


II. MEXICO: INWARD FOREIGN DIRECT INVESTMENT AND CORPORATE STRATEGIES

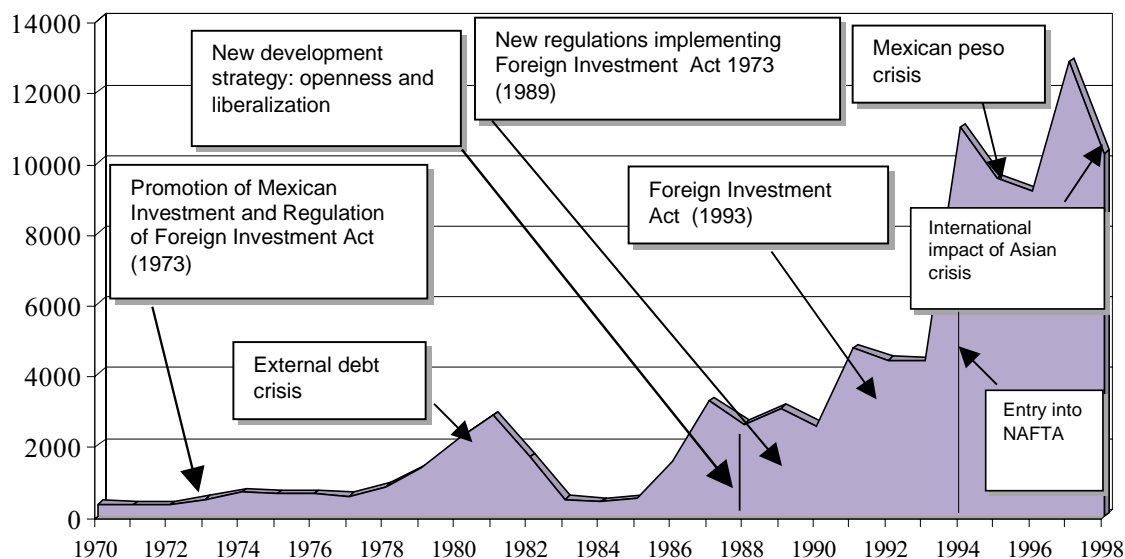


There has been a great deal of growth in foreign direct investment (FDI) inflows to Mexico in the 1990s (see figure II.1). From 1990 to 1995, Mexico received more FDI than any other country in Latin America and the Caribbean and during 1996-1999 it was surpassed only by Brazil (ECLAC, 1998a). These inflows, which rose from under 1% of gross domestic product (GDP) in the 1980s to more than 3% in the 1990s, have had a considerable impact. Their influence has not been limited to the macroeconomic sphere, as they have also played a key role in the generation of the new productive and organizational structure that has developed concurrently with the remarkable modernization of part of the Mexican economy.

In this chapter, the characteristics of FDI inflows to Mexico are discussed against the background of the far-reaching reforms implemented by the national authorities from the mid-1980s onwards, the major changes that have occurred in the world economy in certain industries and their impact on Mexico, and the strong dynamism of the corporate strategies of the

main transnational corporations. In the second part, a more detailed analysis will be made of the main activities to which FDI inflows are channeled, in terms of the two main objectives of the corporate strategies, i.e., to improve efficiency and gain access to markets. The chapter ends with a number of conclusions.

Figure II.1
MEXICO: FOREIGN DIRECT INVESTMENT INFLOWS, 1970-1998
(Millions of dollars)



Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on information provided by the International Monetary Fund and Banco de México.

A. FOREIGN CAPITAL IN THE MEXICAN ECONOMY

1. From nationalism to liberalization

Foreign direct investment has played a major role in some areas of the Mexican economy since the late nineteenth century. The largest capital inflows came from Europe and the United States and were especially oriented towards the mining, petroleum, textile and transport sectors, the exploitation of haciendas and plantations, the expansion of the railway system and a number of service sectors, such as electric power and banking. In 1910, cumulative

foreign investment was estimated at US\$ 2 billion, representing approximately 67%-73% of total investments in the country. These investments played a major part in lowering transport prices and improving communications across a large area of the country (Haber, 1992, p. 27). Furthermore, up to the late 1920s, the fiscal resources generated by foreign capital were instrumental in strengthening the Government (Sherwell, 1992).

A series of major transformations took place from the beginning of the Revolution of 1910 up to the late 1930s. The 1917 Constitution and subsequent legislation assigned the Mexican Government legitimate and inalienable ownership of natural resources, and established the right to strike (both all-out and sit-down strikes). These constitutional changes reflected not only a change in ideology as a result of the Mexican Revolution, but also a growing vigour in the domestic economy. Between 1910 and 1934, despite many disputes between the Government and foreign enterprises, there were no significant changes in levels of foreign capital (Meyer, 1992).

During the presidency of Lázaro Cárdenas (1934-1940), a social, economic and political restructuring took place that laid the foundations for the country's development, at least up to the late 1960s. Land reform and nationalizations, together with economic intervention measures taken by the State in an effort to modernize the country by strengthening domestic industries, were among the main pillars of development during this period. Railway nationalization in 1937 and, most of all, expropriation in the petroleum sector in 1938, had deep repercussions on foreign capital inflows and on the relationship between foreign corporations and the Government. The stock of FDI fell by 42% between 1935 and 1940 (Ornelas, 1989).

Following the Second World War, FDI inflows increased steadily; the average annual increase, which had stood at 2.3% in the 1950s, surged to 8.1% between 1961 and 1970. A number of factors strongly influenced the entry and establishment of FDI in Mexico, including a market that was relatively closed to imports and that limited competition from foreign goods and services by means of tariff barriers (import licences, permits and quotas), other non-tariff barriers and a fixed exchange rate.

Foreign investment showed increasing diversification, as it shifted from agricultural activities towards industry and the services sector. In the early 1970s, the share of foreign capital in manufacturing GDP was over 20%, and was concentrated in chemicals (71.2% of sectoral GDP), machinery and electrical appliances (62.6%), and transport equipment (35.5%) (Sepúlveda and Chamucero, 1973). Between 1940 and 1973, the United States was the main source of FDI inflows to Mexico, which came in steadily increasing amounts, rising from 63.7% to 78.1%. In 1970, it was followed by the Federal Republic of Germany, the United Kingdom, and Switzerland, with 3.4%, 3.3%

and 2.7% of total FDI, in that order (Chapoy, 1975; Sepúlveda and Chamucero, 1973).

The enactment, in March 1973, of the Mexican Investment Promotion and Foreign Investment Regulation Act was a major event in Mexico's economic evolution, as it established the first detailed regulatory framework for FDI. Under this legislation, national policies remained restrictive, and certain activities were reserved solely for the State and for Mexican investors. The State had exclusive control over activities relating to petroleum and other hydrocarbons, basic petrochemicals, the exploitation of radioactive minerals and nuclear power generation, mining, electric power, railways, telegraphic and radiotelegraphic communications, and others for which specific standards were established. There were also other areas that were reserved solely for Mexicans, including radio and television, urban automotive transport, domestic air and sea transport, forestry, gas distribution, and certain areas covered by specific legislation.

Foreign investment was restricted to a maximum 40%-49% share in the capital stock of enterprises and activities involved in the exploitation and development of minerals and secondary products of the petrochemicals industry, the manufacture of parts and components for motor vehicles, and other areas set out in specific legislation. In general terms, this law gave the State discretionary powers to determine in which sectors and activities foreign investment should not exceed 49% of a company's shareholdings. However, foreign investments were allowed to control majority interests in specific projects that were considered desirable for the country's economy.

In the late 1970s, the development model based on industrial import substitution was beginning to show considerable limitations. Stagnation in the private manufacturing sector was reflected in sustained increases in the trade deficit and the capital account, which could no longer be financed by the primary-sector surplus. At that time, oil exports and external borrowing enabled the country to cope with the structural crisis. Despite several decades of direct and indirect incentives, Mexican industry in general had not been integrated into the world economy (Fajnzylber, 1983). The only exceptions were a few branches of manufacturing in which foreign corporations held a substantial interest. In 1982, this situation became unsustainable, giving rise to the so-called external debt crisis.

The strong impact of this crisis led the Mexican authorities to redefine their development strategy and

reconsider the role of foreign investment (Peres, 1990). From 1985 onwards, they implemented a fast-paced trade liberalization programme. Between 1985 and 1987, weighted tariffs fell from 28.5% to 11.8%. In 1987, the maximum tariff was set at 20%. The tariff structure has since remained practically unchanged, except where significant modifications were made as a result of the implementation in 1994 of the North American Free Trade Agreement (NAFTA) (Bank of Mexico, 1999; Dussel Peters, 1997; Ten Kate and De Mateo, 1989). The changes took shape in final form with the signing, in December 1987, of the National Solidarity Pact (Pacto de Solidaridad Económica - PSE), which established that the country's new economic priorities were to develop a dynamic private manufacturing sector and to increase the share of Mexican exports in world markets.

These changes were consolidated during the six-year term of President Salinas (1988-1994). In addition to deregulation and economic liberalization, the authorities began to apply a broad programme of privatization of State assets, conversion of external debt into equity, and across-the-board elimination of direct and indirect subsidies, as well as programmes geared towards specific enterprises, sectors and geographical areas. However, the policy that had the

greatest impact on Mexico was the one aimed at increasing exports by promoting the *maquila* industry.

Initiatives designed to attract foreign investors became a very important element in the new strategy, and from the macroeconomic perspective, foreign investment became one of the largest sources of financing. Policies centred on microeconomics and industrial organization were abandoned, and foreign capital became one of the major factors in economic modernization and in export-oriented strategies in the manufacturing sector.

From that time onwards, the National Foreign Investment Commission (Comisión Nacional de Inversiones Extranjeras - CNIE) became the most important agency in the area of foreign investment policy. Since one of its duties was to set rules, it made a substantial contribution to the interpretation of the law and adapted the existing rules to the increasingly liberal approach of the Mexican Government in this area. In May 1989, in an effort to promote increased foreign investment through clear, self-enforcing rules, the authorities issued regulations to implement the Mexican Investment Promotion and Foreign Investment Regulation Act. Thus, a century that had been marked by a nationalistic approach to foreign investment closed with a policy of rapid liberalization.

2. Integration of Mexico into the world economy – or the North American economy?

The authorities implemented a strategy for improving the country's position in the international context. Mexico acceded to the General Agreement on Tariffs and Trade (GATT) in 1986; joined the Asia-Pacific Economic Cooperation Council (APEC) in 1993 and the Organisation for Economic Co-operation and Development (OECD) in 1994; signed free trade agreements with a number of Latin American countries, including Chile, Costa Rica, and the Group of Three (along with Colombia and Venezuela); implemented the North American Free Trade Agreement (NAFTA) with Canada and the United States in 1994; signed the Economic Partnership, Political Coordination and Cooperation Agreement with the European Union in 1997 and the Free Trade Agreement between Mexico and the European Union in November 1999 (see box II.1). All these measures

—both the internal ones and those resulting from its international economic policy— were aimed at adapting the Mexican economy to the needs and requirements of the “globalizing” transnational corporations, especially United States corporations (Calderón, Mortimore and Peres, 1994).

In practice, Mexico's growing linkages with the world market have entailed increased economic integration with the North American bloc and particularly with the United States economy (Calderón, Mortimore and Peres, 1996). Between 1990 and 1998, the share of North America in Mexico's trade increased from 69% to 82%, and more than two thirds of FDI stocks in Mexico were of United States and Canadian origin (see table II.1). The incorporation of the Mexican economy into the North American bloc is essentially a result, on the one hand, of the country's

Box II.1

**THE FREE TRADE AGREEMENT BETWEEN MEXICO AND THE
EUROPEAN UNION: AN OPPORTUNITY FOR MEXICO TO
DIVERSIFY ITS EXPORT MARKETS?**

Mexico's deepening economic relationship with the European Union is part of the country's broader integration into the world economy and of the correction of certain discriminatory trade practices -the European Union gives better tariff and non-tariff treatment to products from about 100 countries than to those from Mexico (De Mateo, 1999)- but above all it provides an opportunity to counteract Mexico's considerable trade dependence on the United States. During the 1990s, the European Union has lost part of its share in the Latin American market to Asia and the United States, falling from 21% to 16% of the region's total imports (ECLAC, 1999c). Mexico has played a particularly important part in this trend, mostly owing to its privileged economic and trade relations with the United States under the North American Free Trade Agreement (NAFTA). Between 1990 and 1998, the share of Mexico's total imports coming from the United States increased from 66% to almost 75% (see table II.1), while imports from the European Union fell from 17% to 9%. By the middle of the coming decade, according to many European analysts, this trend could be strengthened following the conclusion of negotiations to establish the Free Trade Area of the Americas (FTAA) (IRELA, 1999).

The European authorities have reacted by seeking mechanisms for strengthening and deepening economic and political relations between the two regions, such as the Interregional Framework Cooperation Agreement between the European Community and the Southern Common Market (Mercosur), signed in December

1995, the Economic Partnership, Political Dialogue and Cooperation Agreement between Chile and the European Union, signed in June 1996, and the Economic Partnership, Political Consensus-building and Cooperation Agreement between Mexico and the European Union, concluded in December 1997. All these initiatives provide for the subsequent negotiation of agreements on gradual and reciprocal trade liberalization. This process is progressing to differing extents and at different speeds in the various areas under negotiation.

In July 1998 negotiations began on a free trade agreement between Mexico and the European Union. This process moved forward swiftly, unlike similar initiatives between Europe and the Mercosur countries and Chile, perhaps as a result of Mexico's new status as a member of the Organisation for Economic Co-operation and Development (OECD) and of NAFTA. A year later, following nine rounds of negotiations between the Mexican and European delegations, the negotiations were concluded on 24 November 1999.

Disagreements had been overcome in the areas of market access, rules of origin, investment and industrial tariffs. Meat products, dairy products and grains were left out of the agreement and may be the object of future negotiations. Also, the agreement did not cover the area of government procurement, which is expected to be added at a later stage.

The objective of the agreement is a gradual liberalization of bilateral trade, taking into account economic disparities between Mexico and its future European

partners. Under the provisions of the agreement regarding market access, the European Union will liberalize 82% of its trade when the agreement comes into force, with the remaining 18% being postponed until 2003. The opening up of the Mexican market will take place in four stages. In mid-2000, Mexico will remove tariffs on 47.6% of imports from Europe. Subsequently, tariffs on 5.1%, 5.6% and 41.7% will be eliminated in 2003, 2005 and 2007, respectively. For the textiles, apparel and footwear sectors, the automotive industry and agricultural products, special treatment will be given in respect of rules of origin and the timetable for liberalization. The final deadline for liberalization in the agricultural sector is 2010. The most complex parts of this agreement relate to the liberalization of financial services and the definition of rules of origin; in the latter area, agreement was reached on 80% of industrial products. These advances were made possible by the adoption of a more flexible position on the part of Mexico, which accepted an increase from 30% to 70% in the level of European or Mexican content required for products to be covered by the agreement. For some of Mexico's most important export sectors, such as the automotive industry, electronics and textiles, negotiations were more difficult. Agreement was reached concerning the automotive industry at the last possible moment. According to Mexican government officials, the agreement reached in relation to rules of origin should enable Mexican auto-parts producers to export to the European Union.

Box II.1 (concluded)

Following ratification by the Mexican Senate and the European Council and Parliament, the agreement should come into force on 1 July 2000. Mexico will then be the only country in the world having free trade agreements with six Latin American countries -Bolivia, Chile, Costa Rica, Ecuador, Nicaragua and Venezuela- and with the world's two biggest markets: North America and the European Union. This process

has become the most ambitious trade liberalization programme ever undertaken by the European Union, since it extends to all areas of bilateral trade. Unlike its trade with the United States, Mexico's trade with the European Union shows a considerable deficit (US\$ 5.3 billion in 1998 and US\$ 4.7 billion from January to August 1999). This deficit is expected to trend downward, as it did in the case of the United States, with which

Mexico has had a trade surplus since 1995. Foreign direct investment flows from Europe are also expected to increase, partly because of Mexico's potential as a springboard for exports to the NAFTA area and Latin America. This would contribute to a more sound form of financing for the balance-of-payments current account deficit, which over the past 20 years has triggered a series of crises having to do with the external-sector deficit.

Source: ECLAC, Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management.

efforts to improve competitiveness abroad as it is faced with the existence of a new international industrial order, and, on the other, of the fact that it is attractive to North American transnational corporations, as they strive to improve their competitiveness with respect to Japan and the European Union (Mortimore, 1998a).

In 1993, in anticipation of the implementation of NAFTA, the Mexican authorities amended the regulatory framework for FDI so as to adapt it to the new development strategy. They eliminated numerous restrictions on foreign investment that had existed since the enactment of the 1973 law.²⁷ New legislative changes were subsequently introduced for specific sectors (such as telecommunications, railways and finance), and in 1998, regulations were enacted implementing an amendment to the 1996 Foreign Investment Act, to bring the Mexican law in line with the provisions of NAFTA. Those provisions then

became the frame of reference and the "ceiling" applied by the Mexican authorities in all bilateral or multilateral negotiations on trade and investment. These criteria have been applied in negotiations on the OECD Multilateral Agreement on Investment (MAI), and in Mexico's participation in forums of the World Trade Organization (WTO) and the Free Trade Area of the Americas (FTAA).

All these changes were reflected in a considerable improvement in the performance of exports, mainly of manufactured goods, to the industrialized countries. Between 1989 and 1997, the average annual growth rate of exports of manufactured goods, in real terms, was 14%; this was four times higher than average output growth for the sector (Máttar and Peres, 1999). The share of these exports (not including those of the *maquila* sector) in the sectoral GDP rose from 34% to 58% between 1994 and 1996. Thanks to this

27 The regulatory framework for FDI was approved on 27 December 1993, after NAFTA was signed and a few days before it was implemented. The 1973 law and the corresponding 1989 regulations had established restrictions on foreign investment in 142 items of the Mexican Classification of Activities and Products. Some were reserved exclusively for the State or for Mexican nationals, and for others, only a minority interest was allowed, or prior authorization from the National Foreign Investment Commission (CNIE) was required. The legislation currently in force permits FDI participation in most economic activities: of the 704 listed in the Mexican Classification, 606 are fully open to foreign capital, a share of up to 49% is permitted in 35 others, prior authorization from CNIE is required in 37, and FDI participation is not allowed in only 16 cases.

Table II.1
MEXICO: PRINCIPAL ECONOMIC RELATIONS WITH NORTH AMERICA
(Millions of dollars and percentages)

	1990 ^a		1994		1998	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Total exports	40 771	100.0	60 882	100.0	117 183	100.0
United States	28 254	69.3	51 943	85.3	101 809	86.9
Canada	326	0.8	1 470	2.4	1 716	1.5
Total imports	41 592	100.0	79 346	100.0	124 923	100.0
United States	27 492	66.1	57 009	71.8	92 976	74.4
Canada	541	1.3	1 600	2.0	2 255	1.8
Total trade	82 363	100.0	140 228	100.0	242 106	100.0
United States	55 746	67.7	108 952	77.7	194 785	80.5
Canada	867	1.1	3 070	2.2	3 971	1.6
FDI stocks	35 997	100.0	55 152	100.0	85 697	100.0
United States	23 220	64.5	32 609	59.1	51 443	60.0
Canada	506	1.4	1 410	2.6	2 330	2.7

Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on data provided by the International Monetary Fund and the Ministry of Commerce and Industrial Development of Mexico (SECOFI).

^a Estimated figures, owing to a change in the accounting method used in Mexico for external trade and FDI.

performance, Mexico was the country that achieved the greatest growth, after China, in terms of its share in goods imports of the OECD countries. Between 1980 and 1996, its competitive position on the North American market improved significantly (see table II.2). Mexico's share in that market's imports rose from 4.0% to 7.5%, with the greatest increase occurring between 1990 and 1996. While progress in the area of natural resources was erratic, the competitiveness of manufactures improved considerably. The structure of Mexican exports to the North American market underwent a fundamental change: in 1980, natural resources (especially crude oil) accounted for 63 of such exports, whereas in 1996, manufactures, especially those not based on natural resources, represented 79%. In 1996, eight of the ten main export products (SITC Rev. 2, 3 digits) represented imports that were showing growth on the North American scene, and Mexico made market gains in seven of them. Mexico managed to specialize in products that were strong on the North American market, especially in the automotive and electronics industries (see table II.2).

Between 1993 and 1998, the share of the largest foreign companies in Mexico's total exports, including *maquila* firms, increased from 56.5% to 64.2%. Some

of these branches of industry—including television sets (63.5%), metering equipment (55.4%), and electric power distribution equipment (53.8%)—have achieved a strong position in North American imports (Máttar and Peres, 1999). This reflects the strategy of the North American transnational corporations, which have seen their operations in Mexico as an opportunity to improve their overall efficiency—thanks to reduced costs and easy access to North American markets—, particularly in the automotive, electronics and clothing sectors. Mexico has risen to third place among the countries of origin of total imports into the United States. It also holds third place in motor vehicle imports, and first place in electronics and clothing (see table II.3).

Although considerable emphasis is placed on exports in the strategies of foreign enterprises in Mexico, the local market is also very attractive to them. Many transnational corporations have increased their market share in some manufacturing activities, irrespective of trade liberalization, usually by acquiring local companies, e.g., in the food, beverages and tobacco industries. In recent years, foreign investors have focused, in particular, on services sectors that have been deregulated, liberalized or privatized.

Table II.2
MEXICO: INTERNATIONAL COMPETITIVENESS IN NORTH AMERICA
(UNITED STATES AND CANADA)
(Percentages)

	1980	1985	1990	1996
I. Market share	4.00	4.39	5.09	7.54
Natural resources (1+2+3)	6.31	9.30	7.15	8.16
Agriculture (1)	5.09	5.43	6.97	7.71
Energy (2)	6.99	12.13	7.39	8.58
Textile fibres, minerals and metallic ores (3)	3.78	7.23	6.17	7.88
Manufactures (4+5)	2.38	2.87	4.49	7.39
Natural-resource based (4)	3.54	3.72	3.88	4.03
Non natural-resource based (5)	2.24	2.78	4.47	7.49
Others (6)	4.24	3.84	6.91	8.30
II. Share (export structure)	100.0	100.0	100.0	100.0
Natural resources (1+2+3)	63.0	49.1	27.8	17.2
Agriculture (1)	13.3	10.9	10.4	7.0
Energy (2)	47.6	36.0	15.7	9.1
Textile fibres, minerals and metallic ores (3)	2.2	2.3	1.6	1.1
Manufactures (4+5)	34.1	48.0	67.8	79.0
Natural-resource based (4)	4.2	3.6	3.1	2.1
Non natural-resource based (5)	29.9	44.5	64.7	76.9
Others (6)	2.8	2.9	4.5	3.9
III. Share of 10 main exports	a	b	56.9	51.1
781 Passenger vehicles	*	+	0.0	1.0
333 Crude petroleum oils		+	42.9	31.4
773 Equipment for distributing electricity	*	+	1.4	3.2
764 Telecommunications equipment, parts and accessories		-	5.9	4.4
784 Motor vehicle parts and accessories	*	+	1.6	3.2
761 Television receivers	*	+	0.1	0.7
931 Special transactions and commodities not classified according to kind	*	+	2.8	2.8
782 Motor vehicles for the transport of goods		+	0.0	0.7
713 Internal combustion piston engines and parts thereof	*	+	0.7	5.6
772 Electrical apparatus for opening and closing electrical circuits	*	+	1.6	2.0
			3.0	3.0
			2.0	2.7

Source: ECLAC, based on the ECLAC Competitive Analysis of Nations computer program (CAN PLUS).

Categories of goods based on the Standard International Trade Classification (SITC, Rev. 2):

(1) Sections 0, 1 and 4; chapters 21, 22, 23, 24, 25 and 29

(2) Section 3

(3) Chapters 26, 27 and 28

(4) Chapters 61, 63 and 68; groups 661, 662, 663, 667 and 671

(5) Sections 5 and 6 (minus the chapters included in 4), sections 7 and 8

(6) Section 9.

^a (*) Groups corresponding to the 50 fastest-growing products on the North American market, 1980-1996.

^b Groups in which market share is gained (+) or lost (-), 1980-1996.

Table II.3
UNITED STATES: IMPORTS IN SELECTED INDUSTRIES
(Millions of dollars and percentages)

	1990	1994	1995	1996	1997	1998	1998 (%)
Total	495 261	663 828	743 506	791 560	869 876	907 647	100.0
Canada	91 376	128 947	145 117	156 586	168 048	174 685	19.3
Japan	89 657	119 143	123 578	115 218	121 357	121 313	13.4
Mexico	30 172	49 493	61 705	72 968	85 830	93 017	10.3
China	15 224	38 781	45 555	51 507	62 552	70 815	7.8
Germany	28 109	31 749	36 847	38 944	43 069	49 769	5.5
Automotive industry^a	73 908	97 012	102 327	105 519	114 899	126 313	100.0
Canada	26 272	38 116	40 661	41 398	44 318	46 323	36.7
Japan	27 607	34 521	31 915	28 988	31 143	34 767	27.5
Mexico	3 656	7 134	10 316	14 046	15 387	16 732	13.3
Germany	7 132	6 971	7 974	8 863	10 374	13 810	10.9
United Kingdom	1 744	1 854	2 309	2 376	2 708	2 967	2.4
Electronics industry^b	58 154	94 393	114 182	114 597	122 093	124 581	100.0
Mexico	7 745	14 385	16 478	18 702	21 883	24 400	19.6
Japan	19 153	26 076	29 266	25 304	24 686	22 870	18.4
China	1 926	6 522	7 886	8 907	10 561	12 573	10.1
Canada	4 568	5 778	6 930	8 395	9 087	9 763	7.8
Malaysia	3 000	8 019	10 113	9 777	9 483	8 346	6.7
Clothing industry^c	22 981	33 250	36 103	37 930	44 646	49 719	100.0
Mexico	642	1 786	2 779	3 743	5 245	6 701	13.5
China	3 197	5 086	4 653	5 026	5 998	5 661	11.4
Hong Kong	3 863	4 324	4 261	3 928	3 973	4 437	8.9
Dominican Republic	686	1 538	1 698	1 720	2 189	2 311	4.7
Taiwan	2 248	2 022	1 917	1 825	1 948	2 000	4.0

Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on data obtained with the ECLAC computer program MAGIC.

^a Refers to chapter 87 of the Harmonized System.

^b Refers to chapter 85 of the Harmonized System.

^c Refers to the sum of chapters 61 and 62 of the Harmonized System.

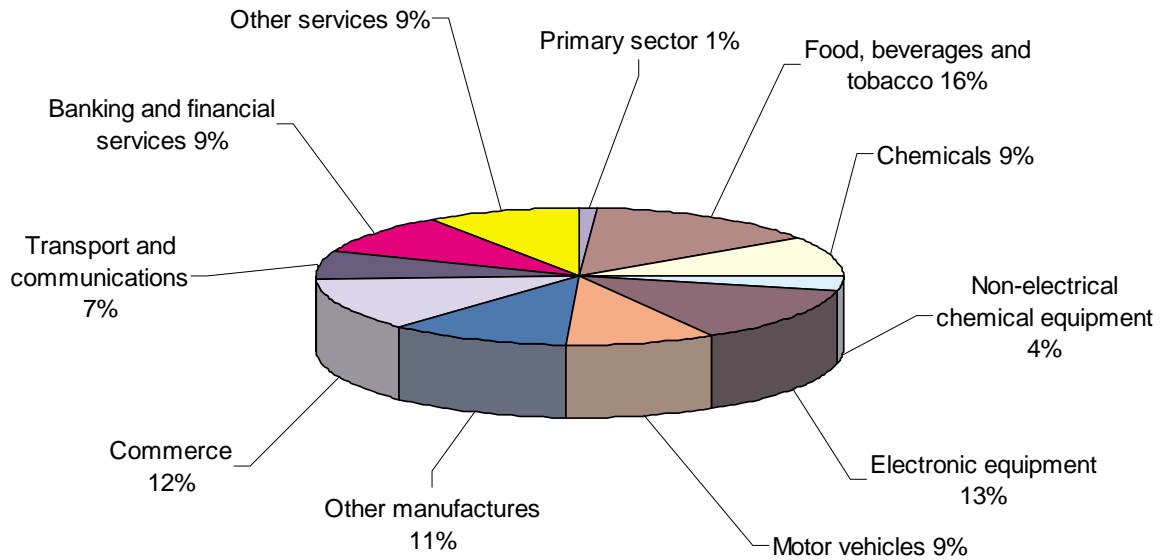
3. Foreign direct investment in the 1990s: an essential element in Mexico's position on the international market

Over the last 15 years, FDI inflows have shown considerable growth (see figure II.1). More than half of these inflows have gone into the manufacturing sector (ECLAC, 1998, p. 74). During the 1994-1998 period, 61% of investments were concentrated in manufacturing activities, particularly those oriented towards export markets. The electronics and computer industries, particularly those operating under the *maquila* system, and the automotive industry have become the fastest-growing recipients of FDI inflows in Mexico (see figure II.2). As regards production for the local market, FDI has been concentrated in food, beverages and tobacco (16% of the total) and chemicals (9%). In beverages and tobacco, the large flows of FDI

have resulted from a wave of mergers and acquisitions in 1997 and 1998 (ECLAC, 1998, p. 76). In 1998, there was a steep fall in FDI flows owing to the international crisis. It appears that this situation remained unchanged in 1999 (see table I.12).

The *maquila* industry has attracted a fast-growing share of foreign investment flows in recent years. Between 1994 and 1998, about 28% of FDI inflows to the manufacturing sector went into this industry. These resources were mainly used for importing machinery and equipment for production purposes. These investments consist of fixed assets brought in by parent companies in foreign countries to their subsidiaries in Mexico, on a commodatum (loan-for-use) basis,

Figure II.2
**MEXICO: SECTORAL DISTRIBUTION OF FOREIGN DIRECT
 INVESTMENT INFLOWS, 1994-1998**
 (Percentages)



Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on information provided by the Department of Foreign Investment of the Ministry of Commerce and Industrial Development (SECOFI) (Mexico).

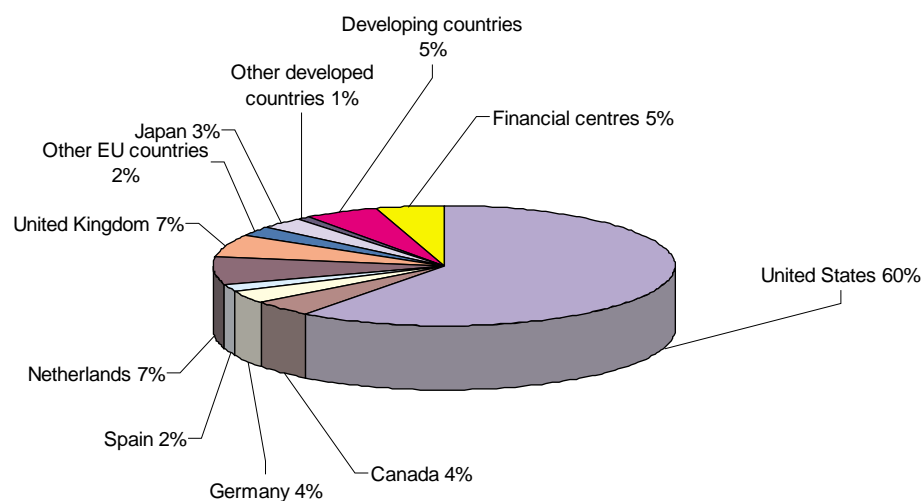
whereby the use of the asset is transferred cost-free to the *maquila* enterprise to enable it to carry on its activity, but ownership of the asset is not transferred, and the Mexican company cannot include it in its accounts (SECOFI, 1999a).

Between 1994 and 1998, 37% of FDI inflows went to services, particularly commerce and the financial and telecommunications sectors (see figure II.2). In most cases, the foreign investors entered the Mexican market by purchasing blocks of shares in financial institutions —mainly banks, insurance companies and pension funds— and in local retail chains. The fall in prices of assets owing to the devaluation of the peso has strengthened this process, which was particularly intensive in the case of transfers to foreign institutions of a part of the capital stock of privatized banks in the early 1990s (ECLAC, 1998a, p. 74).

During the same period, about two thirds of FDI inflows came from NAFTA countries —60% from the United States and 4% from Canada. The European Union as a whole was the source of 22%, the main contributors being the United Kingdom, the Netherlands and Germany. As in most countries of the region, Asian investors played a smaller part; the most significant flows from Asia came from Japan and went to the electronics and automotive industries (see figure II.3 and table II.4).

Foreign direct investment, particularly by transnational corporations, has therefore taken on a leading role. Direct foreign investors hold sizeable stakes in six of Mexico's 10 largest companies (*Expansión*, 21 July 1999). Foreign corporations are dominant in several of the major growth areas of the Mexican economy, especially in export-intensive

Figure II.3
**MEXICO: GEOGRAPHICAL DISTRIBUTION OF FOREIGN DIRECT
 INVESTMENT INFLOWS, 1994-1998**
 (Percentages)



Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on information provided by the Department of Foreign Investment of the Ministry of Commerce and Industrial Development (SECOFI) (Mexico).

sectors. Particularly noteworthy are motor vehicle manufacturers (General Motors, Daimler-Chrysler, Volkswagen, Ford and Nissan) and electronics companies (General Electric, Hewlett-Packard, IBM, Sony, Philips, Samsung and Matsushita) (see table II.4). Likewise, foreign capital seems to be making inroads in the food, beverages and tobacco industries (PepsiCo, Nestlé, Coca-Cola, British American Tobacco) and in some infrastructure and service activities (France Telecom, Wal Mart).

An analysis of the behaviour of FDI flows by sector of destination, country of origin, and type reveals some of the main strategy goals of foreign investors in the Mexican economy:

- To increase the efficiency of integrated production systems of transnational corporations in the North American market. This strategy has been particularly evident in the automotive, computer and electronics, and clothing industries, where the need to cut costs and the potential opportunities for

exports to the broader NAFTA market were determining factors in the location of productive investments in Mexico. Before NAFTA, the development of the *maquila* industry was also decisive in this regard, as it enabled foreign investors to take advantage of the considerable tariff exemptions granted by the United States (HTS rule 9802) to *maquila* enterprises that assembled inputs of United States origin. In 1998, Mexico's *maquila* industry accounted for 45% of total exports, and its main export market was the United States.

- To gain access to local markets having high growth potential. This has been particularly true in the case of financial services, telecommunications, retail trade and certain manufacturing activities, such as foodstuffs, beverages and tobacco. In general, access to the Mexican market or expansion within it have been achieved through acquisitions of existing enterprises (see table I.6, on acquisitions, in ECLAC, 1998a).

Table II.4
MEXICO: PRINCIPAL COMPANIES WITH FOREIGN PARTICIPATION, 1998
(Millions of dollars and percentages)

Company	Activity	Sales	Foreign investor	Foreign capital (%)	Country of origin	Exports
Teléfonos de México (TELMEX)	Tele-communications	8 564	Southwestern Bell Corp./ France Telecom	10 ^a	United States/ France	1 166
General Motors de México	Automotive	7 464	General Motors Corp.	100	United States	5 665
Daimler-Chrysler de México	Automotive	6 177	Daimler Benz	100	Germany	4 890
Cifra and subsidiaries	Commerce	5 634	WalMart Stores	53	United States	...
Volkswagen de México	Automotive	4 927	Volkswagen A. G.	100	Germany	3 682
Ford Motor Co.	Automotive	4 211	Ford Motor Company	100	United States	2 398
Sabritas S.A.	Foodstuffs	2 638	PepsiCo	100	United States	0
General Electric de México	Electronics	2 325	General Electric	100	United States	893
Nissan Mexicana S.A.	Automotive	1 840	Nissan Motor Co.	100	Japan	1 405
Nestlé México	Foodstuffs	1 648	Nestlé A.G.	100	Switzerland	91
Hewlett-Packard de México	Electronics	1 634	Hewlett Packard	100	United States	1 383
IBM de México	Computers	1 487	IBM Corporation	100	United States	...
Femsa-Cerveza	Beverages	1 451	John Labatt Limited	30	Canada	89
Coca Cola-Femsa	Beverages	1 392	The Coca-Cola Company	30	United States	...
Kimberly-Clark de México	Pulp and paper	1 345	Kimberly-Clark	47	United States	109
Nadro S.A. de C.V. ^b	Commerce	1 182	McKesson Corp.	23	United States	0
Delnosa S.A. de C.V.	Auto parts	1 166	General Motors Corp.	100	United States	1 166
Sony de Tijuana	Electronics	1 144	Sony Corporation	100	Japan	1 144
Grupo Celanese	Petrochemicals	1 119	Hoechst Group	100	Germany	385
NEC de México	Electronics	1 095	Nippon Electric Co.	100	Japan	...
SCI Systems ^b	Electronics	1 054	SCI Systems	100	United States	1 054
Philips Exportadora S.A.	Electronics	1 043	Philips A.G.	100	Netherlands	1 043
Cigarrera La Moderna	Tobacco	1 021	British American Tobacco (BAT)	100	United Kingdom	774
Mabe S.A.	Household appliances	1 007	General Electric	48	United States	427
Procter & Gamble de México	Chemicals	1 002	Procter & Gamble	100	United States	...
Grupo Kodak	Photography	985	Kodak	100	United States	629
Grupo Modelo	Beverages	793	Anheuser-Busch	50	United States	...
Ispat Mexicana ^b	Iron and steel	783	Ispat Group	100	India	619
Rockwell Automation de México	Electronics	780	Rockwell	100	United States	780
Colgate Palmolive S.A. de C.V.	Chemicals	...	Colgate Palmolive Co.	100	United States	...
Apasco S.A. de C.V.	Cement	685	Holderbank Group	100	Switzerland	...
Siemens S.A. de C.V.	Electrical machinery	674	Siemens A.G.	100	Germany	162
Deltrónicos de Matamorosb	Electronics	635	General Motors Corp.	100	United States	635
Tubos de acero de México	Iron and steel	616	Grupo Techint	130	Argentina	...
Bayer de México	Chemicals	602	Bayer A.G.	100	Germany	...
Pepsi-Gemex S.A.	Beverages	600	PepsiCo	25	United States	...
Unilever de México	Cleaning agents/ Hygiene	545	Unilever	100	United Kingdom	...
Grupo BASF de México	Chemicals	542	BASF A.G.	100	Germany	82
Cigatam S.A. de C.V.	Tobacco	536	Philip Morris	21	United States	0
Samsung ^b	Electronics	531	Samsung Corporation	100	Rep. of Korea	531
Matsushita S.A. de C.V.	Electronics	516	Matsushita Electric Co.	100	Japan	516
Kenworth Mexicana	Automotive	516	Kenworth Motor Truck Co.	100	United States	...
Xerox Mexicana S.A. de C.V.	Electronics	515	Xerox Corporation	100	United States	302
Motorola de México S.A.	Electronics	514	Motorola	100	United States	280
Kemet de México S.A. de C.V. ^b	Electronics	513	Kemet Electronics	100	United States	513
SlA Electrónica de Baja California ^b	Electronics	512	Sanyo Corp.	100	Japan	512
Favesa S.A. de C.V.	Auto parts	507	Lear Corporation	100	United States	507
Ericsson Telecom S.A. de C.V.	Electronics	500	Ericsson LM	100	Sweden	...
DuPont S.A. de C.V.	Chemicals	498	Du Pont de Nemours	100	United States	161
Sears Roebuck de México	Commerce	451	Sears Roebuck	100	United States	...
Lear Corporation México	Auto parts	445	Lear Siegler Systems	100	United States	277
Daimler Benz	Automotive	428	Daimler Benz	100	Germany	...
Industrias John Deere	Machinery	422	John Deere	100	United States	151
Daewoo de México S.A. ^b	Electronics	416	Daewoo Electronics Corp.	100	Rep. of Korea	416
LG Electronics Mexicob	Electronics	408	LG Electronics	100	Rep. of Korea	408
Compaq Computer SA	Electronics	392	Compaq Computer	100	United States	...
Embotelladoras Argos S.A.	Beverages	358	The Coca-Cola Company	20	United States	0

Table II.4 (concluded)

Company	Activity	Sales	Foreign investor	Foreign capital (%)	Country of origin	Exports
JVC ^b	Electronics	356	Matsushita Electronics	100	United States	356
Avon Cosmetics S.A. de C.V.	Pharmaceuticals	...	Avon Products Inc.	100	United States	...
Alcatel Indetel S.A. de C.V.	Electronics	...	Alcatel Alsthom	100	France	...
3M de México S.A. de C.V.	Chemicals	326	3M	100	United States	...
Mexinox S.A. de C.V.	Iron and steel	320	Krupp Thyssen GmbH	100	Germany	189
Grupo Iusacell	Tele-communications	309	Bell Atlantic	42	United States	0
Acer Computer Latino América	Electronics	303	Acer Inc.	50	Taiwan	218
Delphib	Auto parts	290	Delphi Automobile Systems	100	United States	290
Hitachi de México S.A. ^b	Electronics	280	Hitachi	100	Japan	280
Poliqles S.A. de C.V.	Petrochemicals	273	BASF AG	50	Germany	...
STB ^b	Electronics	267	STB Systems Inc.	100	United States	267
Grupo Smurfit Cartón y Papel de México	Pulp and paper	260	Jefferson Smurfit Group	100	Ireland	0
Pilgrim's Pride S.A. de C.V. ^b	Foodstuffs	257	Pilgrim's Pride Corp.	100	United States	...
Hyundai de México S.A. de C.V.	Automotive	257	Hyundai Corporation	100	Rep. of Korea	257
Nemak ^b	Auto parts	241	Ford Motor Company	20	United States	120
Electrónica BRK	Electronics	239	First Alert Inc.	100	United States	239
Nokia Reynosab	Electronics	227	Nokia	100	Finland	227
Internacional de Cerámica	Non-metallic minerals	222	Interceramic	75	United States	118
Schneider Electric México	Electrical equipment	215	Schneider Electric	100	France	59
Caterpillar México S.A. de C.V. ^b	Machinery	203	Caterpillar	100	United States	203
Ciba de México ^b	Chemicals	199	Ciba Chemicals Corp.	100	Switzerland	64
Elamex S.A. de C.V. ^b	Machinery	194		45	United States	194
Sanmex S.A. de C.V. ^b	Electronics	189	Sanyo Corp.	100	Japan	189
Roche-Syntex ^b	Chemicals	180	La Roche	100	Switzerland	...
Price Pfister de México S.A. ^b	Metals	176	Price Pfister, Inc.	100	United States	176
Electrónica Clarion	Electronics	175	Clarion Co. Ltd.	100	Japan	153
Smithkline Beecham México	Pharmaceuticals	173	SmithKline Beecham plc	100	United Kingdom	...
EDS de México S.A. de C.V.	Electronics	168	Electronic Data Systems	100	United States	...
Albright & Wilson Troy de México	Chemicals	156	Albright & Wilson plc	100	United Kingdom	...
Dirona	Auto parts	155	Rockwell International	50	United States	...
Gillette de México S.A.	Chemicals	147	Gillette	100	United States	...
Honda de México S.A. de C.V.	Automotive	144	Honda Motors Co.	100	Japan	...
Olivetti Mexicana	Electronics	134	Olivetti Spa	100	Italy	52
Eli Lilly y Cía. de México	Pharmaceuticals	129	Eli Lilly & Company	100	United States	...
Alestra	Tele-communication	119	ATT	49	United States	...
Becton Dickinson de México	Pharmaceuticals	111	Becton Dickinson	100	United States	...
Singer Mexicana	Machinery	105	Singer Sewing Machine	100	United States	...
Dovaton de México S.A. de C.V.	Electronics	100	Dii Group Inc.	100	United States	73
Black & Decker S.A. de C.V.	Machinery	99	Black & Decker	100	United States	44
Dal-Tile México S.A. de C.V.	Non-ferrous minerals	97	Dal-Tile	100	United States	76
Mobil Oil de México S.A. C.V.	Petrochemicals	93	Mobil Corp.	100	United States	...
Cementos Portland Moctezuma	Non-ferrous minerals	90	Ciment Molins/Grupo Buzzi	66	Italy	...
BASF Pinturas	Chemicals	86	BASF AG	100	Germany	...
Merck México S.A.	Chemicals	83	Merck KgaA	100	Germany	...
Terza S.A. de C.V.	Textiles	79	Shaw Industries	50	United States	38
SKF de México S.A. de C.V.	Metals	74	SKF AB	100	Sweden	...
Grupo Echlin Automotriz	Auto parts	74	Diana	...	United States	...
NCR de México S.A. de C.V.	Electronics	69	NCR Corp.	100	United States	...
No Sabe Fallar S.A. de C.V.	Other manuf.	69	BIC	100	France	...

Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on *Expansión*, "Las 500 empresas más importantes de México", 21 July 1999; *Expansión*, "Las 100 multinacionales más importantes de México", 15-29 September 1999; *América economía*, "Las mayores empresas de América Latina", special edition, 29 July 1999; and *América economía*, "Los 200 mayores exportadores ... y los 100 mayores importadores", 26 August 1999.

^a Although they own only 10% of the capital, Southwestern Bell Corporation and France Telecom hold equal shares of a 49% block of AA-type voting shares.

^b Export companies, mostly in the maquila industry, which sell close to 100% of their output in external markets.

B. TRANSNATIONAL CORPORATION STRATEGIES IN MEXICO

1. The pursuit of efficiency to improve competitiveness on the North American market

In Mexico, efficiency criteria were applied mainly to the automotive, electronics and apparel industries, especially those operating under the *maquila* system. The automotive industry was the focus of a special chapter in the 1998 report, and a chapter on the apparel industry is included in this edition. Consequently, in this section, more emphasis will be placed on the electronics industry.

(a) United States corporations lay their stakes on the Mexican automotive industry²⁸

Since the 1960s, the automobile industry has been one of the most dynamic sectors of the Mexican economy and the one that has received the most government support (Mortimore, 1995). Between 1962 and 1989, it was the subject of five official decrees aimed at its development and received direct subsidies, while commercial and local performance requirements were established and, in general, efforts were made to enhance its integration into the Mexican economy. From a normative standpoint, however, the North American Free Trade Agreement (NAFTA) accounts in no small measure for the recent dynamism of this subsector.²⁹

The overwhelming advance of Japanese firms on world automobile markets and the challenge they pose to competing industries led the United States and European companies to change their global strategies

(ECLAC 1998a). Thus, integrated production systems, just-in-time production and the development of cheap factors of production were the main elements that determined the strategy of these companies. From the early 1990s on, as a result of the signing of NAFTA, Mexico became increasingly important in the global strategies of the main transnational corporations of the subsector, especially United States firms, as they sought to improve their competitive position on the United States market by selling vehicles assembled in Mexico. The Mexican authorities responded proactively to these international market trends by securing foreign investment and promoting export activities (Camacho Sandoval, 1999; Mortimore, 1998a).

In this context, the automotive industry established in Mexico underwent radical structural changes and exports became the engine of growth. In 1999, in fact, Mexico's motor vehicle production was higher than that of Brazil (*Gazeta Mercantil Latino Americana*, 13-19 September 1999). Automobile production almost tripled between 1980 and 1998, to stand at 1,475,000 units in 1998. During the same period, the share of exports in total output grew steadily, from 3.7% to 68.6%. This trend was interrupted only by the 1994-1995 crisis, which caused a sharp slump in domestic sales (see table II.5). Currently, with the domestic market staging a recovery of sorts, it is estimated that in the coming years, exports

28 For further details, see chapter IV of ECLAC (1998a), "The Automotive Industry: Investment and Corporate Strategies in Latin America".

29 The NAFTA text stipulates that between 1994 and 1998, *national value added* for the production of finished vehicles would be maintained at 34%, and that it would subsequently be reduced by 1% per year until 2003. As from 2004, only the *regional value added* of NAFTA countries, set at 62.5%, would apply. Similarly, performance requirements for the end-use industry would be eliminated in 2004. Domestic sales from the *maquila* industries—which are significant in the case of end-use sectors and parts and components—are expected to increase steadily, from 55% in 1994 to 100% from 2001 onwards. (BANCOMEXT, 1996; Ruiz Durán, Dussel Peters and Taniura, 1997).

Table II.5
MEXICO: PERFORMANCE OF THE AUTOMOTIVE INDUSTRY, 1990-1998
(Billions of dollars and percentages)

	1990	1994	1995	1996	1997	1998
Production (thousands of vehicles) ^a	821	1 097	931	1 211	1 338	1 475
for the domestic market	544	522	152	240	354	464
for export	277	575	779	971	984	1 011
Employees (thousands of persons)	57.6	49.7	41.8	44.3	44.8	...
Exports	4.5	10.4	15.3	19.6	20.8	...
to North America (%) ^b	91.2	90.3	94.0	...	...	...
as a percentage of imports into North America (%)	4.7	7.9	8.6	10.9	...	...
as a percentage of total Mexican exports to North America (%)	15.6	20.8	19.9	21.6	21.8	...
Imports	5.8	11.5	9.5	10.4	13.0	...
Trade balance	-1.3	-1.1	5.8	9.2	7.8	...

Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies of the Division of Production, Productivity and Management, on the basis of information provided by the Asociación Mexicana de la Industria Automotriz (AMIA) and the ECLAC Competitive Analysis of Nations (CAN) software.

^a Passenger, commercial and other vehicles.

^b Canada and the United States.

will represent approximately 60% of total output, and national sales will be concentrated on compact cars. Lastly, especially since the signing of NAFTA, new parts and components producers, as well as producers of finished vehicles, have entered the market (Honda, Mercedes Benz, BMW and Volvo). All these “newcomers” already have production and distribution centres in the United States and will have to assess their operations in Mexico—which amounted to less than 10,000 units in 1998—in the light of their global corporate strategies. The alliance between Chrysler—the fourth largest motor vehicle producer worldwide—and Daimler Benz will certainly have a major effect on Mexico, although it is still too early to make estimates in this regard.

Recently, vast sums have been invested in the automotive sector, and this trend is expected to be maintained over the next few years. Projected investments for the period 1998-1999 were expected to be in excess of US\$ 5.5 billion. This figure includes plans by Daimler-Chrysler to set up eight plants in the country at a cost of US\$ 1.5 billion, and the recent injection of US\$ 170 million in a new stamping plant in Saltillo. Ford plans to invest a further US\$ 1.5 billion in Chihuahua in plants for producing engines, around 90% of which will be geared to the export market. All

this attests to Mexico’s growing importance in the global strategies of these corporations.

The Mexican subsidiaries of General Motors, Daimler-Chrysler, Volkswagen and Ford have become the leading export companies in the country and in Latin America as a whole (see tables I.14 and II.4). To their high levels of investment, the Mexican subsidiaries have added a steadily increasing participation in total NAFTA production (Mortimore, 1998; Ruiz Durán, Dussel Peters and Taniura, 1997). Between 1990 and 1998, following the country’s incorporation into the integrated production systems of United States automotive firms, motor vehicle exports from Mexico to the United States soared from US\$ 2.883 billion to US\$ 17.645 billion. In the same period, the United States accounted for about 90% of the market. These structural changes apply not only to United States companies, but also to those of other origins, such as Volkswagen (see box II.2).

Nevertheless, some automotive firms, in particular some of Japanese origin, faced serious problems in 1998-1999. As a result of restrictions imposed by their parent companies and the difficulties experienced by the Latin American economies—sales in Mexico plummeted by 20% in 1998 (*Expansión*, 1998a; Rico Tavera, 1998)—companies such as Honda and Nissan

Box II.2

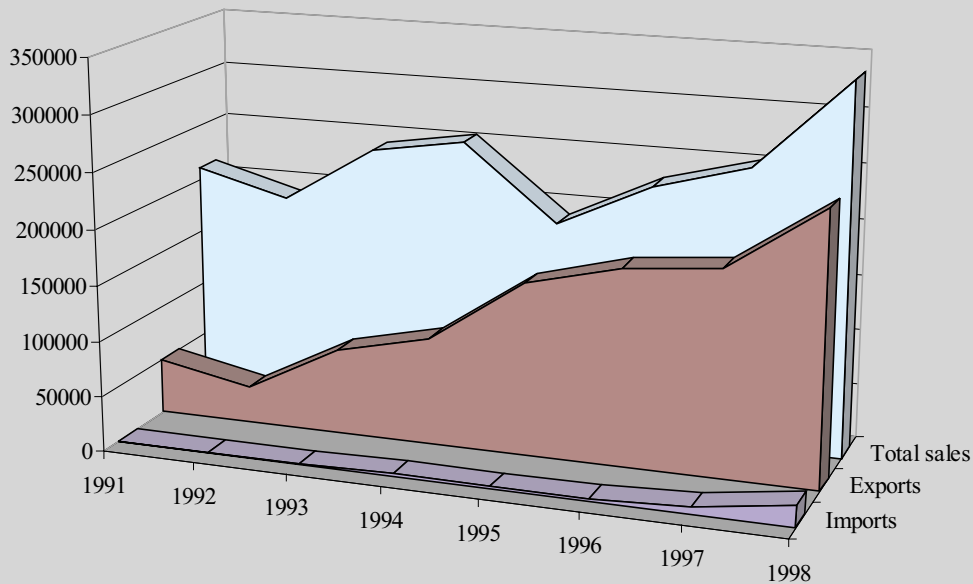
VOLKSWAGEN CHOOSES MEXICO AS CENTRE FOR ITS OPERATIONS UNDER THE NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA)

In 1988, the German-based Volkswagen transferred its operations from the United States (Pennsylvania) to Mexico. Although its main focus had been the local market, it began to sell part of the output from its Puebla plant in North America. Even before the crisis of December 1994, it was exporting more than 30% of the units produced in Mexico, thus making Mexico its main base for exports to NAFTA member countries. Volkswagen is a good example of the structural change undergone by many of the

transnational corporations in Mexico, particularly those involved in the automotive industry. Under the NAFTA rules of origin, non-North American companies had to adjust their operations to include North American inputs in their production processes. From this standpoint, the NAFTA rules of origin and the Mexican currency devaluation deepened a trend that had begun several years earlier. Between 1990 and 1995, the rate of Volkswagen exports increased from under 20% to 82.9%. In 1998, the United

States market was the final destination for 73% of its output (Ramírez Tamayo, 1999b). The structure of the industry and NAFTA made it possible to maintain a relatively stable level of production in 1995 and 1996, despite the sudden fall in domestic sales in 1994 (from 158,052 to 32,244 units) (see figure). Thus, between 1994 and 1998, Volkswagen increased its production by 30.9% and its exports by 151.2%.

Figure
VOLKSWAGEN: TOTAL SALES, IMPORTS AND EXPORTS OF PASSENGER VEHICLES, 1991-1998
(Units)



Source: ECLAC, Information Centre, Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, on the basis of information from the Mexican Automotive Industry Association (AMIA).

In 1995, Volkswagen decided to produce its new Beetle model for worldwide distribution exclusively in Puebla. As a result of this decision, it invested over US\$ 1 billion and generated some 2,000 new jobs. The company expects to produce 160,000 units per year as from 1999, and more than 90% of the total will be for export, mainly to the United States and Europe. Thus, the Puebla plant has been consolidated as the

production base for the German consortium in North America, and three quarters of the vehicles sold by Volkswagen in the region are produced in this Mexican city (Ramírez Tamayo, 1999b). The Volkswagen case is important in many respects. On the one hand, around 75% of the vehicles sold in North America are produced in Puebla. The crisis of December 1994 did not affect planned investments, and

in fact, one of the largest investments of the last decade was made during this period. The structure of the industry and the quality standards and control methods adopted since then have made it possible to gear most production towards the external market within a relatively short space of time, since there was no longer any difference in quality between production for the domestic market and that designed for the export market.

Source: ECLAC, Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management.

reportedly slashed inventory and production costs. Nissan, which merged with Renault in March 1999, is making cuts of up to US\$ 1,000 on each vehicle produced in North America, and in 1999, it laid off 580 employees. In the medium term, this firm plans to take major decisions concerning its operations in the NAFTA area and to turn Nissan North America into a single company with headquarters in the United States. On the other hand, Honda has announced that in 1999, it will invest US\$ 50 million in the production of the Accord model.

Similar trends can be seen among producers of automobile parts, including Magna Internacional and Kasai Mexicana, which have Canadian and Japanese investment capital. Another is Delphi Automobile Systems, which recently split off from General Motors and which plans to concentrate its global operations in Mexico (Guzmán Reyes, 1999). Also of interest are the experiences of American Axle & Manufacturing Co., which has invested US\$ 120 million in the construction of an axle plant; Aventec S.A. will invest US\$ 70 million in the installation of a moulding plant to build parts for General Motors pick-up trucks and vans; Oxford Automotive Co. will bring on stream a new metal-cutting plant for General Motors automobile chassis, at a cost of US\$ 35 million. Other companies, such as United Technologies, Mannesmann, and Easton Control, will invest between US\$ 30 million and US\$ 40 million to expand their production capacity

and build new plants in the north of Mexico. Unik, a parts producer which belongs to the Mexican group Desc, has launched an aggressive growth strategy based on acquisitions. This is one of the few local firms that has survived and that has used an expansionary strategy within the context of NAFTA. It has bought 49% of the manual transmissions division of Robert Bosch, 100% of Borg Warner, and 51% of Dana transmissions. With sales totalling around US\$ 450 million in 1998, Unik plans to invest some US\$ 700 million to consolidate its operations and modernise its plants (*Expansión*, 1998a).

In brief, the United States automotive firms have invested heavily in Mexico in order to improve their competitive position in North America, particularly in view of the growing participation of Asian companies in international markets. In keeping with this strategy, the North American companies have taken full advantage of the facilities granted by the authorities of the United States (production sharing, HTS 9802 and NAFTA) and Mexico (*maquila*). With the entry into force of NAFTA, the increasing integration (within North America) of United States firms was replicated, to some extent, by companies from other countries, such as Volkswagen. This has meant that non-North American companies have had to increase the North American content of their products, in order to comply with rules of origin and be eligible to sell on this market; as a result, they have strengthened subregional

supply chains. Nevertheless, the automotive and auto parts industries are still seriously limited by the low level of Mexican value added and their excessive concentration in the North American market. These issues will undoubtedly pose major challenges to Mexican industry in the twenty-first century. It is of interest to note that Mexico's experience in this area has been quite different from that of the Republic of Korea. Both countries created large automotive industries that are competitive on the international market. The Republic of Korea, however, exports to the whole world. The dominant Korean companies work in association with foreign companies, and have strong national linkages. The Mexican automotive industry is focused essentially on the North American market, is dominated by foreign companies and has limited national linkages.

(b) The Mexican electronics industry: a high-tech industrial complex?

Recently, the electronics industry, like the automobile industry, has been one of the most dynamic branches of the Mexican economy. Between 1988 and 1996, this subsector, not including *maquila* activities, has grown at an average annual rate of 9.8%; in 1996, it generated 228,603 jobs. As with the rest of the manufacturing industry, it has recorded a remarkable expansion in exports, mainly to the United States. Thus, Mexico has become the leading supplier of electronic products to the United States market, edging out other countries, such as Japan and Canada (see table II.3). These achievements notwithstanding, imports of electronic inputs have also grown at a fast pace and generally reflect the difficulty this industry has experienced in trying to enter a field with a high value added.

From the 1980s onward, the Mexican electronics industry has been affected by a number of developments, both internal and external, which are fundamental to an understanding of its importance today. A series of trends may be noted at the international level. From the standpoint of the United States companies, Mexico has occupied a leading role in electronics, particularly in *maquila* activity, since the 1980s.

- Following the 1982 crisis, the electronics industry faced serious difficulties in its efforts to restructure its production and distribution channels. In view of the fall in domestic demand, exports, and especially the activities of *maquila* firms, have been essential to the subsector's recovery. Even

before the signing of NAFTA, a large number of *maquila* companies were already involved in electronics. The renewed buoyancy of this industry stems from the arrival of transnational corporations applying efficiency-seeking strategies in Mexico so that they can compete more successfully in the North American market.

- When NAFTA entered into force and it became possible to import raw materials and inputs on a tax-free basis for local sales, the *maquila* companies had the added incentive of being able to sell an increasing percentage of their production on the Mexican market.
- The broad process of trade liberalization and the signing of free trade agreements with many of the Latin American countries served as further incentives for the main companies operating in the sector to pursue their strategies.
- For Asian companies, the reduction of tariffs on Mexican exports to the United States and the security offered by NAFTA have been fundamental events; most of these firms gear their production to the United States market. The number of Asian companies with manufacturing activities in Mexico, particularly in electronics, rose from 19 in 1990 to 52 within the first three years of the entry into force of NAFTA.
- For United States corporations, the main thrust of their Mexican operations has become their usefulness in countering the growing competition from Asia, whereas in the past they had simply focused on assembling products in Mexico for sale on the domestic market.

Mexico has thus become a zone where the United States and Asian electronics industries are competing more and more for a share of the North American market. The proximity of the Mexican *maquila* companies to the electronics and computer industries in California has reinforced this trend (USITC, 1997a; USITC, 1998a). Mexico is now a major competitor of the Asian countries in assembly and sub-assembly and, to a lesser extent, original equipment manufacturing (OEM). Thus, in cities such as Tijuana and Ciudad Juárez, among others, there has been a vast proliferation of companies engaging in the assembly and sub-assembly of electronic products (*Expansión*, 1998d).

In view of the complexity of the whole field of electronics—consumer goods and components, high tech and highly differentiated products, such as computers—an analysis is made below of two specific branches—computers and television sets—in which

transnational companies have geared their operations towards improving efficiency.

(i) The computer industry in Mexico: the predominance of United States corporations

In the early 1990s, the United States computer and parts and components industry—with a few exceptions, such as INTEL and Microsoft—seemed to have succumbed to competition from Asia. Thus, while IBM was undertaking a radical restructuring in response to the crisis in regard to large servers and the growing importance of personal computers (PCs), companies in Japan (NEC, Hitachi, Fujitsu, Seiko Epson, Mitsubishi Electric, Toshiba, Sanyo and Matsushita), Taiwan Province of China (Acer), Republic of Korea (Samsung, LG Electronics and Hyundai), Singapore and Hong Kong SAR were on their way to becoming the new leaders in the global computer industry.

In the mid-1990s, Taiwan Province of China was the main producer of portable computers, monitors, scanners, keyboards, motherboards and mice. Singapore led the way with hard disks and sound cards and held fourth place worldwide in assembly of personal computers (PCs). The Republic of Korea was Japan's main competitor on the market for dynamic random access memory (DRAM). Lastly, Hong Kong had transferred much of its manufacturing base to China, but maintained its hegemony in the administration of these processes in Asia (Dedrick and Kraemer, 1998, p. 116). Since the 1980s, Asia had been the main supplier to the computer industry, including both Japanese and United States companies. Thus, companies such as Apple, Seagate and IBM itself were competing with Japanese firms for Asian suppliers (Ernst, 1997; Dedrick and Kraemer, 1998); for example, Singapore has no major hard disk manufacturers, and yet it accounts for about half the world output of these components.

In the last few years, although Japan has remained one of the main producers of parts and components—including DRAM, monitors for portable computers, peripheral equipment, hard disks, Compact Disk/Read Only Memory (CD-ROM), laser printers and monitor components—the United States companies have

staged a strong comeback. This may be attributed to their skill in imposing standards (for both software and hardware), as well as to their new corporate strategies.

Falling prices for chips, DRAM and a number of parts and components, combined with the strong impact of the recent financial crisis, have seriously affected Asian companies (Warnke, 1996). Given the reduction in the size of PCs, the success of the portable computer, and the crucial importance of global production and distribution networks designed to reduce inventories and respond in “real time” to the increasingly demand-based requirements of consumers and industrial organizations (build to forecast, configure to order, build to order), manufacturers have found it necessary not only to provide just-in-time delivery and reduce costs and stocks, but also to respond rapidly to constant fluctuations in demand (Pringle, 1998). Thus, the main PC brands have moved—gradually but steadily—towards selling their products directly by electronic mail, leaving distributors out in the cold.³⁰ This is reflected in some of the changes in industrial engineering and corporate strategy that have been implemented by certain key companies in this sector, including Compaq, IBM, Hewlett Packard and Dell Computer.

The adjustment in corporate strategies to meet demand in “real time”—which, in some instances, can mean reducing stocks from weeks to minutes, as in the case of Dell Computer (Stein and Sweat, 1998)—calls not only for new information flows to be developed between the components of the production, distribution and services network, but also for consideration to be given to distances between suppliers and customers and to response time. In the electronics industry, a new form of industrial organization has been generated whereby the United States companies have been able to respond rapidly to international competition through outsourcing. The big brand companies control the entire process of production, distribution and services, outsource most manufacturing activities and concentrate exclusively on intensive research and development, as well as on a few strategic parts and components (Sturgeon, 1997).

In this context, and thanks to the regulatory changes introduced in Mexico, the existence of the

30 Compaq, one of the leading companies worldwide in terms of PC sales, has implemented a system of enterprise resource planning that is designed to synchronize its outsourced operations with real-time demand (Tipton, 1999). Similarly, firms such as Hewlett Packard and IBM have implemented multiple organization systems for synchronizing their outsourced operations with demand (Bruton and Samiee, 1998; Electronic Buyers News, 1998).

maquila industry, and the supply of factors of production that are relatively cheap and comparable with those in Asia, the northern border region of Mexico, especially the state of Jalisco (see box II.3), has become a strategic zone for assembly and sub-assembly operations for the United States computer industry. At the same time, the entry and participation of Asian companies have diminished.

The above-mentioned trends are reflected in the fact that the United States market has become increasingly important to the Mexican computer trade, since over 95% of its production was sold in this country in the 1990s. Between 1990 and 1998, computer exports to the United States rose from US\$ 578 million to US\$ 5.248 billion. Mexico has the highest growth rates for these exports to the United States and has become its fifth largest supplier, having overtaken countries such as China, Canada and the Republic of Korea. In 1997, Mexico was the leading exporter of portable computers to the United States as its sales totalled US\$ 1,649 billion, and it accounted for 40.1% of that country's imports (Dussel Peters and Ruiz Durán, 1999).

The case of the Taiwanese firm, Acer, was quite interesting. Its new strategy entails improving integration between its activities in the United States and in Mexico, emphasizing exports to Latin America in its Mexican operations, and intensifying the assembly of PCs and portable computers—as well as the supply of parts and components—in Mexico. This strategy represents a response to the constraints of the Mexican domestic market and to the difficulties the company faces in its effort to recover its share in PC sales.³¹ Thus, the aim of the new plants in El Paso—original equipment manufacture (OEM) *maquila* operations geared to the export market—and Ciudad Juárez,³² is to reduce deadlines as required by the industry. On average, the El Paso plant supplies the United States operations with a lag of only three days, while the same process can take several weeks from

Taiwan Province of China or even Mexico City. From this standpoint, Acer—the main assembler of portable computers for companies such as IBM, Hitachi and Fujitsu (*Business Week*, 1999b)—has become one of the largest assembly companies in the industry. In addition, Acer has sought to reduce the weight of government purchases. Its recent contract with Teléfonos de México (TELMEX), which in 1999 launched a programme to offer computers for sale on credit, in an effort to expand its Internet access business, seems to be heading in that direction (*América economía*, 1999c).

In 1999, IBM planned to invest some US\$ 100 million in the expansion of its export-oriented plants in Jalisco; Seagate, for its part, was to invest US\$ 70 million in the construction of an electronics plant in Tamaulipas. Both initiatives reflect the complex network being developed in the computer industry in Mexico.

The US\$ 10 million invested by Softek in a software production company probably marks the start of a deepening of processes designed to increase the value added of this industry in Mexico. In May 1999, with an investment of US\$ 1.6 million, Softek and Microsoft agreed to initiate operations for the development of distance computer programs; it is estimated that Microsoft's demand will be between US\$ 5 million and US\$ 10 million. Other investments attest to the changes in industrial patterns and corporate strategies, including the investment by IBM of US\$ 25 million in the construction of a new corporate centre (*Expansión*, 1998c); the decision by Acer to expand its operations beyond Mexico to other Latin American countries and invest US\$ 30 million in ACBr, Brazil, in May 1999, and the transfer by Sanyo of its entire portable computer manufacturing operations from Japan to Mexico at the end of 1997.

In general, the growing presence in Mexico of plants belonging to the major computer companies has two distinctive characteristics:

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- 31 In 1998, PC sales from Mexico (977,475 shipped) came from four major companies, namely, Compaq Digital (21.5%), IBM (12.8%), Acer (11.6%), and Hewlett Packard (10.2%). With a share of over 40% of the domestic market, the Taiwanese firm, Acer, held a predominant position during the first half of the decade. In addition to being one of the main PC manufacturers in Mexico, it also owns several computer parts and components plants in Ciudad Juárez and El Paso. In 1994, Acer—the third largest PC producer worldwide—merged with CompuTec, which had been the Acer equipment distributor since 1989, to form Acer CompuTec Latino América (ACLA). Since then, Acer's share has dropped sharply, and it has had to undertake a major restructuring process (Pérez Moreno, 1998b).
- 32 The Ciudad Juárez plant, with initial investments of US\$ 20 million, will be the ninth plant installed by Acer outside of Taiwan. Its objective is to produce up to 100,000 computers per month, as well as motherboards and other electronic consumer goods. According to the firm itself, this plant will be important to the build-to-order system in the United States (Computergram International, 1998). This plant assembles more than 400,000 portable computers for IBM every year.

Box II.3
**THE COMPUTER INDUSTRY IN JALISCO:
 MEXICO'S SILICON VALLEY?**

Currently, a significant number of leading international firms are operating in Jalisco, including IBM, Hewlett Packard, Siemens, NEC, Kodak, Motorola, Lucent Technologies -bought in 1998 by Philips Electronics, whose plant will be sold now that the alliance between Philips and Lucent has been dissolved-, as well as suppliers such as SCI Systems, Natsteel, Keytronics, Flextronics, Avex Electronics, ALPS, Dovatron and USCO.

During the 1990s, Jalisco has received most of the foreign investment inflows from computer firms. In 1998, according to data prepared by the Jalisco state government, the electronics industry brought in US\$ 624 million in foreign investment, 88.5% of which was of United States origin, and generated 8,442 jobs. In 1995, it accounted for 12.4% of national GDP corresponding to electronic equipment and appliances, including the computer sector. In 1997, the electronic industrial complex in Jalisco had more than 70 firms and provided some 28,000 direct, and more than 100,000 indirect jobs. Since then, moreover, an estimated average of one electronics firm per month has been set up there.

In Jalisco, this industry has specialized in PC-related computer products, portable computers, printers, telephones, floppy disks, semiconductors, hard disks, harnesses, beepers and other parts, components and end products.

Between 1994 and 1998, exports from the subsector increased at an impressive rate, from under US\$ 1.5 million to an estimated

US\$ 6.5 billion in 1998. IBM, Motorola and Kodak, the three top exporting companies in Jalisco, are involved in electronics. In 1996, IBM, SCI Systems, Motorola and Lucent Technology together generated 94.9% of all exports of electronic products. Generally speaking, the companies based in Jalisco belong to two distinct generations, as follows:

- Those established since the 1980s, particularly IBM, which sought in Jalisco a source of cheap labour, proximity to the United States, and the benefits to be obtained from various government programmes designed to attract FDI.
- Those set up in the 1990s, which, in addition to being attracted by the aforementioned incentives, wished to take advantage of NAFTA, Mexico's macroeconomic and foreign-investment policies, and the "cumulative causation" process resulting from the pre-existing demand in the industrial complex. In Jalisco, the proximity of suppliers is crucial, given the increasing number of companies operating in the zone. This trend is all the more important because brand-name companies need to control the operations of contract electronics manufacturers and other inter-firm arrangements.

Nevertheless, the success of the computer industry in Jalisco has not been matched by an equally strong process of national industrialization. The value-added structure of the computer industry is funnel-shaped. A large number

of upper-tier foreign companies have been set up, predominantly with United States capital. There are few subcontractors and even fewer companies that provide supplies for subcontractors. Most of the value added is imported, and very few Mexican companies have become involved in these processes. According to results of the input-output matrix, in 1996, electronics was the least integrated industry, both nationally and regionally. Despite the efforts of the Jalisco state government, an analysis of a significant number of companies in the area revealed an inadequate industrial structure (Dussel Peters, 1998).

- The first-generation companies have fostered -by providing engineers, technology and, in some cases, financing- the establishment of subcontracting firms that supply them with "necessary products" that are difficult to import because of their volume, weight or both (for example, plastic injection or packaging). However, this has not been a constant process.
- In addition, in many cases, second-generation companies have been established in Jalisco with a network of outsourcing of processes, parts, and components, all of which are imported. This situation, added to the technological, financial, quality and time lags, makes it very difficult to generate linkages.

- Major United States corporations, such as IBM and Hewlett Packard —both of which have operations in the state of Jalisco— have substantially expanded their assembly and subassembly capacity. In 1998, IBM assembled 800,000 portable computers and 500,000 PCs at its El Salto plants in Jalisco, of which 95% were exported (see box II.4). Nevertheless, the value added is declining steadily; although IBM has managed to develop some supply companies in the region, Hewlett Packard imports practically all the parts and components required for its PC assembly operations in Jalisco.³³ The production of printers —mostly ink-jet— has been one of the most impressive operations in the electronics industry in general, and in Hewlett-Packard in particular.³⁴ The Jalisco area was chosen for these operations mainly because of the availability of expeditious transport for inputs and distribution of the final product, the availability of highly skilled personnel, and the presence of suppliers of inputs, parts and components. For example, the establishment in Jalisco of Solectron, one of the main suppliers of inputs for printers, cut the cost of the product by 25%.
- Operations of parts and component producers are growing, albeit at a slow pace.³⁵ Steps are being taken in the state of Jalisco to attract suppliers and increase their level of integration into the regional and national economy (see box II.3). The organization Cadena Productiva de la Electrónica (CADELEC) has undertaken numerous studies to report on the demand generated by the electronics industry in Jalisco —plastic injection, power sources, cables and packing harnesses, print circuit and anti-static cards— with the aim of promoting the establishment of new companies in this region of Mexico. In the medium term, this strategy may generate its own dynamic, and the electronics industry may advance along different lines, focusing on assembly and on activities that

provide limited scope for national value added or local training.

In brief, as in the case of the automotive industry, the United States computer companies, faced with competition from Asian products, have transferred part of their productive processes —mainly assembly— to Mexico. This has helped them improve efficiency and become more competitive on the United States market. The Asian firms have also expanded their productive base in Mexico in order to comply with rules of origin for the North American market. In fact, some of them assemble computers for United States companies, for sale on the NAFTA market. From the standpoint of national economic development, these activities are still hampered by the fact that the level of Mexican value added is still very limited, linkages with the rest of the local economy are weak, and they are geared mainly towards exporting to the North American market.

(ii) Television manufacture in Mexico: Asian dominance

The television and computer industries in Mexico share a number of features, including an oligopolistic structure with few participating firms, the dynamic of technological innovation in parts and components and also in production and distribution processes, and strong competition on international markets. Apart from this, the NAFTA rules of origin and the *maquila* industry have also had a significant effect on the production of television sets.

There are also several significant differences between the two industries in Mexico, especially as regards the size and origin of the firms involved. In 1998, computer industry exports to the United States amounted to US\$ 5.248 billion, while exports of television sets amounted to US\$ 4.698 billion. Most of the players in the computer industry are of United States origin, whereas in the television market, United States producers have been displaced by Asian

33 In the case of Hewlett Packard, the parts and components of the three main models assembled in Jalisco (Brio, Vectra and Kayac), which overall represent between 20,000 and 30,000 units per month, are purchased internationally by the corporation, which does not permit local outsourcing.

34 Hewlett Packard produces approximately 330,000 printers per month, mostly for export, especially to the United States. The company has made Jalisco state in Mexico its main location for assembly of ink-jet printers worldwide.

35 IEC Electronics Corp. has concentrated its operations in Ireland (high tech activities and processes) and Mexico (labour-intensive processes) (Dunn, 1998). In 1998, Ge Plastics set up operations in Mexico to provide training services to companies and *maquila* activities in the management and use of plastic injection equipment. The Taiwanese company Delta Products has built a computer battery assembly plant in Nogales, in the state of Sonora, to replace its existing plants in China and Thailand.

Box II.4

IBM: A COMPUTER INDUSTRY GIANT IN MEXICO

After 20 years of activity in the country, IBM moved its manufacturing facility from Mexico City to Jalisco. In 1985, in the wake of economic liberalization, it substantially expanded its activities at that plant. The case of IBM has historical importance, because it was the first foreign company in Mexico to have 100% ownership of a new plant, under the terms of an agreement with the Government. It was also allowed to import its production inputs on a duty-free basis. IBM invested US\$ 92 million to produce a line of personal computers at its Jalisco facility. The treatment given to IBM was innovative compared to earlier policies, but it also gave rise to contradictory situations, as the State overlooked existing trade rules and national-content requirements.

Today, the IBM plants in Jalisco have become an essential component of the company's corporate strategy, both in regard to members of the North American Free Trade Agreement (NAFTA) and worldwide. The facility provides employment to 11,000 workers, 800 of whom are hired directly by IBM, while the remainder work in the plant for a number of subcontractors. IBM has become one of Mexico's main exporters and the largest in the State of Jalisco. In 1998, IBM

brought in around US\$ 2.7 billion (Expansión, 13 October 1999). In 1998-1999, the company planned to invest over US\$ 400 million to build warehouses for chemicals, materials and equipment, and it is currently negotiating arrangements to set up a factory for the production of liquid crystal for computer monitors. This project, which would require an investment of about US\$ 2 billion, would be the largest in Latin America, and would have far-reaching consequences for the electronics industry in general and for the production of television sets and computers in particular. IBM operations in the El Salto industrial belt in Jalisco specialize in the assembly of personal and laptop computers. In both of these product lines, but especially in the latter, the Jalisco plants have become strategically important for the firm at the world level. In 1998, as many as 800,000 laptop computers were assembled there -in addition to the 400,000 assembled for IBM by Acer in Ciudad Juárez- representing 55% of the company's total laptop production worldwide. Ninety-five per cent of its production of this type of computer is sent to four destinations: 70% to the United States, 15% to Canada, 10% to Asia and 5% to Latin America. In 1998, IBM assembled 500,000 PCs, which was less than the

production of laptop computers not only in volume terms but also in value.

In the 1990s, the global scale of IBM operations has increased, and some of its plants and activities that were formerly located in Asia have been transferred to Mexico. Operations in Mexico are fundamental to understanding the far-reaching worldwide restructuring the company has undergone. In 1993, practically all laptop computer components came from Asia, whereas today 80% of them are made in North America. These changes have been less significant in other divisions of the company, as in the case of PC production. For the present, IBM activities in Mexico centre on the assembly of imported parts and components. However, the firm has also created a software development centre (Guadalajara Supporting Laboratory) staffed by 160 engineers and other skilled workers, and it has made significant efforts to set up suppliers in the electronics industry complex in Jalisco. The projected liquid crystal production facility is likely to be fundamental in raising local value added, which so far has been low in these activities.

Source: Enrique Dussel Peters, *La subcontratación como proceso de aprendizaje: el caso de la electrónica en Jalisco (México) en la década de los noventa*, LC/R.1808, Santiago, Chile, ECLAC, 1998; Enrique Dussel Peters and Clemente Ruiz Durán, "North American Integration and Development: the Computer Industry", unpublished manuscript, 1999.

companies, both internationally and in Mexico. The widespread establishment of television assembly plants in Mexico was motivated by the proximity of the United States market and the opportunity to avoid paying that country's high tariffs.

As a result, large amounts of television-related foreign investment have flowed into Mexico, especially to the northern border region. The country has become the main exporter of colour television sets to countries of the Organization for Economic Cooperation and Development (OECD); it accounts for 18.5% of total OECD imports and 60% of North American imports of this product (Mortimore, 1997, p. 13). The percentage of United States imports of colour television sets produced in the northern border region of Mexico could even be as high as 70% (Carrillo, Mortimore and Alonso Estrada, 1998, p. 47). From this standpoint, television-set *maquila* operations in Mexico have become very important owing to their virtually exclusive focus on the United States market and their ability to respond quickly to market demands.

Television set assembly operations are concentrated in just three locations. In Tijuana, there are at least six large assembly plants (Hitachi, S.I.A. Electrónica de Baja California, Sony de Tijuana Este, Sony Centro, Sanyo and JVC), as well as 20 parts and components producers. In Ciudad Juárez, there are seven large assembly operations (Philips, Zenco de Chihuahua, Thomson, LG Electronics, Goldstar, Funai and Orion). Finally, Mexicali is also growing as a television set production centre, as companies such as Samsung, LG Electronics, Osung Electronics and over 20 component makers have set up plants in that city (CNIME, 1998).

With practically no United States companies making television sets,³⁶ Asian companies have invested some US\$ 1 billion in this industry since 1994. The northern region of Mexico currently has the capacity to assemble 25 million sets—in 1996 it produced about 18 million. In March 1999, there were 501 electrical and electronic materials and accessories plants in the north of the country, and

they generated 279,988 jobs and US\$ 304 million in value added.

Since the signing of the NAFTA accords, these firms have expanded their activities in Tijuana—where Sony, the world's leading television set manufacturer, produced 17 million units in 1998 (Martínez Staines, 1998)—and in Ciudad Juárez. Mitsubishi has increased its production of printed circuits in Mexicali, after transferring the manufacture of circuit boards for large television sets to Mexico from Asia; Samsung and Daewoo³⁷ have begun to produce cathode ray tubes in Tijuana and Mexicali; and Samsung has entered a joint venture with Asahi Glass and Corning Glass to produce glass for computer monitors and television screens—an input that previously had been wholly imported. These cases, apart from reflecting international trends,³⁸ are evidence of the steady convergence that is taking place between the computer and television industries, particularly in the increasingly sophisticated technologies applicable to monitors. These trends are significant from several standpoints:

- Mexico's northern border zone has consolidated its position as the world leader in colour television set assembly, based on components imported from Asia and the United States. This leadership is likely to become even stronger. This industrial complex in the north of Mexico is more a result of international trends in the television industry and the adoption of consumer legislation and standards in the United States than of national or regional policies adopted by the Mexican authorities. With very few exceptions, all production is sent to the United States—a trend that has been given renewed impetus by the fact that benefits go beyond the production sharing provisions (TSNS 807/HTS US 9802).
- Despite the volume and total value of television set assembly operations, the value added they generate is very low, and linkages with the rest of the regional and national economy are negligible. However, under the NAFTA rules of origin,

36 The French firm Thomson Consumer Electronics bought the television manufacturing operations of General Electric and RCA; the Dutch company Philips bought the Sylvania and Magnavox brands, and Matsushita of Japan bought Quasar. In 1995, the Korean firm LG Electronics acquired the Zenith facility in Mexico.

37 In November 1995, Daewoo set up a US\$ 264 million facility in Mexicali to produce cathode ray tubes for computer monitors and television sets (Peñalosa, 1997).

38 Alliances and partnerships between firms are increasingly common, such as the one set up between Fijitsu and Philips Consumer Electronics to develop technology to produce laptop computer monitors and flat panel displays.

manufacturers have to increase the regional content of their products. As a result, new FDI has been channeled into the production of inputs and components. Since the 1980s when these activities started to take advantage of the country's cheap labour force, they have been exclusively export-oriented, and there has been no reference to the domestic market as a benchmark.

In accordance with NAFTA provisions, Asian and European firms have been obliged to increase their North American value added. Several of them, especially the Japanese companies in Tijuana and Mexicali, have found a variety of ways to integrate their operations in the region, as in the case of glass production and the manufacture of other components, mentioned above. Nonetheless, the chances of significant research and development activities being carried out in the region are still remote, and it is difficult to envisage Mexican-owned companies overcoming the high financial and technological entry barriers involved in joining this industrial complex.

Finally, in an industry from which United States companies have been virtually displaced, the NAFTA rules of origin have forced Asian companies to set up a production base in North America in order to supply this market. Thus, northern Mexico has become very attractive, and has been responsible for Mexico's becoming the main exporter of colour television sets to North America. Contrary to other industries, in this one there has been an incipient but on-going phenomenon of incorporation of local content, along with the creation of a technological industrial complex in Mexico.

(c) The apparel industry³⁹

The apparel industry was a dynamic element of foreign trade between 1980 and 1996, when its share of OECD imports rose from 2.6% to 4.1%. At the same time, the Asian economies, especially China, played a major role in the main world markets, and the situation in the United States garment industry had become extremely difficult. To meet the "Asian challenge", these firms—backed by national trade policy—began to implement a wide-ranging process of restructuring

that had significant implications for the Mexican economy.

The United States policy was aimed at weakening the competition (through tariffs and import quotas) and strengthening the main local firms in the garment subsector. The production sharing mechanism was important in this context (HTS US 9802), and, as a result, regional supply chains began to be set up to enable these firms to improve competitiveness in their own market. The industry took advantage of lower wages in Mexico and the Caribbean basin; however, the production sharing mechanism virtually prohibited the use of local physical inputs.

In general, the firms kept in the United States those activities that related to product design and development, together with capital-intensive manufacturing processes and tasks linked to domestic marketing. Labour-intensive assembly processes were moved abroad, mainly to Mexico and the countries of the Caribbean basin. Mexican legislation, especially on *maquila* activities, also facilitated the duty- and tax-free operations of clothing manufacturers.

When NAFTA came fully into force, Mexico's situation improved radically compared to other Caribbean basin countries, and it was further strengthened as a result of the devaluation of the local currency in late 1994. NAFTA in general, and its rules of origin in particular, created opportunities for United States firms to increase their production and sales, taking full advantage of economies of scale and inputs from the three member countries. Today, Mexico has overtaken China to become the leading supplier to the United States clothing market (see table II.3). The Mexican garment industry also contrasts sharply with some of the Asian experiences. In Hong Kong SAR, Chinese Republic of Taiwan and Republic of Korea, national companies grew internationally, largely because of their ability to offer a complete package, especially in the women's apparel industry. In Mexico, it seems that the emerging companies that produce complete packages are foreign, mostly North American, and their activities are not necessarily related to the fashion industry. The differences between the Asian and Mexican experiences are evidenced in the levels of national integration that have been achieved.

39 For further details, see chapter IV of this document.

2. Domestic markets: difficult, but promising

Despite globalization, flexible production and consequent specialization, there are some activities that require production facilities to be set up in the destination market (Dussel Peters, 1999). In the case of Mexico, given the specific characteristics of the products and the existence of non-tariff trade barriers (sanitary and phytosanitary regulations), some product lines, such as foodstuffs, beverages and tobacco, pharmaceutical products and non-ferrous metals, have aroused great interest among foreign investors. This phenomenon is seen even more strongly in recently liberalized subsectors (or those currently in the process of deregulation), such as the retail trade, telecommunications, finance and electricity.

(a) Retail trade: the Wal Mart experience

In the mid-1980s, the future seemed promising for retail trade activities (De Icaza, 1999). Anticipating the signing of the NAFTA accords, the subsector underwent significant reorganization; cutting-edge technologies were introduced, ownership of the main firms was thrown open to the capital market, and it seemed to be strongly positioned for future growth. In the early 1990s, the outlook for retailers was substantially altered by a series of alliances and mergers between Mexican firms with retail experience and major foreign players. In general, these alliances and mergers failed to last, owing to cultural differences relating to company management and the foreign partners' desire to rapidly expand the network of branches and increase sales. Retail trade was also hit hard by the crisis that broke out in late 1994, and Mexican-owned firms were especially weakened. In 1995, as a result of the crisis, inflation soared to 50% and the purchasing power of the Mexican population plunged by 20%; this led to a 22% drop in retail sales (De Icaza, 1999).

The most important partnerships between Mexican and foreign firms include those between Cifra and Wal Mart, Gigante and the French supermarket chain Carrefour (which only lasted four years), and Comercial Mexicana and Auchan, the large French distribution group. This latter alliance was dissolved after one year, owing to a dispute over control of the firm (Conger, 1999b). After this, Comercial Mexicana bought the Kmart stores left over from a failed union with Liverpool, which had also been unable to fulfil the

expansion plans envisaged in the alliance (De Icaza, 1999). At the present time, Comercial Mexicana has an association with the United States company Costco Wholesale Corporation (Conger, 1999b).

Despite the failure of most of these associations and the definitive exit of some foreign players, such as Kmart, as a result of the Mexican peso crisis, local firms seem to have drawn positive lessons from their experience. Firstly, alliances are more successful if each of the participating firms operates in different market segments; and secondly, the Mexican firms have benefited from their exposure to the management, standards and products imposed by their foreign partners. The Gigante chain, whose agreements with Flemings and Carrefour ended in failure, is an interesting case study. The company has maintained strategic alliances with Radio Shack and Office Depot since 1992 and 1994, which suggests that associations are successful when they are between companies that deal in different product lines (Conger, 1999b).

The only one of these major alliances still in existence is that between Cifra and Wal Mart, an association that has been characterized by prudence from the outset. In July 1991, an equal-shares joint venture was set up to manage the supermarket company, and this joint operation, valued at over US\$ 2 billion, became the market leader in Latin America. Unlike the case with other partnerships and mergers in the retail sector, Cifra's diversification—including the Vip restaurants, and the Suburbia department stores—allowed it to finance the projected expansion. In 1997, Wal Mart bought an additional US\$ 1.2 billion stake in Cifra, thereby taking its share to 51% and completing the definitive merger. In fact, this is a case where an apparently successful partnership has ended in take-over. Since then, the firm has continued to expand the number of stores it operates and increase its productivity. In 1998, Wal Mart was the largest retail chain in the United States, with over 2,800 stores and total sales of US\$ 139.208 billion (*Fortune*, 26 April, 1999).

Mexico offers promising opportunities for retail activity, as it is the Latin American economy where supermarket chains, which account for only 31% of retail sales, have penetrated the least (Conger, 1999b). Accordingly, Wal Mart envisages making substantial investments in the next few years, with a view to expanding to 47 Mexican cities (De Icaza, 1999).

(b) Telecommunications in Mexico: a very attractive market for the main international operators

In recent years, the telecommunications sector has been one of the most attractive fields for foreign investment in the region (ECLAC, 1998a). In the case of Mexico, current legislation sets a 49% upper limit on foreign ownership of firms in this sector (except for cellular telephony), and leaves access to the local market in the hands of Teléfonos de México (TELMEX). Since the start of the 1990s, the Mexican authorities have introduced a series of measures to provide security to private—and particularly foreign—investment in telecom activities. The TELMEX concession contract was amended in 1990, the Federal Telecommunications Act came into force in 1995, and a regulatory body—the Federal Telecommunications Commission (COFETEL)—was created a year later. Between June 1996 and August 1997, new regulatory frameworks were established in long-distance, international long distance, local service, public telephony and satellite communication.

TELMEX was privatized in December 1990. The aims of the Mexican authorities were to preserve national sovereignty in the subsector, keep most of the capital in the hands of Mexican entrepreneurs, guarantee the continuous expansion of the network, enable workers to participate in the equity of the company, raise service quality to international levels, and strengthen research and development (TELMEX, 1999). In order to keep majority control of the company in Mexican hands, a new equity structure was designed—without infringing the rights of existing shareholders—which at the same time facilitated widespread participation by foreign investors. The Mexican State transferred a majority of the voting shares (series AA), representing 20.4% of the company's stock, to the winner in the bidding process. As a result, management control of TELMEX

remained in the hands of a consortium comprising the local Carso group, the United States company Southwestern Bell Corporation (a subsidiary of SBC Communications Inc.) and the French State company France Cables et Radio (a subsidiary of France Telecom).⁴⁰

As part of the privatization arrangement, TELMEX undertook to increase the number of telephone lines, provide phone service to every town of over 500 inhabitants and significantly reduce waiting times for the installation of new phone lines. In return, it was granted the exclusive right to provide telephone services until 31 December 1996. Since then, firstly long-distance telephony and then local calls have been opened up to participation by private investors (local or foreign) through concessions and tenders.

Despite the significant improvements made to the services provided by TELMEX,⁴¹ telephone density in Mexico is much lower than in other developing countries, including Republic of Korea, Hong Kong SAR and Singapore, which have a telephone density of over 40 units per 100 inhabitants. This makes the country highly attractive to foreign investors, given the subsector's growth potential. The large United States firms (AT&T and MCI WorldCom),⁴² in particular, have shown interest in the long-distance market, as they can provide these services at a relatively low cost by taking advantage of their wide-ranging network of global agreements.

Nevertheless, there are some restrictions that complicate access by foreign investors to this market. Since 1972, TELMEX has been the only firm with the infrastructure needed to make all types of calls, both local and international, having invested some US\$ 14 billion to achieve this (COFETEL, 1999). By 1998, TELMEX had managed to connect practically every town of over 500 inhabitants and was providing services to some 21,000 localities. As a result, new entrants were confronted by a monopoly structure, with over 55,000 km of optic fibre and a network that is

40 Accordingly, TELMEX was controlled, on the one hand, by group of Mexican investors who between them owned 51% of the voting stock, and on the other, by SBC Communications and France Telecom, which held equal parts of the remaining 49% (i.e., 5% of the total capital of the company was held by each foreign investor). The Mexican controlling interest consisted of the Carso group, with 44.9% (12.1% of the total capital of the company), and another 50 investors, none of whom held more than 0.76% of the voting shares (TELMEX, 1998).

41 Between 1990 and 1998, telephone density increased from 6.4 to 10.3 units per 100 inhabitants. In the same period, the average waiting time for the installation of a new line was shortened from two years to 27 days. In June 1999, telephone density was 10.6 per 100 inhabitants (COFETEL, 1999). Currently, the Mexican market has around 10.2 million lines, and over 2 million international long-distance calls are made, with this service growing at twice the rate of local calls.

42 In early October 1999, MCI WorldCom and Sprint announced an agreement to set up one of the largest telecom companies in the world. This merger, valued at US\$ 115 billion, is the largest of its type in the world.

almost 100% digital (29% in 1998). Moreover, any new firm, in either long-distance or local telephony, had to make use of the TELMEX network to be able to deliver its own services.

The fact that new firms had to use the TELMEX infrastructure for all phone services, thereby making them customers of their largest competitor (some firms even built their own infrastructure), gave rise to the so-called “telephone war”. There were fierce debates on interconnection and payment rates, both for local and for long-distance and cellular telephony (see box II.5). Since 1997, these disputes have raged on two main fronts:

- The interconnection fees charged by TELMEX to users of its lines. The interconnection tolls that new long-distance firms had to pay to TELMEX had a 58% surcharge,⁴³ the highest among the world’s 17 largest telephone companies (Olguín, 1998). User firms lobbied for the rates to be reduced, as otherwise they would not be able to compete in the Mexican market. The most visible new entrants, Alestra and Avantel, even threatened to postpone or halt their investment plans—worth about US\$ 1.5 billion—unless the contracts and interconnection charges were reviewed. The conclusion of negotiations between late 1998 and early 1999 produced a significant reduction in interconnection costs and a minimum fee charged to consumers in order to prevent firms from offering services at below cost (see figure II.4). For TELMEX, the cut in rates meant a decrease of around US\$ 650 million in revenues for the biennium 1999-2000.
- The “caller pays” system for cellular telephony. All companies lobbied for this system to be implemented, except for TELMEX, which considered the change unnecessary in a market that in 1998 had grown by as much as 90%. On 1 May 1999, following several months of negotiations and judicial rulings, the “caller pays” system came into force.

As a result of increased competition in long-distance telephony—a market of some US\$ 5 billion—, rates have fallen steadily and significantly, dropping by 15% and 30% in 1997 and

1998 respectively. In 1998, TELMEX had about 75% of the market, with the other 25% being contested by only two firms (Ferro, 1999) (see table II.6). Despite failing to achieve the 40% to 50% market share originally estimated, Alestra, Avantel, Marcatel and other companies still aim to expand their operations in Mexico, in particular by laying their respective fibre optics networks throughout the country and connecting the main urban centres.⁴⁴ This is a reflection of the massive local market penetration achieved by these firms and gives grounds for expecting these trends to be maintained in the medium-term future.

Following these investments in the long-distance market, several firms (both local and foreign) have begun to move into the local-phone segment, valued at between US\$ 5 and US\$ 7 billion. Between 1997 and 1998, over a million phone lines were withdrawn because of the high prices charged by TELMEX; this represents an additional challenge for new entrants (Guadarrama, 1999). According to some estimates, about US\$ 9 billion will be invested in local telephony over the next five years, with most of the new players being Mexican-foreign joint ventures, as in the long-distance segment.

New entrants in the local telephony market will face even greater difficulties than those experienced by long-distance companies.

- As a way of defending its leadership of this market, TELMEX has destined a significant proportion of its income and investments (about US\$ 1.2 billion) towards the extension and strengthening of its local telephony networks and services.
- The new firms will have to use the TELMEX network, so hard bargaining on interconnection charges is expected. The costs to a company of constructing its own local network are much higher than in the case of long-distance service.
- Local phone companies—unlike long-distance operators—have implemented a strategy that involves a high degree of regional specialization.
- Lastly, it is unlikely that local phone companies will compete to provide service in rural areas. The relatively high costs—low phone density, lower purchasing power and higher infrastructure

43 The rates were published before the new firms began operations; they are expected to fall gradually between 1998 and 2000.

44 Examples are United States companies such as Presto—which invested US\$ 150 million in 1998-1999 to install a fibre optic network for its long-distance service—and Alestra, Avantel, and Marcatel, which plan to invest more than US\$ 5.8 billion over a ten-year period starting in 1995-1997. Nextel, meanwhile, has budgeted US\$ 200 million in 1998 and a further US\$ 50 million in 1999 for radio communication services.

Box II.5

MOBILE TELEPHONY: BELL ATLANTIC CHALLENGES TELMEX FOR LEADERSHIP

In the early 1990s, the Mexican authorities issued invitations to tender for cellular telephony bands A and B. As a result, TELMEX operates band B nationwide through its subsidiary, Telcel, while band A was awarded to nine companies. In recent years, four of these firms have become part of Grupo Iusacell, which controls nearly 40% of the market. There are currently 1.5 million cellular phone users in Mexico, and this number is expected to triple by 2000 (Alestra, 1999).

In October 1993, Iusacell formed a strategic alliance with Bell Atlantic, one of the largest players in the United States telecommunications market.

Under this arrangement, Bell Atlantic acquired a 23% stake in Iusacell, via a US\$ 520 million purchase of shares corresponding to a previously agreed capital increase. In June 1994, the American firm completed the second part of the purchase,

thereby raising its total investment to US\$ 1.040 billion and its share in Iusacell equity to 42.1% [<http://www.bell-atl.com>]. In February 1997, Bell Atlantic took over administrative control of the company, appointed a new management team to take charge of Iusacell operations -including marketing, distribution, and customer service- and began to implement a new strategic plan. In October 1999, Bell Atlantic began talks with Motorola Inc. and the Spanish company Telefónica, with a view to strengthening its position on the mobile telephony market. If these negotiations are successful, Grupo Iusacell will become the strongest competitor of TELMEX, currently the leader in this market. According to some analysts, Telefónica is trying to buy four cellular phone companies in northern Mexico that are partly or wholly owned by Motorola, in order to bring them into the Mexican group managed by Bell

Atlantic. Iusacell would then cover a much larger portion of the national market than it does now; it would gain 800,000 new customers and become a partner of a company that is very strong throughout the rest of Latin America (see chapter III). Iusacell is also involved in separate negotiations for the acquisition of Portatel S.A., a cellular telephony supplier in southern Mexico.

Bell Atlantic would then be able to start making substantial profits and speed up amortization of the large investment it has made in Mexico, thus offsetting the advantages enjoyed by TELMEX. In this regard, the subsidiary Telcel offers its customers a rate plan whereby they are able to call anywhere in the country without paying long-distance rates.

Source: ECLAC, Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management.

costs— do not make these operations profitable, at least initially.

Notwithstanding these difficulties, some of the new companies have a good chance of competing with TELMEX. In late 1998, five concessions had been granted, including the following (Olguín, 1999):

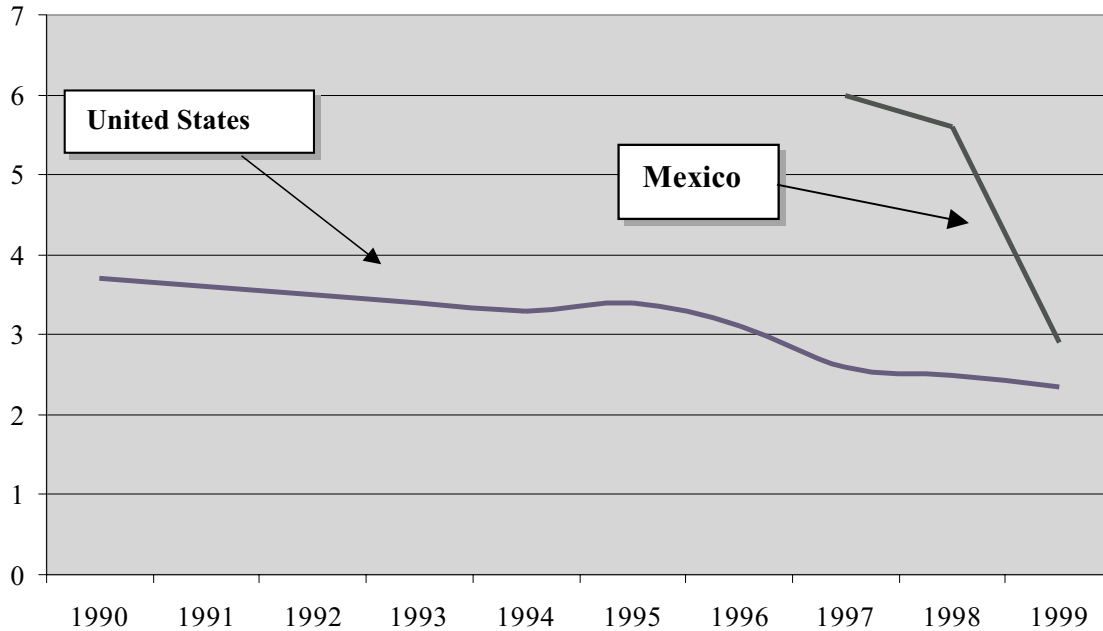
- Telnor (now known as Axtel).⁴⁵ Partially owned by Bell Canada (27%) and WorldTel Limited (22%), it plans to invest US\$ 1 billion. Axtel will

specialize in local residential telephony in cities of over 50,000 inhabitants in the north of Mexico.

- Servicios Profesionales de Comunicación (SPC). This company's main partner is the Elektra Group (Televisión Azteca); it plans to invest US\$ 1 billion over a three-year period. SPC is betting heavily on local telephony, to take advantage of its access to television and to customers of the Elektra store chain.

45 As from January 1998, Telnor changed its name to Axtel, in order to avoid being confused with Telnor, the TELMEX subsidiary in Baja California.

Figure II.4
UNITED STATES AND MEXICO: INTERCONNECTION FEES
(In United States cents per minute)



Source: ECLAC, Information Centre of the Unit of Investment and Corporate Strategies, Division of Production, Productivity and Management, based on information provided by the United States Federal Communications Commission, and the Mexican Federal Telecommunications Commission (COFETEL).

- Amaritel (main partners: Grupo Radio Centro and US Global Telecomm). The company plans to invest US\$ 940 million over the next ten years, concentrating its activities in Mexico City and in the southeastern part of the country, in a search for new users.
- Megacable (formed by Grupo Bours and C-Tec). It will invest US\$ 90 million to provide transmission services.

Some of these new entrants claim that they are not going to compete with TELMEX, but rather that they will create alternative markets, including services with greater value added, Internet connection, voice and data transmission, video on demand, and direct access to long-distance telephone companies. Meanwhile, the recent signing of an interconnection contract between

Axtel and TELMEX, guaranteeing traffic between the two networks for three years without charge, is unprecedented in Mexico and could be an indicator of future trends in this market.

After two years' experience in long-distance telephony, it is possible to draw some conclusions (Lozano and Alarcón, 1999). Firstly, the number of investment projects is likely to decrease substantially as a result of technological development and inter-firm alliances. In addition, corporate strategies in this market have constantly been faced with problems arising from a lack of decisiveness on the part of the regulatory institutions, which have often taken decisions after local and foreign capital has already been committed, thereby creating uncertainty, bewilderment and even threats to cancel foreign

Table II.6
**MEXICAN FIRMS WITH FOREIGN OWNERSHIP OPERATING IN THE
 LONG-DISTANCE MARKET, 1999**

	Foreign partner	Foreign Ownership (percentage)	Cumulative investment	Fibre- optic network	Digitization (percentage)	Year of entry
TELMEX	SBC Com and France Telecom	10	14 000	55 000	100	1990 ^a
Alestra	AT&Tb	49	1 000	4 500	100	1997
Avantel	MCI-WorldComc	49	1 000	5 700	100	1995 ^d
Marcatele	IXC Com and Westel Inc.	...	75	2 000	100	1995

Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on information provided by TELMEX, Alestra, Avantel and Marcatel.

^a Year of foreign investor participation in TELMEX equity.

^b The other owners of Alestra, apart from AT&T, are the local business groups Alfa (25.6%) and Bancomer (25.4%).

^c Avantel is the product of an alliance between Banco Nacional de México (BANAMEX) and MCI WorldCom.

^d In September 1995, Avantel began to construct its fibre-optic network.

^e In order to obtain competitive costs on long-distance calls to the United States, Canada and the rest of the world, a connection to the IXC Communications network was set up on the border at Reynosa, Tamaulipas and McAllen, Texas.

investments. Apart from this, there is still a need for new alliances. Alestra, for example, is looking for partners to invest in local telephony (Ferro, 1999), while Miditel, which failed to find an international partner following the withdrawal of Korea Telecom, lost its concession because it was unable to make the relevant payments (Cárdenas, 1999).

In brief, the gradual opening up of the telecommunications sector has allowed for a growing presence on the Mexican market of the main world operators. The largest company in the sector, TELMEX, was privatized, and its management was turned over to a consortium that included the foreign companies France Telecom and SBC Communications. After that, despite the fact that TELMEX dominated all market segments during most of the 1990s, competition gradually increased, especially for long-distance and mobile telephony. As things stand now, to the deregulation of the Mexican market and the entry into force of NAFTA have been added pressures and alliances of international corporations and a rapid process of technological change. All this has been reflected in a scenario of tremendous dynamism and substantial investments, as new entrants seek to consolidate and expand their

market positions, and the main local operator (TELMEX) puts underway a strategy of rationalization, modernization and hemisphere-wide expansion towards the United States and Central America.

By the end of 1998, 15 concessions had been granted for the installation, operation and use of public telecommunications networks, 5 for local telephony, and another 5 for services in a variety of frequencies in the radioelectric spectrum (Lozano Alarcón, 1998). Other activities, including paging services, specialized radio communication, and restricted transmission microwave television, are expected to grow vigorously. Thus, the rapid and strong growth of telecommunications during the last generation has made a positive contribution to system-wide competition in the Mexican economy, especially in view of its strong dependency on foreign trade.

(c) **The financial system: in search of capitalization**

In the early 1990s, 18 banks were being privatized, there were strict limits on foreign participation in the Mexican financial system. In the wake of the economic

crisis of 1994, these restrictions were eased substantially and today they have all but disappeared. In early 1999, legislative amendments were introduced making it even easier for FDI to gain access to the financial system. As a result, foreign investors are now pursuing a general strategy to establish themselves in Mexico for the first time and participate in that market on a large scale.

The Mexican financial system has undergone far-reaching changes, especially since the peso crisis, and there have been multiple mergers and acquisitions, mostly led by foreign banks. Despite the difficulties the Mexican economy, especially the banking sector, was experiencing, foreign banks saw a great opportunity to enter the market, particularly as they were encouraged by the potential arising from Mexico's recent admission to NAFTA (*Expansión*, 22 May 1996).

Foreign banks injected capital into local financial institutions that were ailing as a result of the crisis and the poor management practices followed in the years leading up to it. In 1995, the banks were generally applying high interest rates (sometimes over 100%) and had massive non-performing loan portfolios. This meant that there was virtually no connection between the financial subsector and productive activities.⁴⁶ To avoid a second general bank failure in less than 15 years (the previous one had occurred in 1982), the authorities had to undertake a bailout operation costing US\$ 92 billion, financed out of public funds. This was carried out by the Bank Savings Protection Fund (FOBAPROA) —now replaced by the Bank Savings Protection Institute (IPAB)— and represented nearly 19.3% of Mexico's GDP.

Thanks to the legislative amendments, since 1996, and especially as from January 1999, foreign investment seems to be seeking to establish itself in Mexico for the first time and on a major scale. Up to the mid-1990s, Citibank was the only foreign bank in Mexico. As in other countries and activities in Latin America, it appears that the purchase of financial institutions gives added security to foreign investment in the subsector (ECLAC, 1998a; De Quesada, 1999). Between 1994 and 1998, total deposits in foreign banks in Mexico, measured in current pesos, grew by 53 times, and the loan portfolio increased by 59 times. The

number of accounts grew from 30,616 to 2.2 million (*Mundo Ejecutivo*, 1999).

Despite the progress made by NAFTA, financial institutions in the United States (other than Citibank) have not shown much interest in entering the Mexican market. Other, bolder and globally smaller investors, such as Canadian and Spanish banks, have been more active. Since 1995, the Bank of Montreal and the Bank of Nova Scotia have acquired minority interests in Bancomer and GF Inverlat, while Banco Bilbao Vizcaya and Banco Santander have gained control of GF Probursa and Banco Mexicano (see table II.7). In late 1996, Canadian and Spanish investors were the main players in the subsector, and between them they owned 12% of Mexican bank capital (Conger, 1999a). In 1997, some of the world's largest financial institutions started to come to Mexico. The Hong Kong and Shanghai Banking Corporation (HSBC) and J.P. Morgan bought stakes in Serfin —Mexico's third largest bank— and a year later Citibank took over 100% of Banca Confía (see table II.7).

Nevertheless, these resources proved insufficient, and the system remained technically bankrupt, with debts amounting to 10.9 times its capacity to pay. In this situation, it became apparent that local banks would have to obtain new capital by entering into associations with or sell controlling interests to foreign firms. In January 1999, the banking legislation was amended to allow a greater presence of foreign capital (particularly in the large banks) and thereby help capitalize local banks (Solomon Smith Barney, 1999a). The Chamber of Deputies approved the presidential initiative eliminating restrictions on foreign capital. Consequently, international banks will be able to own 100% of Mexican banks that have over 6% of the market. Until this measure was passed, foreign institutions had only had a presence in small and medium-sized banks.

There is no consensus on the amount of resources that is needed to put the banking system back on a sound footing. According to an initial government estimate, US\$ 5 billion would be needed; the Mexican Bankers Association, however, puts the optimal level of funds required to capitalize the system at about US\$ 8 billion (García, 1999). These calculations have been far surpassed by financial analysts, who estimate

46 In real terms, lending by Mexican banks to the private sector was lower in 1998 than in 1994. According to data provided by the Bank of Mexico, bank financing for the private sector fell by 39.9% in real terms in 1996, by more than 16% in 1997, and by 4.3% in 1998. In fact, small and medium-sized enterprises have practically had no access to bank credit because of its high cost (Taylor, 1999).

Table II.7
MEXICO: MAIN ACQUISITIONS OF LOCAL BANKS BY FOREIGN INVESTORS, 1995-1999
(Millions of dollars and percentages)

Mexican bank	Percent- age	Foreign bank	Nationality	Amount	Year of entry
GF Probursaa	70	Banco Bilbao Vizcaya (BBV)	Spain	365	1995
Banco Mexicanob	75	Banco Santander	Spain	500	1996
GF Bitalc	8	Banco Central Hispano (BCH)	Spain	37	1995
	9	Banco Comercial Portugués	Portugal	...	1995
Grupo Serfin	20	Hong Kong & Shanghai Banking Corporation (HSBC)	United Kingdom	174	1997
	9	J.P. Morgan	United States	68	1997
Banca Confía	100 ^d	Citibank	United States	195	1998
GF Inverlat	55	Bank of Nova Scotia	Canada	75	1996
Bancomer	20	Bank of Montreal	Canada	456	1995

^a **Source:** ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management.

^b In September 1996, BBV acquired the branch network and business of the Mexican banks Cremi and Oriente, for US\$ 21 million, and these were integrated into BBV-Probursa operations (Álvaro Calderón and Ramón Casilda, "Grupos financieros españoles en América Latina: una estrategia audaz en un difícil y cambiante entorno europeo", Desarrollo Productivo series, No. 59 (LC/L.1244-P), Santiago, Chile).

^c October 1996, Banco Santander bought 75% of Banco Mexicano for US\$ 378 million, and in April 1997, it completed the acquisition of 51% of Grupo Financiero InverMéxico, for US\$ 122 million. By the end of 1997, as a result of a subsequent capital increase and a merger with Grupo Financiero Santander México, the equity share of the Santander group had grown to 68.5%. The purchase of Banco Mexicano by Santander marked the first time that a foreign company that was not already a shareholder had gained control of one of the 18 privatized Mexican banks by bringing in fresh capital once the bank had been put on a financially sound footing (*ibid*).

^c BCH retains a direct 8.26% holding in Grupo Financiero Bitál. This group operates in Mexico with a universal banking approach covering traditional banking services and operations with securities, warrants, insurance and pensions. Banco Internacional is the leading member of the group and holds fourth place in the Mexican banking system, with more than 1,530 branches (*ibid*).

^d Includes an option that can be exercised in the year 2000.

financing needs at between US\$ 10 billion and US\$ 25 billion.⁴⁷ The capitalization requirements of the main banks are enormous: Serfin and GF Bitál need about US\$ 4 billion; Bancomer, about US\$ 2 billion, and Banamex, about US\$ 500 million (Conger, 1999a). Accordingly, in the case of banks that were intervened, the authorities are trying to capitalize and sell them as quickly as possible. In fact, Banco Serfin was intervened and put up for sale in July 1999. Other banks that have been intervened by IPAB, such as Banca Promex, Banco Atlántico and Bancrecer, are certain to be bought by one of the large Mexican or foreign players.

Despite the fact that the three largest banks in the system —GF Bancomer, GF Banamex-Accival and Serfin— already account for over half of Mexico's financial subsector, this high concentration can be

expected to accentuate further, especially as a result of new mergers and acquisitions. In view of the imminent increase in foreign participation in the Mexican banking subsector, several analysts have speculated on the possibility of a merger between the system's largest two players —Bancomer and Banamex (Taylor, 1999). In early 1999, foreign banks held 22% of the capital stock and 40% of the assets of the Mexican banking system (Conger, 1999c).

There is a similar dynamic among the pension fund management institutions (Administradoras de Fondos para el Retiro - Afores). Of the original 17 Afores, 13 remained after 18 months of operation, and only 11 are expected to survive to the end of 1999. Following a series of mergers, Principal, which belongs to US Principal Financing Group, is currently the only Afore that is entirely foreign owned. The Spanish banks BBV

47 This figure could rise substantially if small and medium-sized banks are included, such as Banca Promex, Banco Atlántico and Bancrecer, which could require up to an additional US\$ 12 billion.

and BSCH have stakes in some of the country's largest pension fund managers. Overall, Spanish and United States banks and financial institutions control over 45% of the pension fund management business in Mexico, which was handling nearly US\$ 9 billion in mid-1999.

In brief, the rapid opening up of the financial sector to international firms has coincided with an aggravation of difficulties faced by the major Mexican banks. This has led to opportunities for new entrants, but it has also given rise to some misgivings about the security of future investment in the Mexican financial sector. Although confidence in the Mexican economy has increased with the entry into force of NAFTA, the major United States banks—except Citicorp—have hardly participated at all, and they have left leadership in this field to the Canadian banks. Likewise, in keeping with their strategy throughout Latin America, European firms, particularly Spanish banks, have begun to play a strong role in several of the largest segments of the Mexican financial market, including commercial banking and pension fund management.

One of the greatest challenges for the solidity of the Mexican economy is to maintain a vigorous, healthy and adequately functioning financial system. Mexico's banks need to regain their capacity as lending institutions and enhance their links with the productive sector. Given the recent protagonism of foreign capital, there are major challenges for the future. Attracting the main international banks will not be an easy task.

**(d) The infrastructure and energy subsectors:
new opportunities for foreign capital**

The nationalization of the electric power industry in the early 1970s had a number of goals: to integrate the existing systems, to standardize frequency of service, and to expand coverage, all under the exclusive competency of the Federal Electricity Commission (CFE) (Secretaría de Energía, 1999a). Currently, 95% of the population has access to electricity, and the

service needs to be expanded in order to ensure that adequate provision is made for future consumption, as demand is growing faster than the rest of the economy. The Federal Electricity Commission anticipates that national demand for electric power will grow at an average rate of 6% per year during the period 1998-2007. Growth will be even greater in the industrialized regions (Secretaría de Energía, 1999b).

The Mexican authorities estimate that over the next six years, an additional 13,000 megawatts (MW) of capacity will be needed; this is equivalent to over one third of currently installed capacity. Large investments in transmission and distribution systems will also be required. The total outlay, likely to be on the order of US\$ 25.3 billion, is beyond the reach of the Mexican State (Secretaría de Energía, 1999a). In view of this situation, the Government proposed a wide-ranging reform of the energy subsector that was aimed at admitting private capital in the different phases of generation and distribution,⁴⁸ and even envisaged the gradual privatization of State-owned firms in the subsector. This stage will begin in the year 2000.

These reforms have encountered strong opposition in Congress, however, which could delay them even beyond the end of President Ernesto Zedillo's term of office. Meanwhile, other obstacles to private participation have been removed, particularly the 4% tariff on natural gas imports from the United States. Authorization has also been given to use the gas pipelines belonging to Petróleos Mexicanos (PEMEX).

At present, private investors are allowed to participate in electric power generation projects, both in selling electricity to the Federal Electricity Commission and in meeting the energy needs of Mexican industry by setting up self-generation companies. Between 1994 and 1998, 128 permits were granted for a total of 5,445 MW, which represents 15.6% of installed generating capacity⁴⁹ (Secretaría de Energía, 1999b). In these projects, participation by foreign investors, particularly from Japan, the United States, France, Spain and Switzerland, has been very significant (see table II.8).

48 In 1992, the Public Service Electric Power Act was amended to allow limited private participation, both local and foreign, in electric power generation. Despite the changes, many restrictions still remain, which has caused the level of interest among private companies to remain low. At the present time, attempts are being made to amend Articles 27 and 28 of the Mexican Constitution, along with secondary legislation, to broaden the Electric Power Industry Act and introduce some new regulatory provisions. To ensure a smooth transition to a renovated electricity sector, the Government intends to carry out the process in three stages. The first two will be concluded by the end of President Ernesto Zedillo's term of office. Then, early in the new millennium, a new privatization programme will be initiated to divest State assets in the electricity subsector (Secretaría de Energía, 1999a).

49 Of these permits, 36—for a total of 1,718 MW—were granted to PEMEX plants.

Table II.8
MEXICO: FOREIGN FIRMS IN ELECTRIC POWER GENERATION PROJECTS
(In millions of dollars and megawatts)

Project	Consortium (nationality)	Date of tender	Capacity (MW)	Investment	State of project
Samalayuca II	General Electric (United States), Bechtel Corporation (United States), El Paso Energy Corporation (United States) and ICA-Flour Daniel (United States)	1992	521.7	514	Commercial Operations
Mérida III	AES Corporation (United States), Nichimen Corporation (Japan) and Grupo Hermes (Brazil)	1996	531.5	293	Under construction
Cerro Prieto IV	Mitsubishi (Japan)	1996	100.0	132	Under construction
Rosarito III	ABB Group (Switzerland) and Nissho Iwai (Japan)	1996	550.0	400	Under construction
Chihuahua	Mitsubishi (Japan)	1996	417.8	326	Under construction
Monterrey I	ABB Group (Switzerland) and Nissho Iwai (Japan)	1996	489.9	396	Under construction
Rio Bravo I	Marubeni (Japan)	1998	568.6	274	In operation
Rosarito 7	Marubeni (Japan)	1998	...	...	In operation
Hermosillo	Westinghouse (United States)	1997	...	...	In operation
El Sauz (Bajío)	Westinghouse (United States)	1998	475.0	304	In operation
Huinalá	Westinghouse (United States)	1997	450.0	193	In operation
Hermosillo	Unión Fenosa (Spain)	1998	252.7	116	Under construction
Altamira II	Electricité de France (EDF)	1998	450.0	193	Under construction
Saltillo	Electricité de France (EDF)	1998	245.0	112	Under construction

Source: ECLAC, Information Centre of the Unit on Investment and Corporate Strategies, Division of Production, Productivity and Management, based on information provided by the Secretariat of Energy [<http://www.energia.gob.mx>].

Most of these new electric power projects are fuelled by natural gas, so a surge in new gas pipeline construction can be expected (Secretaría de Energía, 1999b). A case in point is that of KN Energy—the sixth largest integrated natural gas company in the United States—and Sempra, which have announced a project to build new gas pipelines between the United States and Mexico (*Wall Street Journal Americas*, 29 June 1999).

The Government will soon invite bids to build a new electric power plant in Monterrey. For the first time, the successful bidder will be able to choose its natural gas supplier and will also be able to sell power

directly to industrial customers—a situation that has aroused interest among several of the largest United States players. Thus, the efforts by the Mexican authorities to increase the presence of foreign investors in the electric power subsector and thereby contribute to the integration of the Mexican and United States power systems are beginning to bear fruit.

In brief, it appears that the NAFTA countries have a hemisphere-wide strategy in regard to energy infrastructure. As long as regulatory constraints are eased, substantial investments can be expected over the next few years, and this could have a positive impact on the competitiveness of the system in Mexico.

C. CONCLUSIONS: THE CONTRIBUTION OF FOREIGN DIRECT INVESTMENT TO THE MEXICAN ECONOMY

Since the late 1980s, FDI has been a key factor in the new Mexican development strategy aimed at integration with the North American economy. The general easing of rules governing the establishment of FDI, the search for greater operational efficiency and transparency, and the elimination of most sectoral requirements are evidence of the significant changes made in Mexican policy since the 1970s. Today, FDI is allowed to participate in virtually every economic activity, and in the next few years, it is likely that the Mexican authorities will do away with the remaining restrictions.

In this way, FDI has contributed in an increasing and sustained way to gross fixed capital formation and has become an important source of income and macroeconomic financing. Given its weight in the balance of payments, it has played a fundamental role in the development of export capacity and the improvement of the overall competitiveness of the Mexican economy. Since 1998, exports—mainly manufactures—have been the engine of economic growth, with the relative importance of external sales rising from 11.1% to 28.3% of GDP between 1988 and 1998.

In recent years, FDI inflows have grown in spectacular fashion, mainly as a result of the entry into force of NAFTA. The average annual inflow of US\$ 2.4 billion during the 1980s increased to over US\$ 10.5 billion in 1994-1999. During this latter period, over 60% of FDI was destined for manufacturing activities, mainly export-oriented ones. More than 60% of FDI inflows came from the United States. To summarize, the main strategic orientations of foreign investors in Mexico are as follows:

- To improve the efficiency of the transnational corporations' integrated production systems in the North American market, mainly in the automotive, electronics and apparel subsectors. In this regard, foreign firms—especially United States companies—have benefited from Mexico's export-promotion policy, essentially through the

maquila industries programme, and also from the production sharing policy adopted by the United States (HTS rule 9802), all of which has been given added force by NAFTA.

- To gain access to markets with high growth potential. Despite having obtained a significant market share in certain manufacturing activities (especially in the food, beverages and tobacco sector), foreign investor interest has focused increasingly on services, especially telecommunications, retailing, banking, pension fund management, electric power, and gas distribution. Although the opening of these markets has not been problem-free, transnational corporations are counting on Mexico's integration into the United States' production and distribution network. As this trend goes far beyond short-term changes, the country's investment plans are now being defined on the basis of long-term horizons.

From the standpoint of the local authorities, the increased participation of international companies in the areas of services and infrastructure is expected to have a positive impact on Mexico's overall competitiveness.

In recent years, the entry into force of the NAFTA accords has represented a watershed for FDI, and NAFTA provisions have come to represent a "ceiling" in the negotiation of bilateral agreements. The extent of the agreement's impact has been reflected in the changes made by the Mexican authorities to regulatory frameworks relating to FDI and in the strategies of transnational companies. The advantage given to firms from NAFTA countries—including rules of origin, tariff benefits and a regulatory framework providing security to investments—together with the production sharing scheme, have led to a massive inflow of investment, mainly from the United States, and, to a lesser extent, from Canada.

In the case of Mexico, the recent inflow of FDI—especially since the December 1994 crisis—has been aimed primarily at creating new assets and

purchasing fixed assets in the private sector. Efforts by foreign investors to create and expand productive capacity have been concentrated in the most dynamic export areas, and this has had a positive effect on manufacturing export capacity.

Mexican-based operations have become a crucial element in the United States' strategy in the face of competition from Asia those sectors where FDI participation is highest, i.e., the automotive, computer and apparel industries. In general, these industries are trying to raise the efficiency of their global production systems; apart from being the main investors in absolute terms, they have also given rise to a significant increase in intra-industry trade. Mexico has become an integral part of the global production and distribution network of some of the largest transnational companies in the international arena. In most cases, however, Mexico is part of the "United States" or "North American" network, and not necessarily part of the "global" network. This is confirmed by the fact that the concentration of Mexican exports in the United States has continued to intensify and the growth rates in total external sales have been high. The negotiations with the European Union could attenuate this trend, as the markets of destination for Mexican exports become more diversified.

The results reported by the export-oriented segment of the economy have been highly positive. The rest of the economy, however, continues to suffer from significant shortcomings, including the weakness of linkages between export activities and the national economy. This is in sharp contrast with the experience of certain Asian countries. Although the NAFTA rules of origin strongly encourage the creation of national linkages, this has not been facilitated by the operation of the North American production sharing mechanism, via TSUS 807 and HTS US 9802. However, the potentially positive impact is only beginning to be seen, and it will be quite some time before it becomes significant. In this regard, the performance of the television set and computer industries in Mexico's northern border zone is noteworthy. International integrated production systems, global trading links and

both intra-industry and intra-firm foreign trade have predominated in these activities from the outset, whereas links with the rest of the economy, in terms of value added, jobs for skilled workers and learning processes, have been negligible. Despite attempts to enhance the linkages of the *maquila* industry with the rest of the economy, it has not managed to create more than 2% in value added. Because of their neutrality and their horizontal nature, national policies have not encouraged integration between the local economy and these export-oriented activities.

These characteristics explain the dynamics of the Mexican economy over the past decade. From a macroeconomic standpoint, there have been some successes, especially in terms of exports and attraction of FDI, and, to a lesser extent, GDP growth. From a sectoral perspective, however, the structure of the Mexican economy is becoming increasingly polarized. Through FDI, a fairly small group of firms—many of them foreign—have driven GDP and export growth, and they have made a significant contribution to the modernization of one segment of the economy. Nevertheless, these firms, which make intensive use of capital and intra-industry trade, generally create few jobs for skilled workers, and their linkages with the rest of the economy are still minimal.

To summarize, Mexico has been fortunate in that its main export market and the greatest source of FDI inflows enjoyed a protracted and strongly positive economic cycle during the 1990s. However, national development policy should not be based on lucky circumstances. At any rate, much remains to be done as far as national economic policy is concerned. Some of the main challenges facing the authorities will be to find ways to diversify export markets and sources of FDI, in order to ensure the stability of the model; to help national companies become major suppliers of subsidiaries of transnational corporations that play a major role in export activities; and to consolidate the industrialization process by taking advantage of NAFTA rules of origin and reviewing the regulations governing a number of services that are required by the transnational corporations, in order to improve the overall competitiveness of the national economy.