

## **Industrialization and Economic Growth in Mexico after NAFTA: The Road Travelled**

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### **ABSTRACT**

This article examines Mexico's industrial policy and economic performance, focusing on an analysis of the structural changes in its manufacturing sector associated with NAFTA. The aim of the article is to improve our understanding of why the post-NAFTA evolution of the Mexican economy has been characterized by lights and shadows, with low inflation, low budget deficits and a surge in non-oil exports on the one hand, and on the other hand a slower than expected expansion of economic activity and employment. The article also presents some policy implications on the need for a new development agenda if Mexico is to finally succeed in its quest for high and sustained economic growth.

### **INTRODUCTION**

In 1994, Mexico, the United States and Canada launched the North American Free Trade Agreement (NAFTA) which, if not exactly a free trade initiative, was a path-breaking compromise to drastically reduce barriers to intra-regional trade.<sup>1</sup> But for the Mexican government at that time, NAFTA represented much more than a trade-boosting venue. It was the

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1. Article 102 of the Agreement formally identifies NAFTA's main objectives: '[to] Eliminate barriers to trade in, and facilitate the cross-border movement of, goods and services between the territories of the Parties; promote conditions of fair competition in the free trade area; increase substantially investment opportunities in the territories of the Parties; provide adequate and effective protection and enforcement of intellectual property rights in each Party's territory' (NAFTA, 1994).

culmination of a radical change in the country's development strategy which had been implemented since the mid-1980s. This change implied abandoning import substitution and state-led industrialization, and adopting instead a strategy drafted along the lines of the so-called Washington Consensus and, therefore, centred on trade liberalization and on the reduction of the state's intervention in the economy.

Within this new strategy, NAFTA was seen as a vehicle to achieve two goals. The first was to set the Mexican economy on a non-inflationary, export-led growth path driven by sales of manufactured goods, mainly to the United States. The underlying assumption was that NAFTA, together with the drastic macroeconomic reforms and rapid, unilateral trade liberalization that had been initiated in the second half of the 1980s, would encourage local and foreign investment in the production of tradable goods to exploit Mexico's potential as an export platform to the United States. The rapid expansion of Mexico's manufacturing sector — which would allegedly occur, stimulated by exports of labour-intensive products — would then pull the rest of the domestic economy onto a trajectory of high and persistent growth. Furthermore, it was argued, the downsizing of the public sector and the elimination of subsidies would eliminate the fiscal deficit and cut inflation. The second — and politically decisive — objective was to guarantee the lock-in of Mexico's macroeconomic reform process. Indeed, the government of President Salinas (1988–94) claimed that NAFTA imposed international legal and extra-legal constraints that would deter any attempt by subsequent governments in Mexico to return to trade protectionism.

For Mexico, NAFTA and the macroeconomic reforms in which it is embedded have been neither the panacea claimed by its supporters nor the disaster predicted by some of its opponents.<sup>2</sup> The great expectations to which it gave rise have been only partially fulfilled. On the one hand, Mexico's performance in the last ten years has been marked by small budget deficits, low inflation, and a surge in non-oil exports and foreign direct investment (FDI). On the other hand, economic growth has been disappointing. Indeed, fixed domestic capital formation has been rather stagnant, and real gross domestic product (GDP) has grown at a rate way below its historical average, clearly insufficient to generate the number of jobs required by the country's expanding labour force. Moreover, the balance of payments constraint on the Mexican economy's long-term rate of growth has become more binding.

Using data from official sources, including INEGI, Banco de Mexico and ECLAC, the rest of the article is organized as follows. The next section gives a background to industrial policy in Mexico between 1940 and 1984, placing it in the overall context of the macroeconomic reforms that have been

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2. For recent assessments of NAFTA's impact on Mexico, see Audley et al. (2003); Blecker (2005); Dussel (2003); Lederman et al. (2004); Moreno-Brid et al. (2005); Tornell et al. (2004); Weisbrot et al. (2004).

implemented in the last four decades. This is followed by a description of Mexico's road to NAFTA, focusing on two key aspects: unilateral trade liberalization and foreign investment deregulation. We then examine the relationship between NAFTA and exports in Mexico, and analyse some stylized facts concerning foreign trade and economic growth performance and their implications in the context of NAFTA and manufacturing. The article closes with some conclusions and policy recommendations.

### **MEXICO'S INDUSTRIAL POLICY AND ECONOMIC PERFORMANCE UNDER IMPORT SUBSTITUTION (1940–84)**

From the 1940s until the second half of the 1970s, Mexico's economic development was based on strong state intervention to foster industrialization through import substitution. The policy regime was centred on the provision of moderate levels of effective protection to manufacturing with a limited, albeit ad-hoc and increasing, dispersion of tariff rates across industries. Trade protection measures included the requirement of permits prior to importation, the setting of official prices on certain imported goods, and outright bans on the import of a number of products purchased abroad. FDI was heavily regulated; it was accepted as a minority partner only in non-strategic areas of manufacturing, and excluded from the rest.

Industrial policy operated through sector-specific programmes with the aim of building up a manufacturing sector capable of producing capital goods and somewhat complex intermediate inputs (Ros, 1994). To achieve this goal, tax cuts and trade restrictions were implemented, with strict requirements concerning, for instance, the degree of local content and net-export performance. The most successful sectoral programmes included those of the auto, computer and pharmaceuticals industries (CEPAL, 1979). These policies were complemented by intervention from state-owned companies to carry out investment projects that the private sector could not or would not undertake, such as the supply of strategic or basic intermediate inputs. In addition, a number of public enterprises were created through the purchase or the expropriation of private firms either for security reasons or to avert bankruptcies and maintain employment (Rogozinsky, 1997). By 1982 the 1,155 state-owned companies (not counting the recently nationalized commercial banks) had intervened in forty-one of the forty-nine branches of industrial activity. In some of these, they exercised significant market power (SHCP, 1994).

A key element of Mexico's industrial strategy was, and still is, the *maquiladora* programme.<sup>3</sup> This was initiated in 1966, partly to compensate for the

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3. An in-depth analysis of the origin of the *maquiladora* programme and its evolution after Mexico's macroeconomic reform process can be found in Buitelaar and Padilla (2000).

elimination of the *braceros* programme that allowed the temporary entry to the US of Mexican farm workers. Its objective was to stimulate the establishment of labour-intensive, in-bond export processing plants (so-called *maquiladoras*) along the northern border region, by offering tax-free access to imported inputs and machinery, as well as exemption from sales tax (now VAT) and income taxes. Fearing a negative impact on local production, the programme limited the *maquiladoras'* sales on the domestic market to a low percentage of total sales. There were also a number of other instruments used to give fiscal incentives to exporters, including the Certificates for Tax Returns (Cedis) and the Certificates for Fiscal Stimulation (Ceprofis). In addition, development banks and some public entities, as well as private banks, granted subsidized financial support for industrial activities, although these suffered from rather slack follow-up and supervision.

During the import substitution phase, Mexico's manufacturing sector thus received government support through four different channels: 1) artificially high wholesale prices of final products sold in the domestic market, due to trade protection; 2) low costs of key inputs, energy and other utilities due to subsidies and tax incentives; 3) subsidized credit from development banks and certain public entities, and from the private banking sector; and 4) tax exemptions on certain imports of machinery and equipment (Moreno-Brid and Ros, 2004).

The strategy was, on the whole, quite successful. It transformed the country from an agrarian to an urban, semi-industrial society. From 1940 to the mid 1970s Mexico's real GDP grew at an annual average rate of 3.1 per cent per capita. Manufacturing was the driving force of this growth process, with output expanding at an average of nearly 8 per cent per year, boosted by dynamic domestic demand. In this period the share of manufacturing in GDP rose from 15 per cent to 25 per cent. However, this strategy underestimated certain obstacles on the nation's road to development. The first was the uneven distribution of the benefits of economic growth. The second was the failure to implement a fiscal reform that would strengthen tax revenues and thus reduce the public sector's dependence on external debt. The third was that, with the exception of the *maquiladora* programme and the small number of special development sectoral programmes described above, there were few policies in place to efficiently promote exports. These limitations proved fatal.

In the late 1970s, Mexico's economic expansion lost momentum, slowed down especially by the difficulties in substituting imports of high-technology capital goods. Public expenditure became the engine of growth. In 1977 the government launched an ambitious development programme funded by the vast inflow of oil revenues and by external debt. This oil-driven boom was short-lived. Fiscal and foreign exchange revenues, increasingly dependent on petroleum exports, became very vulnerable to external shocks. In turn imports of intermediate and capital goods rapidly expanded, causing a bulging trade deficit. The collapse of the international oil market in 1981, coupled with the

rise in US interest rates, triggered a twin fiscal and foreign exchange crisis in Mexico which, in August 1982, forced President López Portillo to declare a moratorium on external debt service payments. This action ended Mexico's forty-year economic expansion, and was the catalyst for a series of economic reforms aimed at positioning the private sector and market forces as the pivotal agents for investment and industrialization.

### **THE ROAD TO NAFTA: UNILATERAL TRADE LIBERALIZATION AND FOREIGN INVESTMENT DEREGULATION (1985–94)**

In the early 1980s, in the aftermath of the most dramatic balance of payments crisis that Mexico had faced in decades, President De la Madrid (1982–88) began to put in place a series of economic reforms to shift the economy away from its traditional state-led development strategy. This new strategy was committed to trade and financial liberalization, FDI deregulation and privatization. It was accompanied by a radical shift in industrial policies, away from policies targeted to specific sectors and towards so-called horizontal policies. Such a policy reversal had a significant impact on manufacturing, since it eliminated most, if not all, the subsidies and fiscal incentives that manufacturing had traditionally received.

#### **Trade Liberalization and FDI Deregulation**

These reforms, begun timidly in 1984, soon gained speed through the unilateral reduction/elimination of tariff and non-tariff barriers to foreign commerce and the signing of international agreements. In 1985 Mexico signed a Bilateral Agreement on Subsidies and Countervailing Measures with the US, committing itself to eliminate export subsidies granted through low domestic energy prices or preferential interest rates. However a *drawback* system — to allow the reimbursement of import duties paid by exporters — and a programme to allow tax-free entry of imported inputs and raw materials for export purposes (PITEX), were put in place. Before the end of the year the requirement of advance permits for imports had been eliminated for all but 908 items out of a total of approximately 8,000 items, thus unilaterally and drastically opening the domestic market of mainly capital goods and intermediate inputs. In 1986, Mexico joined GATT and began to ease restrictions on FDI particularly in capital- or technology-intensive industries. By December 1987, the prior-permit requirement was abolished for twenty-five of the forty-eight manufacturing branches; its coverage on the remaining twenty-three branches dropped significantly; and a few years later it was cancelled entirely.

By 1988, official prices on imported goods had been completely removed, the range of import duties had been narrowed, from 0–100 per cent to 0–20 per cent, and its average dropped almost four points with only five different

tariff rates remaining. There is general agreement that by the end of that year the trade liberalization of Mexico's domestic market of manufactures was almost complete (Ten Kate and De Mateo, 1989a, 1989b). Notable exceptions were the electronics, computer, and the auto sectors, still subject to special development programmes.<sup>4</sup>

President Salinas de Gortari's administration accelerated these reforms. In 1989, a new regulatory framework on FDI was approved, eliminating restrictions to foreign capital in about 75 per cent of all branches of economic activity (SECOFI, 1994). In December 1993, just before NAFTA began to operate, a new Law of Foreign Investment was enacted, simplifying administrative procedures and eliminating all restrictions on FDI in manufacturing except in the production of explosives and basic petrochemicals (Clavijo, 2000). Most importantly, it progressively removed all the performance requirements on FDI in the automobile sector. By then, 91 per cent of branches of economic activity were open to majority participation by foreign investors (SECOFI, 1994). In the late 1990s FDI in the banking sector was fully liberalized; today the majority of private banks in Mexico are foreign-owned.

NAFTA negotiations started in 1990, by which time Mexico was already one of the developing economies most open to foreign trade (OECD, 1992). The tri-lateral agreement was signed two years later between Mexico, the United States and Canada. It came into effect on 1 January 1994, with the commitment to progressively eliminate tariff and non-tariff barriers to most intra-regional trade over the next ten years and to ease restrictions on FDI (SECOFI, 1994). A small number of trade restrictions were maintained in Mexico (equivalent to approximately 7 per cent of the value of imports), relating to agriculture (particularly corn production), oil refining and the transportation equipment industry. The new trade regime did not include any new incentives for exports, limiting itself to the exemption of import duties on temporary imports which was already allowed by the *maquiladora*, the drawback and the PITEX programmes (Ros, 1993).

### **The Evolution of Industrial Policy up to NAFTA**

Until 1984, Mexico's industrial policy was still geared towards intervention in specific sectors. The National Programme for Industrial Promotion and Foreign Trade (PRONAFICE) launched that year, based on the idea that selective import substitution of capital goods would restart economic growth, allowed a significant role for the public sector in promoting industrialization. PRONAFICE, however, was never put into practice due to the lack of

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4. The import permit requirement was removed from the electronics industry in 1990. In the auto industry, trade liberalization began in 1990-93, but only gained full force with NAFTA when the official provisions on domestic content were substituted for rules of origin.

fiscal resources and, more importantly, to the sharp U-turn in the orientation of economic policies against state intervention in the productive sphere (Clavijo and Valdivieso, 1994). This *volte-face* in trade policy was accompanied by a major shift of industrial policy in the second half of the 1980s, as illustrated by the National Programme for Industrial Modernization and Foreign Trade 1990–94 (PRONAMICE). This set the legal framework for a new industrial policy, based on ‘horizontal’ policies to be applied across the board to compensate market flaws, and not to favour individual sectors. It aimed at stimulating investment by simplifying administrative procedures and speeding up the tax-deduction of depreciation allowances (*ibid.*). Interestingly, the coverage of sectoral development programmes was expanded, but their scope and instruments were fundamentally changed, in order to focus only in reducing trade barriers and administrative simplification.

The special development programme for the automobile industry — put in place decades before — was drastically liberalized in 1989. The limits on the number of lines/models of vehicles were relaxed, as were requirements on local content and export performance. The special programme to develop the computer industry was liberalized the following year by eliminating all import permit requirements.

The tax incentive system for industry was also modified. CEPROFIS were practically eliminated in 1988. Whereas in the early 1980s around 23 per cent of the total amount granted by such incentives was geared to fostering investment, by the end of that decade 95 per cent was linked to the tax-free entry of temporary imports for re-export purposes. The bulk of the remaining 5 per cent was linked to the development programmes of specific sectors (auto, electronics and pharmaceuticals) and soon became insignificant (Clavijo and Valdivieso, 1994).

The Salinas administration deepened the industrial policy reform, and inaugurated a new generation of ‘horizontal’ programmes that sought to maximize comparative advantages. Their design, fully compliant with GATT/WTO provisions, excluded any type of subsidies, tax cuts, trade protection schemes or performance requirements for their beneficiaries. The programmes were open to all businesses, whether in manufacturing or services, and consisted of analysing the economic activity in question, and then identifying actions and commitments by the government and private entities to improve its performance (Ten Kate and Niels, 1996). Although there has been no formal evaluation of these programmes, it seems clear that the magnitude of resources (financial or otherwise) allotted to them was insufficient. They were thus unable to make significant advances in solving the deeply-rooted structural problems of Mexico’s industry, including technological gaps, weaknesses of the national innovation systems, the lack of long-term financial resources, and inadequate investment to modernize machinery and equipment. There is general consensus that the programmes failed to fully develop Mexico’s potential as an export platform for manufactures, beyond its role in assembly activities, dependent on the tax-free entry of temporary imports to be re-exported (Mátar et al., 2003).

The persistent appreciation of the Mexican peso *versus* the US dollar in real terms did not help either.

### **The Change in Industrial Policy after NAFTA: Rhetoric or Reality?**

NAFTA formally institutionalized Mexico's trade liberalization strategy in an agreement with Canada and the US, its main trading partner. Since then, Mexico has joined the OECD and the WTO; it has signed free trade agreements with numerous other parties including Chile (1991), Costa Rica (1994), Colombia (1994), Venezuela (1994), Bolivia (1994), the European Union (2000) and Japan (2004).

In May 1996, after the dramatic balance of payments crisis of the previous year, President Zedillo (1994–2000) launched the Programme for Industrial Policy and Foreign Trade (PROPICE), which implied a certain reorientation of industrial policies (Ten Kate and Niels, 1996). It argued that trade liberalization had led to an excessive de-linking of some productive chains in the Mexican industry, and claimed that to increase domestic value added it was necessary to implement sector-specific policies and incentives, but explicitly excluded the notion of trade protection measures. Based on an assessment of their export potential, it identified textiles, footwear, automobile, electronics, appliances, steel, petrochemicals, and canned foodstuff production, as priority industries. It also noted the potential of the machine tools, plastic products and electronic components industries to become indirect (that is, suppliers of) exporters (Ten Kate and Niels, 1996).

In practice, the initiatives applied to foster export potential were based on the assumption that no subsidy should be granted, beyond a tax rebate on imported inputs or the accelerated phase-out of certain tariffs. Apart from the *maquiladora*, drawback and PITEX programmes mentioned above, these initiatives included the ALTEX, to allow tax-free entry of temporary inputs to large exporters; and SIMPLEX (Mexican System for External Promotion) to inform the business community of investment opportunities in Mexico, and to provide local companies with marketing information. Some other programmes were launched to offer consultancy to local companies to strengthen their (direct or indirect) export potential.

The most significant change took place in 2000 when a series of sectoral development programmes (Programas de Fomento Sectorial, PROSEC) were launched to compensate certain industries, in twenty-two sectors, for the adverse impact of the implementation of Rule 303 of NAFTA. This rule stated that to avoid trade distortions, Mexico must, in 2001, equate the nominal tariffs applied to imports coming from outside of North America with those applied to goods coming from within the NAFTA region. The implementation of Rule 303 caused a drastic reduction of import tariffs on a large number of items imported from the rest of the world. The compensation provided by PROSEC centred on trade measures aimed at reducing the



costs of imported intermediate inputs through the reduction of import tariffs. A quantitative estimate of the impact of such programmes is not available, but academic experts tend to concur that PROSEC caused major distortions in the trade system, as it opened the legal possibility of applying different import tariffs to the same item, depending on the type of firm/sector importing it.<sup>5</sup>

The current administration of President Fox (2001–) reaffirmed the notion that Mexico, although operating within a strategy of trade liberalization, must implement sector-specific policies to stimulate investment and economic growth. Concerning the industrial sector, the National Plan for Development (2001–06) explicitly stated that a key objective was to increase the generation of domestic value added, and to strengthen the linkages among local productive chains. It argued that the state — at the national, regional or local level — has a leading role in promoting international competitiveness. It declared a key goal to be the implementation of tailor-made sectoral programmes to boost the international competitiveness of the following industries: automobile, electronics, software, aeronautical, textiles and garment, agriculture, *maquiladoras*, chemical, leather and shoes, tourism, trade and construction. At the time of writing only four such programmes have been formally completed and launched: electronics, software, leather and shoes, and textiles.

Contrary to the prevailing practice of the last two decades, these programmes allow for more active state involvement and earmark public funds to provide financial support in preferential conditions. However, the inadequacy of these funds, together with the long delay in putting the programmes in place, reduce the chances of them having a significant, positive impact. Thus it seems safe to conclude that, in practice, the current administration's key instrument of industrial policy remains that of allowing tax-free imported inputs to be re-exported. The announced change in Mexican industrial policy's orientation — moving away from horizontal policies implementing more sector-specific measures instead — have so far been more rhetorical than real.

## NAFTA: PUTTING MEXICO ON AN EXPORT LED GROWTH PATH?

Trade liberalization, crowned by NAFTA, has been associated with the dynamic insertion of Mexico into global markets and its increasing importance in exports of non-oil products. Studies have shown that since 1985, and particularly since 1995, Mexico has been among the top ten countries in terms of increasing its share in the world (non-oil) market (see Moreno-Brid et al., 2005). This positive performance is particularly evident in the evolution of its

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5. The PROSEC programmes are presented in Secretaría de Economía (2000). For comprehensive analyses, see Dussel and Álvarez (2001); Vázquez Tercero (2000).

manufactured exports. As Table 1 shows, from 1985 to 1994 Mexico ranked fifth among countries with the largest increases in their share in world exports of manufactures; during 1994–2001 (the most recent year for which such comparative data are available) it moved to second place, just behind China.

Mexico's export drive in manufactures started in the late 1980s, before NAFTA was launched. The boom was partly rooted in the trade liberalization processes that began at this time, but also in the sectoral development programmes which were put in place during the previous phase of state-led industrialization. The launch of NAFTA opened an unprecedented window of opportunity to export to the US, the largest world market. In 1994, total exports represented 16 per cent of Mexico's real GDP. By the year 2000 this figure had more than doubled, to 35.1 per cent. Although it subsequently declined somewhat, in 2003 it still stood at 34.9 per cent. The export drive was based on the dynamism of manufactured exports, which meant a shift for Mexico, whose main exports had traditionally been primary commodities — shrimp, coffee, cotton and tomatoes. In the late 1970s Mexico was fundamentally an oil-exporting economy. However, as shown in Figure 1, by 1988 manufactures already accounted for more than 50 per cent of Mexico's total exports, and today their share exceeds 85 per cent, as their rapid growth has more than compensated for slack performances in exports of oil, minerals and agricultural commodities.

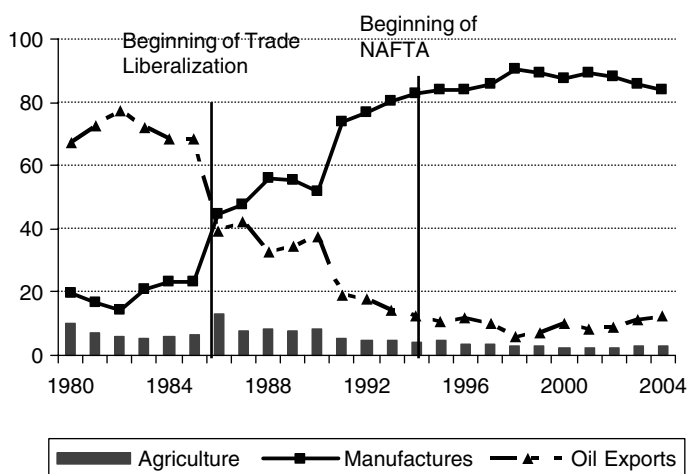
*Table 1. Changes in Participation of Exports of Manufactures in the World Market (Top 20 Countries), 1985–94 and 1994–2001*

	1985	1994	Variation 85–94	Rank		1994	2001	Variation 94–01
	(A)	(B)	(B – A)			(C)	(D)	(D – C)
China	1.42	5.86	4.44	<b>1</b>	China	5.86	8.86	3.00
Malaysia	0.55	1.73	1.18	<b>2</b>	Mexico	1.71	3.28	1.57
Singapur	0.88	1.88	1.00	<b>3</b>	USA	13.37	14.27	0.90
Thailand	0.30	1.06	0.77	<b>4</b>	Philippines	0.43	0.93	0.50
Mexico	1.01	1.71	0.70	<b>5</b>	Canada	3.78	4.27	0.49
USA	12.82	13.37	0.55	<b>6</b>	Malaysia	1.73	2.17	0.44
Indonesia	0.19	0.67	0.48	<b>7</b>	Korea	2.73	3.15	0.42
Korea	2.26	2.73	0.46	<b>8</b>	Hungary	0.23	0.56	0.33
Spain	1.49	1.79	0.30	<b>9</b>	Ireland	0.59	0.83	0.24
Poland	0.18	0.40	0.22	<b>10</b>	Czec Rep.	0.31	0.55	0.24
India	0.47	0.67	0.20	<b>11</b>	Israel	0.41	0.58	0.17
Turkey	0.22	0.40	0.18	<b>12</b>	Thailand	1.06	1.23	0.17
Philippines	0.31	0.43	0.12	<b>13</b>	Poland	0.40	0.54	0.14
Hungary	0.15	0.23	0.09	<b>14</b>	Indonesia	0.67	0.77	0.10
Viet-Nam	0.00	0.08	0.08	<b>15</b>	Turkey	0.40	0.50	0.10
Ireland	0.51	0.59	0.08	<b>16</b>	Viet-Nam	0.08	0.17	0.09
Australia	0.35	0.43	0.07	<b>17</b>	Slovakia	0.10	0.18	0.08
Portugal	0.44	0.51	0.07	<b>18</b>	Rumania	0.15	0.22	0.07
Pakistan	0.14	0.20	0.06	<b>19</b>	Bangladesh	0.10	0.15	0.05
Dominican Rep.	0.06	0.11	0.05	<b>20</b>	Costa Rica	0.05	0.10	0.05

*Source.* Own calculations based on ECLAC, CAN 2003.  
Manufactures covers items 6, 7 and 8 of the CAN classification.

Since the mid-1980s, the external sector has undoubtedly been the most dynamic component of demand for Mexican manufacturing. In 1988, exports were equivalent to 49.7 per cent of the total value added by the manufacturing industry. In 1994 this figure had climbed to 71.9 per cent, and by 2003 it even exceeded (by 61 per cent) the manufacturing industry's value added. Whilst this strong performance was undoubtedly helped by NAFTA, it was also stimulated by two closely related factors. The first was the collapse of Mexico's domestic market in 1995 (real GDP fell 6 per cent, in the so-called 'tequila crisis'), which forced firms to seek external markets in order to compensate for the decline in their local sales. The second was the acute depreciation of the peso *vis-à-vis* the US dollar that took place in 1995 (a drop of 45 per cent in real terms), in response to the severe foreign exchange crisis experienced that year.<sup>6</sup> This depreciation gradually slowed,<sup>7</sup>

Figure 1. Composition of Total Exports, Mexico 1980–2004 (%)



Source: Authors' elaboration based on World Bank *World Development Indicators* (2004).

6. Econometric studies by Blecker (2005), Krueger (1998) and Pacheco-López (2004) all conclude, after controlling for the effect of the real exchange rate movements, that NAFTA had no significant impact on Mexican exports. Lederman et al. (2004), however, argue the opposite.
7. Comparing consumer price indices measured in a common currency, the peso appreciated in real terms by 26 per cent between 1995 and 2004. The ratio of the price deflators of tradables (manufactures) *vis-à-vis* non-tradables (services) suggests a real exchange appreciation of 17 per cent for this period.

but by 2004 the real exchange rate still showed a 7 per cent depreciation relative to the level of ten years earlier.

This export boom placed Mexico among the most successful competitors in many branches of the US market of manufactures, a position currently being challenged by China. *Maquiladoras* were a key force behind this export drive. In the early 1990s, they provided more than half of Mexico's total exports of manufactures, and more than 40 per cent of Mexico's total exports. Other important actors behind the boom were those foreign firms that were already well established in Mexico, as well as some that arrived as part of the vast inflow of FDI triggered by trade liberalization, NAFTA and privatization. FDI grew from a level comparable to 2 per cent of GDP in the early 1990s to reach a peak of 4 per cent in 2001, but has declined since then. The manufacturing industry absorbed 53 per cent of all FDI inflows to Mexico during 1994–2004, with investment heavily concentrated in three sub-sectors: metal products (48 per cent), chemical products (16 per cent), and food, beverages and tobacco (18 per cent).

Mexico's strong export drive has been accompanied by increased technological sophistication in some of the manufactured goods sold abroad. Table 2 shows the structure of Mexican exports and their share in OECD total imports from 1985 to 2001 (the most recent year for which data are available with this classification), distinguishing three groups: 1) exports directly based on natural resources (agriculture, energy, textile fibres, minerals and metals); 2) manufactures; and 3) other exports. In turn, manufactured goods are classified in two groups — those that make intensive use of

*Table 2. Selected Indicators of Mexican Exports to the OECD, 1985–2001*

Mexico	1985	1990	1994	2001
<b>Market Share</b>	<b>1.78</b>	<b>1.52</b>	<b>2.03</b>	<b>3.62</b>
Natural Resources	3.08	2.10	1.98	2.65
Agriculture	1.30	1.28	1.37	2.09
Energy	4.60	3.26	2.99	3.29
Textile Fibres, Minerals and metal	1.89	1.48	1.57	1.49
Manufactures	1.10	1.29	2.02	3.85
Based on Natural Resources	1.23	0.96	1.03	1.26
Not Based on Natural Resources	1.10	1.33	2.10	4.03
Others	1.61	2.54	2.70	4.12
<b>Structure of exports</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Natural Resources	58.6	33.6	21.4	14.7
Agriculture	9.7	10.3	8.2	5.1
Energy	45.9	21.0	11.8	9.1
Textile Fibres, Minerals and metal	3.0	2.3	1.4	0.5
Manufactures	39.1	62.5	74.9	81.4
Based on Natural Resources	3.4	3.4	2.5	1.5
Not Based on Natural Resources	35.0	57.6	70.7	78.1
Others	2.3	3.9	3.7	3.9

Source: Authors' elaboration based on ECLAC (2003)

natural resources and those that tend to use more other resources.<sup>8</sup> The second part of Table 2 shows the same categories, in terms of their contribution to Mexico's total exports. Notice the impressive penetration into the OECD market of manufactures by Mexico (from 1.1 per cent to 3.9 per cent): this has been especially fast in the category 'not based on natural resources', its share increasing from 1.1 per cent in 1985 to 2.1 in 1994 and 4 per cent in 2001. This dynamism is also reflected in the fact that, while this category accounted for 35 per cent of Mexico's total exports in 1985, by 1994 its share had climbed to 71 per cent, and by 2001 it stood at 78 per cent.

Mexico's export-drive was not uniformly grounded on all its manufacturing industries, but was highly concentrated across a few industries. Motor engines and auto parts, automobiles, and computers and other electronic equipment accounted for 58 per cent of Mexico's total exports of manufactures in 1994–2003. Adding electrical equipment and garments raises the combined share to 71 per cent. With the exception of motor engines (whose share actually declined) these branches are among those registering the highest increase as a proportion of Mexico's total exports of manufactures. Other dynamic branches include non-electric machinery and equipment, soap and cosmetics, transport equipment and electro-domestic appliances. The micro/firm-level shows similar concentration: according to some authors, the bulk of Mexico's manufacturing exports is accounted for by no more than 300 firms, most of them linked to transnational corporations (see Dussel, 2000; Máttar et al., 2003).

Notwithstanding the impressive performance of manufactured exports since NAFTA, reflected in the trade surplus with the US, Mexico has systematically registered trade deficits, except for periods of severe recession. The trade surplus derived from the *maquiladoras* and the oil industry have not been able to compensate for the bulging deficit in other manufacturing, coupled with the small negative figures for trade in primary goods and services (see Figure 2).

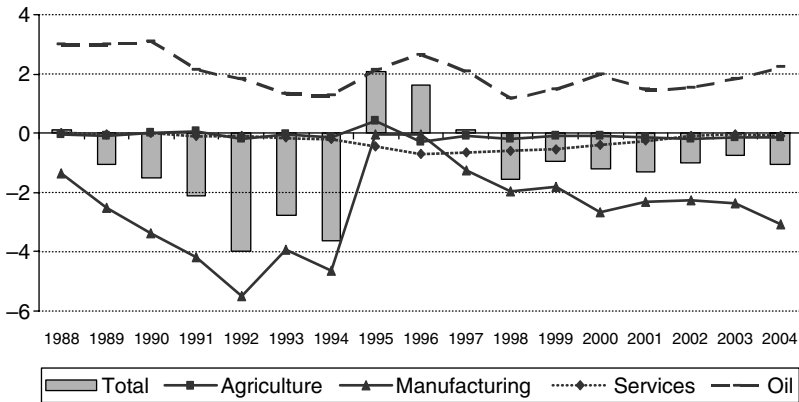
#### **NAFTA AND MANUFACTURING: SOME STYLIZED FACTS CONCERNING FOREIGN TRADE AND ECONOMIC GROWTH PERFORMANCE**

That the manufacturing industry has played, and continues to play, a key role in the Mexican economy, is illustrated by Figure 3, which shows that manufacturing has been the driving force of economic growth, exhibiting a strongly procyclical evolution. This section examines the stylized facts of its

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8. Table 2 does not give any information on the technological content of the actual processes adopted to manufacture export goods. In particular, all *maquiladoras*' exports are registered as 'not based on natural resources'.

Figure 2. Mexico's Trade Balance (% GDP), 1988–2004

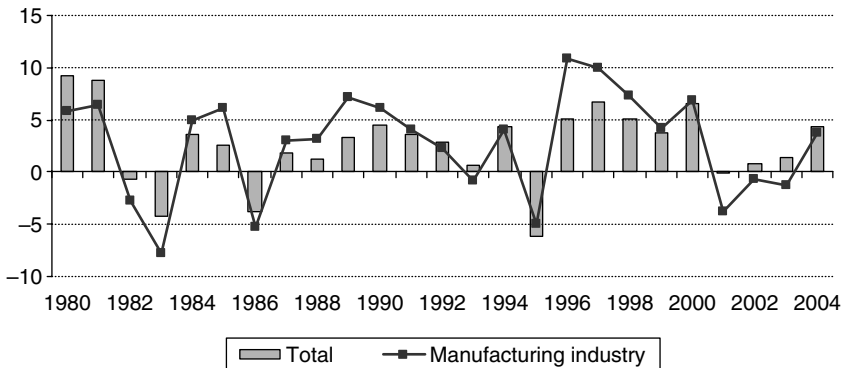


Source: Authors' elaboration based on INEGI (2005) and Banco de Mexico (2005).

evolution since NAFTA, and more generally since the trade liberalization reforms were put in place.

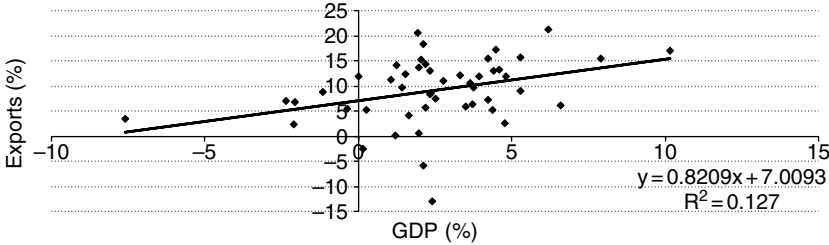
Parallel to the export boom in manufactures, Mexico has experienced a massive penetration of imports, mainly of manufactured goods, since the 1980s. It was to be expected that after decades of protectionism, trade liberalization would provoke an intense, but temporary, flood of imports.

Figure 3. Real GDP Growth of the Mexican Economy and its Manufacturing Industry: 1980–2004 (annual variation, %)



Source: Authors' elaborations based on INEGI (2005).

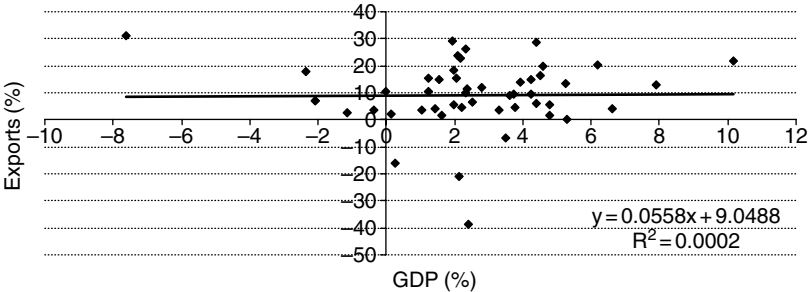
Figure 4. Mexico’s Manufacturing Industries: Real Value Added and Exports, 1988–2003 (annual average rates of growth, excluding maquiladoras)



It was assumed that once Mexican consumers had adjusted to the new ‘menu’ made available by trade liberalization, purchases of imported goods would lose momentum. However, such a slowdown has not yet happened. The first stages of the trade liberalization process implemented in the second half of the 1980s triggered an explosive surge in imports, expanding at annual rates of 30 per cent and above — unparalleled in the region. As a share of GDP, they climbed from 10 per cent in 1982 to more than 30 per cent by the mid-1990s.

Figures 4 and 5 depict the relation between the average rate of expansion of exports and of real value added, for each branch of manufacturing, in the period 1988–2003. Contrary to some *a priori* expectations, these figures suggest there is no significant relation between the two, with or

Figure 5. Mexico’s Manufacturing Industries: Real Value Added and Exports, 1988–2003 (annual average rates of growth, including maquiladora)



Source: Authors’ elaboration based on official data from INEGI.

without *maquiladoras*. Even at this simple level of analysis, it is clear that exports, in spite of their dynamism, have not in general been able to act as a sufficiently strong engine of growth for the manufacturing sector, or — given the procyclical nature of the industry — for the whole economy. Part of this failure is due to the fact that Mexico's manufactured exports have become increasingly dependent on imports, with reduced local content and weak linkages with domestic suppliers.

This is certainly true of *maquiladoras*,<sup>9</sup> but also of a substantial proportion of the manufacturing firms that export. As Dussel (2003, 2004) has pointed out, around 70 per cent of Mexico's exports of manufactures are produced through assembly processes involving imported inputs that enter the country under preferential tax schemes such as PITEX and ALTEX. He estimates that as a result of the tax facilities offered by such programmes, manufacturing firms that rely on foreign inputs entering as temporary imports benefit from input costs approximately 30 per cent lower than similar firms which use locally produced inputs.

The fast expansion of imports seems to confirm the assertions above. From 1988 to 2003, imports of manufactures at constant prices grew at more than twice the rate of exports. The trade deficit in manufacturing has thus been widening, putting extra pressure on the overall trade balance. Traditionally, manufactured goods account for the bulk of Mexican imports. In 1982, and measured in constant pesos, they represented 90 per cent of total imports. By 1994 their share was 95 per cent, a level which has remained constant.

The swift pace of Mexican imports since the second half of the 1980s was induced not only by the elimination of non-tariff barriers to foreign trade, but also by the expansion of domestic demand in the context of persistent appreciation of the real exchange rate. The resumption of facilitated access to external funds also played a role. After decades of tightly restricted access to them, Mexican consumers began to eagerly satisfy their demand for a wide variety of foreign goods and brands. However, such import demand also mirrors to some extent the strong relation that exporting firms have with foreign suppliers. The case of *maquiladoras*, the most successful export sector to date, is typical, as they rely on imported inputs and materials, and have weak relations with local suppliers. Another factor that boosted import penetration to the domestic market, and that should not be ignored, is the breakdown of some internal linkages in Mexico's domestic productive structure, as local producers have been put out of business by foreign competition. Finally, the insufficiently dynamic performance of labour productivity in Mexico's manufacturing may also have contributed to the problem. From 1994 to 2003, rather than closing, the gap widened by 10 per

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9. According to Cámara de Diputados (2004) and Dussel (2004), on average no more than 8 per cent of *maquiladoras*' intermediate inputs and raw materials are locally supplied.



cent *vis-à-vis* the US.<sup>10</sup> Unit labour costs in manufacturing show a similarly unfavourable comparison, with a 7 per cent increase relative to the US.

Applied studies (*inter alia* by Aroche, 2005; Moreno-Brid, 2001; Pacheco-López, 2004) reveal that in the last fifteen to twenty years the Mexican economy has significantly increased its structural dependence on imports. These results indicate that the long-term 'income-elasticity' of demand for imports (essentially manufactured goods) has more than doubled in this period.<sup>11</sup> Where it was previously valued at between 1.2 and 1.5 per cent, it has now risen to levels close to 3 per cent. This implies that if Mexico's real income is to grow at an annual average long-term rate of 5 per cent, its imports in real terms will tend to expand yearly by 15 per cent. To keep the trade deficit in check, and avoid an excessive increase as a proportion of income, Mexican exports must expand at least 15 per cent per year. If the terms of trade move in an adverse way, the required expansion of exports would have to be even higher. Such growth in exports seems unlikely to be achievable or sustainable in the long run. As a benchmark, it is worth recalling that during 1988–99, when the US economy grew rapidly, Mexican exports increased at an annual average rate of 10 per cent.

It is doubtful that the upward shift so far detected in Mexico's long-run income elasticity of imports is permanent. It is more likely to abate, and then decline somewhat as some effects of the trade liberalization process on the demand for foreign goods and services wear off. But if it remains at current high levels, the external sector will become a major obstacle in Mexico's struggle to steer a path of high economic growth, away from recurrent balance of payments crises. The most recent data available at the time of writing this paper (INEGI, 2005) report for January 2005 an annualized increase of 18 per cent in Mexico's imports in real terms, while its real GDP expanded by 4.4 per cent.

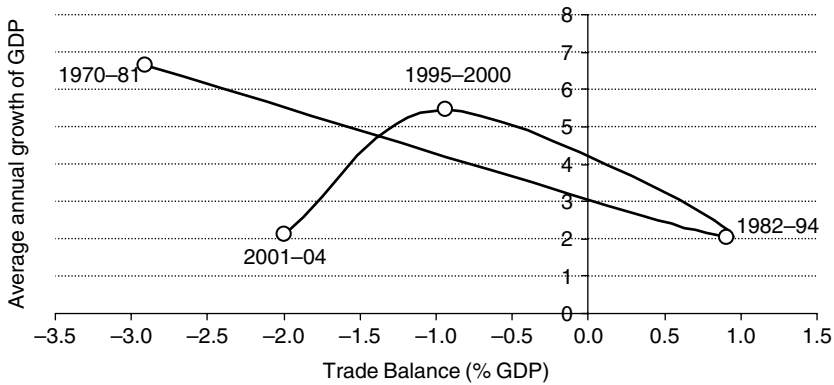
Figure 6 shows that trade liberalization and macroeconomic reforms have not yet been able to ensure strong export-led growth for Mexico. For the Mexican economy as a whole, the relation between trade performance and economic growth has been deteriorating. Figure 7 compares the same data for the manufacturing industry. The two figures show that the relation between trade performance and economic growth has been deteriorating. During 1955–70 and 1971–82, real GDP expanded at an annual average rate above 6 per cent and registered a trade deficit of 2.7 per cent and 1.9 per cent of GDP respectively. The international debt crisis and the collapse of the oil boom forced an economic slowdown in the 1980s, concomitant with a trade surplus of 1 per cent of GDP. The first five years after NAFTA saw

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10. Own elaborations based on official data.

11. The income-elasticity of imports is the increase — measured in percentage points — that the volume of imports will register for every 1 per cent increase in real income.

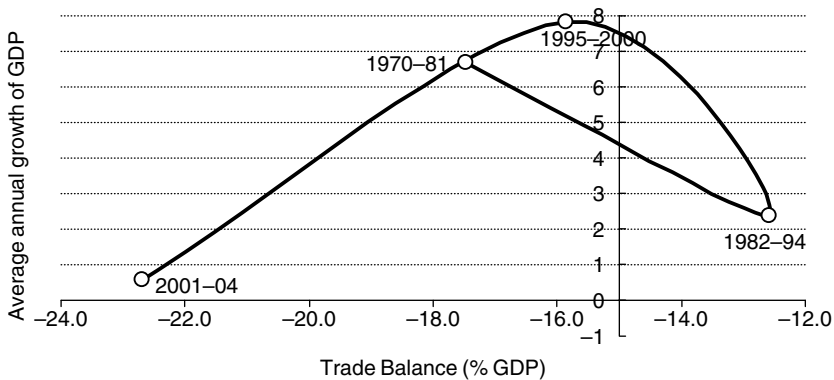
Figure 6. Trade Balance and Real GDP Growth in Mexico, 1970–2004



Sources: Authors' elaboration based on data from INEGI, and Santamaría (2004).

real GDP expand at an average annual rate of 5 per cent. This recovery was short-lived, however: the renewed appreciation of the peso eventually slowed down the export boom, and the recession of the US economy starting in 2001 put an end to the dynamism of this short period of export-led growth. In 2001–03, the Mexican economy barely grew (annual average rate 2 per cent) and registered a trade deficit, once again, of 1.5–2

Figure 7. Mexico's Manufacturing Industry: Trade Balance and Output Growth, 1970–2004



Sources: Authors' elaboration based on data from INEGI, and Santamaría (2004).

per cent of GDP. Such slow expansion, most alarmingly, implied that its income per capita fell for three years in a row. In 2004, real GDP grew by 4.4 per cent, better than its performance in the recent past but still way below the rates of expansion that it experienced in the pre-1980 period, and that it needs in order to absorb the vast amount of people entering its labour market. In other words, with amounts of foreign resources as a proportion of GDP which are relatively similar to those it received in the four decades before the oil collapse, the Mexican economy is now able to grow on average at only one-third of the annual rates it achieved in 1950–80, before macroeconomic reforms were put in place. As Figure 8 shows, in the late 1980s Mexico managed to moderately reduce this gap. However, the economic crisis suffered in 1995 widened it once more, and since then it has remained high, with minor changes. The gap with the US currently stands at a level comparable to that of the 1950s.

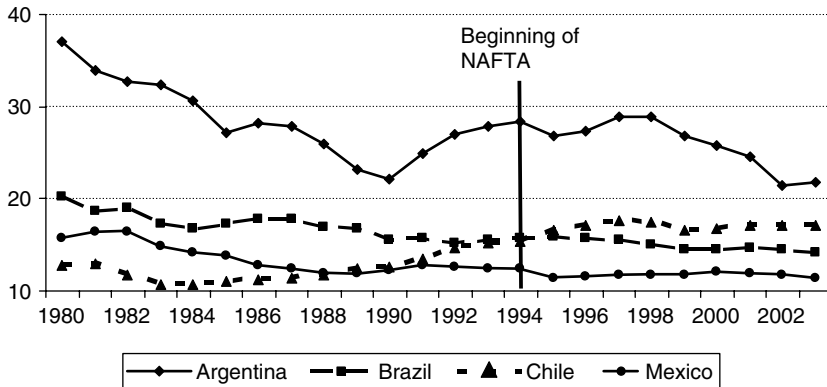
Thus, and contrary to the expectations raised by NAFTA, Mexico has yet to see any significant convergence with its main regional trade partners in its average income in real terms or in its living standards (Blecker, 2005). A remarkable trait of the Mexican transition to trade liberalization has been the relatively weak restructuring of the composition of output in the manufacturing industry, especially relative to that of exports. Estimated with UNIDO's index of structural variation, the change in the composition of manufactured exports between 1988 and 2003 was equivalent to 32 per cent of their total volume. If *maquiladoras* are excluded, the index is lower, at 27.6 per cent.<sup>12</sup> However, using the same methodology suggests a much smaller change in the composition of value added in Mexico's manufacturing industry in this period: only 13.2 per cent of total output, or close to one-third of the corresponding index estimated for exports. It may be concluded that, with some exceptions, NAFTA's reallocation processes have extrapolated past trends in the composition of value added within manufacturing industry: in other words, there is scant evidence of a massive restructuring of manufacturing output. Some of the most dynamic sectors have their roots in the era of import substitution and state-led industrialization.

Sustaining high long-term economic growth should be a top priority in the national agenda. Assuming that the labour force expands at an average 2.5 per cent per year, the Mexican economy needs to expand at an average annual rate of at least 5–6 per cent in real terms just to create sufficient jobs. The rate of economic growth would need to be even higher to significantly improve the living standards of the more than 13 million Mexicans that live

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12. The index is given by  $S = \Sigma \text{abs}\{[q_i(t_n) - q_i(t_0)]/2\}$ , where the right-hand side is the sum of the absolute values of the differences between  $q_i(t_n)$  and  $q_i(t_0)$ ;  $q_i(t_0)$  is the share of industry 'i' in total exports of manufactures in the initial year; and  $q_i(t_n)$  is the corresponding share of the same industry "i" in total exports of manufactures during the final year. The closer the final figure is to 0 (to 1), the smaller (larger) is the structural change that took place during the period of reference  $(t_n) - (t_0)$ . See UNIDO (1998).

Figure 8. Mexico and Other Countries: Real GDP Per Capita (relative to the US) 1980–2003 (US GDP per capita = 100, measured in constant 1995 US\$)



Source: Authors' elaboration based on World Bank, *World Development Indicators* (2004).

in conditions of extreme poverty. It is clear that the evolution of employment in Mexico after NAFTA has not fulfilled the expectations that had been generated. There has been a re-composition of employment in favour of export-related activities, but overall employment growth is still found wanting. NAFTA's effects on employment in the Mexican rural sector have been adverse, partly due to the limited growth of value added in the manufacturing industry, and its weakened labour absorption capacity. Partly as a consequence of this, migration flows to the US have increased. In 2004, open unemployment in Mexico reached an all-time high, and the informal sector has vastly expanded. In addition, the earnings and wages gap between the qualified and the unqualified labour force has widened. If the economy does not enter a path of high and sustained expansion in the medium term, capable of creating sufficient jobs, the nation's social fabric may be severely damaged.

Numerous analysts agree that the trade and macroeconomic reforms have not, so far, led to any significant improvement in the long-term trend of labour productivity in manufacturing. Although difficult to disentangle from other effects, trade liberalization is likely to have had some positive impacts on productivity growth in selected (but not all) manufacturing industries. It is safe to assume that in the capital goods and heavy intermediates sector it allowed for greater intra-industry (and intra-firm) specialization in foreign trade. In some light industries, such as food processing and parts of the textile industry, it shook out some less efficient local

producers and forced businesses to modernize. But all in all, estimates indicate that labour productivity has not responded in a sufficiently dynamic way to the new policy environment. To the extent that any productivity gains that have occurred were based on the elimination or displacement of local producers, the short-term social impact could have been negative.<sup>13</sup> Whether the impact can be turned around and assessed positively in the medium term will depend on whether the resulting redundant labour force can make the transition to gainful new employment in the dynamic sectors. It is also important to note that, in contrast to the kind of support policies in place in the US, Mexico has no programmes to ease such a transition or to compensate displaced workers. This would require higher investment, which has not yet happened.

## CONCLUSIONS

NAFTA, and the package of trade liberalization and economic reforms implemented since the mid-1980s, have so far had mixed results for the Mexican economy. On the one hand, the fiscal deficit and inflation were drastically reduced, and have remained at low levels for a number of years. FDI inflows increased and helped to trigger an export boom in manufacturing that transformed Mexico's insertion in the world economy. Within twenty-five years, it went from being essentially an oil-exporting country to becoming a major export platform of manufactured goods, including vehicles, auto parts, ready-made clothing and electronic products, to the US.

On the other hand, notwithstanding the dynamism of exports, the Mexican economy has not grown fast enough and, thus, has not been able to create enough jobs to meet the employment demands of its increasing labour force. Growth in GDP has been marked by sharp, short-lived upswings that exert excessive pressure on the trade balance and ultimately stoke foreign exchange crises and prevent the consolidation of a sustained and robust economic expansion. The balance of payments constraint on the long-term expansion of Mexico's economy has actually become more binding.

Part of the explanation of this failure lies in the fact that an overall upturn in investment did not accompany the liberalizing reforms and the new macroeconomic environment. Fixed capital formation never reached more than 21 per cent of GDP, way below the 25 per cent benchmark identified by UNCTAD as the minimum investment ratio required to sustain a

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13. Official data from Banco de Mexico (2005) and INEGI (2005) show that from the first quarter of 2000 to the first quarter of 2005, employment in Mexico's manufacturing sector fell 17 per cent and labour productivity grew by 18 per cent. Detailed and periodical information on Mexico's manufacturing sector can be found in *Monitor*, the bi-annual reports produced by Facultad de Economía UNAM et al.

medium-term annual economic expansion of 5 per cent. This limited investment response was caused in part by the fact that the trade liberalizing reforms were implemented when the Mexican economy was in deep stagnation, tightly constrained in its access to foreign credit. The drastic fall in public investment, aimed at cutting the fiscal deficit, did not help either. Uncertainty arising from the change in development strategy also led to the postponement or interruption of investment projects by the private sector.

Trade liberalization and the shift in industrial policies had a particularly significant impact on the manufacturing sector. Intensified competitive pressure in the domestic market meant that local firms had to modernize and reorient their sales towards exports in order to survive. Incentives for structural change were provided, but they were not necessarily appropriate. In fact, the elimination of most fiscal and financial subsidies put pressure on the manufacturing sector's relative rate of return. And although financial liberalization led to a serious restructuring of Mexico's banking sector, domestic credit for productive activities and for investment has been severely rationed for the last ten years. Between 1996 and 2005, banking credits to productive activities shrank by more than 15 per cent as a proportion of GDP.

Thus a dual structure has been taking shape in Mexico's manufacturing sector. On the one hand there are a few, very large firms whose links with transnational corporations (TNCs) and access to foreign capital have helped them to become relevant players in export markets; on the other hand, vast numbers of medium and small firms struggle to survive the intensified competition pressure from their external competitors. One worrying aspect of Mexico's boom in exports of manufactured goods is its rapidly increasing reliance on imported intermediate goods and raw materials. This reflects a rupture of backward linkages and explains why the impact of manufactured exports on domestic value added has been rather limited. In comparison to Korea, we see that while Mexican exports of manufactures have grown in US current dollars at approximately the same pace, the value added of the manufacturing sector in Mexico has expanded at barely half the rate of growth of Korea (UNCTAD, 2002).

A word of caution on exchange rate policy is necessary. As other observers have suggested, Mexico should be wary of any persistent trend of appreciation in its real exchange rate. Its own recent economic history has proven once again that systematic appreciation of the real exchange rate is invariably reflected in mounting trade deficits which lead to an unsustainable trajectory of external indebtedness, and sooner or later create a balance of payments crisis and the collapse of economic activity.

Mexico's manufacturing sector, and indeed its whole economy, is at a crossroads. It can no longer base its place in the global economy on low wages and *maquiladoras*, but at the same time, it has not yet successfully entered the international market through high value added processes and products. If Mexico is to succeed in its quest to achieve high and sustained

economic growth, it needs urgently to rethink key elements of its overall strategy and industrial policies. In particular, current incentive schemes which allow the tax-free entry of imported inputs and raw materials for export purposes must be reconsidered. If special programmes to promote the development of selected industrial sectors are to be implemented — as proposed by the current administration — they should be supported by financial and human resources on a scale to match the magnitude of the challenge. In this regard, the institutional framework should be tailored to guarantee, as far as possible, that all subsidies are temporary, transparent, accountable and goal-oriented. New policies to promote technological innovation in manufacturing and to favour linkages with local suppliers are particularly urgent. Inevitably, a new wave of public investment will be needed to expand and improve the basic infrastructure. It remains to be seen whether the next administration, which will run from 2006 to 2012, will have the political will and the fiscal resources to put such a strategy in place.

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