 14.1 | 20.2 | 21.6 | 22.7 |
| Office workers | 8.5 | 12.9 | 16.7 | 15.7 |
| Sales workers | 5.6 | 7.3 | 4.9 | 7.0 |
| Small entrepreneurs | NA | 0.5 | 4.6 | 3.7 |
| Self-employed and family workers | 37.9 | 20.5 | 18.6 | 22.0 |
| Wage workers | 32.8 | 41.9 | 36.5 | 32.6 |
| Transport | 4.7 | 4.8 | 2.5 | 2.3 |
| Construction | 3.3 | 6.4 | 8.3 | 2.6 |
| Industry | 19.5 | 21.6 | 14.5 | 16.0 |
| Services (personal, repair) | 5.3 | 9.1 | 11.2 | 11.7 |
| Domestics | 10.7 | 7.5 | 5.3 | 4.8 |
| | 100% | 100% | 100% | 100% |

NOTES: Totals may not add because of rounding.

NA = not available.

aBased on data fro„ seven cities (Mexico City, Guadalajara, Monterrey, Tijuana, Ciudad Juarez, Nuevo Laredo and Matamoros), roughly comparable to earlier data from national censuses.

SOURCE: Bryan R. Roberts, "The Dynamics of Informal Employment," paper prepared under contract with the U.S. Department of Labor, Bureau of International Labor Affairs, January 1992, p. 19.

informal sector (or "underground economy") fell from 57 percent in 1950 to 40 percent in 1980.[4] During the 1970s, employment grew rapidly in social and producer services (table 3-5), contributing to the growth of a new white-collar middle class—managers and clerical workers, technicians and teachers, nurses and physicians-many in the public sectors

### *Indigenous and Export-Oriented Industries*

Today, Mexico has a relatively small but flourishing group of export-oriented fins, centered on the 2,000 or so *maquiladoras,* plus hundreds of thousands of mostly small firms producing for the domestic market. Monterrey, in northern Mexico, is home to a number of large conglomerates that dominate the country's steel, cement, petrochemical, consumer goods, packaging, and glass industries. But small companies-some 700,000, 85 percent of them tiny microenterprises--dominate Mexico's economy.[6] Leaving aside the "Monterrey Group,' most of Mexico's large firms have been foreign owned (auto and computer manufacturers) or state owned (Pemex, TelMex until its recent privatization).

4 Manuel Castells end Alejandro Portes, "World Underneath: The Origins, Dynamics, and Effects of the Informal Economy," *The Informal Economy: Studies in Advanced and Less Developed Countries,* Alejandro Portes, Manuel Castells, and Lauren A. Benton, eds. (Baltimore, MD: Johns Hopkins University Press, 1989), pp. 11-40. Leopoldo Solis, "Social Impact of the Economic Crisis," *Mexico 's Search for a New Development Strategy,* Dwight S. Brothers and Adele E. Wick, eds. (Boulder, CO: Westview, 1990), pp. 43-52, gives a somewhat lower estimate for the size of the informal economy during the 1980s, putting it at about one-third the size of the official economy. In Guadalajara, one recent estimate is that 40 percent of those working in *manufacturing maybe* doing so informally (including the self-employed). Bryan R. Roberts, "Employment Structure, Life Cycle, and Life Chances: Formal and Informal Sectors in Guadalajara,'' Portes et al., eds. *The Informal Economy* (above), pp. 41-59. A forthcoming volume prepared by the U.S. Department of Labor and the Mexican Ministry of Labor will provide an overview of estimates of the size of Mexico's informal sector according to various definitions.

5 Agustín Escobar Latapi and Bryan R. Roberts,, ''Urban Stratification, the Middle Classes, and Economic Change in Mexico,' *Social Responses to Mexico's Economic Crisis of the 1980s,* Mercedes Gonzales de la Rocha and Agustín Escobar Latapi, eds. (La Jell% CA: University of California, Center for U.S.-Mexican Studies, San Diego, 1991).

6 Jaime Luis Padilla, General Director for Training and Productivity, Ministry of Labor, personal communication January 1992.

Mexico resembles Taiwan in that large firms account for only a small fraction of total GDP (14.3 percent for the 10 largest firms in Taiwan, 14.7 percent in Mexico). Korea's *chaebol, in* contrast, dominate that country's economy, with the 10 largest accounting for 63.5 percent of GDP. Gary Gereffi, "Big Business and the State,' *Manufacturing Miracles: Paths of Industrialization in Latin American and East Asia, Gary* Gereffi and Donald L. Wyman, eds. (Princeton, NJ: Princeton University Press, 1991), pp. 90-109.

The capabilities of Mexico's small-firm sector may not improve rapidly because there are few established channels for diffusing technical knowledge, managerial expertise, best practices, and other skills needed to become more competitive. Trade associations have so far been largely political and lobbying organizations; the government itself has no active technology policy. The multinational corporations (MNCs) that account for 45 percent of Mexico's exports function in isolated enclaves, training their workers but relying on imported materials and components.

### *Maquiladora Plants: Offshore Assembly in Mexico*[7]

A number of large U.S.-based firms have manufactured (or at least assembled) in Mexico for the Mexican market for many years-Ford since 1925, General Motors since 1935. They have developed sales and distribution channels, sometimes buy parts locally, and make minor design changes for the Mexican market. In contrast, *maquiladora* plants operate like the offshore production facilities found in many other developing countries. Production tends to be simple and labor intensive. Workers need few skills, only a willingness to perform routine tasks at what is often an intense pace. Normally, MNCs seek to minimize their investments in such plants, transferring no more technology than necessary and retaining the ability to pull out quickly, Often, they simply contract with a local firm. Mexico has accepted this kind of investment, with the view that bad jobs are better than no jobs.

Mexico's government established the *maquiladora* program in 1965, intending to use the country's low-wage labor and proximity to the United States to build export platforms that create jobs and earn foreign exchange. *Maquila* plants could bring in equipment, raw materials, and semifinished items duty free as long as they were used to fashion products for shipment back to the United States, which in turn levied duties only on the value added in Mexico. (Ch. 9 describes how the tariff system works for apparel.)

At first, *maquiladoras* had to be located within 20 kilometers of the border; although there are several medium-sized Mexican cities along the border (from Tijuana on the west coast, across from San Diego, to Matamoros on the east coast, next to Brownsville, Texas), this part of Mexico was largely undeveloped at the time. Later, restrictions on *maquila* location were relaxed. The *maquila* sector grew rapidly beginning in 1982, as devaluation of the peso depressed Mexican wages relative to U.S. wages. By the end of 1991, 2,000-plus *maquilas,* employing more than 450,000 people, produced more than a third of Mexico's exports of manufactured goods.

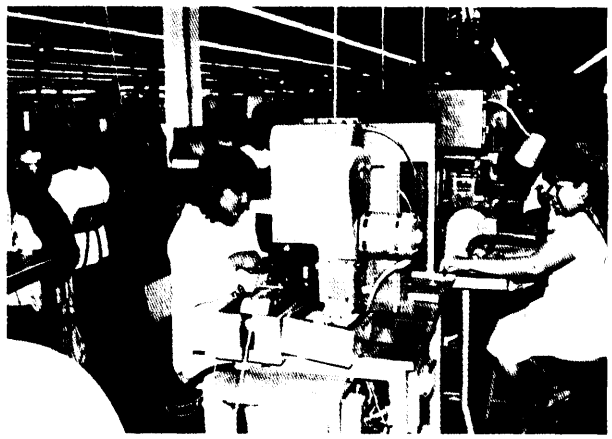


*Photo credit: Twin Plant News*

**Workers crimping connectors in a TRW *maquiladora* in Reynosa.**

*While maquilas* produce for the U.S. market (they can now also sell some of their output within Mexico), they need not be U.S. owned. Mexican entrepreneurs operate many as contract facilities; about 70 are owned and operated by Japanese firms (see box 3-C), a somewhat larger number by European companies. As table 3-7 shows, electronics and auto parts-e. g., assembly of TV sets and automobile wiring harnesses-account for more than half of *maquiladora* employment and valued added.

Because *rnaquiladoras serve* primarily as branch or satellite plants, they have brought little in the way of technology and skills to Mexico. On average, they buy less than 2 percent of their parts and components from Mexican firms, and even import cardboard boxes for packaging from the United States, claiming that Mexican firms cannot meet quality (e.g.,

7 M. Angeles Villarreal, *Mexico's Maquiladora Industry,* CRS Report 91-706 E (Washington, DC: congressional Research Service, Sept. 27, 1991); "The Maquiladoras: Present Status, Future Potential, ' report prepared for OTA under contract No. H3-7040 by Leslie Sklair, December 1991; ''NA.FIA and the Electronics Industry in Mexico, ' report prepared for OTA under contract No. H3-7200 by Patricia A. Wilson, February 1992.

### *Box 3-C—Japanese Maquiladoras*[1]

Cumulative Japanese direct investment in Mexico stands at about $1.8 billion, far less than U.S. investment ($19 billion) and also far less than Japanese firms have invested in, say, Brazil. The majority of the 100 or so Japanese ***maquilas*** assemble consumer electronics products, chiefly television sets for shipment to the United States, or else supply parts to these firms. Most of the plants operated by companies including Sanyo, Hitachi, Sony, and Matsushita are in Tijuana, in part for ease of shipping components from Asia and exporting finished products to the United States, but also because Japanese managers much prefer living in San Diego to the alternatives. (Many components for TVs come from newly industrializing countries in Asia, although Japan still supplies some parts and most production equipment.)

**Table 3-6-Perceptions by Japanese Managers on Producing in Mexico**

*Advantages*
- Cheap labor
- Transportation cost savings for shipment of finished goods to the United States
- No unions or weak unions (in *maquiladoras)*
- Lack of labor market regulations regarding minorities, gender, age
- No lawyers
- Tax system more lenient than in the United States
- Improving network of Japanese suppliers (in Tijuana)
- Electricity costs one-third those in the United States
- Contribution to North American content
- Special tariff provisions

*Disadvantages*
- High workforce turnover and absenteeism
- Poor infrastructure
- Fear of possible political instability
- Shortages of managers, engineers, and technicians
- Border crossings time consuming
- High inventory levels needed
- law educational levels and poor "socialization" of workers
- Hard to recruit Japanese managers to work in Mexico

SOURCE: "Japanese-Owned Maquiladoras in Mexico," report prepared for OTA under contract No. H3-7145 by Martin Kenney and Richard Florida, April 1992, table 9.

In consumer electronics particularly, Japanese investment in Mexico represents a response to U.S. trade policies as much as a search for low-cost assembly labor. When the United States negotiated import quotas in the form of "Orderly Marketing Agreements" (OMAs), first with Japan (in 1977) and later with South Korea and Taiwan, Japanese and other Asian TV manufacturers not only began shipping from existing plants in countries not covered by the OMAs, but also set up shop in the United States and in some cases Mexico. Sanyo, for example, entered U.S.-based TV production in 1976 by purchasing the private-brand manufacturer Warwick, a major supplier to Sears. At that time Warwick already had a ***maquiladora in*** Tijuana. A few years later, Zenith-today the only remaining U.S.-owned TV manufacturer-moved much of its production to Mexico and Taiwan. Both Sanyo and Zenith are now in the process of consolidating their North American TV operations in Mexico.

Despite the example of Sanyo, there are few signs that Japanese firms will substantially increase their rate of new investment in Mexico. In interviews, Japanese managers repeatedly stress the difficulties of producing high-quality output in Mexico, pointing to a workforce relatively poorly qualified compared to that in low-wage Asian countries, to the lack of suppliers and poor infrastructure, and to difficulties in communicating in either Spanish (which very few Japanese speak) or English (a second language on both sides). Few companies have tried to introduce a full range of production techniques associated with Japanese practices elsewhere (work groups, quality circles and ***kaizen,*** job security). Table 3-6 summarizes the views of Japanese firms on manufacturing in Mexico.

To solve the supplier problem, Japanese end-product manufacturers have encouraged their Asian suppliers to establish ***maquilas*** of their own, but these firms, too, have been reluctant. Japanese managers seem universally unhappy if asked to take posts in Mexico (and increasingly even to go to the United States, which many view as a detour from preferred career paths). At the same time, Japanese multinationals seem less willing than American firms to delegate to Mexican managers.

[1] "Japanese-Owned Maquiladoras in Mexico," report prepared for OTA under contract No. H3-7145 by Martin Kenney and Richard Florida, April 1992.

**Table 3-7—Profile of Mexico's *Maquiladora* Sector, 1990**

| Products | Number of plants | Number of employees |
|---|---|---|
| Electronic and electrical equipment and components | 501 | 161,000 |
| Auto parts, transportation equipment | 158 | 100,000 |
| Apparel | 289 | 42,000 |
| Furniture | 265 | 25,000 |
| All other | 707 | 118,000 |
| | 1,920 | 446,000 |

SOURCE: "The Maquiladoras: Present Status, Future Potential," report prepared for OTA under contract No H3-7040 by Leslie Sklair, December 1991, table 3, p 57 (based on data compiled by the Mexican Government).

printed graphics) and delivery standards.[8] The steel, insulation, piping, and furnishings in factory buildings--along with the production equipment---comes from abroad.

When the *maquiladoras* began growing rapidly, they drew on a rural labor force, in part comprised of migrants from southern Mexico, with little or no experience of industrial discipline.[9] Even in the mid- 1980s, the average *maquiladora* employee had only 3 years of basic education. With further growth, rising wages, and a slow increase in the number of technical jobs, *maquiladoras* have drawn labor from a wider region and levels of education have increased to about the national average of 6-plus years. The proportion of white- and grey-collar workers (e.g., administrators, technicians, quality-control inspectors) in the *maquiladora* sector has increased from about 14 percent in the 1970s to 18 percent today—far lower percentages than common in U.S. industry. High turnover stems from low wages, poor working conditions, and the ease with which workers can get an equivalent job in another *maquila* or cross the border into the the United States. Generally speaking, *maquila* owners and managers prefer to live with turnover rates that may exceed 20 percent per month rather than move away from the border, with its easy access to the United States.[10]

*Maquila-like* production will not solve Mexico's employment problems. Despite the labor intensive nature of their operations, *maquiladoras* created only about half a million new jobs during the 1980s, a period in which Mexico's labor force grew by a million people each year.

## *Agriculture*

About 26 percent of Mexico's labor force remains in agriculture. Considering that agricultural output has fallen from 14 percent of GDP in 1965 to about 9 percent today, this high percentage indicates the low productivity of Mexican agriculture.[11] A long-standing policy of granting usage rights to small plots of land called *ejidos,* to which the state retained ownership, has helped preserve a fragmented and inefficient system. Through trade protection and price supports, the government sought to keep *ejidatarios,* small farmers, and agricultural laborers on the land. At least 2 million peasant farmers continue to grow corn and beans-staple foods before the Spanish arrived. More than two-thirds cannot produce enough for their own families[12] Today, Mexico cannot feed itself; food imports tripled during the 1980s.

The changes to the *ejido* system will remove one of the government's principal sources of social control; the promise of expanded *ejido* lands (e.g., through expropriation of large private holdings) has for many years served to dampen unrest among the rural poor. By withdrawing its longstanding promise of land, the government will satisfy those who gain title to their *ejidos, while* leaving those still waiting—perhaps 2 1/2 million-with few prospects except to

8 The primary exceptions are the petrochemical and food processing (or *agro-maquila*) sectors, both of which source more of their inputs in Mexico. See Jaime Zabludovsky, "Trade Liberalization and Macroeconomic Adjustment," *Mexico's Search for a New Development Strategy,* Dwight S. Brothers and Adele E. Wick, eds. (Boulder, CO: Westview, 1990), table *3,* p. 196.

9 This paragraph draws on Jorge Carillo, "*Mercados de Trabajo en la Industria Maquiladora de Exportación*" [Labor Markets in the Assembly Pkmt Exporting Industry], unpublished report, *El Colegio de la Frontera Norte,* Tijuana, 1991.

10 A recent survey found little indication of plans t. move t. the interior in the event of a NAFTA. Jan Gilbreath Rich and David Hurlbut, *Free Trade With Mexico: What's In /t For Texas?,* U.S.-Mexico Policy Report No. 1 (Austin, TX: University of Texas, Lyndon B, Johnson School of Public Affairs, 1992), pp. 40, 41. For exceptions to this pattern, see ch. 9 on apparel.

11 World *Development Report 1992,* op. cit., footnote 1, p. 223; *Foreign Agriculture 1990-91* (Washington, DC: Department of Agriculture, Foreign Agricultural Service, August 1991), p. 82.

12 Santiago Levy and Sweder van Wijnbergen, "Transition Problems in Economic Reform: Agriculture in the Mexico-US Free Trade Agreement," *Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Men"co,* Addendum to the Report on Investigation No. 332-317 Under Section 332 of the Tariff Act of 1930, USITC Publication 2508 (Washington DC: U.S. International Trade Commission, May 1992), pp. 299-357.

**Table 3-8-Mexico's Federal Spending on Education and Health**

| Share of all central government spending (percent) | | |
|---|---|---|
| Year | Education | Health |
| 1982 | 13.2% | 1.3% |
| 1983 | 10.9 | 1.2 |
| 1984 | 12.3 | 1.5 |
| 1985 | 11.5 | 1.4 |
| 1986 | 9.1 | 1.3 |
| 1987 | 8.3 | 1.2 |
| 1988 | 9.0 | 1.3 |
| 1989 | 11.7 | 1.5 |
| 1990 | 13.9 | 1.9 |

SOURCE: *Government and Financial* Statistics Yearbook *1991* (Washington, DC: international Monetary Fund, 1992), Mexico table 3.

work as agricultural laborers or move to urban areas in search of other work.[13]

## CRISIS AND AFTERMATH

Mexico's new middle class had a hard time during the 1980s, as did almost all Mexicans except the wealthy who could send capital abroad to protect against inflation.[14] The "crisis" began in 1981, when the price of oil-then Mexico's largest export—began to fall and interest rates on Mexico's foreign borrowings to rise. The price of Mexican crude had doubled between 1979 and 1981, when a barrel brought as much as $37. Projecting future prices as high as $50 a barrel for state-owned oil, the government increased spending levels faster than revenues, borrowing billions of dollars from foreign lenders.

Oil revenues began to slide, gradually at first, as the government's budget deficit rose. In 2 years, external debt more than doubled, from $40 billion in 1980 to $91 billion in 1982.[15] As the 1980s progressed, public sector spending dropped, squeezing social programs, including education and health, while the government steered scarce funds to managing the debt crisis (table 3-8). When then-President Lopez Portillo nationalized the banks, the progressive deterioration in relations between government and business reached a breaking point. Mexico's balance of payments went deeply negative. The peso fell from its 1981 value of about 25 to the dollar, passing through 250 to the dollar in 1985 on the way to 3,100 to the dollar at the beginning of 1992. Unemployment and underemployment rose, while wages and living standards dropped. Mexico stock market crashed in 1987, like many others, tier-easing the already high rate of bankruptcies, particularly among smaller fins.

Following an agreement with the International Monetary Fund in 1986, Mexico embarked on a stabilization program. The 1987 Economic Solidarity Pact *(Pacto de Solidaridad Econ6mica)* and its successors provided for predictable devaluation of the peso. As the policies of austerity and opening *(apertura)* brought inflation rates down (to 17 percent in 1991), economic growth gradually resumed and capital began flowing back into the country. After 1989, commercial lenders forgave a small portion of Mexico's debt and extended new loans under a plan developed by U.S. Secretary of the Treasury Nicholas Brady. Other exports began taking the place of oil, which accounted for about 70 percent of Mexico's total exports in 1982, but only 30 percent in 1988.

Entering office in 1988, President Carlos Salinas de Gortari accelerated Mexico's opening to trade and investment, which had begun with accession to the General Agreement on Tariffs and Trade-a step that required an end to ISI policies. The PRI (box 3-D) had nearly lost the 1988 elections, despite its well-honed ability to ''manage" the electoral process; Salinas knew that without economic recovery his party's control could end. In August 1990, he formally requested talks with the United States on a free trade agreement, hoping to encourage investment by foreign firms and create new jobs for a rapidly growing labor force.

A cautious fiscal and monetary policy and reductions in trade barriers leading to increased import competition reinforced the wage and price controls under the *Pacto* to contain inflation. Real wage declines slowed, and then wages began to rise, although unemployment remains in the range of 18 to 20 percent or higher and as much as half of the

13 The 2 1/2 million figure is from Tim Golden, "The Dream of Land Dies Hard in Mexico, 'New *York Times, Nov. 27,* 1991, pp. Al, A1O.

14 More than $11 billion left the country in 1981, and perhaps $40 billion during the period 1980-84. Estimates for the decade as a whole range Up to $80 billion. For a comparison of five estimates of capital flight, see Rudiger Dornbusch, ''Mexican Debt," *Mexico's Search for* a New ***Development Strategy,*** Dwight S. Brothers and Adele E. Wick, eds. (Boulder, CO: Westview, 1990), table 11, p. 165.

15 Ibid., pp. 141-169. Most of Mexico's external debt was owed by the government, and mostly to foreign commercial banks. The government suspended payments on its foreign debt in August 1982.

### *Box 3-D-Organized Labor and the PRI*[1]

Mexico has been a one-party state since 1929, in part because of votes assured through the longstanding alliance between the PRI-affiliated (or "official") labor movement and the national political leadership. The post-revolutionary Mexican social pact provided the unions incorporated into the PRI with preferential treatment in union registration proceedings and a share of the PRI's elected offices. Union members received government-subsidized housing, health care, and basic foodstuffs. When opposition elements threatened PRI-affiliated unions, several Mexican presidents have employed force against them. For the government, the official unions provided abase of mass electoral support. In periods of economic instability, such as the 1980s, the labor leadership's capacity to contain rank-and-file wage demands and control worker opposition helped the government manage the macroeconomy and reduce inflation.

Since the 1930s, the PRI-affiliated labor movement has been dominated by the *Confederaci6n Trabajadores de Mexico (CTM),* formed in 1936 by socialist Vicente Lombardo Toledano. The CTM drifted to the right when President Avila Camacho replaced Toledano with the more conservative Fidel Velasquez. Velasquez, now 92, remains the head of the CTM and the most powerful labor figure in Mexico. On various occasions since Velasquez came to power, radical or independent elements of the Mexican labor movement have challenged CTM dominance and advocated pressure on the PRI for policies more favorable to workers. On each of these occasions, divisions among dissident unionists, the use of state power to weaken opposition, and overtures to moderate elements in opposition coalitions served to re-establish the dominance of the pragmatic mainstream of the Mexican labor movement.

[1]This box draws from Kevin J. Middlebrook, "State-Labor Relations in Mexico: The Changing Economic and Political Context," Unions and the State in Mexico, Kevin J. Middlebrook, ed. (La Jolla, CA: University of California-San Diego, Center for U.S.-Mexican Studies, 1991).

workforce may be underemployed. [16] Lacking unemployment insurance, and with such high levels of unemployment and underemployment, it is possible that half of Mexico's labor force lives below the official poverty line.

## MEXICO'S ALTERNATIVE FUTURES

### *Politics and Policy*

President Salinas, who cannot succeed himself, has until 1994 to lock in the new economic policies he helped put in place as planning and budget minister in the preceding administration.[17] If his policies are seen as failing, the government and the PRI risk political backlash. Although Salinas will probably pick his own successor—just as he was chosen in 1986 by then-President de la Madrid-a NAFTA would help solidify his reforms, making it harder to return to past policies and practices.

Mexico is trying not only to open and modernize its economy, but also to define a new set of accommodations among government, business, and labor. The 30-year understanding between government and business, which broke down with the crisis, called for the private sector to stay out of party politics in return for trade protection, subsidies, and, in effect, guaranteed high profits. Under the 1987 *Pacto,* business interests acquiesced in the continued opening of the economy, while labor settled for wage increases that initially lagged behind inflation. For its part, the government promised to contain spending, raise controlled price levels for products including gasoline, electrical power, and fertilizer, and reduce the size of a state-owned sector that had

16 The official unemployment figures are much lower, but do not include rural areas or discouraged job-seekers, while *counting* anyone who works an hour or more per week among the employed. Also see Michael J.D. Hopkins, "Employment Forecasting and the Employment Problem: Conclusion" *Employment Forecasting: The Employment Problem in Industrialized Countries,* M.J.D. Hopkins, ed. (London: Pinter, 1988), pp. 210247; and Trejo Reyes, " 'Mexican-American Employment Relations: The Mexican Context, " op. cit., footnote 3.

17 That is probably enough time. The experiences of a wide range of developing countries suggest that after 5 or 6 years liberalized trade and industrial policies are unlikely to be reversed. Michael Michaely, Demetris Papageorgiou, and Armeane M. Choksi, *Liberalizing Foreign Trade, Volume 7: Lessons of Experience in the Developing World,* Demetris Papageorgiou, Michael Michaely, and Armeane M. Choksi, eds. (Cambridge, MA: Basil Blackwell, 1991), p. 33.

numbered more than 2,000 companies .18 The ***Pacto*** has also given business greater and more formalized access to the policymaking process, for instance through representation on the *Comisión de Seguimiento y Evaluación del Pacto,* which monitors price and wage levels and administers the *Pacto. While* many in Mexico will probably continue to look to the government to lead if not guide the economy, it is not clear that government-at least under Salinas-will exercise the powers it retains. The *Pacto* has given Mexico a window of relative stability in which to rebuild, but the future form of Mexico's industrial policy has yet to take shape.

A long list of issues will demand the government's attention in the years ahead. With *apertura,* Mexican industry must learn to compete against imports and the products of new plants under foreign ownership. Productivity levels must rise, and costs fall. Mexican- and foreign-owned companies must generate new jobs to keep pace with a swelling labor force driven by the country's still-high birth rate and the reform of the *ejido* system, which will force subsistence farmers and farm laborers off the land and into Mexico's already overburdened cities. Mexico must depend on foreign enterprises for long-term investments in productive economic sectors and for inflows of technology. Finally, Mexico needs massive investments in infrastructure-roads, ports, and railroads; electrical power and communications networks; water and sewage facilities-if it is to attract the investments its economy needs to grow.

### *Infrastructure*

***In*** OTA interviews, many managers in Mexico reported that rail transportation bordered on unusable. Telephone service is expensive and unreliable, new lines take months to install, and businesses pay for more lines than they would otherwise need because repairs take so long. Rural areas, which are attractive to firms seeking low-cost labor and reduced turnover, often have little or no telephone service.[19]

Under such circumstances, larger Mexican firms and affiliates of U.S. producers have significant advantages. They can, for instance, operate their own fleet of trucks or set up private communication systems. Xerox's plant in Aguascalientes has a satellite link to Xerox's domestic communications network. Indeed, until the Mexican telecommunications network is upgraded, large companies will usually have better communications with the United States than with other parts of Mexico.

Infrastructure problems are more than annoyances. They raise the costs of doing business and thereby slow the development of Mexico's economy. The government has programs in place for upgrading the infrastructure, including large planned investments in the telecommunications grid (see ch. 8). Service has been improving. In interviews, managers noted that telephone repair personnel now may show up on the same day they are called. Despite complaints about the roads, shipments eventually get through. Many highways are being rebuilt, and private investors are financing a number of new toll roads.

### *Two Paths*

Over the years ahead, Mexico (like the United States) could follow one of two broad development paths, as summarized in table 3-9. The first path, characterized by market-oriented policies and continued deregulation—and thus labeled *laissez-faire in the* table—would extend and expand the policies of the 1980s, when the Mexican Government sought to attract FDI through low wages. The second or ''developmental' path would link elements of Mexico's recent market-oriented approach with policies that reflect the country's traditions of social policy and state intervention in the economy. Because the impacts on U.S. jobs and job opportunities will depend on how the Mexican economy

18 By the end of 1992, Mexico hopes to have privatized all but about *30* companies. Susan Kaufman Purcell, "Mexico's New Economic Vitality,'' Current History, February 1992, pp. 54-58. Mexico's two largest banks, and a number of smaller financial institutions, were reprivatized in 1991, the rest in 1992. Tim Golden, "Mexico Sells Off Last Of 18 Banks at Big Profit,'' *New* York *Times,* July 7, 1992, p. D2. Favored Mexican businesses appear to have gained substantially from privatization. See, for example, "Benefits to Business Supporters of PRI Cited, " ***Daily Report: Lain America,*** FBIS-LAT-92-049, Foreign Broadcast Information Service, Mar. 12, 1992, pp. 10-14, translated from ***Este*** *Pais,* January 1992.

19 The manager of an apparel firm based in Aguascalientes visited for OTA had recently setup a factory in an adjacent rural area where there were no telephones. He kept in touch with his factory by radio. Another producer had built a plant in a small town with only one telephone—on the plaza in the center of town. At the time of the interview, he communicated with this factory by asking whoever answered to walk down the street and have the factory manager call him back. ''The Effect of a North American Free Trade Agreement on US Apparel Employment and Industry Structure, " report prepared for OTA under contract No. 13-0165 by Thomas Bailey and Theo Eicher, May 1992.

**Table 3-9—Alternative Paths for Mexico's Economy**

| | *Laissez-Faire* | *Developmental* |
|---|---|---|
| Government role | Continues to shrink, as the influence of market-oriented technocrats and business interests grows. | Political forces, corporatist heritage, and social policy traditions lead to emphasis on quality of working life, human resource development, and diffusion of the benefits of economic growth to poorer groups and regions. |
| Parallels in other countries | United States, Britain. | Germany, Sweden, South Korea, Singapore. |
| Sectoral industrial policies | Limited to cases where broad consensus favoring government involvement exists (e.g., oil and petrochemicals, telecommunications). | Moderate degree of industrial targeting--e.g., to attract foreign investment, support small- and medium-sized firms, channel investment capital. |
| Trade policy | Continued lowering of barriers. | Selective trade protection within limits set by GAIT and NAFTA discipline. |
| Regional policies | Left primarily to state and city governments. | Federal government steers resources and development assistance to poorer states and cities. |
| Human resource policies | Federal government continues to support basic education but does not pursue aggressive worker training programs. | Government provides steady increases in support for public education, with special programs for poorer regions and population groups (e.g., peasants, Indians). Vocational-technical education expands, along with training programs developed in cooperation with industry and unions, complemented by retraining for displaced workers, especially former agricultural workers. |
| Labor policy | Organized labor loses influence as union coverage declines, government selectively withdraws support, and employers co-opt existing unions. | Independent unions expand with government support; "official" unions become more democratic. Organized labor supports "negotiated flexibility" at the plant level (see ch. 4). Labor standards gradually rise. |
| Implications for Mexico | Industrial development follows a *maquiladora-like* model, with limited productivity growth and little rise in real wages. Mexico remains a site for labor-intensive branch plants operated by or for multinationals. Domestic firms, likewise, seek to compete with imports primarily through low-wage strategies. | Broader based development, with multinationals investing in a growing number of world-class plants relying on sophisticated technology and flexible forms of work organization, as well as labor-intensive production. Domestic firms pursue a greater range of strategies for growth and competitiveness, emphasizing technological upgrading and skill-based products/processes. With political opening, and growing technological and financial resources, environmental protection becomes a higher priority. |
| Implications for U.S. jobs and job opportunities | Threats to U.S. jobs greatest in labor-intensive sectors like apparel. Slow growth in Mexican market limits imports from the United States, hence creation of new jobs here. Large numbers of Mexicans continue to emigrate to the United States. | Some U.S. jobs and job opportunities lost in higher-wage, higher-skill sectors/occupations. Mexico buys more U.S. capital goods as well as consumer goods, thus creating some good new jobs here. With rising wages and living standards in Mexico, and better opportunities at home, emigration slows. |

SOURCE: Office of Technology Assessment, 1992.

develops over the next several decades, the table serves as a guide to much of the rest of the report.

Two major variables distinguish the developmental path from *laissez-faire*. First, the Mexican Government would, over time, define anew but still activist role for itself in development. As a result, policy attention and financing would be directed to bottlenecks such as human resource limitations or backward organizational practices that might otherwise constrain development and leave Mexico heavily dependent on foreign firms. Second, Mexico would establish a new ''social pact' with labor—one that would sustain commitment to flexibility, productivity, and quality improvement-rather than accept or accelerate labor's declining influence.

The path that Mexico ultimately follows will depend on which of two factors with deep roots in the country's history prevails. These two factors are the country's tradition of social solidarity, reflecting the heritage (and mythology) of revolution, and Mexico's older and still strong authoritarian and patriarchal traditions. The structure of the PRI, with

its three ''sectors"—labor, peasants, and an amalgam of middle-class interests called the popular sector—reflects the Mexican notion of society, in which the group takes precedent over the individual. The role of party and government leaders is then to define consensus among the groups. The strength of extended family ties also illustrates the country's social traditions, as does Mexico's high ranking on the quality of life indicators discussed earlier in the chapter (box 3-A). The hierarchical side of Mexico is reflected in high levels of income inequality, the subservient place of women and people of Indian ancestry, the many decades of one-party rule, and the lack of democracy in Mexico's labor unions (as discussed in the next chapter).

Mexico's social traditions are alive and well. Elaborate tripartite structures linking labor, government, and business oversee labor-management relations, the minimum wage system, and profit sharing. During the crisis, government called on its control mechanisms to enforce austerity. Afterwards, spending on education rose, some of it directed to making Mexico more competitive but some also at improving rural schools in poor villages. The government's new "Solidarity" program directs resources to social and infrastructure needs in poor and rural areas. With World Bank money, the Labor Ministry has established a training and industrial extension program to help Mexican workers and businesses adjust to international competition (ch. 5). The mayor of Mexico City has created an urban development program to bring commercial and clean industrial jobs to some of the poorest areas of the city. In the wake of *apertura*, modest programs have been established to help small-and medium-sized firms obtain financing or upgrade their technology. The Mexican government and the World Bank are discussing irrigation projects that would help more farmers move into labor-intensive fruit and vegetable production, thus easing the employment problems that might result from the combination of *edjido* reforms and freer trade in crops like corn.

But the central question—which path will Mexico take?--has no clear answer. Fifty years of regulation and protection have left the country with a bureaucracy accustomed to intervention, Although spending on education has risen, the government has not demonstrated a commitment to human resources—and to raising the necessary tax revenues—comparable to that in industrializing countries in Asia. Except for a few MNCs, neither government nor employers have paid much attention to the critical grey- and blue-collar technical and managerial skills essential to broad-based development. In labor relations, it is not clear whether Mexico will find a new consensus that generates virtuous circles of high worker commitment, high productivity, and rising wages. Achieving such a consensus requires a more independent union movement, hence loss of power by current union leaders—and government and PRI officials-particularly if independent unions join with other parts of civil society to demand political liberalization. Finally, the government and its market-oriented technocrats may believe that wage controls and weak unions are needed to limit inflation, attract foreign capital, and achieve long-term growth.

The pace of Mexican development remains uncertain. In contrast with Korea, Taiwan, and Hong Kong—whose economies are dominated by domestic enterprises--only a handful of Mexican-owned and -operated firms have proven themselves in world markets. There are few analogs in Mexico to Korea's *chaebol* (large conglomerates, including Hyundai and Samsung) or the many dynamic smaller firms in Taiwan. The dense, flexible networks of small companies in Taiwan and Hong Kong have helped those countries move into higher value-added production in response to changing demand. At the same time, government-initiated income redistribution and land reforms—part of post-World War II restructuring in Japan, Korea, and Taiwan-fueled domestic consumption and accelerated development in Asia. Taiwan also redistributed industrial assets that had been in the hands of the Japanese. Moreover, while popular wisdom links Asian development to labor repression, land reforms raised rural incomes, forcing manufacturing firms to pay higher wages to attract workers.

## CONCLUDING REMARKS

To become a full-fledged participant in globalization, Mexico must help its workers learn to function in the sophisticated technological and organizational context of complex international production networks. Failing that, Mexico will remain primarily a site for labor-intensive branch plants. Today, Mexico competes for jobs with such countries as Thailand and Indonesia; if it fails to improve its human resources, it will find itself competing with a poorer group of Third World countries.

Mexico cannot develop through "*maquilazation.' Since* his election, President Salinas has visited Europe and Japan, as well as the United States, seeking investments that can help modernize Mexico's economy. With European governments preoccupied with the new democracies of Central and Eastern Europe and the breakup of the Soviet Union, and with Japan focused on the Pacific Rim and its trade disputes with the United States, Salinas has found himself with little choice but to look northward. Hence his proposal for trade talks with the United States.