

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN

**DESARROLLO
PRODUCTIVO**

Nº 21

**MEXICO'S INCORPORATION INTO THE NEW INDUSTRIAL ORDER:
FOREIGN INVESTMENT AS A SOURCE OF INTERNATIONAL
COMPETITIVENESS**

Alvaro Calderón, Michael Mortimore, Wilson Peres

TRANSNATIONAL CORPORATIONS AND FOREIGN INVESTMENT



UNITED NATIONS

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN

**MEXICO'S INCORPORATION INTO THE NEW INDUSTRIAL ORDER:
FOREIGN INVESTMENT AS A SOURCE OF INTERNATIONAL
COMPETITIVENESS**

Alvaro Calderón, Michael Mortimore, Wilson Peres



UNITED NATIONS
Division of Production, Productivity and Management
Santiago, Chile, 1995

LC/G.1864
May 1995

This document was prepared by Alvaro Calderón and Michael Mortimore, of the Joint ECLAC/UNCTAD Unit on Transnational Corporations of the ECLAC Division of Production, Productivity and Management and Wilson Peres of the Joint ECLAC/UNIDO Industrial and Technological Development Unit of the same Division. The views expressed herein and those of the authors do not necessarily reflect the views of the Organization.

This document has not undergone formal editing, but has been checked for correct terminology and references.

CONTENTS

	<i>Page</i>
SUMMARY	5
RESUMEN	7
I. INTRODUCTION	9
II. MEXICO'S STRUCTURAL CHANGE IN THE 1980s AND EARLY 1990s	11
III. FOREIGN DIRECT INVESTMENT AND STRUCTURAL CHANGE	13
1. Impacts on the production structure	16
2. Outward orientation and international competitiveness	17
3. The importance of foreign firms in improved international competitiveness	19
IV. SECTORAL DYNAMICS	21
1. The automobile industry	21
2. Electrical and electronic equipment and appliances	26
3. The <i>maquiladora</i> industry	28
V. MEXICAN DIRECT INVESTMENT ABROAD	33
VI. CONCLUSIONS	35
Notes	36
BIBLIOGRAPHY	39
 TABLES AND FIGURES	
Table 1 Foreign direct investment flows, 1955-1993	10
Table 2 Cumulative foreign investment	15
Table 3 Share of foreign investment in Mexico's gross fixed investment .	16
Table 4 Indicators of Mexico's international competitiveness	18
Table 5 Share of foreign firms in Mexico's foreign trade	20
Table 6 Mexico: Passenger car sales, by principal market	24
Table 7 Mexico: Passenger car sales, in export and domestic markets, 1978-1993	25

	<i>Page</i>	
Table 8	Main economic indicators of the <i>maquiladora</i> industry	29
Table 9	Total value of U.S. imports for consumption under HTS provision 9802.00.80	31
Figure 1	Foreign investment and GDP growth	14
Figure 2	Mexico: Automotive industry exports, by group, 1980-1992 . . .	22
Figure 3	Passenger car sales, 1978-1993	23
Figure 4	Mexico: Total exports of in-bond (<i>maquiladora</i>) industry, 1988-1992	29

SUMMARY

Transnational Corporations (TNCs) have become the most important agents of the integration of Mexico into the new international industrial order and account for the most dynamic elements of its new international competitiveness. The interplay of international market factors in certain industries, the corporate strategies of certain TNCs and national policy guidelines in certain sectors explains that phenomenon.

Foreign direct investment was closely associated with Mexico's process of structural reforms and improved competitiveness. As a proportion of gross fixed investment FDI rocketed from 3% in 1980-1981 to 9% in 1990-1993. Between 1989 and 1993 the stock of FDI doubled to US\$ 48 billion and United States investments accounted for almost two thirds of that growth. Industries that received the most FDI were also the fastest growing in 1989-1993: automobiles (20%), dairy products (11%), beverages (10%), electrical machinery (9%) and chemicals (8%). A structural transformation took place with regard to Mexico's exports to the OECD, manufactures now account for two-thirds of the total whereas in 1980 less than one-third did.

Mexico is more closely integrated into the international industrial order as a consequence. Its overall market share of OECD imports of manufactures rose from 0.7% in 1980 to 1.7% in 1992. Very significant market shares are found for electrical equipment (20%), TV receivers (12%), power machinery (8%), radio receivers (7%), engines (5%), car parts (4%) and passenger vehicles (2%). Foreign firms accounted for more than half of total private sector exports (excluding in-bond assembly or *maquiladora*) most notably in the automobile, electrical machinery and electronic equipment, and chemical industries.

Much of the change in Mexico responds to the globalization process and the restructuring of particular industries in the United States and specific corporate strategies employed to deal with them. These factors are particularly evident in the automobile and in-bond assembly sectors. In general, national policy was liberalized to accommodate the process.

With regard to the transformation of the Mexican automobile sector, it was the Japanese challenge faced by the Big Three (GM, Ford and Chrysler) in the United States market which led them to seek out nearby low cost production sites for small engine entry level front wheel drive passenger vehicles in order to export them competitively to the United States market. Annual passenger vehicle production in Mexico jumped from the 25 000 unit level during 1983-1987 to the 832 000 level during 1993-1994 and over half the production in the latter period was exported. Non in-bond assembly exports from this industry reached more than US\$ 6 billion in 1992 (passenger cars - US\$ 4 billion, engines - US\$ 1.3 billion, car parts - US\$ 0.8 billion). High-tech automobile and engines plants, such as Ford's plants in Hermosillo and Chihuahua, demonstrated that considerable sophistication accompanied Mexico's improved competitiveness in this industry.

With regard to the in bond assembly or *maquiladora* industries, net value added reached US\$ 5.4 billion in 1993 and incorporated 2,100 plants, employing 550,000 persons. The most dynamic sectors in respect of exports were auto parts, electrical

machinery and electronic equipment, clothing, and leather and footwear products. The success of the *maquiladora* industries stems primarily from the sharp devaluation of the Mexican peso (reducing real salaries measured in dollars), the restructuring of several industries in the United States in response to the Asian challenge (automobile, electronic equipment, clothing, etc.), and preferential access to the United States market (by way of HTS 98.02 which defines the production sharing mechanism). These activities in Mexico represent a low-tech variant of Mexico's improved international competitiveness.

In sum, transnational corporations have been central to the improvement of Mexico's international competitiveness and its closer integration into the new international industrial order. That integration is limited to the North American cluster of the new Triad taking form. In the case of Mexico there exist both high-tech (automobile industry) and low tech (in-bond assembly) variants and both are externally-generated.

RESUMEN

Las empresas transnacionales se han transformado en los agentes más importantes de la integración de México en el nuevo orden industrial internacional y constituyen los elementos más dinámicos de su nueva competitividad internacional. La interacción de factores de mercado internacional en ciertas industrias, las estrategias comerciales de algunas empresas transnacionales y las directrices de política nacional de determinados sectores explica ese fenómeno.

La inversión extranjera directa (IED) estuvo estrechamente vinculada al proceso mexicano de reformas estructurales y mayor competitividad. Como proporción de la inversión fija bruta, la IED se disparó de 3% en 1980-1981 a 9% en 1990-1993. Entre 1989 y 1993 el stock de IED se duplicó a 48 000 millones de dólares, y las inversiones de los Estados Unidos representaron casi dos tercios de ese crecimiento. Las industrias que recibieron más IED también fueron las que más crecieron en el período 1989-1993: automóviles (20%), productos lácteos (11%), bebidas (10%), maquinaria eléctrica (9%) y productos químicos (8%). Se produjo una transformación estructural con respecto a las exportaciones de México a la Organización de Cooperación y Desarrollo Económicos (OCDE); actualmente las manufacturas representan dos tercios del total, mientras en 1980 les correspondía menos de un tercio.

En consecuencia, México está más estrechamente integrado en el orden industrial internacional. Su participación global en el mercado de las importaciones de la OCDE aumentó de 0.7% en 1980 a 1.7% en 1992. Se registran participaciones muy importantes en el mercado para los equipos eléctricos (20%), los televisores (12%), los aparatos para la distribución de electricidad (8%), los radiorreceptores (7%), los motores (5%), los repuestos para automóviles (4%) y los vehículos de pasajeros (2%). Las empresas extranjeras representaron más de la mitad de las exportaciones totales del sector privado (excluidas las maquiladoras), sobre todo en la industria automotriz, la maquinaria eléctrica y equipo electrónico y la industria química.

Gran parte del cambio en México responde al proceso de globalización y la reestructuración de ciertas industrias en los Estados Unidos y las estrategias comerciales concretas empleadas para hacerles frente. Estos factores son particularmente evidentes en los sectores del automóvil y las maquiladoras. En general, la política nacional se liberalizó para adaptarse al proceso.

Con respecto a la transformación del sector automotor mexicano, fue el reto que planteó Japón a los tres grandes productores de automóviles (General Motors, Ford y Chrysler) en el mercado de los Estados Unidos lo que los llevó a buscar locales de producción cercanos y de bajo costo para fabricar vehículos de pasajeros de nivel básico, motor pequeño y tracción delantera, a fin de exportarlos competitivamente al mercado estadounidense. La producción anual de vehículos de pasajeros en México aumentó de 250 000 unidades durante 1983-1987 a 832 000 unidades durante 1993-1994 y más de la mitad de la producción en este último período se exportó. Las exportaciones de esta industria no provenientes de maquiladoras ascendieron a más de 6 000 millones de dólares en 1992 (vehículos de pasajeros: 4 000 millones, motores: 1 300 millones,

repuestos: 800 millones). Las plantas de alta tecnología para la fabricación de automóviles y motores, como las que posee la Ford en Hermosillo y Chihuahua, demostraron que el aumento de la competitividad de México en esta industria estuvo acompañado de considerable sofisticación.

Con respecto a las industrias maquiladoras, el valor agregado neto alcanzó los 5 400 millones de dólares en 1993 e incorporó 2 100 plantas, que emplearon a 550 000 personas. Los sectores más dinámicos en cuanto a las exportaciones fueron los repuestos de automóviles, la maquinaria eléctrica y el equipo electrónico, el vestuario, los productos de cuero y el calzado. El éxito de las industrias maquiladoras radica principalmente en la fuerte devaluación del peso mexicano (que redujo los salarios reales medidos en dólares), la reestructuración de varias industrias de los Estados Unidos en respuesta al desafío asiático (automóviles, equipo electrónico, confecciones, etc.) y el acceso preferencial al mercado estadounidense (gracias a la sección 98.02 de la Clasificación Armonizada de Aranceles, que determina el mecanismo de compartimiento de la producción). Estas actividades en México representan una variante de baja tecnología de la mayor competitividad internacional mexicana.

En suma, las empresas transnacionales han sido cruciales en el aumento de la competitividad internacional de México y su mayor integración en el nuevo orden industrial internacional. Dicha integración se limita al conglomerado norteamericano de la nueva tróada que se está formando. En el caso de México existen variantes de alta tecnología (industria automotriz) y baja tecnología (maquiladoras), ambas generadas externamente.

I. INTRODUCTION*

Foreign direct investment (FDI) has played a crucial role in Mexico's development since the nineteenth century. Investments in mining, oil and public utilities around the turn of the century were followed, after the interruption forced by the 1910 Revolution, by important investments in manufacturing, all through out the import substitution industrialization (ISI) process. Naturally, in this context, multinational enterprises (MNEs) have been the leaders in some of the most important industries on which the country has based the expansion of its domestic market and its industrial exports. The investment development path (IDP) concept (Dunning and Narula, 1994) is a useful tool to understand and summarize the dynamics of FDI inflows to Mexico, as well as the more recent outflows from the country.

Until the mid-1940s Mexico may be considered as "stage 1" country in the IDP; its locational specific advantages were insufficient to attract significant direct investment, with the exception of those related to the possession of natural assets. Although some manufacturing MNEs started assembly operations in the country much earlier, it is with the development of the metal-mechanical and chemical industries during the ISI period that the country entered "stage 2" of the IDP. The building up of a basic infrastructure and the upgrading of human resources via education that took place during the previous stage combined with a fast growing domestic market during ISI made profitable for MNEs to undertake local production with a significant domestic content in parts and components. FDI inflows increased sharply from the 1950s to the 1970s (table 1) basically induced by economic growth, stable macroeconomic conditions and government policies that protected the domestic market, subsidized capital investment and safeguarded the purchasing power of large segments of the urban population.

Although the debt crisis of the 1980s stopped economic growth for a decade, the country experienced a drastic economic restructuring that strengthened some very specific industrial sectors. As it was to be expected for a country well advanced into its second stage in the IDP, some large Mexican firms located in those sectors emerged as significant direct investors abroad. Ownership advantages in the production of some industrial commodities, as well increasingly important perceived internationalization advantages by such firms may indicate that there are forces pushing towards Mexico's upgrading from stage 2 to stage 3 along the IDP. However, medium-term obstacles (as the financial crisis surrounding the huge devaluation of the Mexican peso in December 1994) and the increasing dependence of the country on foreign investment inflows to modernize its economic structure will determine that its net outward investment (NOI) position will continue to be negative for a long period in the future.

In this context of change, in which modernization and crisis intertwine permanently, multinational enterprises played, and are playing, a crucial role. The main objective of this chapter is to present the principal features of their dynamics and their impact on

* A similar version of this study will be published in John Dunning and Rajneesh Narula (1995).

Mexico's incorporation into the new international industrial order as well as on its growing competitiveness in some important manufacturing markets. The chapter is divided into five parts that present: i) a brief description of the most important characteristics of Mexico's process of structural change in the 1980s and the early 1990s, ii) the role of foreign firms in this process, specially in the areas of outward orientation and international competitiveness, iii) the dynamics of three industries in which that role is particularly important (automobiles, electric and electronic equipment and in-bond assembly activities, i.e. *maquiladoras*), iv) the increasingly important process of investing abroad on the part of the largest Mexican industrial corporations, and v) some conclusions that will take into account the new challenges posed by what looks like a new crisis period in the mid-1990s.

Table 1
FOREIGN DIRECT INVESTMENT FLOWS, 1955-1993
(Annual averages in million 1985 dollars)^a

	Inflows	Outflows ^b
1955-1961	498	na
1962-1973	731	na
1974-1977	1 271	na
1978-1982	2 347	na
1983-1985	467	176
1986-1988	2 495	140
1989-1993	3 189	235

Source: Banco de México, *Informe anual*, Mexico City, several years; and Organisation for Economic Cooperation and Development (OECD), *International Direct Investment Statistics Yearbook*, Paris, 1994.

^a Balance-of-payments flows deflated by the consumer price index in the industrialized countries.

^b Mexico does not produce data over investment abroad. Outflows recorded in this table refer only to Mexican direct investment in the United States, by far the most important host country for those investments. The large direct investments undertaken by CEMEX in Spain are not included.

II. MEXICO 'S STRUCTURAL CHANGE IN THE 1980s AND EARLY 1990s

When in early 1989 a new Mexican Administration announced its target of doubling the stock of foreign investment in the country by the end of its six-year term, skepticism was widespread. The country had been in the midst of the debt crisis since 1982 and the prospects for the future were at most slightly optimistic. At the end of 1993, that is one year before the end of that Administration, that target had been surpassed by more than 74%. Foreign investment flows reached US\$ 41.7 billion in 1989-1993,¹ increasing the investment stock from US\$ 24.1 billion to US\$ 65.8 billion in the period (Calderón, Mortimore and Peres, 1994). The context for this spectacular performance was a harsh macroeconomic stabilization programme, radical structural change and an increasingly profound integration in the North American economic area. By mid-1994, Mexico was a member country of the Organisation for Economic Cooperation and Development (OECD), was implementing an already approved North American Free Trade Agreement (NAFTA) with Canada and the United States, and appeared well positioned for a period of renewed economic growth. The plunge in the value of the peso and the collapse of the stock market in December 1994 and January 1995 may result in an important obstacle for renewed growth in the short term, but in a longer term perspective, the country's prospects for growth continue to be strong.

In spite of a slowdown in the Mexican economy in 1993 when GDP per capita fell, during the 1988-1994 period GDP grew at an annual average of 2.9% and gross fixed investment as a proportion of GDP grew from 17% in 1988 to 20.7% in 1993. Although these figures do not look impressive in comparison to the country's long-term (1950-1980) economic performance, they show an important improvement with reference to the crisis period of 1982-1988. Moreover, other macroeconomic variables also show the results of the stabilization and structural change policies. Inflation that was 159% in 1987 came down to 7% in 1994, public finances showed a surplus in 1992 and 1993, and the ratio of external public debt to GDP declined from 44.0% in 1988 to 14% at year-end 1993. The net transfer of resources abroad was reversed, and during that period Mexico had net capital inflows of 5% of GDP on average. The capital account balance changed from a deficit of US\$ 1.2 billion in 1988 to a surplus of US\$ 30.9 billion in 1993, the accumulated new inflows reaching US\$ 86.7 billion in the period. This process was the result of capital repatriation, foreign investment and the private sector's greatly improved access to international capital markets. Capital inflows combined with a decline in the level of domestic savings and a persistent trend towards the revaluation of the exchange rate implied a current account deficit of US\$ 23 billion both in 1992 and 1993 (Banco de México, 1994). By the end of 1994, a deficit of that magnitude proved to be unsustainable and forced a sharp devaluation of the peso and prompted a new macroeconomic stabilization programme.

Mexican exports, especially manufactured exports, have grown continuously since the mid-1980s. In 1985-1993, non-oil exports, measured in current dollars, grew at an annual rate of 17.8%, while manufactured exports did so at an annual rate of 19.4%. As a result the ratio of non-oil exports to GDP increased threefold between 1982 and 1993

(from 4% to 12%). Furthermore, the Mexican economy experienced a significant diversification of its export structure; while in 1982 crude oil accounted for 75% of total merchandise exports, by 1993 this percentage has dropped to 14.3%. Moreover while in the early 1970s, Mexico was mainly an exporter of silver, tomatoes, cotton, seafood and similar goods, by the mid-1990s some of the leading export products were passenger cars, car parts, car engines, electricity distribution equipment, telecommunication and information processing equipment, and television receivers.

These results, both the positive (renewed growth, capital inflows, increased and diversified exports, reduced inflation) and the negative ones (exchange rate revaluation, trade and current account deficit), were basically the outcome of policies oriented towards reducing the role of the state in the economy, dismantling the structure of protection that characterized the import substitution period of industrialization and deregulating important segments of economic activity, which were combined with skillful negotiations with other countries (the United States and Canada) and crucial economic agents in the country (for example, the automobile-producer multinational enterprises –MNEs– and the largest domestic corporations).

The reduction of the role of the state implied privatization of most state-owned enterprises, the exceptions being the oil and electricity state enterprises, as well as an important reduction of public investment and expenditures from 42% of GDP in 1982 to 27% in 1993. The protectionist structure was dismantled relatively quickly, and less than 2% of the import schedule is subject to quantitative restrictions in 1993. Even before the NAFTA, the Mexican economy had been transformed into one of the most open economies in the world with an average tariff of about 10% and a maximum tariff of 20%. Deregulation has been specially important in issues related to private and foreign investment, domestic transportation and land ownership. New regulations have been sparse and were concentrated in the field of competition policy.

Regarding the regulatory framework, two government policies, enacted as law, stand out for their potential impact on the country's attraction to foreign investors. In December 1993, the 20-year-old nationalistic foreign investment law was substituted by a new legal framework that incorporated the commitment Mexico undertook in the NAFTA and designed a strategy to reorganize the action of different government units in charge of the promotion of FDI. The new legislation brought about substantial liberalization in the screening process and in opening key sectors of the economy to foreign participation. A closely related law regarding foreign investment in the financial sector was simultaneously approved.² As the 1973 law was instrumental for the development of foreign firms in a context of protectionism and ISI, it is to be expected that the new legislation will be instrumental for foreign investors to benefit from Mexico's more recent locational specific advantages as an export platform to North America.

III. FOREIGN DIRECT INVESTMENT AND STRUCTURAL CHANGE

Since the beginning of the 1990s, the Latin American countries have received large net amounts of external capital. During the first four years of this decade, the flows of capital towards the region reached an annual average of US\$ 44 billion (ECLAC, 1994). This situation represents a complete turnaround from the 1980s when Latin America had to face a notable restriction of foreign financing as a consequence of the international debt crisis. Although most of the countries in the region benefitted from increased foreign capital inflows, these flows were concentrated in only a few countries. The high-performer was Mexico whose economy accounts for a quarter of the regional GDP and yet absorbed almost 50% of these net capital inflows from private sources.

Several factors explain the dimension of the capital flows towards Mexico. In terms of external factors, one should take into account the recession in the industrialized countries, especially in the United States, which also caused a steep fall in the profits in the property market, and the decline in domestic United States interest rates on deposits and short term financial investments (Calvo, Leiderman and Reinhart, 1993). Furthermore, some changes in the regulations of the capital markets in the United States reduced the transaction costs of agents entering foreign markets.³ The sharp rise in capital inflows also responded to factors in the Mexican economy itself, notably, the high real interest rates, initially closely linked to the stabilization programme and, later on, owing to the policy of partial sterilization of such capital inflows. In addition to offering attractive real yields, progress achieved in the structural reforms had a definite influence in attracting foreign capital due to the confidence it produced. Particularly, the 1989-1992 external debt restructuring package was a key factor, backing up the perception of reduced country risk (Gurría, 1994).

While shorter term profitability factors have been central to the explosion of portfolio investment flows to Mexico, FDI flows have responded more to longer term considerations in terms of MNEs' strategies to improve their competitiveness via production facilities in lower cost areas, the geographic proximity of Mexico to the huge North American market, the more recent growth potential of the Mexican economy, and the opportunities presented by the NAFTA. Foreign direct investment has been the preferred instrument of MNEs in these fields.

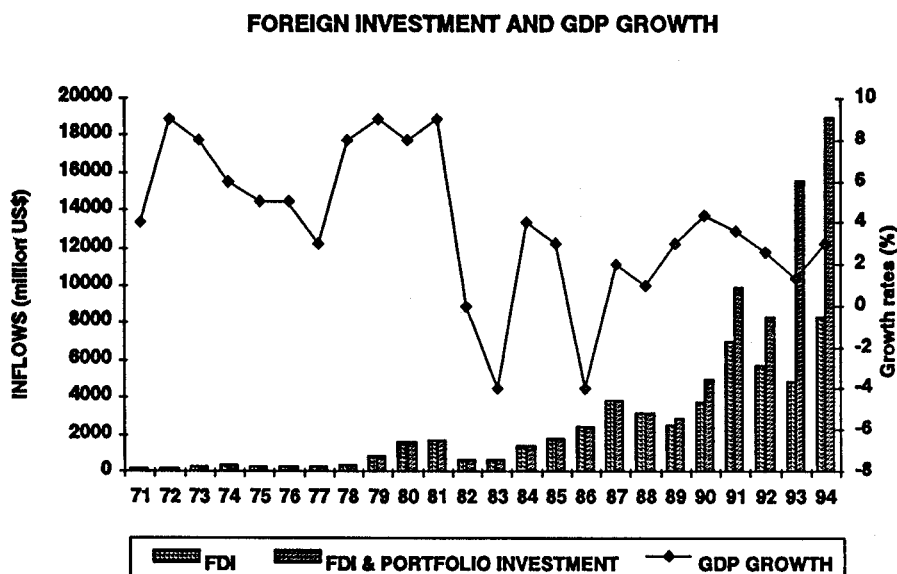
Since the Second World War, FDI flows to Mexico were closely associated with the import-substituting industrialization process (Fajnzylber and Martínez, 1976; Sepúlveda, Pellicer and Meyer, 1974). For MNEs selling differentiated products in established oligopolistic markets it was important to expand into the larger new markets in developing countries to preserve their advantages (Hymer, 1976). High tariffs kept their exports out, thus FDI became the only, if inefficient, means of participating in those protected markets. Besides, the Mexican authorities tended to take a defensive approach to FDI, as was manifest in their 1973 Law to Promote Mexican Investment and Regulate Foreign Investment.

By the early 1980s, foreign enterprises accounted for about 27% of the manufacturing industry in the country and their production was concentrated in transport

equipment, electrical machinery foodstuffs and chemicals. Although some foreign firms were efficient, in most sectors their size was well below the industrialized countries' standards and optimal economies of scale could not be achieved. Actually most of those industries presented characteristics closely associated with the concept of "miniature replicas" (Evans, 1977; Peres, 1990a).

The coincidence in time of the breakdown of the ISI process, the domestic impact of the international debt crisis and other severe external shocks (the collapse of the international price of petroleum, etc.) provoked an extensive rethinking of the Mexican development strategy and the official view toward FDI. In the context of the stabilization and structural reform programmes, very significant incentives were provided to daring foreign investors by way of the debt-equity conversion programme implemented in the mid-1980s.⁴ Debt-equity swaps, for the most part, explained the very peculiar characteristics of FDI to Mexico in the late 1980s: for the first time ever FDI flows showed a marked counter-cyclical behavior. In 1986-1988, although GDP fell the first year and grew very slow the other two, FDI inflow surpassed even the levels attained during the oil boom of 1978-1981, when GDP grew at about 8% on average (figure 1).

Figure 1



Source: Ministry of Commerce and Industrial Development (SECOFI), Papel y aportaciones de la inversión extranjera a la economía mexicana, Mexico City, October 1993; Banco de México, Indicadores económicos, Mexico City, several years.

After 1989, FDI flows also showed a counter-cyclical behavior. While, as mentioned before, GDP grew at just 2.9% yearly, the stock of FDI reached a total of US\$ 47.9 billion in 1993 (table 2). With regard to foreign investment flows, a record was made in 1993 at the level of US\$ 15.6 billion. As well as authorized FDI and registered inflows, the SECOFI (Ministry of Commerce and Industrial Development) figures include portfolio investments. These flows consist of US\$ 2 billion (12.6% of total inflows in 1993) corresponding to investments authorized by the National Foreign Investment Commission

(CNIE), US\$ 2.9 billion (18.8%) corresponding to investments registered by the National Registry of Foreign Investment (RNIE) and portfolio investment in the stock market for a value of US\$ 10.7 billion (68.6%).

Table 2
Cumulative foreign investment *a/*
(million dollars)

Year	New Investment				Total	Cumulative Direct Investment	Cumulative Total Investment
	Direct Investment		Portfolio <i>d/</i>	Total			
	C.N.I.E. <i>b/</i>	R.N.I.E. <i>c/</i>					
1985	1337.6	533.4	1871.0	-	1871.0	14628.9	14628.9
1986	1563.1	861.1	2424.2	-	2424.2	17053.1	17053.1
1987	3260.7	616.5	3877.2	-	3877.2	20930.3	20930.3
1988	2448.3	708.8	3157.1	-	3157.1	24087.4	24087.4
1989	1231.5	1268.2	2499.7	414.0	2913.7	26587.1	27001.1
1990	2118.6	1603.8	3722.4	1256.0	4978.4	30309.5	31979.5
1991	4871.7	2143.5	7015.2	2881.0	9897.0	37324.7	41876.5
1992	4298.5	1406.6	5705.1	2629.7	8334.8	43029.8	50211.3
1993	1964.8	2935.9	4900.7	10716.3	15617.0	47930.5	65828.3

Source: Department of Foreign Investment, Ministry of Commerce and Industrial Development (SECOFI).

a/ Foreign investment flows, as shown in the balance of payments figures, may differ from new foreign investment registered or authorized (due to lags between authorizations and actual investments and because some authorized investments may not be realized).

b/ Investments approved by the National Commission on Foreign Investment (CNIE).

c/ Investments registered by the National Registry of Foreign Investment (RNIE), that do not require prior approval by the CNIE.

d/ The figures for foreign portfolio investment do not reflect the total flows during the year, as part of the flow is recorded as foreign direct investment.

The largest source of FDI in Mexico has been the United States (with 63.8%), followed by France and the United Kingdom with 4.6% each, Switzerland with 4.5%, Germany with 3.6%, the Netherlands with 2.5%, Japan with 2%, Canada with 1.8%, Spain with 1.1%, and other countries accounting for a total of 11%. Thus, FDI in Mexico continues to show a US-centric character and is a clear signal of the further integration of both countries. In 1993, with the ratification of NAFTA by the United States Congress, this tendency increased as North American FDI accounted for 73% of the total inflows for that year. The United States share was 71.5% and that of Canada 1.5%.⁵

During the 1989-1993 period the sectors which have attracted most FDI are services, aside from those listed below (32.1%), manufacturing (31%), communications and transportation (22.3%), commerce (10.8%), and agriculture, mining and construction (3.8%). Over the same period, the accumulated FDI in manufacturing declined from 69 to 50%, while services increased its share from 29 to 48% of the total. The interpretation of this shift away from manufacturing and toward services should be done with caution because several simultaneous processes are taking place: the exit or sale of non-competitive existing foreign firms' operations; the restructuring of existing foreign operations

from the ISI period to make them more competitive; and new entrants, both those large MNEs which were not present and small and medium North American firms which are beginning their internationalization process. Mexico is already the second most important developing economy after Hong Kong in terms of the operations of small and medium-sized United States MNEs, mainly in the *maquiladora* industry (UNCTAD, 1993; Ortiz, 1993). The key feature is that a strong *specialization* process is taking place and therefore it is more the quality of the FDI than its absolute amount which gives character to it. In a following section reference to the situation in the automotive sector will clarify this assertion.

In the services sector FDI during the 1989-1993 period has been concentrated in property (32%), professional services (30%), financial services (19%) and hotels and restaurants (14%). Part of the rapid growth of FDI in this sector corresponds to the fact that it began from a very small base and new entrants are plentiful in the context of the NAFTA.⁶

1. Impacts on the production structure

The two periods of counter-cyclical foreign investment inflows gave rise to two specific impacts in the Mexican production structure. On one side, the share of FDI in the country's gross fixed investment averaged 9% in 1990-1993, a figure more than three times the average for the oil-boom years (table 3). When direct investment and investment made through the stock exchange are both included, the corresponding figure reaches 15% for the early 1990s. Although these data suggest a growing importance of foreign firms in the Mexican economy, the concentration of new investments in the services

Table 3
SHARE OF FOREIGN INVESTMENT IN MEXICO'S GROSS FIXED INVESTMENT
(Percentages)

	Foreign direct Investment	FDI and Stock exchange investment
1980	3.4	3.4
1981	2.6	2.6
1982	1.6	1.6
1983	2.6	2.6
1984	4.6	4.6
1985	5.3	5.3
1986	9.6	9.6
1987	14.9	14.9
1988	9.4	9.4
1989	6.6	7.7
1990	8.1	10.8
1991	12.5	17.7
1992 ^a	8.4	12.3
1993 ^b	6.6	20.9

Source: Ministry of Commerce and Industrial Development (SECOFI), *Papel y aportaciones de la inversión extranjera a la economía mexicana*, Mexico City, October 1993; Banco de México, *Indicadores económicos*, Mexico City, several years; National Institute of Statistics, Geography and Informatics (INEGI), *Sistemas de cuentas nacionales de México, 1988-1992*, Mexico City, 1993.

^a Preliminary data.

^b Estimated data.

sector makes it very difficult to determine what is happening with the participation of foreign firms in the manufacturing industry. However, information about the most important foreign investment projects⁷ and the net result of the privatization of state-owned firms that accounted for about 7% of manufacturing production indicate the long-term ownership pattern prevalent in the Mexican industry might be relatively stable,⁸ foreign firms accounting for about one third of production but with a strong presence in durable consumer goods (automobiles, appliances), capital goods (electric and electronic equipment), some modern non-durables (pharmaceuticals and foodstuffs) and some intermediate inputs as chemicals or paper.⁹

A second characteristic of the industrial sectors that received the most of foreign investment was their strong dynamism. As also happened with sectors with high presence of foreign firms in the 1970s, in the 1990s those same industries were the fastest growing in the country. While on average, Mexican manufacturing grew at 5.8% yearly in 1989-1993, the automobile industry grew at 20%, dairy products at 10.8%, beverages at 9.5%, electrical machinery and equipment at 9.3% and miscellaneous chemicals and pharmaceuticals at 8.3%. The only such sectors that grew slower than the industrial average were non-electrical machinery (1.2%), pulp and paper (2.2%) and basic chemicals (2.9%). A similar pattern of higher dynamism of sectors with high foreign presence took place in services, particularly regarding communications services (SECOFI, 1993).

Although all this information is quite general, everything points towards the long-term stability of two key features of the presence of foreign firms in the Mexican industry: their sectoral specialization and their dynamism.

2. Outward orientation and international competitiveness

While stability characterized the structure of FDI in the Mexican industry, extreme dynamism characterizes its behavior. Mexico is presently in the process of being incorporated into the new international industrial order (Calderón, Mortimore and Peres, 1994; Mortimore, 1992). Structural change combined with the opening up of the economy has produced an intense adjustment on the part of producers, especially manufacturers, operating in Mexico (Mortimore and Huss, 1991). Those that were able to shift to more dynamic activities, to significantly improve their productivity and to modernize their technology have been able to specialize their production and generally have encountered success in exporting their wares or defending their national market share (Casar, 1993 and 1994; Shaiken, 1990).

With regard to international trade, export growth has been spectacular and Mexico's international competitiveness has improved enormously over the 1980-1992 period (table 4).¹⁰ Measured by its share of the OECD imports, it rose from 1.26% in 1980 to 1.81% in 1992. Of more importance was the increased market share of OECD imports of manufactures, the dynamic part of international trade, which went from 0.71 to 1.66% over the same period. Moreover, Mexico achieved a massive transformation of the structure of its exports, away from lethargic natural resources and toward dynamic products (especially manufactures not based on natural resources). Manufactures now account for two-thirds of Mexico's exports to the OECD (up from 30.6% in 1980) and natural resource exports declined from two thirds in 1980 to less than one-third in 1992. Eight of Mexico's ten principal exports to the OECD are found on the list of the 50 most dynamic industrial groups in international trade, in 1980-1992. In other words, Mexico has dramatically improved its international competitiveness in dynamic products and has linked the dynamism of international trade to its chosen path of economic development.

Table 4
INDICATORS OF MEXICO'S INTERNATIONAL COMPETITIVENESS
 (percentages)

	1980	1985	1990	1992
I. STRUCTURE OF ITS EXPORTS TO THE OECD	100.0	100.0	100.0	100.0
Natural Resources <i>a/ + b/ + c/</i>	67.2	58.2	33.6	29.5
Agricultural products <i>a/</i>	12.9	9.6	10.2	9.1
Energy <i>b/</i>	50.3	45.6	21.1	18.5
Other natural resources (textile fibers, crude minerals, etc.) <i>c/</i>	4.0	3.0	2.3	1.9
Manufactures <i>d/ + e/</i>	30.6	39.5	62.5	66.8
Based on natural resources <i>d/</i>	5.4	3.3	3.4	2.6
Not based on natural resources <i>e/</i>	25.3	36.2	59.2	64.3
Others <i>f/</i>	2.2	2.3	4.0	3.7
II. MARKET SHARE IN OECD IMPORTS	1.26	1.77	1.59	1.81
Natural Resources <i>a/ + b/ + c/</i>	1.94	3.06	2.14	2.20
Agricultural products <i>a/</i>	1.13	1.30	1.34	1.36
Energy <i>b/</i>	2.47	4.56	3.22	3.34
Other natural resources (textile fibers, crude minerals, etc.) <i>c/</i>	1.40	1.87	1.51	1.62
Manufactures <i>d/ + e/</i>	0.71	1.09	1.36	1.66
Based on natural resources <i>d/</i>	1.28	1.28	1.04	1.00
Not based on natural resources <i>e/</i>	0.65	1.08	1.39	1.70
Others <i>f/</i>	1.49	1.63	2.55	2.59
III. PRINCIPAL EXPORTS TO THE OECD	60.1	62.6	54.9	53.0
333 Crude petroleum	46.1	42.0	19.9	17.5
781 Passenger vehicles <i>g/</i>	0.3	0.9	6.0	7.7
784 Parts and accessories for vehicles <i>g/</i>	1.3	2.6	4.3	5.4
773 Equipment for distributing electricity <i>g/</i>	1.1	2.5	6.6	4.8
931 Unclassified operations and merchandise <i>g/</i>	2.2	2.2	3.6	3.6
764 Telecommunication equipment and parts <i>g/</i>	4.6	3.4	3.1	3.1
713 Internal combustion motors and parts <i>g/</i>	0.6	4.6	3.5	3.0
761 Television receivers <i>g/</i>	...	0.5	2.6	2.9
772 Electrical apparatus for making/breaking circuits <i>g/</i>	1.3	1.6	2.6	2.7
054 Vegetables, fresh, chilled, frozen or preserved	2.7	2.3	2.7	2.3

Source: Calculated by the authors using the CAN software, version 2.0.

- a/* Sections 0, 1 and 4; divisions 21, 22, 23, 24, 25 and 29 of the Standard International Trade Classification (Revision 2).
b/ Section 3.
c/ Divisions 26, 27 and 28.
d/ Divisions 61, 63 and 68; groups 661, 662, 663, 667 and 671.
e/ Sections 5, 6 (except divisions and groups included in 4), 7 and 8.
f/ Section 9.
g/ Industrial groups found on the list of the 50 most dynamic groups in OECD imports, 1980-92.

Mexico had achieved very significant and enviable market positions in certain specific OECD imports by 1992, and these had improved enormously from those held in 1980. The examples of electrical goods, such as equipment for distributing electricity (20.2%), television receivers (12.1%), power machinery (7.7%) and radio receivers (7.2%) as well as engines (5.4%), parts and accessories for vehicles (3.9%) are particularly noteworthy. As a result of these advances in terms of international competitiveness, Mexico now pertains to the small group of "winners", that is, countries that have gained at least a 1% OECD import market share for manufactures during the 1971-92 period. Other members of this select group are Japan, China, South Korea, Taiwan Province of China, Singapore and Spain. In other words, Mexico has come in from the cold with regard to its international competitiveness.

A somewhat similar situation holds in terms of foreign investment, in the sense that Mexico has become significantly more integrated into the international capital markets (ECLAC, 1994). This is true for all aspects of foreign investment: portfolio investment, loans and foreign direct investment. If one considers the long term capital inflows from private sources over the 1989-93 period, Mexico received US\$ 83.7 billion, or 43% of all inflows to Latin American countries. With regard to FDI inflows, Mexico was one of the five principal developing country recipients during 1990-1992 (with China, Singapore, Malaysia and Argentina, which together accounted for 60% of the developing country total). Mexico's share corresponded to one-third of that for Latin American countries, 12% of that for developing countries and 2.5% of the world total. Mexico had become a factor in global capital flows.

3. The importance of foreign firms in improved international competitiveness

At the end of the import-substituting period of the 1970s, foreign firms showed much higher labour productivity levels and growth rates than domestically-owned firms of similar size and located in similar industries. Not only foreign firms tended to be more efficient than others, but also their share in manufacturing exports was bigger than their share in production, and they accounted for 42% of total exports made by private firms in the economy in 1981 (then, worth only US\$ 3.9 billion). From 1984 on, this relatively better integration in the world markets increased dramatically. In 1986-1987, those firms accounted for 65% of the total of private sector's exports (Peres, 1990a). More recent data show that although the domestic private sector peaked up foreign firms continue to have a disproportionate participation in the Mexican foreign trade. The contrast between tables 2 and 5 cannot be more apparent. While foreign firms accounted for less than 10% of gross fixed investment in the country, they explained more than half of its private exports in 1992 (then, worth US\$ 18.8 billion), a proportion equivalent to 36% of all Mexican *non-maquiladora* exports. According to SECOFI (1993), the automobile industry explained 61% of total exports by foreign firms, while electrical and electronic machinery and equipment accounted for 9.2%, basic chemicals for 8.6%, non-ferrous basic metals for 2.3% and pharmaceuticals for a similar percentage.

In spite of a higher export propensity, foreign firms' imports also continue to be quite significant and their foreign trade balance shows a deficit of similar proportions to the one reached during the late 1970s. Intra-firm trade, internationalization of production and integration in the North American economy much earlier than the approval of the NAFTA were the bases for this trade performance. Naturally, the final explanation of such performance must be found in the dynamics of particular sectors, most specifically it must be found in the performance of the automobile industry.

Table 5

SHARE OF FOREIGN FIRMS IN MEXICO'S FOREIGN TRADE ^{a/}
(million dollars and percentages)

	1990		1991		1992	
	Amount	%	Amount	%	Amount	%
EXPORTS						
Foreign firms	7 940.4		9 332.9		9 903.8	
Total private sector	15 974.4	49.7	18 215.7	51.2	18 792.9	52.7
Total for the country	26 950.3	29.5	27 120.2	34.4	27 530.8	36.0
IMPORTS						
Foreign firms	11 688.2		14 613.7		17 398.7	
Total private sector	26 843.2	43.5	35 331.4	41.4	44 901.7	38.7
Total for the country	31 090.0	37.6	38 184.0	38.3	48 138.4	36.1
BALANCE						
Foreign firms	-3 747.8		-5 280.8		-7 494.9	
Total private sector	-10 868.3	34.5	-17 115.7	30.9	-26 108.8	28.7
Total for the country	-4 139.7	90.5	-11 063.8	47.7	-20 607.6	36.4

Source: Ministry of Commerce and Industrial Development (SECOFI), *Papel y aportaciones de la inversión extranjera a la economía mexicana*, Mexico City, October 1993.

^{a/} Does not include *maquiladora* exports.

Regarding labour productivity, data for the late 1980s suggest that foreign firms continued to present a much higher sales/employment ratio than domestic firms, both state-owned and private ones, even in cases where the capital/labour ratio was lower for foreign firms. Particularly, for 1988-1989, the sales/employment ratio for foreign firms was 66% higher than for large private firms, while the capital/labour ratio was 10% smaller for the former than for the latter. This productivity differential is quite compatible with similar indicators available for the late 1970s. Moreover, the presence of foreign firms also continued to be positively correlated with the productivity levels in the manufacturing industry, a correlation that seems to have become stronger after trade liberalization in the mid-1980s (Kessel and Samaniego, 1992).

The evidence presented in the last three sections points out quite clearly to a new role for foreign firms in the Mexican economy. Their new export orientation is quite compatible with the counter-cyclical behavior that FDI has presented in the last decade. Protection and domestic market size and growth are not the main determinant of FDI to the country anymore. Foreign firms are now the forefront of the integration of the country in the world economy playing a role quite different from the one they used to play when they were an effective, but usually not efficient, agent of the import-substituting industrialization. However, higher productivity and export performance suggest that, as it also happened in the previous development stage, foreign firms will continue to be leading agents of change, perhaps the crucial ones, in the Mexican economy.

IV. SECTORAL DYNAMICS

Multinational enterprises operating in specific sectoral activities have been a leading force in the structural transformation, the new export orientation and the improved international competitiveness of the Mexican economy (Unger, 1990 and 1991). These aspects of the participation of foreign firms in Mexico's development have been particularly noteworthy in the automobile industry, electric machinery and electronic equipment and certain defined in-bond assembly (*maquiladora*) activities. The role of MNEs in these industries will be examined in this section.

1. The automobile industry

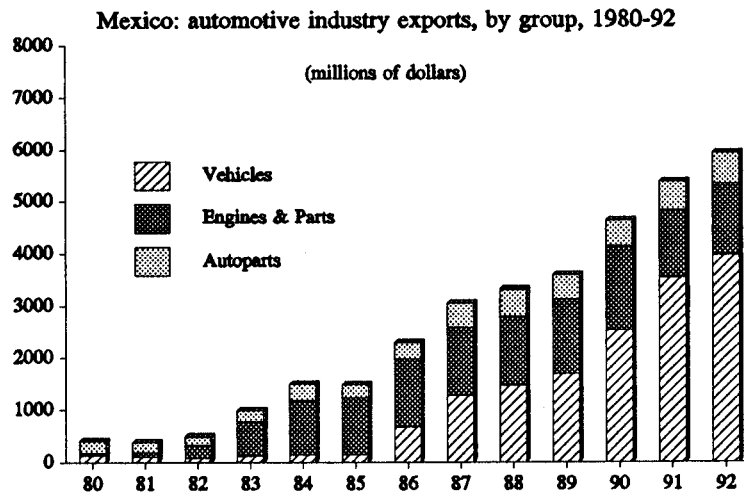
The recovery, expansion and transformation of the Mexican automobile industry has been nothing short of spectacular and has also been an important element in Mexico's structural adjustment, economic reorientation and improved incorporation into the new international industrial order. Foreign direct investment and technology played a central role in that process (Mortimore, 1995; de Marfa y Campos and López, 1992). The effect was most evident on the trade front where by 1992 automotive industry exports (passenger cars, 7.7%; automobile parts, 5.4%; and internal combustion engines and their parts, 3%) represented 16% of all Mexican exports to the OECD and accounted for three of their five principal exports of manufactures (occupying first, second and fifth spots). The Mexican operations of vehicle producers such as General Motors, Ford, Chrysler, Volkswagen and Nissan occupied the third, fifth, sixth, tenth and twenty-sixth spots, respectively, in the 1993 list of principal exporters from all of Latin America, together accounting for exports in the order of US\$ 7.8 billion, approximately one third of the value of the exports of the principal Mexican exporters and over 10% of that of the principal Latin American exporters (*América económica*, 1994a). The automobile industry was evidently one of the principal vehicles by which Mexico integrated the dynamism of international trade to specific sectoral pursuits.

Figures 2 and 3 and tables 3 and 4 present a good profile of the transformation of the industry, viewed primarily from the perspective of overall export performance and the specific situation of passenger cars. Figure 2 points out that in terms of its export performance, it went through three phases. The first was a low volume one in which car parts dominated the minor export flows. The second encompassed the export boom associated with the new engine plants which came on stream during the early 1980s. The third phase was based on the explosion of passenger vehicle exports from the new plants built during the late 1980s. Taken together, the growth in engine and vehicle exports were a significant element of the structural change in the Mexican industrialization process.

Figure 3, which highlights the domestic and export sales of passenger vehicles, demonstrates that the industry faced two explicit and interrelated challenges. One was to recuperate from the devastating blow associated with the debt crisis in Mexico during the mid-1980s which produced a dramatic decline in domestic demand for passenger

vehicles. By 1988, the overall sales of passenger vehicles surpassed the previous high of 1981. The second challenge was to improve the international competitiveness of Mexican automobiles so as to permit the conversion of the industry to an export orientation. As of 1993, exports of passenger cars exceeded domestic sales of such. Thus, the industry met the two challenges put to it.

Figure 2



Source: The authors based on data from the Banco de México.

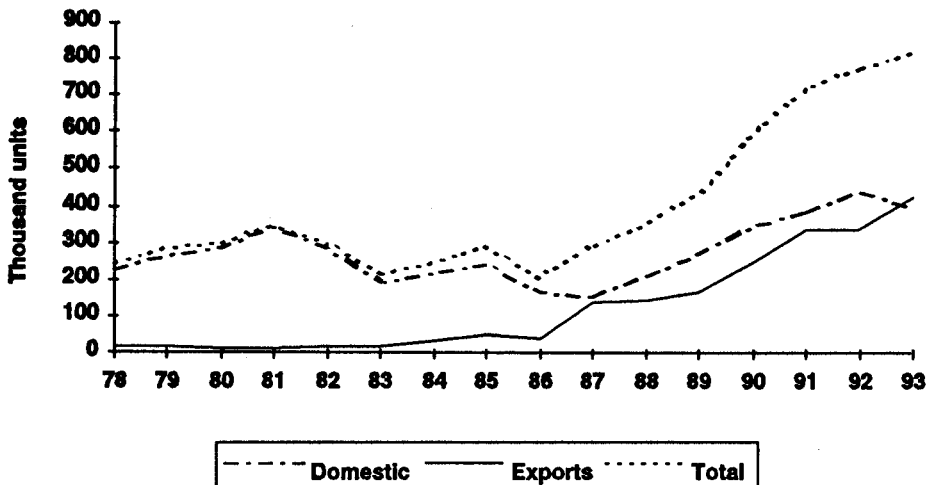
The automotive industry has lived through three distinct stages, which can be described as the 1978-1982 import substitution boom in which sales for domestic consumption reached an average of 300 000 units a year, the 1983-1987 crisis and reorientation stage in which sales fell to an average of 250 000 units a year but when modern new plants were built, and the 1988-1992 export-based expansion stage when sales jumped to the 570 000 level on average and over 240 000 units were exported annually. In 1993, production surpassed 800 000 units and over half (425 000) were exported. It is necessary to carefully distinguish the nature of these stages in order to appreciate the profundity of the transformation of that industry.

During the import-substituting stage, 1978-1982, the Mexican automobile industry had a radically distinct impact on the national developmental path. The fact that automobiles could not be imported into Mexico determined that MNEs interested in the national market had to make substantial investments to produce locally. This established an oligopolistic market structure for producers and resulted in considerable government intervention via sectoral programmes. The result was a strained negotiating relationship among foreign vehicle producers, national car parts manufacturers and the government (Bennett and Sharpe, 1979a and 1979b; Whiting, 1991) due to the fact that the sector had become so important in the domestic process of industrialization. The difficult relations between producers of vehicle and producers of parts and the complexity of government intervention resulted in an automotive industry characterized by many models and makes, low production runs, high prices and poor quality. Furthermore, the sector

negatively impacted the national balance of payments. While unpublished foreign investment data from the Banco de México suggest that over 40% of the FDI which entered the country during 1972-1981 went to the transportation equipment sector, that industry was in no way internationally competitive. As a result, the massive imports of components by vehicle producers and their exceedingly low export propensities in the range of 14-15% during 1977-1982 (United States Department of Commerce, 1977, 1982 and 1989) created a yawning trade deficit that even relatively high FDI flows could not eliminate. As a consequence of this situation, the government pressured vehicle producers to raise the local content of their vehicles and to export more parts and accessories to compensate for the trade deficit generated by the industry. The foreign producers responded that they could not export by decree, rather they must be given more liberty of action in order to meet this challenge.

Figure 3

**PASSENGER CAR SALES
1978-1993**



Source: The authors based on data from the Mexican Automobile Manufacturers Association (AMIA).

Initially, the vehicle producers responded by building modern and internationally competitive engine plants which came on stream in the early 1980s just as the domestic demand bottomed out. In spite of the fact that the Mexican market collapsed, these companies had great success introducing modern technology into the new Mexican engine plants (Shaiken and Herzenberg, 1987; Moreno, 1988) and this success coincided with the implementation of new corporate strategies on the part of the headquarters of the United States vehicle producers operating in Mexico (General Motors, Ford and Chrysler) aimed at defending their national market from import penetration by Japanese and other producers. They came to the conclusion that Mexico could become a low cost

export platform for entry level front-wheel drive 4 and 6 cylinder small cars. These factors, that is, the success with new engine plants, Mexican government's pressure to relieve the negative balance of payments impact of the automobile industry, and the difficult competitive situation in the United States market, encouraged the Big Three United States automobile producers to begin major new investments in modern small vehicle production facilities in Mexico, primarily for export to the United States market, in spite of the dismal macroeconomic situation of Mexico and the depressed level of domestic demand for national automobiles. Many of these producers took advantage of the Mexican programme which subsidized the conversion of external debt paper into direct investments (Mortimore, 1991). Generally, the new attitude on the part of government officials was to *facilitate* the new corporate strategies of the foreign vehicle producers.

The 1988-1992 stage of the development of the Mexican automobile industry witnessed the explosion of vehicle exports from Mexico, such that the sector produced a trade surplus of US\$ 1.3 billion in 1990 (later reduced by imports). Non-United States vehicle producers, Volkswagen and Nissan, also made significant investments in new plants even though their export propensities did not approximate those of the United States vehicle manufacturers. As was suggested earlier, passenger vehicles, engines and parts and accessories all enjoyed major improvements in their international competitiveness, as measured by OECD import market shares. Car parts corresponded to over one-half of the (low level) of exports from the automotive industry in 1980, by 1984 engines accounted for over two thirds of rising automobile exports, and ten years later vehicles corresponded to two thirds of such. The transformation of the Mexican automobile industry was clearly a result of increased *specialization* and technological sophistication by foreign firms operating in Mexico (Moreno, 1994; Shaiken, 1994).

Table 6 captures the transformation of the automobile industry in terms of the national market, dual market and export market orientations of passenger car sales.

Table 6
Mexico: Passenger car sales, by principal market
(annual averages by period, 1978-1992)

	1978-82	1983-87	1988-92
UNITS			
National market <i>a/</i>	147.1	78.3	70.8
Dual market <i>b/</i>	138.6	116.9	307.5
Export market <i>c/</i>	10.5	54.5	199.0
Total	296.1	249.7	577.4
PERCENT			
National market <i>a/</i>	49.7	31.4	12.3
Dual market <i>b/</i>	46.8	46.8	53.3
Export market <i>c/</i>	0.4	21.8	34.4
Total	100.0	100.0	100.0

Source: M. Mortimore, *La competitividad de la industria automotriz en México*, Mexico City, ECLAC Subregional headquarters in Mexico, 1994, on the basis of data provided by the Mexican Automobile Manufacturers Association (AMIA).

a/ Car models sold only in the domestic market.

b/ Car models with more than 50% of total sales in the domestic market less than 50% of sales in export markets.

c/ Car models with more than 50% of total sales in export markets.

During 1978-1982, half of all passenger car models were aimed *exclusively* at the domestic market and exports models were virtually nonexistent. By the 1988-1992 phase, only 12% of passenger car sales corresponded to models aimed only at the domestic market and export models accounted for more than one-third of all sales. International competitiveness had become a central feature of the transformed industry.

Table 7 distinguishes the behavior of the five passenger car producers in Mexico. This table demonstrates quite clearly that it was the three United States automobile companies which most expanded their Mexican production operations and converted them to an export orientation (United States Congress, 1992). Those three companies accounted for over 70% of all exports during the export-based expansion phase and by 1993 all had export propensities above 60%. The non-United States auto producers (Volkswagen and Nissan) concentrated their operations on domestic sales, where together they accounted for over one-half. In other words, the original transformation of the Mexican automobile industry in terms of its international competitiveness was clearly the work of the Big Three United States automobile producers.

Table 7

Mexico: Passenger car sales, in export and domestic markets, 1978-1993 ^{a/}
(thousands of units)

	1978-82 ^{c/}	1983-87 ^{c/}	1988-92 ^{c/}	1993
EXPORT MARKET SALES				
Ford	-	10.4	87.3	117.2
General Motors	-	17.7	52.6	90.7
Chrysler	...	15.8	53.7	101.7
Volkswagen	14.7	8.3	30.4	77.5
Nissan	...	4.2	18.4	37.4
Total	14.8	56.4	242.4	424.5
DOMESTIC MARKET SALES				
Volkswagen	93.0	64.5	111.3	151.7
Nissan	39.0	45.9	78.0	83.4
Chrysler	49.7	29.1	61.3	59.6
Ford	39.6	25.7	51.4	52.8
General Motors	23.0	15.5	32.9	51.2
Others ^{b/}	37.2	12.6	-	-
Total	281.3	193.3	334.9	398.7

Source: M. Mortimore, *La competitividad de la industria automotriz en México*, Mexico City, ECLAC Subregional headquarters in Mexico, 1994, on the basis of data provided by the Mexican Automobile Manufacturers Association (AMIA).

^{a/} Does not include imported vehicles. They declined from 6 048 in 1992 to 3 273 units in 1993.

^{b/} Diesel Nacional S.A. (Renault) and Vehículos Automotores Mexicanos S.A. (American Motors).

^{c/} Annual averages.

With regard to the transfer of technology (and new organizational practices), available evidence (de Marfa y Campos and López, 1992) suggests that in terms of productivity and quality the *new* production facilities in Mexico have caught up to and in

certain cases surpassed the benchmarks established by the United States auto industry, including the Japanese transplants operating there.¹¹ The experience of Ford in Mexico is particularly revealing in this regard. Ford's engine plant at Chihuahua and its vehicle assembly operations at Hermosillo have been extensively examined and are considered examples of how advanced production processes can be successfully transferred to newly industrializing countries (Shaiken, 1991). The Hermosillo plant was designed primarily by Mazda, a major Japanese auto producer in which Ford has a minority participation, thereby introducing to the Mexican automobile industry many of the best practice production techniques and modern organizational practices of the very competitive Japanese automobile industry. The Hermosillo plant had a defects per vehicle rating (0.276) well below the weighted average for all Mexican auto producers (0.665) and close to the world optimum (Olea, 1993; Womack, 1990). It is ranked among the five best plants in all of North America.

The explanation of why this transformation of the Mexican auto industry took place is as important as its dimension. Succinctly, the relevant factors can be combined in only three groups: those related to the competitive situation of the international automobile market, those linked to the corporate strategies of the major global producers, and those pertaining to Mexican national policy at the macroeconomic and sectoral levels (Mortimore, 1995). In gist, the Japanese challenge to United States auto makers in their own market led the Big Three United States producers to alter their corporate strategies with regard to entry-level front wheel drive small engine passenger cars. They sought out lower cost production sites in a few select newly industrializing countries, one of which was Mexico. The new corporate strategies of these producers led to the transformation of their Mexican production facilities via new plant construction and the restructuring of existing plants so as to integrate them into their North American production system (Ozawa, 1994). The reorientation of the Mexican macroeconomic policy during the 1980s, the new Automotive Decrees (1983 and 1989), and the NAFTA negotiations allowed these auto MNEs to consolidate their advantages (SECOFI, 1994b). In this sense, strategic asset-seeking and efficiency-seeking FDI replaced the former market-seeking FDI in the Mexican automobile industry.

Registered FDI projects in the industry for 1994 alone total US\$ 2.5 billion (SECOFI, 1994a). The NAFTA impact was important here, due to the fact that the NAFTA continued for a further ten years the existing limitation of passenger car imports into Mexico to the existing five auto producers in Mexico, that was contained in the 1989 Automotive Decree. This advantage and the desire to consolidate their Mexican operations into their North American production facilities is reflected in investment projects by Chrysler, General Motors and Ford worth US\$ 1.0 billion in 1994. The NAFTA rules of origin (62.5% North American content) inspired investment projects by the non-United States original producers (Nissan and Volkswagen) in the order of US\$ 1.2 billion in order to expand production and consolidate local supplier networks. Furthermore, in spite of the advantages given to original producers, newcomers (BMW and Honda) have registered investments in the order of US\$ 246 million in 1994. These FDI figures indicate elements of Mexico's integration into global or regional production systems of many major automobile producers.

2. Electrical and electronic equipment and appliances

Another industry which has expanded rapidly in the 1980s is the production of electrical appliances and electronic equipment. As in the automotive industry, the main source of

Mexico's comparative advantage for this industry does not lie in the domestic availability of any specific natural resources, but in the abundant supply of high-quality low-cost labour.¹²

Until the mid-1980s Mexico's electrical machinery and electronic equipment industry was protected from foreign competition by a number of official programmes, the most important of them being the 1981 "Program for Promoting the Manufacturing of Electronic Computer Systems". This attempt to develop the industry along import-substituting lines was frustrated by the reluctance of some of the main computer producers (e.g., IBM and Apple) to accept a minority ownership share in the production of personal computers, the speed of technological change and the fall in domestic disposable incomes caused by the debt crisis which resulted in a sharp contraction in the domestic demand for these goods (Peres, 1990a). Within the electrical machinery industry (excluding electronics), the producers of appliances performed particularly badly during 1980s. Their combined value added declined by more than 32% between 1980 and 1990, which in turn caused the Mexican value added of the electrical machinery industry as a whole to contract by 3.9% over the decade, despite good performances elsewhere in the industry. The most impressive growth was recorded by producers of accumulators and batteries, whose value added increased by almost 40% between 1980 and 1990 as a result of strong demand from Mexico's thriving car industry, and by producers of electrical bulbs and tubes, whose value added increased by 30% during the same period.

The industry's performance improved following the deregulation of the Mexican economy in the latter half of the 1980s, which prompted a substantial increase in foreign direct investment. That situation was fuelled further by the onset of the United States recession and the resulting decision of many United States firms to relocate to Mexico in an attempt to reduce production costs.

During the early 1990s, new production facilities were created in almost all sectors of the electrical machinery and electronics industry by a number of major international companies, including General Electric, Hitachi, IBM, ITT, Sony and Zenith. There were located mainly in the *maquiladora* sector, with the result that the manufacture of electrical machinery and electronic equipment has become one of the most important *maquiladora* activities (see the next section). This increasing inflow of FDI has also helped to offset the effect of the weakening demand caused by the United States recession in the 1990s (UNIDO, 1993).

The biggest gains in the 1990s were made in the production of television sets and other consumer electronics, such as video recorders and camcorders. This sector has attracted large inflows of foreign investment, such as the United States-based Zenith which moved all its color television assembly and plastic cabinet finishing operations to Mexico. Several Japanese producers, including Sony, Matsushita, Toshiba and Sanyo, have also established production facilities for television sets and related equipment in various parts of Mexico. Important companies from the Republic of Korea, such as Daewoo Electronics and Goldstar, opened television manufacturing plants; and Philips from the Netherlands established a large plant for the production of television sets and compact disc players in Ciudad Juárez, on the United States-Mexico border.¹³ All these investments implied that the number of color television sets shipped from Mexico to the United States grew from 1.7 million in 1987 to about 6 million by 1992. The United States remains the main market of the Mexican consumer electronics industry, with about 70% of the output produced by foreign investors in Mexico being exported to the United States.

Another important sector of the electronics industry has been the manufacture of personal computers. As a result of the liberalization process and skillful negotiation with

IBM in the mid-1980s, this industry has experienced a strong dynamism, mainly through considerable inflows of foreign investment. As in the case of the consumer electronics industry, the computer industry had its origins in the establishment of some assembly and production facilities in the *maquiladora* sector, mainly as a platform for exports into the United States. Many important international firms, such as IBM, Hewlett Packard, Wang, Motorola and Texas Instruments established plants for the assembly of computers and components in various parts of Mexico, mainly Guadalajara,¹⁴ and by 1993 the country was exporting information processing machines and their parts for a volume worth US\$ 826 million.

The third major sector of the electronics industry has been the production of telecommunications equipment. This has been induced mainly by the privatization of the Mexican telephone corporation (TELMEX) in several stages since 1990, which resulted in the introduction of a wide-ranging modernization programme. This naturally generated a considerable increase in demand for telecommunications equipment, which in turn prompted large new investments by suppliers of such equipment from within Mexico and abroad. By the early 1990s, most of the major international telecommunications producers had a significant presence in Mexico, such being the case of the Swedish firm Ericsson (which has played a major role since the 1950s), North American-based companies like American Telephone & Telegraph (AT&T) and Northern Telecom, Japanese firms like NEC and Panasonic; and the French company Alcatel. Increasingly, Mexico is also being integrated into the production networks of companies based in North America, both indigenous United States and Canadian companies and European and Asian companies with regional headquarters in the United States or Canada.

In summary, during the 1990s the growth of Mexico's electric machinery and electronic equipment industry has been largely export-led, mainly operating under the *maquiladora* scheme, and this process fostered the growing integration of this industry into the world economy, particularly into the economic structure of North America.

3. The *maquiladora* industry¹⁵

The in-bond assembly industry in Mexico has experienced explosive growth since the major devaluations of the Mexican peso during the 1980s. The number of plants rose from 620 in 1980 to 2 142 in 1993, the number of jobs went from 124 to 549 000, and the net value added climbed from US\$ 772 million to 5 410 million over the same period raising the *maquiladora* share of total exports from 16 to 42% (table 8). This industry is now the second most important source of foreign exchange, the most important creator of new jobs, and is responsible for most of the principal exports of manufactures, especially those with the highest OECD import market shares in 1992. The most important activities were transport equipment, electrical machinery and electronic equipment, and textiles, footwear and leather products (figure 4).

As of the early 1990s, about one-half of the *maquiladora* plants pertained in whole or in part to United States investors, about 40% were Mexican-owned, and the remainder corresponded to Japanese, German and Spanish investors, thus, FDI is an integral element of such operations. 90% of these plants are located in areas close to the United States border, which indicates their function, that is, to allow US-based companies to take advantage of the production sharing provisions 9802.00.60 and 9802.00.80 of the Harmonized Tariff Schedule of the United States. Such companies can obtain reduced tariff treatment for eligible imported goods that are assembled outside of the United States using United States-made components and this has been found to be "an important part of the global competitiveness strategy for many United States firms" (USITC, 1991).

Table 8

Main economic indicators of the maquiladora industry
(million dollars and thousand jobs)

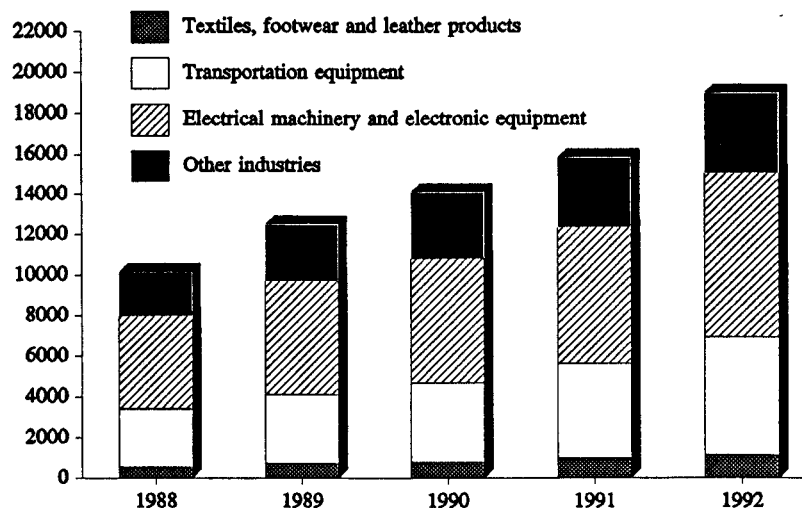
	Plants	Value added	Employment
1980	620	771.7	124
1983	600	818.4	151
1985	789	1 267.1	212
1987	1 125	1 598.1	305
1989	1 655	3 047.3	430
1990	1 938	3 606.5	460
1991	1 925	4 118.9	467
1992	2 075	4 808.5	505
1993a/	2 142	5 410.0	549

Source: Banco de México, *Indicadores económicos*, Mexico City, May 1994 and March 1990; National Institute of Statistics, Geography and Informatics (INEGI), *Avance de información económica, industria maquiladora de exportación*, Mexico City, May 1993 and September 1989.

a/ Employment data is for October and number-of-plants data is for April.

Figure 4

Mexico: Total exports of in-bond (maquiladora) industry, 1988-92
(millions of dollars)



Source: Banco de México, *Indicadores económicos*, Mexico City, several years.

It is evident that *maquiladoras* are no longer solely based on the unskilled labour assembly practices of the 1960s and 1970s rather they have become increasingly intensive in skilled-labour activities in keeping with international competitiveness requirements of United States-based MNE operations. The early concentration in the apparel industry has given way definitively to more technology-intensive activities, such as electronic products, electrical equipment and components, and automobile parts, even though the assembly-nature of such operations persists. Evidence of the widespread use of modern managerial techniques in the new industrial sectors can be cited (Carrillo, 1989). Just-in-time inventories, statistical process control, zero-defects techniques and work teams are now common practices.

The in-bond assembly operations are a second fundamental aspect of Mexico's integration into the new international industrial order, specifically the North American economy. While the sharp devaluations of the 1980s made Mexican assembly operations much more convenient for foreign companies operating in the United States market, the early low wage advantage seems to have given way to more long range considerations for corporate strategies in terms of international competitiveness in modern activities, such as electrical distribution equipment, televisions, radios, car parts, electrical apparatus, circuit breakers, telephones and sound equipment, in which the Mexican-assembled products represent a significant share of the United States market (table 9).

These sectoral considerations drawn from the automobile, electrical machinery and electronic equipment, and *maquiladora* industries serve to provide a "taste" for the process of Mexican integration into the North American economy which the statistics alone do not supply. They are especially useful in suggesting the overriding importance of new corporate strategies for improving the international competitiveness of their international or regional production systems in the context of the new international industrial order and the advantages offered by Mexico in that context. Clearly the nature of the advantage sought in terms of FDI has changed over time and in the context of the new development path of Mexico efficiency-seeking and strategic-asset FDI has replaced market-seeking FDI in the automobile, electric and electronic, and, generally, in-bond assembly industries.

Table 9

**Total value of U.S. imports for consumption under HTS provision 9802.00.80
(million dollars and percentages)**

	1990				1992			
	All countries	Amount	Mexico As percent of all countries	Composition	All countries	Amount	Mexico As percent of all countries	Composition
I. Textiles, apparel, and footwear	3526.3	830.1	23.5	6.5	5363.1	1304.0	24.3	8.0
II. Machinery and equipment	68986.0	10548.4	15.3	82.3	47371.9	13393.1	28.3	82.4
a) Electrical machinery and electronic equipment sector	12619.5	5388.9	42.7	42.1	12975.3	6480.8	49.9	39.9
Television receivers	1654.3	1536.5	92.9	12.0	1944.7	1918.6	98.7	11.8
Electrical conductors	1367.9	1302.3	95.2	10.2	1834.8	1660.1	90.5	10.2
Articles for making and breaking electrical circuits	931.6	760.6	81.6	5.9	983.2	830.3	84.5	5.1
Motors and generators; and miscellaneous equipment related to motors, generators and transformers.	495.2	440.4	88.9	3.4	656.1	569.4	86.8	3.5
Office machines and parts thereof	2104.4	337.8	16.1	2.6	2015.1	392.7	19.5	2.4
Semiconductors	4961.3	297.4	6.0	2.3	4353.8	272.0	6.2	1.7
Transformers	170.7	149.6	87.6	1.2	273.3	229.2	83.9	1.4
Radio receivers and transceivers and parts thereof	481.7	260.8	54.1	2.0	344.1	219.9	63.9	1.4
Electric household appliances	286.3	151.2	52.8	1.2	373.6	209.9	56.2	1.3
Electrical capacitors	166.1	152.4	91.7	1.2	196.7	178.8	90.9	1.1
b) Automobile sector	50155.8	3930.9	7.8	30.7	31097.2	5585.7	18.0	34.4
Motor vehicles including automobile trucks and truck tractors, motor buses and passenger automobiles	45184.7	2602.2	5.8	20.3	27377.2	3591.3	13.1	22.1
Motor vehicle parts, industrial vehicles, non-self-propelled vehicle, and motorcycles	2923.6	1049.6	35.9	8.2	2931.5	1657.9	56.6	10.2
Internal combustion engines, piston-type and parts thereof	2047.5	279.1	13.6	2.2	788.4	336.5	42.7	2.1
c) Other machinery and equipment	6210.7	1228.5	19.8	9.6	3299.5	1326.5	40.2	8.2
III. Other articles	2609.8	1432.5	54.9	11.2	2630.0	1551.1	59.0	9.5
IV. Grand total	75122.1	12811.0	17.1	100.0	55365.0	16248.1	29.3	100.0

Source: The authors based on information from United States International Trade Commission (USITC), Production Sharing: U.S. Imports under Harmonized Tariff Schedule Provisions 9802.00.60 and 9802.00.80, Washington, D.C., various issues.

V. MEXICAN DIRECT INVESTMENT ABROAD

Since the mid-1980s, large Mexican firms have made important market-seeking direct investments in foreign countries. Although Mexican investments abroad are rather diversified, they present two basic features: their concentration in the developed countries (mainly the United States) and their specialization in some key production and service sectors, particularly cement and glass products (Peres, 1993). Most of those investments have been undertaken through the acquisition of existing firms, and, in some cases, those acquisitions took the form of hostile take-overs.

The most important successful take-over of a United States firm by a Mexican conglomerate was done by Vitro, a holding company which is the leading producer of glass containers, flat and household glass, glass-making machines, and car windows and windshields, and whose sales reached US\$ 3.3 billion in 1992. In 1989, Vitro acquired, through a tender offer, 95% of the Anchor Glass Container Corporation, the second-largest glass container manufacturer in the United States. The cost of the acquisition was estimated at more than US\$ 900 million, including US\$ 460 million of Anchor's debt. According to its Chief Executive Officer (CEO), Vitro went abroad because, if it wanted to continue to be a glass company, it could no longer be based solely on a strong domestic base coupled with some minor export activity: "With a more open Mexican economy our strategy had to change" (Peres, 1990b). Although the strategy undertaken by Vitro was quite probably the only way to survive as a world producer in an industry that is under harsh restructuring, the mere fact that such a strategy could be pursued by a Mexican firm before the end of the debt crisis deserves special attention.

In the cement industry, another Mexican conglomerate (Cementos Mexicanos, CEMEX) with sales of US\$ 2.2 billion in 1992, took over its major domestic competitor to prevent its acquisition by one of the largest world producers, then it also went abroad. The focus of CEMEX's first raids was the cement production facilities of the UK-based Blue Circle Industries, both in Mexico and in the United States. When CEMEX's CEO presented an account of the reasons for the firm's strategy, he argued that the mergers will increase cost-efficiency through economies of multi-plant operation, distribution channels will be improved, and transportation costs will be cut (Peres, 1990b). These same reasons, and the access to the European Union market, were also present in CEMEX's acquisition of the two largest Spanish cement producers, which implied that, in 1993, the Mexican conglomerate controlled 29% of the Spanish cement production. After these investments (worth US\$ 1.8 billion), CEMEX became the fourth largest cement producer in the world.

Although CEMEX and Vitro have been the largest Mexican investors abroad, several other big conglomerates have followed suit, both in the production and service sectors. For example, Synkro (a large producer of panty-hose and other women's underwear) bought Kayser-Roth, DINA (a producer of trucks) acquired Motor Coach Industries, the financial and agro-business Grupo Cabal Peniche took control of PPI Del Monte Fresh Produce, and the media giant Televisa bought Univision. All these operations took place in the United States.¹⁶

The size of these firms' investments shows that they are following strategies under which the basic elements that define the structure of their industries and their competitive positions are determined in an integrated Mexican-United States economic area. In these cases, we see leading Mexican conglomerates, becoming international players in their industries. Some of these conglomerates have a long history in the Mexican economy (e.g., Vitro or Televisa), while others have a relatively recent record (e.g., Cabal Peniche). The strengthening of these conglomerates, both old and new, is quite in accordance with the pattern that have prevailed in the Mexican industry in the long term: foreign firms' control on modern consumer and capital goods, and large Mexican firms' predominance in traditional consumer and intermediate goods. The big change now is that some of the Mexican companies are expanding successfully into regional and global markets and this expansion is gaining speed after the beginning of the implementation of the NAFTA.¹⁷

VI. CONCLUSIONS

The analysis presented in this chapter suggest that the integration of Mexico in the new industrial order, is being fostered by the export orientation of the main foreign firms in the country, which have moved from a inward-looking perspective to using the country as an export platform. This is the case not only of some low-skilled-labour *maquiladoras* but also of relatively high value-added activities as the production of passenger cars and electrical and electronic equipment. This relative disengagement of foreign firms from the dynamics of the domestic market has been a result of their own strategy *vis-à-vis* their competitive situations in international markets and of policy decisions that opened and liberalized the country's economy. The structural heterogeneity of the Mexican economy, in particular of its industrial base, allowed foreign firms to develop export-oriented production facilities in quite different sectors, ranging from the extremely high capital-intensive production of chemicals, to the intermediate capital-intensive production of passenger car and parts, and to the labour-intensive *maquiladora* assembly of electrical appliances.

These "benefits" of the country's structural heterogeneity suggest that Ozawa's assertion that "it is imperative for Mexico to keep pushing for labour intensive industrialization until full employment is attained and wages start to rise" (Ozawa, 1991, p. 150) cannot be accepted completely. Although labour-intensive activities should continue to be supported to reduce unemployment, the country already has some quite developed capital-intensive industrial sectors which are competitive exporters to North America or are already in the stage of undertaking foreign investment in the developed countries.

In a long-term perspective, Mexico has been upgrading almost permanently its locational specific advantages, inducing MNEs to change the main reason for investing in the country. The natural-resources-seeking investments of the early decades of the century have been followed by market-seeking investments during the ISI period, and by efficiency-seeking ones as Mexico becomes an export platform to North America.

Although the evidence tends to point out that some industries in Mexico are moving from stage 2 to stage 3 of the IDP, this transition is not clear-cut or linear in nature. Due to the unstable macroeconomic situation of the early to mid-1980s, a result of the international debt crisis, the developmental path of Mexico had more of a convoluted nature. For example, the shift from an inward-looking import-substituting framework to an outward-looking export orientation was really a sharp break highly compressed in time. For that reason, would be anomalies such as the growth in labour-seeking FDI in the *maquiladora* sector resulted from the major devaluations demanded by crisis management, yet also coincided with a process of efficiency-seeking and strategic-asset-seeking FDI which produced greater technological sophistication in the electric and electronic equipment industry and the automobile industry. Furthermore, the growth in market-seeking Mexican FDI probably occurred a little bit out of phase according to the Dunning investment development path scheme. These country-specific factors are a result of the complexity of the Mexican reality. Naturally, the new period of economic uncertainty opened by the December 1994 foreign exchange crisis may reinforce the same complexity.

Finally, Mexico's integration in the North American cluster of the Triad (UNCTC, 1991) has sharply intensified in the last decade. Multinational enterprises are central actors in this process and have begun to specialize their Mexican operations, such that they play a progressively more defined role in their global or regional production and marketing systems. Although of a much smaller dimension, large Mexican conglomerates are also globalizing their activities through direct investment abroad, primarily in the United States, so Mexico's integration into North America is, at least partially, a two-way process.

Synergy among the changes in the competitive position of countries in international product and capital markets, new globalizing corporate strategies, and reconsidered national policies on the part of most developing countries (including a new attitude towards FDI) has resulted in a new international industrial order. In the case of Mexico, the logic of the globalization process for MNEs, its location in the North American market, and other competitive advantages are replacing the domestic market as the main attraction for foreign investors.

The strategy adopted by the Mexican government in 1995 relies on foreign direct investment inflows to finance almost half of the expected current account deficit, while in the previous years portfolio investment played the predominant role. To induce direct investments of the order of US\$ 8 billion per year in an uncertain macroeconomic environment, new locational specific advantages will be offered, most probably the opening up of new areas for foreign investment (i.e., 100% ownership in banking) and new privatizations (satellite communications, transport infrastructure and possibly, but not probably, some activities related to oil extraction and refining).¹⁸

Notes

¹ Except when otherwise indicated, the currency used for data in this chapter is the United States dollar.

² For a detailed account of these laws and the commitments the country undertook under the NAFTA, see Calderón, Mortimore and Peres (1994).

³ The approval in 1990 of Regulation "S" and Rule 144A of the United States Security and Exchange Commission (SEC) was influential in the decision of portfolio investors to change their investment strategies in response to new off-shore opportunities.

⁴ During a period of foreign investment scarcity in Latin America, the Mexican debt-equity conversion programme succeeded in attracting over \$3 billion in FDI (Mortimore, 1991). This FDI went primarily to the tourism (29%), automobile (17%) and *maquiladora* industries (12%). While most of it came from the United States (48%), some diversity by origin was evident: United Kingdom (14%), Germany (6%), Japan (4%), France (3%) and Spain (3%). This incentive programme carried an initial implicit subsidy (the difference between the cost of Mexican debt paper in secondary markets and the redemption value in pesos offered by the Mexican government) of almost 19%. This incentive programme, coupled with macroeconomic considerations, such as the sharp devaluations of the mid-1980s, the country's growth potential and its successes in containing inflation, proved very effective in Mexico's eventual return to a more 'normal' FDI inflow situation (Calderón, 1993).

⁵ In 1993, there were 7 708 firms with foreign investment in Mexico; in 4 783 of them foreign investors owned more than 50% of capital. Half of the foreign firms operating in the country that year had been established after 1988 (SECOFI, 1993).

⁶ One notable feature of this service sector FDI, for example, has been the use of joint investments in franchising operations which are spilling over into Mexico from the United States. The number of such operations rose from only 10 in 1990 to 125 (with 950 locals in the country) in 1993.

⁷ Of total FDI in the manufacturing sector in 1989-1992, 27% went to the metal-mechanic industries, 22% to chemicals and petrochemicals, 21% to foodstuffs, beverages and tobacco, and 17% to non-metallic mineral products (SECOFI, 1993). For a list of new investment projects, see SECOFI (1994a).

⁸ According to Garrido (1994), most of the privatized manufacturing enterprises were sold to large Mexican conglomerates. Foreign firms did not play a leading role in the privatization process in Mexico, as they actually did in other countries, for example in Argentina.

⁹ In 1992, foreign firms accounted for 1.1 million jobs in the Mexican economy (total: 7.4 million). More than 773,000 of those jobs were in the manufacturing industries, where such firms accounted for 24% of the total. In the metal-mechanic industries, foreign firms provided 424,000 positions, equivalent to 41% of the total for those industries (SECOFI, 1993). Data from a different source indicated that foreign firms accounted for 456,000 manufacturing jobs in 1980, 19% of total (Peres, 1990a). If in 1980, foreign firms with 19% of employment explained 27% of industrial production, it is reasonable to expect that in 1992 with 24% of employment they should explain about one third of production, specially given the relative stability of the sectoral pattern of investment mentioned above.

¹⁰ The ECLAC computer software known as Competitive Analysis of Nations (CAN) was used for all calculations regarding international competitiveness. For conceptual and methodological details, see the article by its inventor, Mandeng (1991).

¹¹ Between 1987 and 1990 the overall production of passenger cars in the United States remained more or less constant at the 6 million unit level, however, the share of the United States Big Three fell from 5.5 to 4.8 million while that of the Japanese transplants and joint ventures rose from 0.5 to 1.3 million units (or, from less than 8 to almost 22% of the total). See United States Department of Commerce (1991, p. 55).

¹² In the early 1990s the labour costs faced by the electrical and electronics industries in Mexico were not only lower than those faced by their counterparts in the United States and Japan, but also below those prevailing in the more advanced Asian countries, such as Taiwan Province of China, the Republic of Korea or Singapore.

¹³ These inflows of FDI in the sector as are for the most part a result of the implementation of anti-dumping duties by the United States against tubes imported from Japan, Republic of Korea, Singapore and Canada in 1988; and more recently in response to the anticipated implementation of the NAFTA.

¹⁴ One of the main attractions of Guadalajara as a site for the computer industry has been the decision of IBM to base its Mexican operations in that city, and to establish a major educational and technical center next to his production facilities to train its employees.

¹⁵ This section and the following one draw heavily on Calderón, Mortimore and Peres (1994).

¹⁶ Although Mexican investments in developing countries are much smaller than those in the United States and Europe, important ventures have taken place also in Central and South America. Some examples are the investments of the bread producer Bimbo in Guatemala and Chile, the tortilla producer Maseca in Costa Rica, the airline Aeroméxico in Peru, CEMEX in Venezuela, and Televisa in Chile (Peres, 1993 and *América economía*, 1994b, p. 27).

¹⁷ According to *América economía* (1994a), the NAFTA explains the surge in Mexican investment in the United States during the first semester of 1994. The amount invested in that period (US\$ 1.4 billion) is bigger than the accumulated Mexican investment in the United States in 1990-1993.

¹⁸ "The egg's on Zedillo's face", *The Economist*, January 7th-13th, 1995, p. 31-32, and "México no caerá en la insolvencia", *El financiero*, January 6th, 1995.

BIBLIOGRAPHY

- América economía* (1994a), "Los 200 mayores exportadores de América Latina", special issue, Santiago, Chile, September.
- _____ (1994b), Santiago, Chile, February.
- Banco de México (1994), *The Mexican Economy, 1994*, Mexico City, June.
- Bennett, D. and K. Sharpe (1979a), "Transnational corporations and the political economy of export promotion: the case of the Mexican automobile industry", *International Organization*, vol. 33, No. 2, Spring.
- _____ (1979b), "Agenda setting and bargaining power: the Mexican State versus transnational automobile corporation", *World Politics*, vol. 32, No. 1, October.
- Calderón, A. (1993), "Inversión extranjera directa e integración regional: la experiencia reciente de América Latina y el Caribe", *Industrialización y desarrollo tecnológico series*, No. 14 (LC/G.1778), Santiago, Chile, September.
- Calderón, A., M. Mortimore and W. Peres (1994), "Mexico's integration into the North American economy: the role of foreign investment", *Foreign Direct Investment in Developing Countries: The Case of Latin America*, Madrid, Institute for European-Latin American Relations (IRELA)/European Commission.
- Calvo, G., L. Leiderman and C. Reinhart (1993), "Capital inflows and real exchange rate appreciation in Latin America: the role of external factors", *IMF Staff Papers*, vol. 40, No. 1, March.
- Carrillo, V. (1989), "Calidad en maquiladoras", *Expansión*, Mexico City, October.
- Casar, J. I. (1994), "Un balance de la transformación industrial en México", ECLAC/UNDP Project on Industrial Organization, Innovation System and International Competitiveness, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), May.
- _____ (1993), "La competitividad de la industria manufacturera mexicana: 1980-1980", *El trimestre económico*, vol. 60, No. 237.
- De María y Campos, M. and G. Lopez (1992), *Reestructuración y desarrollo de la industria automotriz mexicana en los años ochenta: evolución y perspectivas*, Estudios e informes de la CEPAL series, No. 83 (LC/G.1672-P), Santiago, Chile. United Nations publication, Sales No. S.92.II.G.11.
- Dunning, J. and R. Narula (eds.) (1995), *Foreign Direct Investment, Economic Structure and Governments*, London, Routledge.
- _____ (1994), "Transpacific foreign direct investment and the investment development path: the record assessed", *Essays in International Business*, No. 10, Columbia, College of Business Administration, University of South Carolina.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1994), *Latin America and the Caribbean: Policies to Improve Linkages with the Global Economy* (LC/G.1800(SES.25/3)), Santiago, Chile.
- Evans, P. (1977), "Direct investment and industrial concentration", *Journal of Development Studies*, vol. 13, No. 4, July.

- Fajnzylber, F. and T. Martínez (1976), *Las empresas transnacionales: expansión a nivel mundial y proyección en la industria mexicana*, Mexico City, Fondo de Cultura Económica.
- Garrido, C. (1994), "National private groups in Mexico, 1987-1993", *CEPAL Review*, No. 53 (LC/G.1832-P), Santiago, Chile.
- Gurría, J. A. (1994), "Capital flows: the Mexican case", *Coping with Capital Surges: the Return of Finance to Latin America*, R. French-Davis and S. Griffith-Jones (eds.), Boulder, Lynne Rienner.
- Hymer, S. (1976), *The International Operations of National Firms: A Study of Direct Foreign Investment*, Cambridge, MA, The MIT Press.
- Kessel, G. and R. Samaniego (1992), *Apertura comercial, productividad y desarrollo tecnológico: el caso de México*, Documentos de trabajo series, 112, Washington, D.C., Inter-American Development Bank (IDB).
- Mandeng, Ousmene (1991), "International competitiveness and specialization", *CEPAL Review*, No. 45 (LC/G.1687-P), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).
- Moreno, J.C. (1994), *La competitividad de la industria automotriz en México*, Mexico City, ECLAC Subregional headquarters in Mexico.
- _____ (1988), "The automotive industry in Mexico in the eighties", Working Paper series, No. 22, Geneva, World Employment Programme, International Labor Organisation (ILO).
- Mortimore, M. (1995), "Transforming sitting ducks into flying geese: the Mexican automobile industry", Desarrollo productivo series, No. 26 (LC/G.1865), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).
- _____ (1993), "Flying geese or sitting ducks? Transnationals and industry in developing countries", *CEPAL Review*, No. 51 (LC/G.1792-P), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), December.
- _____ (1992), "A new international industrial order", *CEPAL Review*, No. 48 (LC/G.17-48-P), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), December.
- _____ (1991), "Debt/equity conversion", *CEPAL Review*, No. 44 (LC/G.1667-P), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), August.
- Mortimore, M. and T. Huss (1991), "Encuesta industrial en México", *Comercio exterior*, vol. 41, No. 7, Mexico City, July.
- Olea, M. A. (1993), "The Mexican automotive industry in NAFTA negotiations", *Driving Continentally: National Policies and the North American Auto Industry*, C. Molot (ed.), Ottawa, Carleton University Press.
- Ortiz, E. (1993), "NAFTA and foreign direct investment in Mexico", *Foreign Investment and North American Free Trade*, A. Rugman (ed.), Columbia, University of South Carolina.
- Ozawa, T. (1994), "The southerly spread of America's automobile industry. Flexible production and foreign direct investment as a corporate restructuring agent", *World Competition*, vol. 17, No. 4, June.
- _____ (1991), "The dynamics of Pacific rim industrialization: how Mexico can join the Asian flock of 'flying geese'", *Mexico's External Relations in the 1990s*, R. Roett (ed.), London, Lynne Rienner Publishers.
- Peres, W. (1993), "The internationalization of Latin American industrial firms", *CEPAL Review*, No. 49 (LC/G.1757-P), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), April.

- _____ (1990a), *Foreign Direct Investment and Industrial Development in Mexico*, Paris, Organisation for Economic Co-operation and Development (OECD).
- _____ (1990b), *From Globalization to Regionalization: the Mexican Case*, OECD Technical Papers series, No. 24, Paris, Organisation for Economic Co-operation and Development (OECD), August.
- SECOFI (Ministry of Commerce and Industrial Development) (1994a), "Principales proyectos de inversión extranjera", *Comercio exterior*, vol. 44, No. 5, Mexico City, May.
- _____ (1994b), *Resumen del Tratado de Libre Comercio entre México, Canadá y Estados Unidos*, Mexico City.
- _____ (1993), *Papel y aportaciones de la inversión extranjera a la economía mexicana*, Mexico City, Subsecretaría de Comercio e Inversión Extranjera, October.
- Sepúlveda, B., O. Pellicer and L. Meyer (1974), *Las empresas transnacionales en México*, Mexico City, El Colegio de México.
- Shaiken, H. (1994), "Advanced manufacturing and Mexico: a new international division of labor?", *Latin American Research Review*, vol. 29, No. 2.
- _____ (1991) "The universal motors assembly and stamping plant: transferring high-tech production to Mexico", *Columbia Journal of World Business*, vol. 26, No. 11, Summer.
- _____ (1990), *Mexico in the Global Economy: High Technology and Work Organization in Export Industries*, Monograph Series, No. 33, San Diego, Center for United States-Mexican Studies, University of California.
- Shaiken, H. and S. Herzenberg (1987), *Automation and Global Production Automobile Engine Production in Mexico, the United States and Canada*, Monograph Series, No. 26, Center for US-Mexican Studies, University of California, San Diego, 1987.
- UNCTAD (United Nations Conference on Trade and Development) (1993), *Small and Medium-Sized Transnational Corporations: Role, Impact and Policy Implications (ST/CTC/160)*, New York. United Nations publication, Sales No. E.93.II.A.15.
- UNCTC (United Nations Centre on Transnational Corporations) (1991): *World Investment Report 1991. The Triad in Foreign Direct Investment (ST/CTC/118)*, New York. United Nations publication, Sales No. E.91.II.A.12.
- Unger, K. (1991), "The automotive industry: technological change and sourcing from Mexico", *North American Review of Economics and Finance*, vol. 2, No. 2.
- _____ (1990), *Las exportaciones mexicanas ante la reestructuración industrial internacional. La evidencia de las industrias química y automotriz*, Mexico City, El Colegio de México and Fondo de Cultura Económica.
- UNIDO (United Nations Industrial Development Organization) (1993), *Mexico. The Promise of NAFTA*, London, The Economist Intelligence Unit.
- United States, Congress (1992), *United States-Mexico Trade: Pulling Together or Pulling Apart?*, Washington, D.C., Office of Technology Assessment, October.
- United States, Department of Commerce (1977, 1982 and 1989), *Benchmark Surveys*, Washington, D.C.
- _____ (1991), *Foreign Direct Investment in the United States*, Washington, D.C.
- USITC (United States International Trade Commission) (1991), *The Likely Impact on the United States of the Free Trade Agreement with Mexico*, USITC Publication series, No. 2353, Washington, D.C.
- Whiting, V. (1991), *The Political Economy of Foreign Investment in Mexico. Nationalism, Liberalism and Constraints on Choice*, Baltimore, John Hopkins University Press.
- Womack, J. (1990), *The Machine that Changed the World*, New York, Rawson Associates.

Desarrollo Productivo series *

- | No. | Title |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 | "Reestructuración y competitividad: bibliografía comentada" (LC/G.1840), Red de reestructuración y competitividad, noviembre de 1994. |
| 17 | "Síntesis del planteamiento de la CEPAL sobre la equidad y transformación productiva" (LC/G.1841), Red de reestructuración y competitividad, diciembre de 1994. |
| 18 | "Two studies on transnational corporations in the Brazilian manufacturing sector: the 1980s and early 1990s" (LC/G.1842), Transnational Corporations and Foreign Investment, December 1994. |
| 19 | "Tendencias recientes de la inversión extranjera directa en América Latina y el Caribe: elementos de políticas y resultados" (LC/G.1851), Red de empresas transnacionales e inversión extranjera, diciembre de 1994. |
| 20 | "Empresas transnacionales manufactureras en cuatro estilos de reestructuración en América Latina. Los casos de Argentina, Brasil, Chile y México después de la sustitución de importaciones" (LC/G.1857), Red de empresas transnacionales e inversión extranjera, mayo de 1995. |
| 21 | "Mexico's incorporation into the new industrial order" (LC/G.1864), Transnational corporations and foreign investment, May 1995. |

* *Desarrollo productivo* is the continuation, under a new name, of the *Industrialización y desarrollo tecnológico* (IDT) series, published periodically by the ECLAC Division of Production, Productivity and Management. This new name has been chosen as a more accurate reflection of the issues dealt with in this series. The articles will be grouped into at least three categories: i) restructuring and competitiveness; ii) transnational corporations and foreign investment; and iii) agricultural and rural development. These topics broadly reflect the internal organization of the Division (Joint ECLAC/UNIDO Industrial and Technological Development Unit, Joint ECLAC/UNCTAD Unit on Transnational Corporations and Agricultural Development Unit), as well as the networks of public and private entities linked to these Units.

The Division welcomes contributions to this series from all staff members of the ECLAC and United Nations systems, and particularly from members of the institutions comprising the networks, as well as distinguished specialists from Latin America and the Caribbean and outside the region. Readers interested in back numbers in this series should request them in writing from the Division of Production, Productivity and Management, ECLAC, Casilla 179-D, Santiago, Chile.