

Mexico: Economic growth exports and industrial performance after NAFTA

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Contents

Abstract	7
Introduction	9
I. Mexico's industrial policy and economic performance under import substitution (1940-1984)	9
II. The road to NAFTA: Unilateral trade liberalization and foreign investment deregulation (1985-1994)	11
1. Trade liberalization and FDI deregulation.....	11
2. The evolution of industrial policy up until NAFTA	12
3. The change in industrial policy after NAFTA: rhetoric or reality?.....	13
III. NAFTA: Putting Mexico on an export-led growth path?	15
IV. NAFTA and manufacturing: Some stylized facts concerning foreign trade and economic growth performance	21
Conclusions	27
Bibliography	63
Serie Estudios y perspectivas, issues published	85

Tables

Table 1	Changes in the participation of manufactures exports in the world market, 1985-1994, 1994-2001	16
Table 2	Selected indicators of Mexican exports to the OECD, 1985-2001	18

Graphs

Graph 1	Composition of total exports, Mexico, 1980-2004.....	17
Graph 2	Mexico's trade balance (% GDP), 1988-2004	19
Graph 3	Real GDP of the Mexican economy and its manufacturing industry, 1980-2004.....	22
Graph 4	Mexico's manufacturing industries: Real value added and exports, 1988-2003 (excluding maquiladoras).....	22
Graph 5	Mexico's manufacturing industries: Real value added and exports, 1988-2003 (including maquiladoras).....	23
Graph 6	Trade balance and real GDP growth in Mexico, 1970-2004.....	24
Graph 7	Mexico's manufacturing industry: Trade balance and output growth, 1970-2004	25
Graph 8	Mexico and other countries: Real GDP per capita (relative to the US), 1980-2003 ..	26

Abstract

This article concerns Mexico's industrial policy and economic performance, focusing on an analysis of the structural changes associated with NAFTA that have occurred in the country's manufacturing sector. The purpose 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 deficit and a surge in non-oil exports, and on the other hand a slower than expected expansion of economic activity and employment. The article also presents some implications of economic policy that are essential for formulating a new development agenda in Mexico by which the country can finally succeed in its endeavour to attain 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.¹ But for the Mexican government at that time, NAFTA represented much more than a trade-boosting venue. It was the culmination of a radical change in the development strategy that Mexico had implemented since the mid-1980s. This change involved abandoning import substitution and state-led industrialization, and adopting instead a strategy drafted along the lines of the so-called Washington Consensus, centred therefore on trade liberalization and a reduction of state intervention in the economy.

Within this new strategy, NAFTA was seen as a vehicle for achieving 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 initiated in the second half of the 1980s, would encourage local and foreign investment in the production of tradable goods, thus exploiting Mexico's potential as an export platform to the United States. The fast expansion of Mexico's

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).

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. It was furthermore argued that downsizing the public sector and eliminating subsidies would cancel 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 Salinas administration (1988–1994) 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.² The great expectations to which it gave rise have been only partially fulfilled. On the one hand, Mexico’s performance over the last ten years has been marked by a small budget deficit, 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, while real gross domestic product (GDP) has grown at a rate way below its historical average and 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: Chapter I gives a background to industrial policy in Mexico between 1940 and 1984 within the overall context of the macroeconomic reforms that have been implemented in the last four decades. Chapter II describes Mexico’s road to NAFTA, concentrating on two key aspects: unilateral trade liberalization and foreign investment deregulation. Chapter III discusses whether NAFTA has put Mexico on an export-led growth path. Chapter IV gives an analysis of some stylized facts concerning foreign trade, economic growth performance and their implications in the context of NAFTA and manufacturing. The article closes with some conclusions and policy recommendations in Chapter V.

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).

I. Mexico's industrial policy and economic performance under import substitution (1940-1984)

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 focused 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, setting 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 programs, 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 regarding, for instance, the degree of local content and net-export performance. The most successful sectoral programs included those of the auto, computer and pharmaceutical 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 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 fundamental element of Mexico's industrial strategy was, and still is, the *maquiladora* program. This was initiated in 1966, partly to compensate for the elimination of the *braceros* program that had allowed Mexican farm workers temporary entry to the US. Its objective was to stimulate the establishment of labor-intensive, in-bond export processing plants (known as *maquiladoras*) along the northern border region, by offering them tax-free access to imported inputs and machinery, as well as exemption from sales tax (now VAT) and income taxes. In order to avoid a negative impact on local production, the program limited the *maquiladoras*' sales in the domestic market to a low percentage of total sales. There were a number of other instruments also 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. However, these activities 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, certain public entities, and 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 average annual rate of 3.1% per capita. Manufacturing was the driving force of this growth process, with output expanding at a yearly average of nearly 8%, boosted by dynamic domestic demand. In this period the share of manufacturing in GDP rose from 15% to 25%. Nevertheless, in designing and applying this strategy, a number of obstacles on the nation's road to development were underestimated. The first of these was the uneven distribution of economic growth benefits. 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. Third, with the exception of the *maquiladora* program and the small number of special development sectoral programs 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 difficulties in substituting imports of high-technology capital goods. Public expenditure became the engine of growth. In 1977 the government launched an ambitious development program 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 swelled, 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 directed towards positioning the private sector and market forces as the pivotal agents of investment and industrialization.

II. The road to NAFTA: unilateral trade liberalization and foreign investment deregulation (1985-1994)

During the early 1980s, in the aftermath of the most dramatic balance of payments crisis that Mexico had faced in decades, President De la Madrid (1982–1988) began setting up a series of economic reforms to shift the economy away from its traditional state-led development strategy. This new strategy centered on trade and financial liberalization, FDI deregulation and privatization. It was accompanied by a radical shift in industrial policy, away from policies targeted to specific sectors and towards so-called horizontal policies. Such a policy reversal significantly impacted manufacturing, by eliminating most, if not all, the subsidies and fiscal incentives that this sector had traditionally received.

1. Trade liberalization and FDI deregulation

These reforms, begun timidly in 1984, soon gained speed through the unilateral reduction 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 end 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 program to allow tax-free entry of imported inputs and raw materials for export purposes (PITEX) were created. Before the end of the year, the advance permit requirement 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 for 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% to 0%–20%, and its average decreased almost four points with only five different tariff rates remaining. According to general consensus, by the end of that year, the trade liberalization of Mexico's domestic market for manufactures was almost complete (Ten Kate and De Mateo, 1989a, 1989b). Notable exceptions were the electronics, computer, and auto sectors, still subject to special development programs.

President Salinas de Gortari's administration accelerated these reforms. In 1989, a new regulatory framework on FDI was approved, lifting restrictions on foreign capital in about 75% 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, this law progressively removed all the performance requirements on FDI in the automobile sector. By then, 91% of the 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 commenced in 1990, by which time Mexico was already one of the developing economies most open to foreign trade (OECD, 1992). Two years later, Mexico, the United States and Canada signed the tri-lateral agreement which came into effect on 1 January 1994, with the commitment to phase out 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% of the value of imports) relating to agriculture (particularly corn production), oil refining and the transportation equipment industry. The new trade regime did not contain any new incentives for exports, providing only for an exemption from duties on temporary imports, which was already permitted by the maquiladora, the drawback and the PITEX programs (ROS, 1993).

2. The evolution of industrial policy up until NAFTA

Until 1984, Mexico's industrial policy was still geared towards intervention in specific sectors. The National Program for Industrial Promotion and Foreign Trade (PRONAFICE) set forth that year stemmed from the idea that selective import substitution of capital goods would restart economic growth, and allowed the public sector a significant role in promoting industrialization. PRONAFICE, however, was never put into practice due to the lack of 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). The volte-face in trade policy was accompanied by a major shift in industrial policy during the second half of the 1980s, as illustrated by the National Program for Industrial Modernization and Foreign Trade 1990–1994 (PRONAMICE). These developments laid the legal framework for a new industrial policy, based on 'horizontal' policies to be applied across the board so as to compensate for market flaws, and not favour individual sectors. The policy aimed to stimulate investment by simplifying administrative

procedures and speeding up the tax-deduction of depreciation allowances (*ibidem*). Interestingly, the coverage of sectoral development programs was broadened, but their scope and instruments were fundamentally changed in order to focus only on trade barrier reduction and administrative simplification.

The special development program for the automobile industry —introduced decades before— was drastically liberalized in 1989. Limits on the number of lines/models of vehicles were relaxed, as were requirements on local content and export performance. The special program to develop the computer industry was liberalized the following year when all import permit requirements were eliminated.

The tax incentive system for industry was also modified. CEPROFIS were practically eliminated in 1988. Whereas in the early 1980s, around 23% of the total amount granted by such incentives was geared toward fostering investment, by the end of that decade 95% was linked to the tax-free entry of temporary imports for re-export purposes. The bulk of the remaining 5% was linked to the development programs for 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’ programs 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 programs were open to all businesses, whether in manufacturing or services, and consisted of analyzing the economic activity in question, and then identifying actions and commitments that the government and private entities could undertake to improve its performance (Ten Kate and Niels, 1996). Although there has been no formal evaluation of these programs, the magnitude of resources (financial or otherwise) allotted to them was apparently insufficient. They were thus unable to make significant advances in solving the deeply-rooted structural problems of Mexico’s industry, including technological gaps, weaknesses in the national innovation systems, the lack of long-term financial resources, and inadequate investment to modernize machinery and equipment. Researchers generally agree that the programs 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 (Máttar et al., 2003). The persistent real appreciation of the Mexican peso versus the US dollar did not help either.

3. 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 also 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 Program for Industrial Policy and Foreign Trade (PROPICE), which entailed a reorientation of industrial policies (Ten Kate and Niels, 1996). It was founded on the argument that trade liberalization had led to an excessive de-linking of some productive chains in Mexican industry, and that to enhance domestic value added, sector-specific policies and incentives needed to be implemented, but the program explicitly excluded the notion of trade protection measures. Textiles, footwear, automobile, electronics, appliances, steel, petrochemicals, and canned foodstuff production were identified as priority industries, based on an assessment of their export potential. The machine tools, plastic products and electronic components industries

were also noted as having the potential to become indirect (that is, suppliers of) exporters (Ten Kate and Niels, 1996).

In practice, the initiatives to foster export potential were built on the assumption that no subsidy should be granted, beyond a tax rebate on imported inputs or the accelerated phase-out of certain tariffs. Besides the maquiladora, drawback and PITEEX programs 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 programs were activated to offer local companies consultancy on strengthening their (direct or indirect) export potential.

The most significant change took place in 2000 when a series of sectoral development programs (Programas de Fomento Sectorial, PROSEC) were established to compensate specific industries in twenty-two sectors for the adverse impact of NAFTA Rule 303. This rule stated that to avoid trade distortions, Mexico needed to 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 mostly comprised trade measures intended to lower the costs of imported intermediate inputs through the reduction of import tariffs. A quantitative estimate of the impact of such programs 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.³

The current administration of President Fox (2001–) reaffirmed the notion that Mexico, although operating within a strategy of trade liberalization, must formulate sector-specific policies to stimulate investment and economic growth. Concerning the industrial sector, the National Plan for Development (2001–06) explicitly stated that a core objective was to boost 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. A key component was defined as the implementation of tailor-made sectoral programs to promote 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 programs have been formally completed and carried out: those pertaining to the electronics, software, leather and shoes, and textiles.

In contrast to the prevailing practices of the last two decades, these programs give the state more opportunity for active involvement to provide financial support with preferential conditions, such as longer repayment periods and lower interest rates. However, the inadequacy of these funds, together with the long delay in putting the programs in place, reduces the chances of them having a significant, positive impact. Thus it seems safe to conclude that, in practice, allowing tax-free imported inputs for re-exportation remains the current administration's main instrument of industrial policy. The change that this government had announced would take place in the orientation of Mexico's industrial policy—moving away from horizontal policies and enacting more sector-specific measures instead—has so far been more rhetorical than real.

³ The PROSEC programs are presented in Secretaría de Economía (2000). For comprehensive analyses, see Dussel and Alvarez (2001) and Vázquez Tercero (2000).

III. NAFTA: Putting Mexico on an export-led growth path?

Trade liberalization, crowned by NAFTA, has been associated with Mexico's dynamic insertion into global markets and its rising importance in non-oil exports. Studies have shown that since 1985, and particularly since 1995, Mexico has ranked among the top ten countries in terms of increasing its share in the world (non-oil) market (Moreno-Brid and others, 2005). This positive performance is particularly evident in the evolution of its manufactured exports. As Table 1 shows, from 1985 to 1994 Mexico ranked fifth among countries with the largest increases in their share of world manufactures exports; 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 during the late 1980s, before NAFTA came into force. The boom was partly rooted in the trade liberalization processes that began at that time, but also in the sectoral development programs initiated during the previous phase of state-led industrialization. NAFTA opened an unprecedented window of opportunity to export to the US, the largest world market. In 1994, total exports represented 16% of Mexico's real GDP. By the year 2000, this figure had more than doubled, reaching 35.1%. Although subsequently it declined somewhat, in 2003 it still stood at 34.9%. 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.

Nonetheless, as shown in Graph 1, by 1988 manufactures already accounted for more than 50% of the country's total exports, and today their share exceeds 85%, as their rapid growth has more than compensated for slack performances in exports of oil, minerals and agricultural commodities.

Table 1

**CHANGES IN THE PARTICIPATION OF MANUFACTURES EXPORTS IN THE WORLD MARKET
(TOP 20 COUNTRIES), 1985–1994 AND 1994–2001**

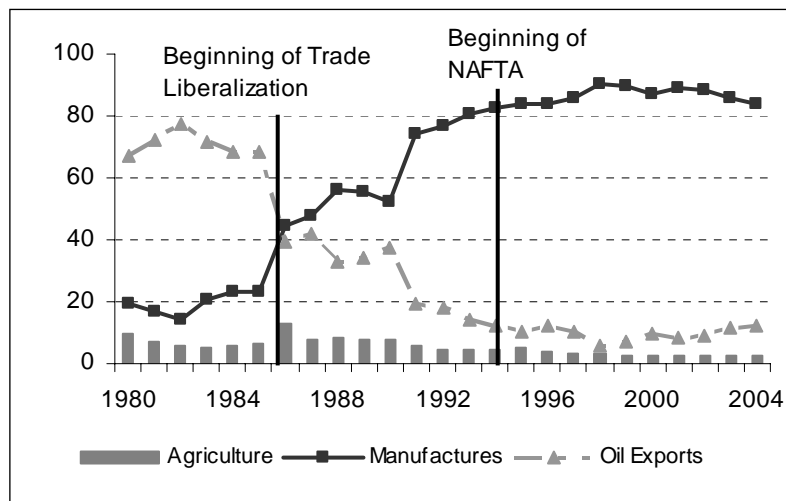
Country	1985 (A)	1994 (B)	Variation 85-94 (A – B)	Rank		1994 (C)	2001 (D)	Variation 94-01 (C–D)
China	1.42	5.86	4.44	1	China	5.86	8.86	3.00
Malaysia	0.55	1.73	1.18	2	Mexico	1.71	3.28	1.57
Singapore	0.88	1.88	1.00	3	USA	13.37	14.27	0.90
Thailand	0.30	1.06	0.77	4	Philippines	0.43	0.93	0.50
Mexico	1.01	1.71	0.70	5	Canada	3.78	4.27	0.49
USA	12.82	13.37	0.55	6	Malaysia	1.73	2.17	0.44
Indonesia	0.19	0.67	0.48	7	Republic of Korea	2.73	3.15	0.42
Republic of Korea	2.26	2.73	0.46	8	Hungary	0.23	0.56	0.33
Spain	1.49	1.79	0.30	9	Ireland	0.59	0.83	0.24
Poland	0.18	0.40	0.22	10	Czech Republic	0.31	0.55	0.24
India	0.47	0.67	0.20	11	Israel	0.41	0.58	0.17
Turkey	0.22	0.40	0.18	12	Thailand	1.06	1.23	0.17
Philippines	0.31	0.43	0.12	13	Poland	0.40	0.54	0.14
Hungary	0.15	0.23	0.09	14	Indonesia	0.67	0.77	0.10
Viet Nam	0.00	0.08	0.08	15	Turkey	0.40	0.50	0.10
Ireland	0.51	0.59	0.08	16	Viet Nam	0.08	0.17	0.09
Australia	0.35	0.43	0.07	17	Slovakia	0.10	0.18	0.08
Portugal	0.44	0.51	0.07	18	Rumania	0.15	0.22	0.07
Pakistan	0.14	0.20	0.06	19	Bangladesh	0.10	0.15	0.05
Dominican Republic	0.06	0.11	0.05	20	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% of the total value added by the manufacturing industry. In 1994 this figure had climbed to 71.9%, and by 2003 it even exceeded (by 61%) the manufacturing industry's value added. Whilst NAFTA undoubtedly contributed to this strong performance, two closely related factors also stimulated export expansion. The first was the collapse of Mexico's domestic market in 1995 (real GDP fell 6%, during the so-called 'tequila crisis'), which forced firms to seek external markets in order to offset the decline in their local sales. The second was an acute depreciation of the peso *vis-à-vis* the US dollar that took place in 1995 (a drop of 45% in real terms), resulting from the severe foreign exchange crisis

experienced that year.⁴ This depreciation gradually slowed,⁵ but by 2004 the real exchange rate still showed a 7% depreciation relative to the level ten years earlier.

Graph 1
COMPOSITION OF TOTAL EXPORTS, MEXICO 1980–2004
(Percentages)



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

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

Mexico's vigorous export drive has transpired concurrently with a greater use of technological sophistication in the production of some of its 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 fibers, minerals and metals); 2) manufactures; and 3) other exports. For their part, manufactured goods are classified in two groups: those for which manufacturing requires an intensive use of natural resources and those for which the production process tends to employ other resources more.⁶ The second part of

⁴ Econometric studies by Blecker (2005), Krueger (1998) and Pacheco-López (2004) all conclude, after controlling for the effect of real exchange rate movements, that NAFTA had no significant impact on Mexican exports. Lederman et al. (2004), however, argue the opposite.

⁵ Comparing consumer price indices measured in a common currency, the peso appreciated in real terms by 26% 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% for this period.

⁶ 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'.

Table 2 shows the same categories in terms of their contribution to total Mexican exports. Notice Mexico's impressive penetration of the OECD manufactures market (from 1.1% to 3.9%), which has happened especially quickly in the category 'not based on natural resources,' whose share rose from 1.1% in 1985 to 2.1% in 1994 and 4% in 2001. As further evidence of the export dynamism, while this category accounted for 35% of Mexico's total exports in 1985, by 1994 its share had climbed to 71%, and by 2001 it stood at 78%.

Table 2
SELECTED INDICATORS OF MEXICAN EXPORTS TO THE OECD, 1985-2001

International competitiveness of Mexican exports in OECD				
Mexico	1985	1990	1994	2001
Market share	1.78	1.51	2.03	3.62
Natural resources	3.08	2.10	1.98	2.65
Agriculture ^a	1.30	1.28	1.37	2.09
Energy ^b	4.60	3.26	2.99	3.29
Textile fibres, minerals and metal ^c	1.89	1.48	1.57	1.49
Manufactures	1.10	1.29	2.02	3.85
Based on natural resources ^d	1.23	0.96	1.03	1.26
Not based on natural resources ^e	1.10	1.33	2.10	4.03
Others ^f	1.61	2.54	2.70	4.12
Contribution (structure of exports)	100.0	100.0	100.0	100.0
Natural resources	58.6	33.6	21.4	14.7
Agriculture ^a	9.7	10.3	8.2	5.1
Energy ^b	45.9	21.0	11.8	9.1
Textile fibres, minerals and metal ^c	3.0	2.3	1.4	0.5
Manufactures	39.1	62.5	74.9	81.4
Based on natural resources ^d	3.4	3.4	2.5	1.5
Not based on natural resources ^e	35.0	57.6	70.7	78.1
Others ^f	2.3	3.9	3.7	3.9

Source: Authors' calculations based on data from ECLAC (2003).

^a Sections 0, 1 and 4, chapters 21, 22, 23, 24, 25 and 29.

^b Section 3.

^c Chapters 26, 27 y 28.

^d Chapters 61, 63 and 68; groups 661, 662, 667 and 671.

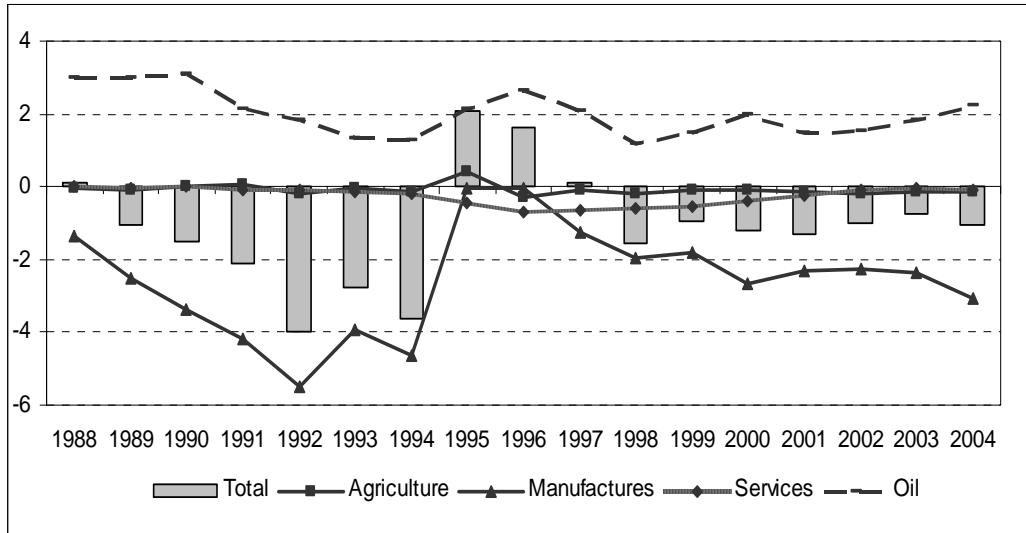
^e Sections 5 and 6 (except for the chapters included in d), sections 7 and 8.

^f Section 9.

Mexico's export-drive was not uniformly distributed across all its manufacturing industries, but was highly concentrated in only a few. Motor engines and auto parts, automobiles, and computers and other electronic equipment accounted for 58% of Mexico's total exports of manufactures in 1994–2003. Adding electrical equipment and garments raises the combined share to 71%. 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 a similar concentration: according to some authors, no more than 300 firms, most of them linked to transnational corporations, account for the bulk of Mexico's manufacturing exports (Dussel, 2000; Máttar and others, 2003).

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

Graph 2
MEXICO'S TRADE BALANCE (% GDP), 1988-2004



Source: Author's calculations based on official data from INEGI (2005) and Banco de México (2005).

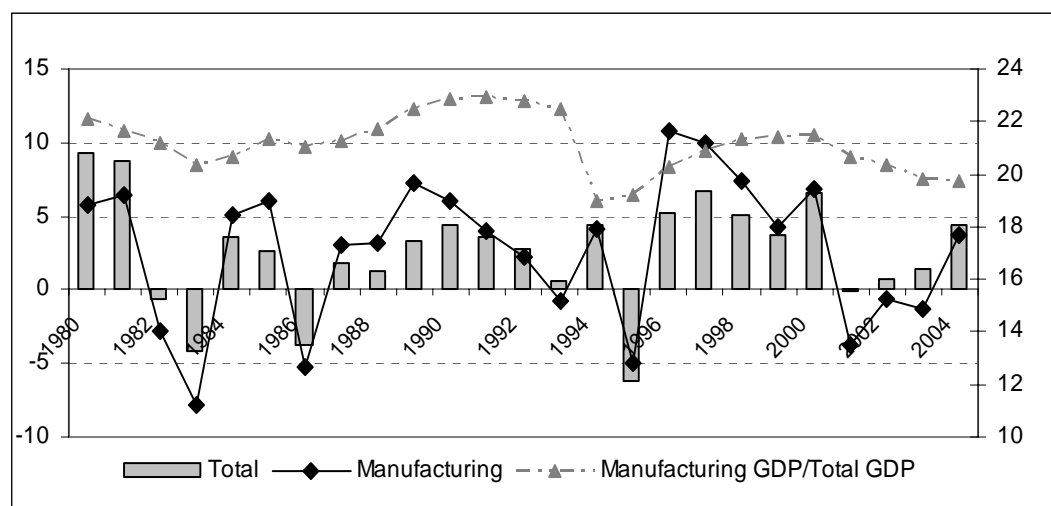
IV. NAFTA and manufacturing: Some stylized facts concerning foreign trade and economic growth performance

The manufacturing industry has played, and continues to play, a vital role in the Mexican economy, as illustrated by Graph 3, which shows that manufacturing has acted as the driving force of economic growth, exhibiting a strongly pro-cyclical evolution. The stylized facts of this industry's evolution since NAFTA, and more generally since trade liberalization reforms were introduced, are examined in this section.

Parallel to the export boom in manufactures, the Mexican economy has experienced a massive penetration of imports, mainly 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. Once Mexican consumers had adjusted to the new 'menu' made available by trade liberalization, it was assumed that purchases of imported goods would lose momentum. However, such a slowdown has not yet happened. The first stages of the trade liberalization process begun in the second half of the 1980s triggered an explosive surge in imports, which expanded at annual rates of 30% and above, a pace unparalleled in the region. As a share of GDP, they climbed from 10% in 1982 to more than 30% by the mid 1990s.

Graph 3
REAL GDP OF THE MEXICAN ECONOMY AND ITS MANUFACTURING INDUSTRY, 1980-2004

(Annual variation, %)



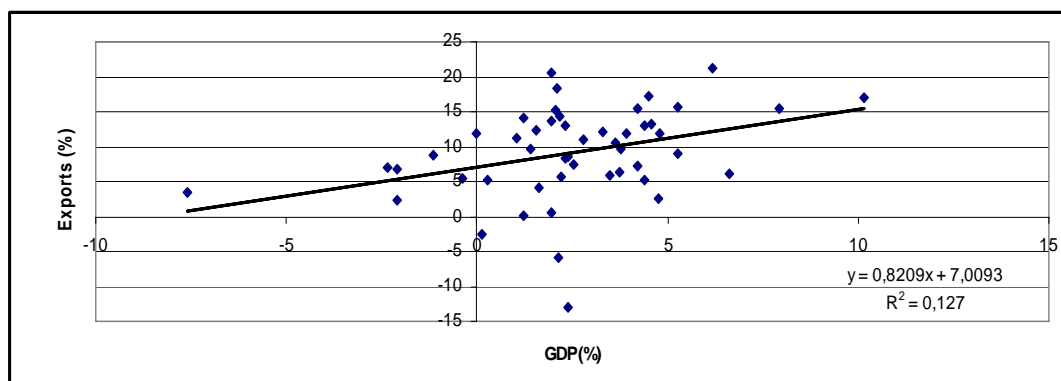
Source: Author's calculations based on official data from INEGI (2005).

Graphs 4 and 5 depict the relation between the average rate of export expansion and that of real value added for each branch of manufacturing, in the period 1988–2003. Contrary to some a priori expectations, these Graphs suggest that there is no significant relation between the two, with or without maquiladoras. It is clear even at this simple level of analysis that, in general, exports have not constituted a sufficiently powerful engine of growth for the manufacturing sector, nor —given the procyclical nature of the industry— for the whole economy, despite their dynamism. Part of this failure owes to the fact that Mexico's manufactured exports have become increasingly dependent on imports, and are hence characterized by reduced local content and weak linkages with domestic suppliers.

This is certainly true of maquiladoras,⁷ but also of a substantial proportion of the other manufacturing firms that export. As Dussel (2003, 2004) has pointed out, around 70% 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 programs, manufacturing firms that rely on foreign inputs entering as temporary imports pay approximately 30% lower input costs than similar firms which use locally produced inputs.

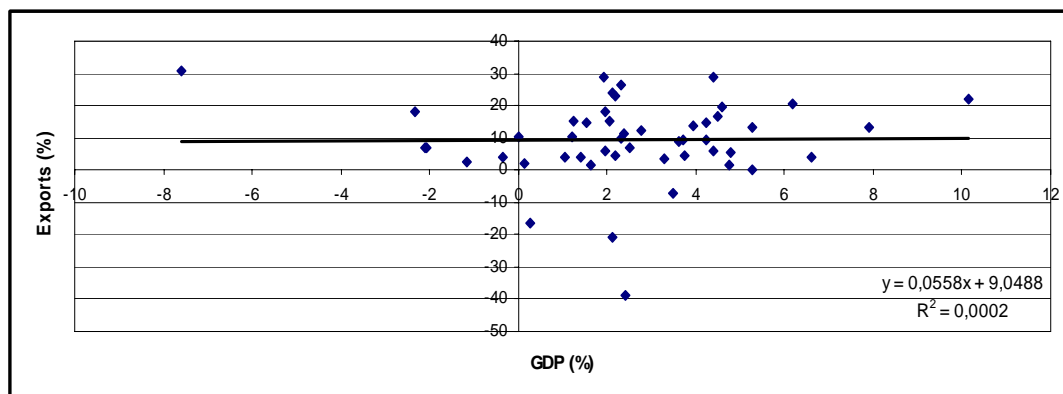
⁷ According to Cámara de Diputados (2004) and Dussel (2004), on average, no more than 8% of maquiladoras' intermediate inputs and raw materials are locally supplied.

Graph 4
MEXICO'S MANUFACTURING INDUSTRIES: REAL VALUE ADDED AND EXPORTS, 1988-2003
(Annual average rates of growth, excluding maquiladoras)



Source: Author's calculations based on official data from INEGI.

Graph 5
MEXICO'S MANUFACTURING INDUSTRIES: REAL VALUE ADDED AND EXPORTS, 1988-2003
(Annual average rates of growth including maquiladoras)



Source: Author's calculations based on official data from INEGI.

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

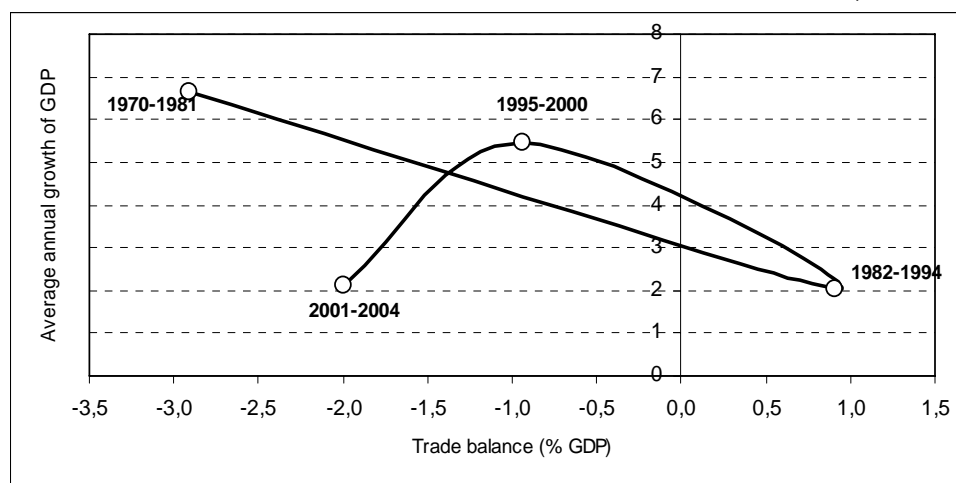
The swift growth rate of Mexican imports since the second half of the 1980s was induced not only by the elimination of non-tariff barriers to foreign trade, but also by the expansion of domestic demand amidst a persistent appreciation of the real exchange rate. Facilitated access to external funds resumed at that time and likewise played a role. After decades of tightly restricted access to foreign products, Mexican consumers began to eagerly satisfy their demand for a wide variety of goods and brands from abroad. However, to some extent, such import demand also mirrors the strong relations between exporting firms and foreign suppliers. The case of maquiladoras, which make up the most successful export sector to date, is typical because 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 inadequate performance of labor productivity in Mexico's manufacturing may also have contributed to the problem. From 1994 to 2003, rather than closing, the gap vis-à-vis the US widened by 10%.⁸ Unit labor costs in manufacturing show a similarly unfavourable comparison, with a 7% 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's structural dependence on imports has increased significantly. These results indicate that the long-term 'income-elasticity' of demand for imports (essentially manufactured goods) has more than doubled over this period.⁹ Where it was previously valued between 1.2% and 1.5%, it has now risen to almost 3%. This implies that if Mexico's real income is to grow at an annual average long-term rate of 5%, its imports in real terms will need to expand yearly by 15%. To keep the trade deficit in check and, most specifically, to avoid an excessive increase in this deficit as a proportion of income, Mexican exports must expand at least 15% annually. If the terms of trade deteriorate, the required export expansion will have to be even higher, which seems hardly achievable or sustainable in the long run. As a benchmark, it is worth recalling that during 1988–1999, when the US economy grew rapidly, Mexican exports increased at an average annual rate of 10%.

It is doubtful that the upturn detected thus far in Mexico's long-run income elasticity of imports is permanent. It is more likely to abate, and then decline to a certain degree as some effects of the trade liberalization process on the demand for foreign goods and services wear off. But if it remains at current highs, the external sector will become a major obstacle in Mexico's struggle to steer a path of solid 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, a real annualized increment of 18% in Mexico's imports, while real GDP expanded by 4.4%.

Graph 6
TRADE BALANCE AND REAL GDP GROWTH IN MEXICO, 1970-2004



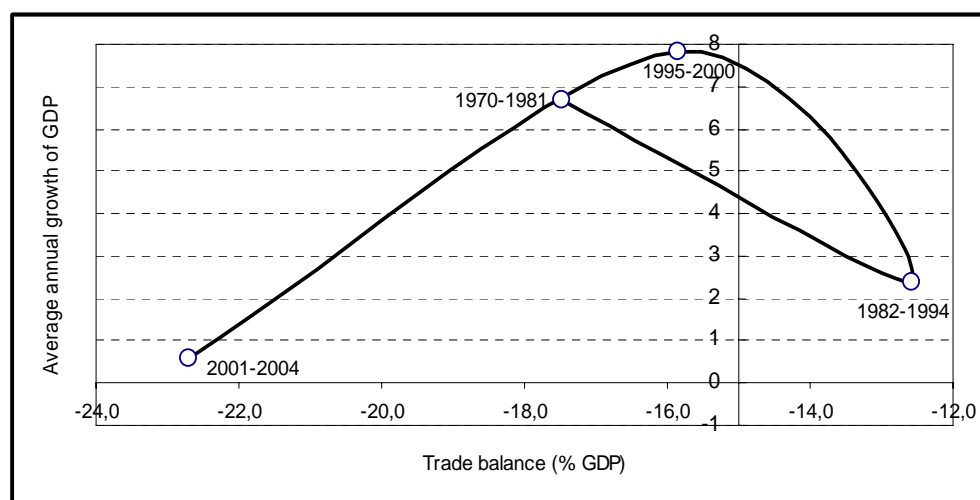
Source: Author's calculations based on data from INEGI, and Santamaría (2004).

⁸ Own calculations based on official data.

⁹ The income-elasticity of imports is the increase —measured in percentage points— that the volume of imports will register for every 1% increase in real income.

Graph 6 shows that trade liberalization and macroeconomic reforms have not yet secured strong export-led growth for Mexico. In the Mexican economy as a whole, the relation between trade performance and economic growth has been deteriorating. Graph 7 compares data for the manufacturing industry in particular, showing that the relation between trade performance and economic growth has been declining. During 1955–1970 and 1971–1982, real GDP expanded at an average annual rate above 6% and a trade deficit was registered of 2.7% and 1.9% 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 equaling 1% of GDP. The first five years after NAFTA saw real GDP rise at an average annual rate of 5%. This recovery was short-lived, however. The renewed appreciation of the peso eventually reduced the export boom, and the US economic recession that began in 2001 put an end to the dynamism of this short period of export-led growth. In 2001–2003, the Mexican economy barely grew (an average annual rate of 2%) and once again registered a trade deficit at 1.5% – 2% of GDP. Such slow expansion most alarmingly meant that income per capita fell for three years in a row. In 2004, real GDP grew by 4.4%, a better performance than that of the recent past, but still way below the rates of expansion experienced in the pre-1980 period, which are needed in order to absorb the vast amount of people entering the Mexican labor market. In other words, with amounts of foreign resources as proportions of GDP that 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 1950–1980, before macroeconomic reforms were instituted. As Graph 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 GDP per capita gap with the US currently stands at a level comparable to that of the 1950s.

Graph 7
MEXICO'S MANUFACTURING INDUSTRY: TRADE BALANCE AND OUTPUT GROWTH, 1970-2004



Source: Author's calculations based on data from INEGI, and Santamaría (2004).

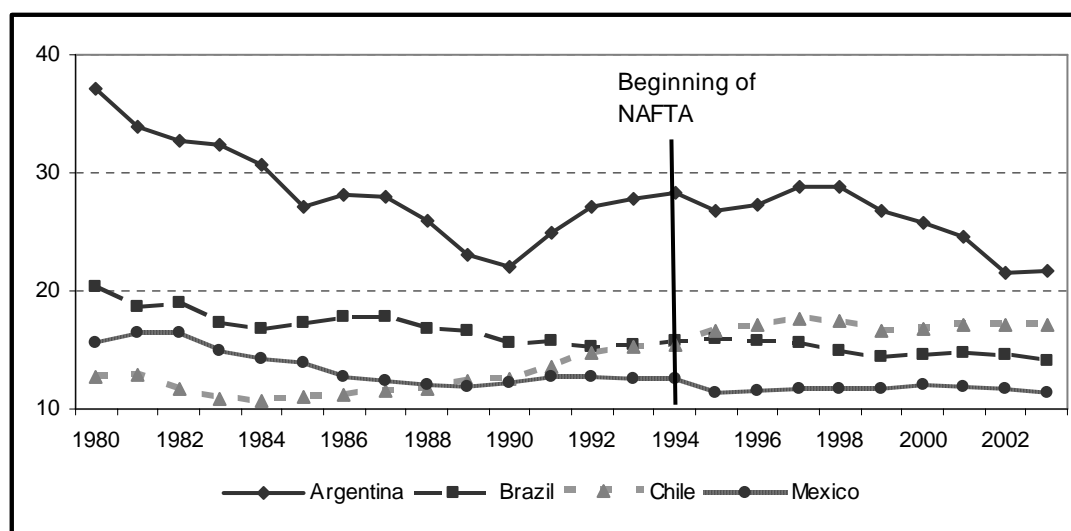
Thus, contrary to the expectations raised by NAFTA, Mexico has not yet seen any significant convergence with its main regional trade partners in its real average income or living standards (Blecker, 2005). A remarkable trait of Mexico's transition to trade liberalization has been the relatively weak restructuring of output composition in the manufacturing industry, especially compared to export composition. Based on UNIDO's index of structural variation, the change in the composition of manufactured exports between 1988 and 2003 was equivalent to 32% of their total

volume. If maquiladoras are excluded, the index is lower, at 27.6%.¹⁰ Conversely, calculations derived using the same methodology show a much smaller change in the composition of value added in Mexico's manufacturing industry during this period: only 13.2% 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 tended to follow past trends in the composition of value added within the 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 on the national agenda. Assuming that the labor force expands at an average 2.5% per year, the Mexican economy needs to expand at an average annual rate of at least 5%–6% in real terms just to create enough jobs. The rate of economic growth would have to be even higher to significantly improve the living standards of the more than 13 million Mexicans that live in conditions of extreme poverty. The evolution of employment in Mexico after NAFTA has clearly fallen short of the expectations that were generated. Employment has been restructured in favour of export-related activities, but overall employment growth is still wanting. NAFTA's effects on employment in the Mexican rural sector have been disadvantageous, somewhat due to the weakened capacity of this sector to absorb labor and to the limited growth of value added in the manufacturing industry. 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 wage gap between the qualified and the unqualified labor 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.

Graph 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: Author's calculations based on World Bank, *World Development Indicators* (2004).

¹⁰ The index is given by $S = \sum \text{abs}\{[q_i(t_n) - q_i(t_o)]/2\}$, where the right hand side is the sum of the absolute values of the differences between $q_i(t_n)$ and $q_i(t_o)$; $q_i(t_o)$ 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 (tn) - (to). See UNIDO (1998).

Numerous analysts agree that, so far, the trade and macroeconomic reforms have not led to any significant improvement in the long-term trend of labor productivity in manufacturing. Although difficult to disentangle from other effects, trade liberalization most likely 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 a number of 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 were based on the displacement of local producers, the short-term social impact could be considered negative.¹¹ Whether the impact can be turned around and assessed positively in the medium term will depend on whether the resulting redundant labor 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 existing support policies in the US, Mexico has no programs to ease such a transition or to compensate displaced workers. This would require higher investment, which has not yet happened.

¹¹ Official data from Banco de México (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% and labor productivity grew by 18%. 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.

V. 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 for manufactured goods, including vehicles, auto parts, ready-made clothing and electronic products, to the US.

On the other hand, despite 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 labor force. Growth in GDP has been marked by sharp, short-lived upswings that exert excessive pressure on the trade balance, ultimately stoking foreign exchange crises and preventing 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 for 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% of GDP, way below the 25% benchmark identified by UNCTAD as the minimum investment ratio required to sustain an annual economic expansion of 5% over the medium-term. This limited investment response was caused in part by

the fact that the trade liberalizing reforms were introduced 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 private sector investment projects.

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 not necessarily appropriate. In fact, the elimination of most fiscal and financial subsidies put a strain 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% 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 important players in export markets; on the other hand, vast numbers of medium and small firms struggle to survive the intensified 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 the Republic of Korea, exports of manufactures have grown in current US dollars at approximately the same pace for both countries, whereas value added by the manufacturing sector in Mexico has expanded at barely half the rate of the value added by this sector in the Republic 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 appreciation trend 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 a mounting trade deficit which leads to an unsustainable trajectory of external indebtedness, and sooner or later generates 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 steady economic growth, it urgently needs 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 programs 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 imperative. Inevitably, a new wave of public investment will be needed in order to extend 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 resolve and ability as well as the fiscal resources to put such a strategy in place.

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