

# **THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE MEXICAN ECONOMY: LESSONS TO BE LEARNED FROM TEN YEARS OF NORTH SOUTH ECONOMIC INTEGRATION<sup>1</sup>.**

**(Draft only for discussion)**

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<sup>1</sup> This paper is based on: Puyana y Romero: "Trade Liberalization In Mexico: Some Macroeconomic And Sectoral Impacts And The Implications For Macroeconomic Policy", paper presented at the IDEAS-UNDP conference "Post Liberalization Constraints on Macroeconomic policies", Chennai, India January, 2006.

# **THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE MEXICAN ECONOMY: LESSONS TO BE LEARNED FROM TEN YEARS OF NORTH SOUTH ECONOMIC INTEGRATION<sup>2</sup>.**

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## **I INTRODUCTION**

Today, Mexico is one of the most liberal of the medium sized economies in the world. Import tariffs have been reduced and the movement of goods, services and capital is practically free. This liberalization is part of the policies implemented in order to mitigate the effects of the debt crisis of 1982. In addition, the government has implemented reforms to the foreign trade regime, which did not necessarily form part of the stabilization policies. From 1983 on Mexico gradually abandoned the import substitution model, liberalized the economy, and dismantle the import substitution model. The economic role of the government was reduced by selling off most public enterprises, deregulating transportation, telecommunications, banks, financial institutions, and practically all productive state enterprises but *Petróleos Mexicanos* and the *Comisión Federal de Electricidad*. The process also included opening up the capital market and the elimination of trade barriers.

Great national economic instability has been the frame in which the state adopted the new development model: the country experienced the deep crises of 1982, 1987 and 1994 – 1995 and was affected as well by the international crises of 1997-1998 and 1999.

This work consists of an analytical effort to explore the impact of trade reforms on the performance of the Mexican economy, the distribution of income and the environment. In order to meet its objectives this work has been organized in the following manner: Second section considers the policies adopted to liberalized the economy throughout deep changes in trade policy and with NAFTA. In section three the analysis focus on the effect of reforms upon Mexican macroeconomic and sectoral variables and Section four presents some effects NAFTA on the environment and considers how efficient has being the North American Agreement on Environmental Cooperation (NAAEC) in preventing the negative effects expected from trade expansion. Section five concludes the paper.

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## II OPENING UP THE ECONOMY TO FOREIGN CONCURRENCY

Between 1983 and 1985 the Mexican authorities dismantle the protection afforded to its industry and on July 24, 1985 Mexico formalized its entry into GATT. In that year the percentage of imports that did not required import permits reached 69.1 per cent. In 1993 Mexico signed the NAFTA agreement, and since then Mexico has signed another nine FTAs, including one with the European Union and Japan.

The results in terms of international trade were remarkable. From 1980 to 2005 exports grew at an average rate of 7.9 per cent a year; 2 per cent more than in the 1940-1982 period. This rapid growth of trade is illustrated by the change in the importance of exports and imports as a percentage of the Mexican GDP shown in Table I.

**Table I MEXICO. EXPORTS AND IMPORTS AS A PERCENTAGE OF GDP**

<b>Año</b>	<b>Total Exports</b>	Exports Maquila	Non maquila exports	<b>Total Imports</b>	Imports Maquila	No Maquila Imports	<b>Net value added Contributed by maquila</b>
1980	<b>7.36</b>	1.03	6.33	<b>8.95</b>	0.74	8.21	<b>0.29</b>
1985	<b>18.04</b>	3.43	14.61	<b>11.75</b>	2.45	9.3	<b>0.98</b>
1990	<b>15.5</b>	5.3	10.2	<b>15.8</b>	3.9	11.9	<b>1.4</b>
1995	<b>26.8</b>	10.5	16.3	<b>24.3</b>	8.8	15.5	<b>1.7</b>
2000	<b>28.2</b>	13	15.2	<b>29.2</b>	10.2	19	<b>2.8</b>
2004p	<b>29.04</b>	13.48	15.56	<b>30.32</b>	10.52	19.8	<b>2.96</b>

Own Calculations on: Fuente: INEGI.

Manufacturing exports registered the fastest growth. During the 1982-2000 period, manufacturing exports grew at an annual rate of 18.8 per cent; eleven percentage points more than in the 1940-1982 period. Agricultural exports grew at an annual rate of 6.2 per cent; almost four percentage points higher than in the 1940-1982 period. This difference in the rates of growth of the various categories of exports implied a big change in the composition of exports. While mining exports in 1982 (basically crude oil), represented 76 per cent of total exports, this figure shrank to 9 per cent in 2000; in contrast, the share of manufacturing exports rose from 16 per cent of the total in 1982 to 87 per cent in the year 2004. Since the implementation of NAFTA in 1994 and the proliferation of FTAs in the following years, the origins of Mexican imports have shifted away from the USA, European Union, Japan, and ALADI (Latin American Association of Integration “Asociación Latinoamericana de Integración”), in favour of China, the so called NICs,

Canada, and the “rest of the world” (See Table II). The impact of the FTAs on the structure of Mexican imports is not clear since the countries with the greater share gains are countries with which Mexico does not have any agreements (except Canada).

Mexican Exports are highly concentrated in one single market: the United States. From 1993 to the year 2003 the share of NAFTA in total exports increased by five percentage points, and the share of the US in total Mexican exports grew almost six percentage points. The only other country with gains in the share of Mexican exports was China; this country tripled its share in eight years, although with still a very small share in absolute terms. The countries or group of countries with the biggest reductions in Mexican export shares were the European Union, Japan and ALADI.

The share of the ALADI and Central American countries in total Mexican exports have fallen substantially between 1993 and the year 2001, implying again that the FTA established with some members of those regions have been insufficient to increase the share of this region in total Mexican exports.

**TABLE II.**  
**STRUCTURE OF MEXICAN IMPORTS**

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>TOTAL</b>	<b>100.00%</b>										
<b>NAFTA</b>	71.10%	71.10%	76.20%	77.40%	76.50%	76.20%	76.20%	75.41%	70.07%	65.83%	64.19%
United States	69.30%	69.10%	74.30%	75.50%	74.70%	74.40%	74.10%	73.10%	67.56%	63.17%	61.78%
Canada	1.80%	2.00%	1.90%	1.90%	1.80%	1.80%	2.10%	2.30%	2.51%	2.66%	2.42%
<b>ALADI</b>	3.30%	3.30%	2.00%	1.90%	2.10%	2.00%	2.00%	2.24%	2.73%	3.21%	3.78%
<b>Central America</b>	0.20%	0.20%	0.10%	0.20%	0.20%	0.20%	0.20%	0.19%	0.21%	0.37%	0.51%
<b>European Union</b>	11.90%	11.40%	9.30%	8.70%	9.00%	9.30%	9.00%	8.62%	9.69%	9.86%	10.56%
<b>EFTA</b>	0.80%	0.70%	0.60%	0.50%	0.60%	0.50%	0.50%	0.49%	0.54%	0.52%	0.54%
<b>NICS</b>	3.40%	3.50%	3.00%	2.90%	3.30%	3.30%	3.70%	3.96%	4.89%	6.08%	4.98%
<b>Japan</b>	6.00%	6.00%	5.50%	4.60%	3.90%	3.60%	3.60%	3.71%	4.80%	5.54%	4.45%
<b>China</b>	0.60%	0.60%	0.70%	0.80%	1.10%	1.30%	1.40%	1.65%	2.39%	3.72%	5.51%
<b>Rest of the world</b>	2.80%	3.20%	2.80%	2.90%	3.40%	3.50%	3.40%	3.74%	4.67%	4.87%	5.47%

**ALADI:** Argentina, Brazil, Mexico, Chile, Colombia, Peru, Uruguay, Venezuela, Bolivia, Ecuador and Paraguay.

**Central America:** Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

**European Union:** Germany, Austria, Belgium, Denmark, Spain, Finland, France, Greece, Holland, Ireland, Italy, Luxemburg, Portugal, United Kingdom and Sweden.

**EFTA (European Free Trade Agreement):** Iceland, Norway and Switzerland.

**NIEs:** Korea, Taiwan Province of China, Hong Kong, Singapore

**Source:** Banco de México, Informe de la Presidencia de la República Several Years

Mexican Exports are highly concentrated in one single market: the United States. From 1993 to the year 2003 the share of NAFTA in total exports increased by five percentage points, and the share of the US in total Mexican exports grew almost six percentage points. The only other country with gains in the share of Mexican exports was China; this country tripled its share in eight years, although with still a very small share in absolute terms. The

countries or group of countries with the biggest reductions in Mexican export shares were the European Union, Japan and ALADI. See Table III. The share of the ALADI and Central American countries in total Mexican exports have fallen substantially between 1993 and the year 2001, implying again that the FTA established with some members of those regions have been insufficient to increase the share of this region in total Mexican exports.

**TABLE III  
STRUCTURE OF MEXICAN EXPORTS**

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>TOTAL</b>	<b>100.00%</b>										
<b>NAFTA</b>	85.70%	87.40%	85.80%	86.20%	87.40%	88.90%	90.00%	90.74%	90.48%	89.92%	89.43%
United States	82.70%	84.90%	83.30%	83.90%	85.40%	87.60%	88.30%	88.72%	88.55%	88.05%	87.60%
Canada	3.00%	2.40%	2.50%	2.30%	2.00%	1.30%	1.80%	2.01%	1.94%	1.87%	1.83%
<b>ALADI</b>	3.10%	2.60%	3.60%	3.60%	3.40%	2.50%	1.60%	1.54%	1.71%	1.68%	1.56%
<b>Central America</b>	1.00%	0.90%	0.90%	0.90%	1.00%	1.10%	1.00%	0.80%	0.91%	0.92%	0.91%
<b>European Union</b>	5.40%	4.60%	4.20%	3.70%	3.60%	3.30%	3.80%	3.37%	3.37%	3.47%	3.68%
<b>EFTA</b>	0.30%	0.30%	0.80%	0.40%	0.30%	0.20%	0.30%	0.35%	0.29%	0.11%	0.07%
<b>NICS</b>	0.50%	0.50%	1.00%	0.90%	0.70%	0.70%	0.70%	0.43%	0.53%	0.46%	0.41%
<b>Japan</b>	1.30%	1.60%	1.20%	1.50%	1.00%	0.70%	0.60%	0.56%	0.39%	0.74%	0.71%
<b>China</b>	0.10%	0.10%	0.00%	0.00%	0.00%	0.10%	0.10%	0.12%	0.18%	0.41%	0.59%
<b>Rest of the world</b>	2.60%	2.00%	2.40%	2.80%	2.40%	2.40%	2.00%	2.09%	2.14%	2.30%	2.64%

**ALADI:** Argentina, Brazil, Mexico, Chile, Colombia, Peru, Uruguay, Venezuela, Bolivia, Ecuador and Paraguay.

**Central America:** Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

**European Union:** Germany, Austria, Belgium, Denmark, Spain, Finland, France, Greece, Holland, Ireland, Italy, Luxemburg, Portugal, United Kingdom and Sweden.

**EFTA (European Free Trade Agreement):** Iceland, Norway and Switzerland.

**NIEs:** Korea, Taiwan Province of China, Hong Kong, Singapore

**Source:** Banco de México, Informe de la Presidencia de la República Several Years

To summarize this section we can say that the evolution of Mexican trade has been such that the origin of the Mexican imports is now more diversified than in 1993, the year of her first FTA, and that the countries which Mexico have not FTA gained most of the growing Mexican imports. In contrast, Mexican exporters show a noticeable tendency to concentrate on the USA, and this has occurred despite the proliferation of FTAs.

### **Negotiating NAFTA**

NAFTA in some aspects is less than a FTA and in many others more than that since it includes aspects that were not incorporated in shallow integration agreements, and were characteristic of Common Markets or Economic Unions. With the inclusion of rules on investment, property rights, and the parallel agreements on labour and environment policies, NAFTA opened a new path that has been followed by other agreements and by the WTO. The MX-EU FTA follows the path of NAFTA and the MX-EFTA reflects the latter.

Several reasons explain why this section covers a substantial part of the paper, giving it an imbalanced character. The United States accounts for 85 per cent of Mexico's total external trade and 80 per cent of the flows of foreign direct investments the country receives. To meet the conditions set by NAFTA, Mexico had to substantially reform her economy and many of her institutions. There was no need for any substantial new reforms to accommodate agreements with the European countries. In fact, both the European Union and EFTA looked for NAFTA parity.

Given that a twelve-year period has elapsed since NAFTA was put in motion, it is by now easy to foresee its effects on the Mexican economy. During this period, the Mexican economy, as well as both the Canadian and US economies, has experienced episodes of expansion and recession, the causes of which cannot be exclusively linked to the mechanisms of NAFTA.

It had been widely accepted that the static effects of the liberalization process agreed to under NAFTA would not to be very significant for a number of reasons: First, the process of the Mexican economy's "silent integration" into the US economy had occurred over decades prior to NAFTA. Second, tariff protection levels, from which preferences were granted, were low. At the time of signing the agreement, the average Mexican tariff was 10 percent, and US tariff was around 2.1 percent. Almost half of Mexican exports entered under the GSP program, whose major beneficiary was Mexico. The rest was subject to a 4 percent tariff. With NAFTA, Mexican tariffs fell to 2.9 percent, while US tariffs declined to a mere 0.61 percent (Clinton 1997, p.1). Furthermore, since US tariff reduction was a commitment made by that country during the Uruguay Round negotiations, tariff reductions by the US in the NAFTA process were almost irrelevant. Third, a substantial share of Mexican exports to the USA was included in the GSP. Others, such as textile and apparel, were subject to special treatment under multilateral agreements –for instance the *Multifibre Agreement*, or included in bilateral sectoral programmes, as in the case of the automobile sector. In agriculture, quotas and restrictions on trade were maintained, and a longer liberalization period was agreed upon. Fourth, in investments, changes began in advance of the implementation of the Treaty.

A country decides to enter into regional integration agreements in order to advance the realization of national welfare objectives and not in pursuit of global gains in efficiency.

Any evaluation, therefore, should start from, or take into consideration, the individual country's point of view about the possible outcomes of regional integration. In the case of Mexico, the objectives were several and went far beyond the strict effects of trade expansion. These included: i) achieving more secure access to the US market; ii) using trade agreements to underpin domestic policy reform; iii) attracting foreign investments; iii) securing faster and sustained rates of economic growth; iv) granting access to a procedure for settling disputes agreed to by consensus; and v) reducing emigration to the USA.

Ex-ante evaluations of the impact of NAFTA suggested that trade creation and trade diversion effects would be minor. Welfare gains would benefit Mexico in larger proportions (Brouer 1992, Ros 1994). Studies assumed complete liberalization, and did not consider the important restrictions to free trade in agriculture, textiles and the automobile industry (Whalley 1993, Krugman 1994, William and Welch 1994). Despite the importance of political objectives, NAFTA does not include any compensatory mechanisms or transfers to speed up growth among the less developed members. It was agreed, as early as 1990, during the Houston meeting, that "Mexico would not be treated as a developing country in the negotiations, meaning that it would not receive preferential treatment in matters such as transition periods for the elimination of tariffs" (Maxwell 2000). Due to this reason, Smith (1993) suggests that "Mexican participation in NAFTA is another major step in the dramatic liberalization of the Mexican economy since the mid-1980s." For Mexico, GDP growth was expected to be 1 percent a year, during a 10-year period. This effect was to mainly benefit larger industries with important scale economies and capital intensive technologies. Sectors with Ricardian comparative advantages would grow at lower pace. Growth effects would be larger if transfers of capital, especially foreign direct investment, are considered (Székely 1994, Ros 1994).

We will analyse some important developments in the Mexican economy, without suggesting direct and exclusive causal relations with NAFTA. Those features are important and should be taken into consideration while negotiating new trade agreements.

### **III SOME EFFECTS OF THE LIBERALIZATION OF THE ECONOMY**

*1. The growth of the external coefficient of the Mexican economy.* Since the mid-80s, the Mexican economy has evolved from being a closed economy, fully implementing the inward-looking Import Substitution Industrialization (ISI) model, to an open economy with

one of the highest external coefficient relative to GDP in the western Hemisphere, as illustrated in table IV. The process was initiated in the 1980s – in the context of the macroeconomic reforms –, and speeded up after 1994. The difference in the value of the coefficient registered for Mexico and for the US is remarkable. A large external coefficient suggests improvements in productivity and competitiveness of Mexican production since both exportable and importable goods compete with foreign production. On the other hand, the Mexican economy has become more dependent on imported supplies and inputs. The increase in the elasticity of imports with respect to GDP makes it difficult, if not impossible, to simultaneously ensure positive GDP rates of growth and balanced trade and current accounts.

**Table IV. Ratio of Total Trade to GDP**

	1970	1975	1980	1985	1990	1995	2000	2002	2003
World	27.0	33.7	38.8	38.7	38.3	42.0	50.0	47.2	NA
Latin America & Caribbean	18.3	22.4	24.9	24.8	26.1	30.8	42.1	44.2	45.8
Argentina	10.3	11.8	11.5	18.0	15.0	19.7	22.4	40.5	39.1
Brazil	14.5	19.0	20.4	19.3	15.2	17.2	22.8	28.9	30.0
Chile	28.6	52.8	49.8	53.9	66.0	59.3	58.5	63.9	68.3
México	17.4	16.5	23.7	25.7	38.3	58.2	63.9	55.5	58.5
United States	11.3	16.1	20.7	17.3	20.6	23.5	26.3	23.4	NA

Source: World Development Indicators, World Bank 2005

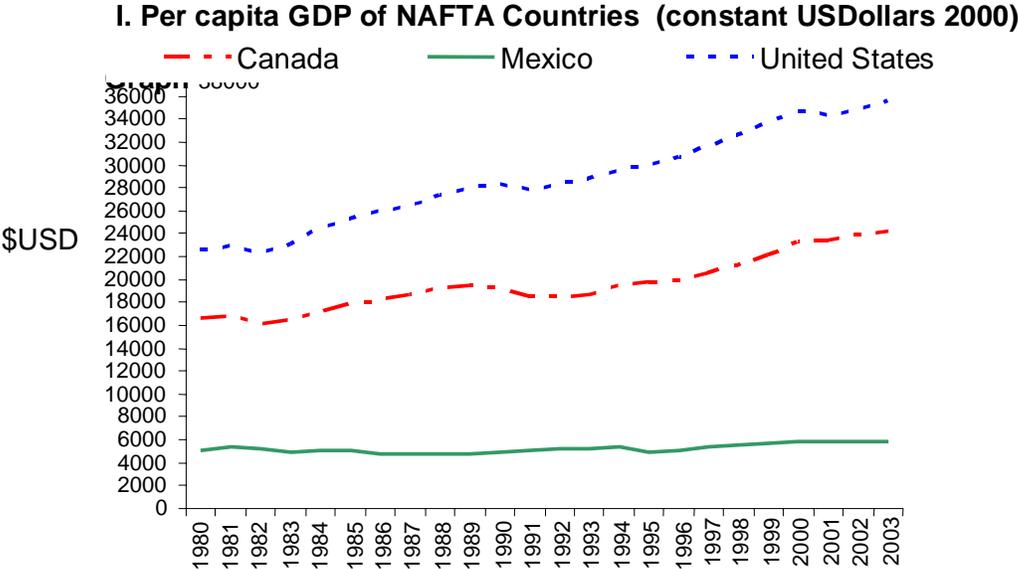
*The impressive growth of Mexican exports.* Mexican exports to the US did accelerate before the signing of NAFTA, consolidating the US's supremacy as the source of and market for both Mexican imports and exports. During the first five years of the implementation of NAFTA (1994-1998), total Mexican exports grew by 16.5 per cent annually, while imports expanded by 11.5 per cent. Trade with the US expanded faster and resulted in a significant trade surplus (Tables VIII and IX). In the year 2000, the US represented 85 per cent of the total Mexican foreign trade. Practically 92 percent of Mexican external trade is with the high income industrialized countries. Trade with developing countries is residual. All in all, Mexico's foreign trade is more inter-industrial (62 percent, in 1998) than intra-industry (38 percent) in character. In 1998, the index of intra-industry trade with the US reached 39 percent (Puyana 2002). In a large list of goods that are exported by Mexico to the US, the

intra-industry index is well above 50 percent, suggesting those goods have reached a competitive level and are able to compete in foreign markets (Puyana 2002).

2. *The transformation of Mexican external supply.* The change in the composition of Mexican exports started with the structural reforms, and the dismantling of the ISI model. In the year 2000, exports of manufactures represented almost 87 per cent of total external sales, contrasting with the 23 per cent in 1980. Oil sales retreated from 64 per cent in 1980, to 9.0 per cent of total exports in 2000 (Romero 2002). Within manufactures, the *maquiladora* segment is the one with the fastest expansion, representing around 45 per cent of total industrial exports in the year 2000. *Maquiladora* activity is practically the only fraction of manufactured exports with a trade surplus, as Table V shows. Mexican exports are concentrated in a relatively small number of goods. Working with a six-digit desegregation of the Harmonized System, 82 per cent of total exports were concentrated in only 5 percent of the items, grouped in branches such as electrical machinery, automotive industry, boilers and reactors, fossil oils, and apparel. In these very sectors, Mexico accounts for a majority share of total US imports. As a result, it is feasible to suggest that Mexico is specializing in sectors in which the country has acquired competitive advantage vis-à-vis the US market, and, in consequence, has developed the potential to compete in other markets as competitively as North American (Puyana 2002, Dussel 2000). Nevertheless, only the final segments of the productive processes of the sectors take place in Mexico, since these are *Maquila* dominated exports.

3. *Is convergence taking place?* One of the explicit arguments in favor of NAFTA frequently presented to public opinion on both sides of the border was that, by freeing trade and investments, Mexico would achieve faster economic growth. This would result in economic convergence between the two economies, with the ultimate result being reduced emigration to the US. The ratio of the US GDP per capita to the Mexican GDP per capita has increased from 3.94 in 1983 to 5.95 in 2000. Annual net migration amounts to 300 thousand workers representing 0.7 per cent of labor force. There are no signs of any reduction in emigration. While is too early to register robust signs of convergence; at least a change in divergence could be expected. But evidently the opposite is the fact (Puyana y Romero 2005).

We examined whether the NAFTA member countries have achieved convergence after this agreement came into effect. The path of growth of per capita product in the three countries is analysed as well, during a sufficiently long period of time, so as to detect historical trends and determine when and why there were changes in the relative paths of growth. Even though the number of countries is small, this analysis is important for several reasons. These three economies were closely related to each other long before the NAFTA came into effect. In addition to very intensive commercial exchange, investments and technological transfers, -not to mention the migration that consolidated purely commercial relations even more, the links between these economies are manifold, as suggested in the studies made by Krueger. Hence, convergence would seem natural. Other than that, this analysis allows us to test the proposition that trade flows going from small (or less developed) countries to the rich are catalysts of convergence, as acknowledged by Arora & Vamvakidis (2001) and Krueger (2003). Given the substantial Mexican investment in human capital, that has considerably increased the supply of university-educated labour (Romero and Puyana, 2004), it is also possible to examine whether this factor promotes convergence in accordance with Ben-David & Kimhi's results (2000). It is also feasible to verify whether there is a positive correlation between opening and changes in trade and foreign investment policies and convergence. Graph I indicates the GDP per capita trajectory for all three NAFTA member countries.



Source World Bank, World Development Indicators, 2005 CDR

At first sight, it is clear that the income gap observed in 1965 has widened. It is possible to assess how much widening has occurred and when this amplification started by calculating sigma convergence. It is possible to distinguish three periods: (i) 1930–44, when the prevalent trend was the augmentation of dispersion. (ii) 1945–1982, this includes the post-War reconstruction years in the Japanese and European economies, and Mexico as many other countries embraced the ISI. During these the value of the standard deviation was negative, that is, the expansion of the Mexican economy was such that by 1982, it reached a point where the distance separating them was the smallest ever registered. (iii) 1982–2003, started with the outbreak of the debt-crisis and the subsequent reforms, and ended with the 20th century, when the process of economic liberalization and opening had been largely completed and NAFTA was fully in place and the privatization process had been set in motion. The Mexican and the USA economies grew distant from each other. Neither the export push nor the NAFTA effects could change the sign of this trend, see Puyana y Romero, 2006.

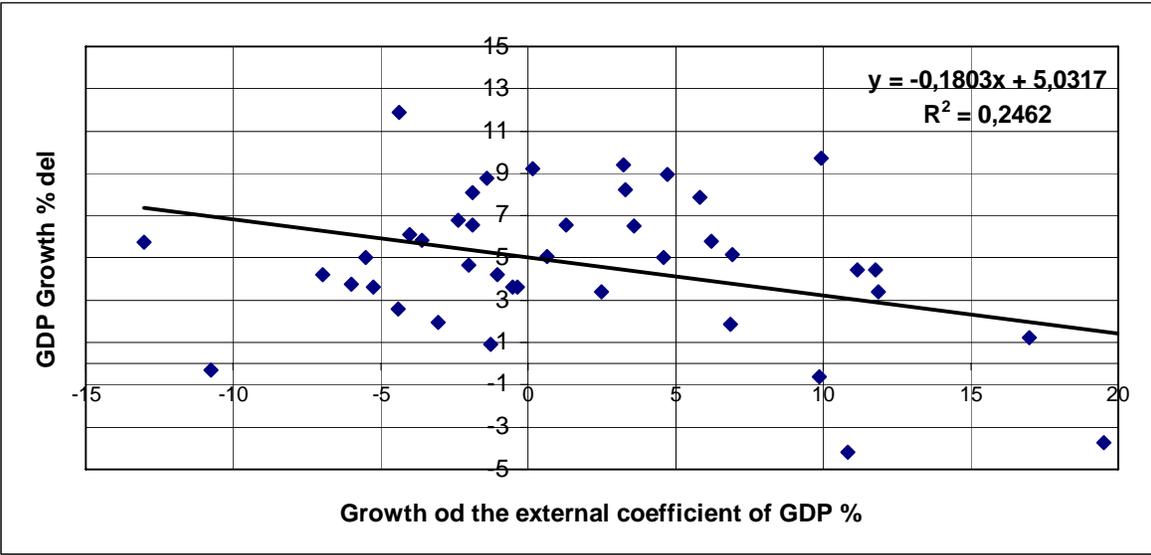
To make a deeper analysis of NAFTA convergence and in response to the argument that there is an unmistakable positive correspondence between trade and sustained growth, we explore the correlation between the extent of openness of these economies and GDP growth. We found a very small or a non-existent correlation between the extent of openness and GDP growth. It can be assumed that lower import tariffs and export taxes would reduce the domestic prices of importable goods and exportable goods and since the degree of openness of an economy is inversely associated with changes in relative prices (of local prices of importables to exportables), the more open an economy the lower the relative price. Production and export structures should move towards comparative advantage and, if the exchange rate is appropriate, the trade deficit should not be excessive.

In principle, if the export sector is characterized by higher productivity than the rest of the economy, then, in those countries that reallocate resources towards exports, the export-GDP ratio should increase and these economies should grow faster. By closely linking domestic prices to international prices gains in efficiency will emerge through changes in: i) the production structure, which would now favour increased production of tradable goods whose domestic production costs are lower than international ones, ii) the use of the abundant factors of production, labour in particular; wages would tend to rise, with more

land and capital being devoted to more competitive products offering higher returns on these factors; and iii) commercial exchange: with increased importation of goods in which the countries are not competitive and increased exports of efficient goods. However, as we observe, though the opening up of the Mexican economy has practically been completed, economic growth is lower and erratic.

We detected a negative correlation between the growth of the external coefficient of the Mexican GDP and the expansion of its economy. The trend sign is negative, and in the Mexican case, it suggests that the greater the degree of openness, the lower the growth. There is no causative relationship between the variables, so it is necessary to go deeper into the elements explaining Mexican economic growth, Graph II. Worrying aspect is that we did obtain a positive and significant correlation between the two variables in the Canadian case, and a positive correlation (to a lesser extent) in the American case. Consequently, it is essential to explore the Mexican economy's sources of growth and think of the causes explaining why this opening has not induced higher rates of growth and convergence, as was expected. Our results are in line with those of Slaughter and Quah (1995).

**Graph No. II México: México: correlation between GDP growth and external coefficient of GDP growth 1960-2003**



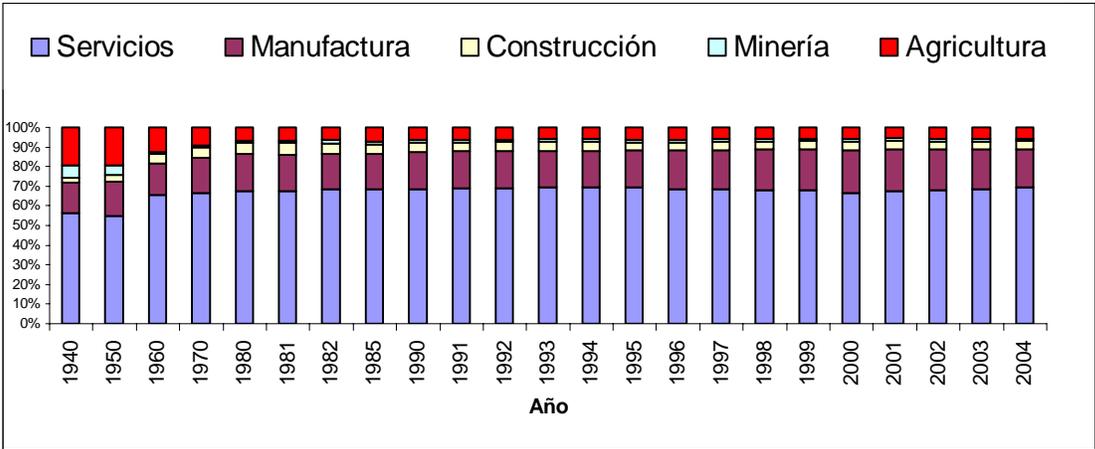
Source: our calculations based on WB, WDI, 2005, CDR

4. *The evolution of the Mexican manufacturing sector.* Contrary to what was expected, so far, there are no marked changes in the structure of the Mexican economy. As presented in

Graph III, the production of the tradable sectors has stagnated as a source of GDP, as has employment. The explanations are several.

There has been a premature decline in their contribution to GDP that does not correspond to the normal transformation that characterizes the development process and suggests the “Dutch disease” which afflicts all economies rich in natural resources subjected to frequent external price shocks, or to the intense and unstable flow of external financial resources and the migration of workers abroad<sup>3</sup>. With Mexico’s current per capita GDP, agriculture ought to contribute between 12 and 15 per cent of total GDP and manufacturing nearly 30 per cent (Romero and Puyana 2004b).

**GRAPH III. The Structure of the Mexican GDP- 1940-2004**



Source: Own calculations based on INEGI, SNCN, several years

In the case of agriculture, the speed of liberalization, the urban bias, still evident in Mexican economic policies, the chronic deficit in public spending and the distortion of international agricultural prices induced by the developed countries’ support policies, all help to explain this trend.

5. *The fragmentation of the productive process.* In the manufacturing sector, premature decline may be explained, at least partially, by Mexico’s increasing specialization in assembly activities (*maquila* – the Mexican term for these activities) that helps to explain the minor impact of the reforms and exports expansion, in increasing the weight of manufacturing in the total GDP and employment. The share of the *maquilas* in total

<sup>3</sup> Income from illegal traffic of drugs or arms can induced similar effects,

exports increased from 14 per cent in 1980 to 50 per cent in the year 2004. *Maquila* and the PITEX (a program similar to *Maquila*) accounted for as much as 87 per cent of total manufactured exports from Mexico. The long term objective when the *maquilas* were established was to create links between the *maquilas* and the rest of the economy, assuming that the former would benefit the latter, by the integration of the domestic productive elements, increasing productivity and intensifying/up-grading/improving human capital and technology. The stimuli that encouraged the expansion of the *maquila* and the PITEX program offered in Mexico (tax exemption for imports and some others) and in the United States (free importation of the U.S. components for the manufactured products and exemption from Mexican VAT), limited the value added in Mexico and the scope for increasing productivity.

The impact that the *maquila* has had on the national economy suggests that this form of industrialization does not induce a higher level of productivity, employment or income.

A one per cent growth in *maquila* exports results only in a 0.3 per cent growth in its contribution to GDP, and by the end of 2004, its contribution to the Mexican GDP was 2.9 per cent, which corresponds to an advance of 0.04 percentage points of the GDP since it was first established in the late 60s. For this reason, given the weight of the *maquila* in manufactured production and total exports, there is no connection between the expansion of manufactured exports and the contribution of the manufacturing sector to the generation of GDP.<sup>4</sup>

*Maquila* was the most dynamic generator of employment in the whole manufacturing sector (a rate of 333,3 percent over the period 1988-2000). In 1988 it accounted for 9.9 per cent of manufacturing jobs, which figure rose to 26.7% in 2000. but manufacturing employment in total employment did not growth and stagnated around 20 percent since 19882. *Maquila* absorbed part of the labour made redundant by the manufacturing crises of the eighties and nineties and the processes of readjustment of manufacturing businesses to the reform of foreign trade and to the trade agreements. In this case, it absorbed a relatively more skilled type of labour, at lower wages and in jobs that requiring less demanding technical skills, and did not employed workers from the informal sector.

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<sup>4</sup> For a detailed analysis of the effects of maquila exports to the Mexican economy, see Puyana y Romero, 2006, op cit.

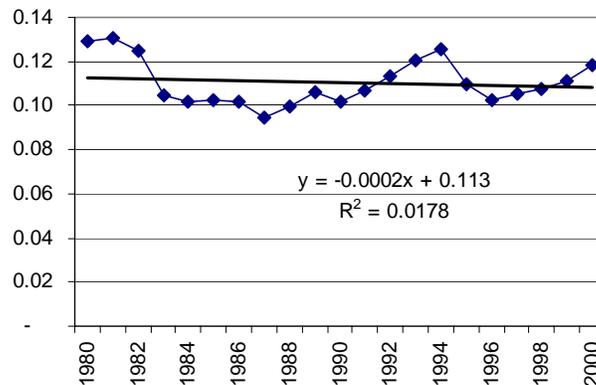
Another interesting effect of maquila exports has to do with their impact on average wages. The growth in productivity in the maquila was lower than the expansion of its exports and employment. In 2000, productivity per worker reached \$ 21,000 in constant 1993 pesos, an increase from the \$ 20,000 registered in 1989, but lower than the productivity levels registered in 1993 and 1995. That is to say, in eleven years it has recorded a cumulative increase of only 5 Per cent. One percentage point of growth in *maquila* exports corresponds to 0.01 of a percentage point increase in productivity. The limits to the growth of productivity of the *maquila* industry are established by the share that wages represent in value added a ratio that gives the labour cost per unit of produce. In the *maquila*, remuneration accounted for close to 74 per cent of the value added in 1993 and 80 per cent in 2000. Therefore, in *maquila* manufacturing, only if productivity were increased, would there be added value, without an increase of the share of labor costs either in total value added or in the total labour cost per unit of produce. With the low value added and the low productivity of the maquila sector, it is not surprising that the effect of average individual and total remuneration is equally limited. These had to be contained in order to face international competition. In fact, even if the average remuneration in the *maquila* did increase, the pace was slow, although at times greater than for productivity (during the whole period 1993-2000, for example). We found that the relation between the growth in sales of the *maquila* and of the average remunerations of the *maquila* and of non-*maquila* manufacturing sectors is negative, Puyana and Romero (2005 c). This partially explains the low impact that exports have had on wages.

The ever deepening Mexican specialization in ensemble activities helps to explain the very feeble impact of maquila exports upon the expansion of sectoral GDP. Another element to consider is the enormous presence of large multinational corporations in total exports. Companies with direct foreign investments are responsible of at least 60 per cent of the total non oil exports. If only exports of manufactures is considered the concentration is even higher.

6. *Performance of workers wages.* From 1980 to 2000 the average wage for workers showed certain circumstantial fluctuations that did not modify the general tendency towards stagnation. This trend in remuneration cannot be attributed exclusively to the trade agreements. Other mechanisms also influenced this trend. This can be seen in Graph IV

which uses data from 73 branches of the International Standard Industrial Classification ISIC at three digits discrimination, for the period 1980-2000, the slope of the trajectory of average workers' wages is practically nil (and statistically insignificant), this means that during the period analyzed no clearly defined tendency can be established. Real wages deteriorated during the periods of “structural re-adjustment” (1980-1988) and “macro-economic stabilization” (1983-1988) and recovered during the period 1988-2000, although not sufficiently to re-establish the 1981.level of real wages.

**GRAPH IV**  
**PERFORMANCE OF REAL AVERAGE WAGES\***  
(Miles de pesos de 1980)



\*Median of total wages paid between the number of workers deflated by the index of consumer prices.

**Fuente:** INEGI, Sistema de Cuentas Nacionales, México 2000.

From 1982 to 1988 the national currency was undervalued, real wages fell, and the prices of imported goods rose in local currency, thereby protecting the production of movable goods and fomenting employment. The response to the crisis of 1994 was the real devaluation of the peso during 1995-1996 and the fall in real wages. Once again, between 1997 and 2000 (and continuing into 2006) the authorities responsible for monetary affairs and rates of exchange opted for the overvaluation of the peso with all its consequences, one of which was the increase in real wages and the growth of overt and covert unemployment. Table V based on annual facts from eight surveys on employment (National Survey of Employment: for the years 1991, 1993 and 1995 to 2000), shows the evolution of wages by type of work. For each survey, the average wages are given for six types of work and the corresponding growth rate for wages. These facts make evident: the fall in average annual wages for workers with more education and those with less education; a modest rise for

intermediate levels and a moderate increase in the average wage of the entire labor force.  
(See column “G” = Growth rates)

**TABLE V**  
**REAL AVERAGE WAGES BY TYPE OF WORK**  
**(Thousands of 1990 pesos)**

<b>TYPE OF WORK</b>	<b>1991</b>	<b>1993</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>G</b>
<b>L0</b>	8.51	6.98	6.95	7.37	7.70	7.58	9.23	7.98	-0.72%
<b>L1</b>	11.35	12.06	10.86	10.78	10.93	11.01	11.46	12.20	0.80%
<b>L2</b>	33.44	42.60	33.61	30.75	29.85	31.27	33.15	34.80	0.44%
<b>L3</b>	42.25	51.88	47.43	38.51	41.19	41.32	43.64	44.64	0.61%
<b>L4</b>	72.65	82.64	69.37	61.58	68.49	64.89	68.49	73.56	0.14%
<b>L5</b>	80.59	90.03	75.96	71.93	81.80	77.97	92.46	80.41	-0.02%
<b>Total</b>	<b>16.01</b>	<b>18.48</b>	<b>16.61</b>	<b>15.86</b>	<b>16.62</b>	<b>16.75</b>	<b>17.65</b>	<b>18.97</b>	<b>1.88%</b>

G: Geometric growth rate: 1991-2000.

L0: No education. L1: From one to six years education (Primary) L2: From seven to nine years education (Secondary) + Technical. (Primary required) whether finished or not. L3: From ten to twelve years of education (College)+ Technical II (Secondary required) whether finished or not. L4: One or more years University studies+ Technical III (College required) whether finished or not. L5: One or more years of postgraduate studies, Master’s, Ph.D, etc.

Source: Secretariat of Labor and Social Welfare, National Employment Survey – several years

The policies for reducing state spending, wage control, reforms to the Social Security System and flexibility in labor relations, have contributed to a precarious employment situation and to self-employment, characterized by low levels of remuneration, the absence of social benefits and job security, all of which contribute to depressing the general level of wages. Employment in the public sector was reduced by the policies of privatization and by cuts in state spending. Industrial employment in the big enterprises suffered due to competition from imported products. The incentive of employment in the *maquila* plants only partially counteracted the effects of contraction of the manufacturing sector. The growth in informal employment, that is the expansion of jobs in commerce and services gained importance in the nineties.<sup>4</sup> Informal employment without any social benefits increased in recent years, rising from 61 per cent of the active population in the year 1991 to 64 per cent in 2005. According to the employment surveys, the percentage of the labor force that does not receive any income, or receives only twice the minimum wage accounted for 66 per cent and 65 per cent of the work force in the years 1991 and 1997,

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<sup>4</sup> Ibid. p. 455

respectively.<sup>5</sup> In contrast with the tendency to stagnation of real wages in the last twenty years, retributions to capital investment did persistently expand (Puyana y Romero, 2006)

*7. Trade and Productivity Growth.* Faster growth of productivity was another effect the reforms and the liberalization of trade regimes were supposed to deliver. Within the manufacturing sector, the levels of labour productivity and the rates of growth of total factor productivity do not appear to have any significant relation with the measure of manufacturing exports. We found, for panel data for 49 manufacturing industries for the period 1989-2000 a negative correlation between labour productivity and exports growth with a correlation coefficient of -0.1501, and for TFP the correlation coefficient of 0.0811). This relations shows that trade liberalization has not yet translated itself into improvements of efficiency for the aggregate Mexican economy, and therefore, into higher rates of economic growth. For México, trade liberalization has not being accompanied by improvements in technical efficiency nor in the increase in the rate of economic growth, we elaborate on the subject and suggest some explanations for this “unexpected” and unfortunate outcome.

Per Capita GDP Growth and the Productivity Path. From the trends in GDP per capita we can infer that Mexico has not registered significant advances in productivity. In fact, the average value of the per capita income (GDP/C) has been identified as an accurate indicator of the level of development and an approximation of factor endowments. Helpman & Krugman (1981) suggest that a higher per capita income indicates higher capital intensity and greater productivity, a superior capacity to innovate and to produce differentiated goods, by production processes that are intensive in capital and technology. Others (Loertscher & Wolter (1980) have argued that as they have better information and superior communication systems, they can expand their trade of differentiated goods. The per capita income defines the structure of demand and, thanks to differentiation, and the capacity for production to adapt to changes with greater flexibility than the less developed economies, supply can adjust to international demand. According to the historian John Coatsworth

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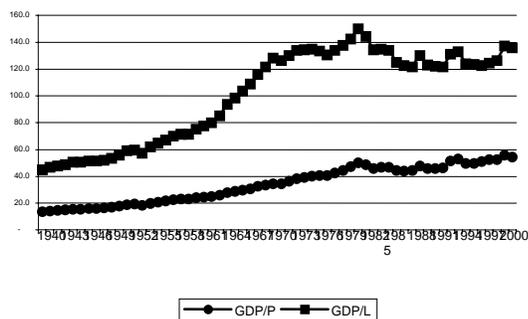
<sup>5</sup> For information on these and other trends in the Mexican labor market during the eighties and nineties, see Oliveira & García (1996); Rendón & Salas (1996) and (2000); Estrella & Zenteno (1998); García (1999); Salas & Zepeda (1999); Salas (2000).

(1990), “Income per head is the indicator that best reveals to the economists and historians, the level of productivity and therefore the state of any country’s economy”.

It is evident that the period after the debt crisis is one of slower GDP/C growth relative to the pace registered by the USA, as illustrated above in Graph No II. No wonder then that divergence rather than convergence took place. Due to the lack of unemployment insurance in Mexico, people out of jobs need to quickly employ themselves in any activity including informal employment. That is why the rate of open unemployment in Mexico is small, often negligible. Graph V presents the trajectory of GDP per capita and average product of labor for the 1940-2001 period.

### GRAPH V

#### INCOME PER HEAD AND INCOME PER WORKER (1940-2001)



**Source** Nacional Financiera (1978), La Economía Mexicana en Cifras; INEGI (1999), Estadísticas Históricas de México; Presidencia de la República, Informe de Gobierno, Several years

Two distinct trends emerge: 1940-1982 and 1983-2001. In the first period the income per head and the GDP per worker had a steeper slope than in for the second. By contrast, in the second period a negative slope for GDP per worker and a positive, but almost flat slope for GDP per capita was found. The average productivity of labour has declined during the trade liberalization period, and this decline has been compensated by an increase in participation rates, to produce an almost constant income per a head. The continuous increase in product per head during the 1940-1982 period resulted from an uninterrupted increase in average labor productivity. In contrast, during the 1982-2000 period, the grow rate of the GDP per capita was 1.1 per cent, the average product per worker declined at a rate of -0.1 per cent and the country experienced a significant increase in participation rates which averaged 1.2 per cent a year.

The path of labor productivity in México. Labor productivity in México in over the last twenty years as a whole shows a negative trend, as indicated by the tendency. The average growth rate for the economy in this period was (-0.3%), though the trend was positive for the 1990-2000 period. Fifteen sectors contributed the most to the growth rate of labour productivity in 2000. In that year the net growth rate of labour productivity was an outstanding 4.9 per cent Table VI. Only two of them were manufactures (automobiles, meat, and dairy products). Their contribution to the total labour productivity growth rate was only 0.6 per cent. Commerce, a non tradable activity, contributed with 2.6 per cent of total growth, that is, more than 50 per cent <sup>5</sup>. Two of the three main contributors to the increase of labour productivity in that year, communications and automobiles, were sectors that have not fully face international competition. Finally “others” (that includes the sum of 57 activities) only contributed with 0.2 per cent to the total growth of aggregated labor productivity.

**TABLE VI CONTRIBUTIONS OF THE FIRST FIFTEEN ACTIVITIES TO THE GROWTH OF TOTAL LABOUR PRODUCTIVITY OF MEXICO**

CIU	BRANCH	1983	1984	1985	1990	1995	1996	1997	1998	1999	2000
62	COMMERCE	-1.2%	0.4%	0.2%	-0.7%	-3.4%	1.1%	1.5%	0.4%	0.0%	2.6%
65	COMUNICATIONS	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	0.2%	0.1%	0.4%	0.5%
56	AUTOMÓBILES	-0.1%	0.1%	0.1%	0.1%	0.0%	0.6%	0.1%	-0.1%	0.1%	0.5%
66	FINANCIAL SERVICES	0.1%	0.1%	0.1%	0.2%	0.0%	-0.1%	0.0%	0.4%	0.3%	0.4%
64	TRANSPORTATION	0.1%	0.2%	0.1%	-0.1%	-0.2%	0.0%	0.3%	0.0%	0.1%	0.2%
60	CONSTRUCTION	0.0%	-0.1%	0.0%	-0.4%	-0.5%	-0.2%	-0.2%	-0.2%	0.1%	0.1%
63	RESTAURANTS AND HOTELES	-0.1%	-0.2%	-0.2%	-0.1%	-0.4%	0.0%	0.2%	0.0%	0.0%	0.1%
8	NON FERROUS METALS	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%	0.1%
11	MEET AND MILK PRODUCTS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
69	EDUCATION SERVICES	0.1%	-0.1%	-0.1%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
54	ELECTRONIC APPLIANCES	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
22	NON ALCOHOLIC BEVERAGES	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
51	MACHINERY AND NON ELECTRIC EQUIPMENT	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
39	SOAPS, DETERGENTS AND COSMETICS	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
19	OTHER FOOD PRODUCTS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
	Rest	-0.2%	0.0%	-0.1%	0.6%	0.4%	1.1%	0.5%	0.1%	0.2%	0.2%
	<b>TOTAL</b>	<b>-1.35%</b>	<b>0.52%</b>	<b>0.16%</b>	<b>-0.24%</b>	<b>-3.94%</b>	<b>3.08%</b>	<b>2.81%</b>	<b>1.02%</b>	<b>1.19%</b>	<b>4.94%</b>

Source: Own calculations based on INEGI, SNCN, several years

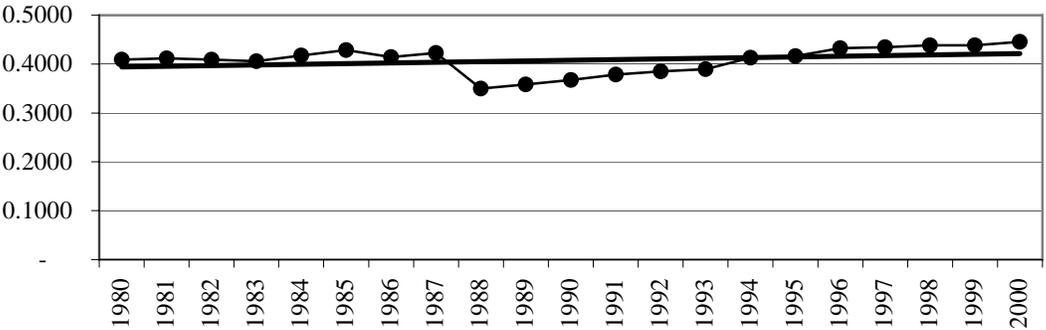
This result confirms our conclusions about the dynamism of the Mexican economy. The increase of productivity registered in the aggregated data, for example in the year 2000, was generated to a large extent by increased relative prices in the non-tradable sectors and not

<sup>5</sup> This increase in labor productivity of “Commerce” was due to increases in the relative price of the nontradables, product of the overvaluation of the peso, more than an increase in the “productive efficiency” of that activity.

by an increase in labour productivity in the manufacturing sector, the main sector responsible of the surge of Mexican exports.

Labor productivity in the Mexican manufacturing sector. The observed average growth rate of labour productivity in the manufacturing sector during 1980-2000 period was slightly positive, 0.33 per cent. Graph VI

**Graph VI**  
**LABOR PRODUCTIVITY IN MEXICAN MANUFACTURES**  
(Thousands of 1980 pesos)



From 1990 the sectors with the highest rates of growth of production, also registered the fastest productivity growth and gains in sectoral shares. Those activities are automotive, machinery, and electronics. A point worth mentioning is the fact that since 1989 the Mexican manufacturing sector has experienced a reallocation of the labour force towards activities with lower capital labour ratios; a trend that has adversely affected total labour productivity in the entire sector, as explained when analyzing the structural effects of Maquila activity.

The most successful manufacturing activity, so far, is the automobile industry, which in recent years contributed at least 65 per cent of the net rate of growth of labour productivity in manufacturing. This is a surprising and revealing fact. The automobile sector is an activity that did not fully face international competition until 2004 and was subjected until that year to the commitments of the Automobile programme.<sup>6</sup> This industrial policy ended in 2004, exposing the industry, for the first time to unhindered international competition. If as a result of the disappearance of the protection that favoured its growth, this industry were

<sup>6</sup> Since the Automobile Decree of 1989, the assembly firms were obliged to maintain in 2002 a national value added (VAN) from Mexican sources of 30%, and in 2003 of 29%. In the Decree is also established that the assembly could import new vehicles only when they count with positive trade balance. The Automobile Decree also establishes that the manufacturers of auto parts have to maintain a VAN of at least 20%.

to stop growing, labour productivity in the entire Mexican manufacturing sector will decelerate as well.<sup>7</sup>

In sum, Mexican manufacturing is characterized by generalized feeble growth in productive efficiency, except for its automobile, machinery and electronics sectors. The automobile industry recorded the strongest positive growth rate of productivity, stimulated by a sectoral development programme, and not as a result of the liberalization process, which affected it only recently.

8. *Trends in the agricultural sector.* The “dramatic liberalization” of the Mexican economy covered also the agricultural sector. So did NAFTA. The Agreement submitted the agricultural and livestock activities to the general, progressive and intensive phasing out of tariff barriers with total disregard to the asymmetries in productivity between the USA and de Mexican agriculture sectors. NAFTA was a key element in the policy of modernization of the agriculture which intended to raise productivity through changes in: i) *the composition of production*, which would favour increased cultivation of fruits and vegetables and reduce that of basic grain and oil-seed production; ii) *the use of factors* towards more competitive products iii) *commercial exchange*: with increasing imports of basic grains and oil-seeds and exports of fruit and vegetables. As we shall see, some of these effects have indeed been felt.

The agreements reached in NAFTA do not reflect the asymmetries existing between the gricultural and livestock sectors of Mexico and its NAFTA partners. In the list of critical products, those scheduled for opening in 10 and 15 years the United States included trade representing 17.3 per cent of its imports from Mexico, whereas Mexico only included for those periods 12.6 per cent of its imports from the United States. Mexico receives a tariff preference in the USA market of only 1 percent while granting the USA an 8 percent preference. The degree of protection enjoyed by Mexican farm products in the United States is low and real devaluation in excess of this percentage, or gains in productivity or reduction of the profit margin in non-member competing countries, can eliminate the advantage that Mexico enjoys<sup>8</sup>.

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<sup>7</sup> As a result of NAFTA and EUFTA, Mexico will have to eliminate for the signing countries all its tariffs and non tariff barriers to the automobile sector no latter than December 31ST 2003. This means that the trade balance requirements and VAN will cease to exist after that day.

<sup>8</sup> For more detail on the asymmetries of the commitments in agriculture that discriminate agians Mexico, see Puyana y Romero, 2006, op cit.

The Mexican agriculture has opened as mucho as the total economy did. In effect, the external sectoral coefficient registered 66% in 2004, off which imports represent 50 per cent of agricultural GDP and exports near 16 20 per cent of GDP. Therefore, the effects should have emerged. And some did.

Effects on production and in allocation of arable lands. Liberalization of the Mexican agricultural sector did link domestic and international prices and induced a decline in producers' internal prices of the main exportable and importable products: grains, beans, fruits and vegetables. Though, producers responded with increases in volume of produce and improvements in yields, the real value of the sector's output, its share in overall GDP and producers income have been falling (Puyana y Romero 2005c.). Higher profitability of fruits and vegetables induced an increase in land dedicated to their cultivation, although in a very small proportion. High entry costs,

The trends in sectoral productivity and employment. Between 1993 and 2003, productivity growth in agriculture was faster than for the rest of the economy, because agriculture did not absorbed workers and has lost weight in overall employment. Nevertheless, the gap between the productivity of Mexican agriculture and that of Canada and USA continues to widen and in 2004 was two times larger than when NAFTA was enforced.

The magnitude of employment loss varies, according to different authors. López *et al.* suggest that, as a result of the changes in the structure of agricultural production since the opening, there has been a loss of 700,000 jobs which would have been generated if these changes had not taken place. Polasky places the loss of jobs at over a million. We found that agricultural employment stagnated between 1993 and 2004, in absolute numbers, and a declined sharply in relative terms. This loss was not compensated by increase in employment in manufacturing industry or rural activities other than in farming. Despite gains in productivity and the loss in employment, in 2003 real wages in the agriculture and livestock were 17 per cent less than in 1993.

The effects on external trade equilibrium. From 1993 to 2002 external agricultural trade grew, in real terms, at a slower rate than total external trade. Following a notable increase between 1993 and 1995, agricultural exports slowed down. Imports have been more dynamic and the sector's external trade deficit has increased. The livestock sector registers a trade surplus; but not the agricultural and livestock sector as a whole, which registered in 2002 the biggest trade deficit since 1980.

The trend followed by trade in agricultural, livestock and food products reveals a high sensitivity to changes in the real exchange rate. In 1995 imports diminished and exports increased, as a

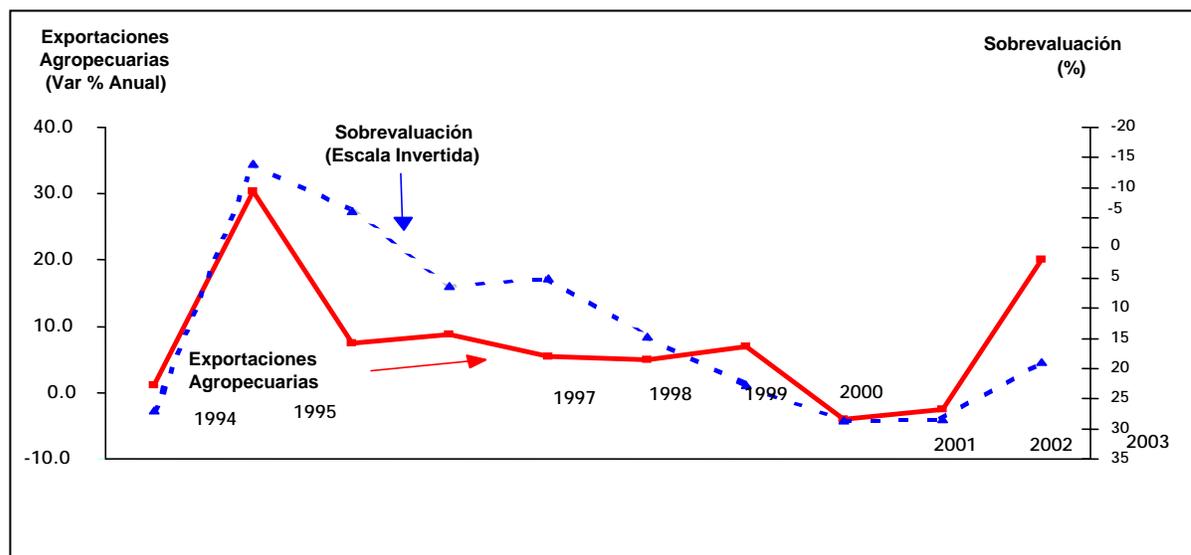
consequence of the devaluation, registering thereby a significant sectoral trade surplus. In 1997, with the depreciation of the currency, the agricultural trade deficit fell (Puyana y Romero, 2006b). Moreover, the preferences received by Mexico are small and can be annulled or reduced as an effect of appreciation of the peso, by the higher transaction costs deriving from the lack of adequate infrastructure or information or financial services, or by gains in productivity by competing countries. As result, Mexico's presence in the US market is falling, pushed aside by external competitors. Our calculations of Revealed Comparative Advantage<sup>9</sup> or index of specialization suggest that the very products in which Mexico qualified as global exporter registered, in 2002, lower indices of specialization when compared with those for 1990. For example, tomatoes lost 60 per cent of the value of their specialization index. The same, although to a lesser extent, is happening in the case of other fruits, such as melons, grapes and vegetables in general. On the other hand, crops which are gaining ground are avocado, mango and guava. These are new products that are expanding their sales. This loss of presence by Mexico as regards some of its already consolidated exportable products in the US market indicates that other countries took greater advantage than Mexico from the expansion of United States demand, and that they succeeded, without enjoying NAFTA preferences, although they did obtain similar or greater preferences through preferential schemes granted unilaterally by the United States or Canada to countries with a lesser degree of development. That products already established on the market and enjoying a majority share in US total imports are unable to make further advance may indicate the difficulty of gaining new ground or maintaining that already gained when one is the major supplier. Buyers seek to diversify their suppliers, for reasons of taste, novelty or differentiation of products, etc.

Changes in food security. As had been expected, the structure of production—in value terms—has been modified in favor of more profitable exportable products, which have won the terrain yielded by cereals. This evolution is reflected in the deceleration of the volume of production and per capita consumption of most agricultural products, the increase in the imported content of the apparent consumption of these goods, and a greater dependence on imported food. For example: 95 per cent of soy beans, near 65% of rice and around 45 per cent of barley, wheat and sesame seeds. From being self sufficient in corn, Mexico imports over 25 per cent of corn.

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<sup>9</sup> Revealed Comparative Advantage (RCA), or Specialization Index (B. Balassa, 1967).

**GRAPH NO. VII . MEXICO:REAL EXCHANGE RATE AND AGRICULTURAL EXPORTS, 1994-2002**



Source: Taken from Puyana y Romero, 2006b.

Changes in distribution of income. We suggest that changes in the distribution of income that has been observed after NAFTA was enforced (no direct and exclusive causality relation implied) have tremendous impact on the environment, social, political and overall. Gini coefficient of income has jumped to 55 per cent. Despite the exploding growth of remittances to 20 billion dollars in 2005, and the increase in current expenditure, favoured by the oil bonanza, extreme poverty affects 26% of population.

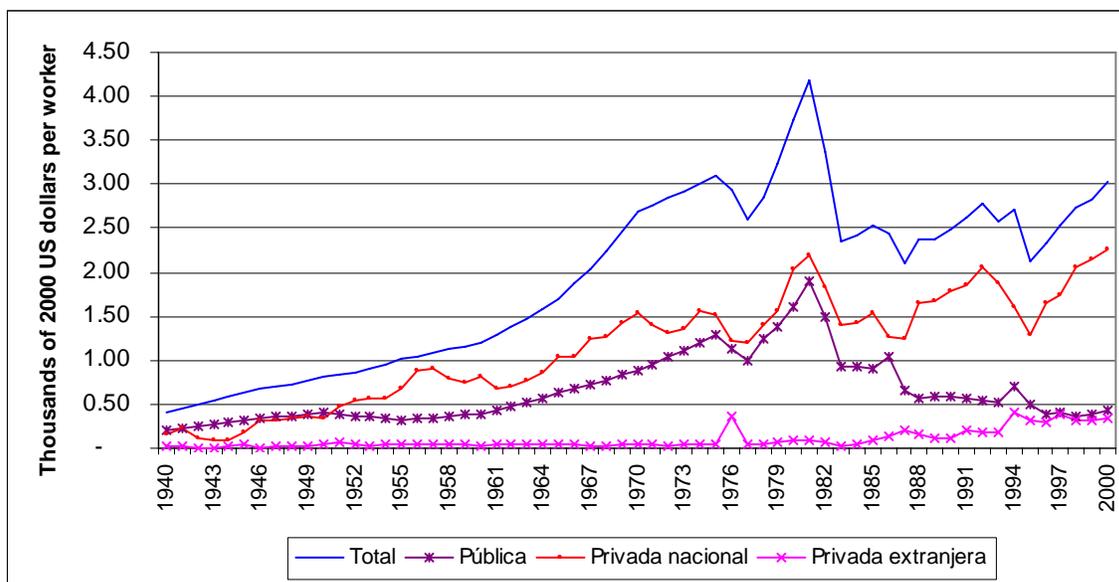
The 100 per cent liberalization, which Mexico already implemented for many products and which will apply to the whole universe of tariffs in 2008, induces benefits for taxpayers and consumers of 1,826 million dollars, while losses for farmers are around 2,035 million, and society as a whole suffers a loss of well-being equivalent to 103 million dollars. Assuming a liberalization of 100 per cent and generalized, Mexican farmers belonging to the 5 deciles of lowest earnings are net losers of income. The loss oscillates between 7 (in the first decile) and 22 per cent (for the third decile). Rural consumers gain between 3 per cent (for the first decile) and 1 per cent (for deciles 3, 4 and 5). the net effect on the rural sector is negative with a variation between -4 per cent (in the first decile) and 20 per cent (in the third). The non-agricultural sectors gain between 2 per cent in the first decile and 1 per cent in the four remaining deciles. The biggest losers are the small and commercial producers, for whom income is reduced by 22 per cent.

The effects of the fall in prices of food products induced by liberalization has been discussed intensely, it being stated that there are undeniable positive effects for urban consumers and for the rural poor who are net purchasers of foodstuffs. The affirmation that rural consumers, producers who sell part of their harvest and are net purchasers of foodstuffs gain by the fall in grain prices and that food price rises do not benefit them is not very well founded. Such affirmations are backed up by analysis of partial and static equilibrium and do not take into consideration the effects that are obtained when “other prices, relevant in terms of well-being, and the quantities, respond to changes in food prices” (De Gorter, *et al.*, 2004). By stimulating the production of foods and the demand for agricultural labor, high food prices can benefit the poor rural population, even those who are net food purchasers. This effect takes place via the response of wages. In order to understand fully the effect of the changes in food prices it is necessary to carry out a detailed analysis of the many different prices that affect the income of rural households, taking into account the elasticity of demand for labor and that of salaries with regard to food prices. It is reasonable to expect that higher food prices and more rural employment will increase rural demand for services, retail trade, and infrastructure. In the light of these studies and these considerations, the claim that a fall in basic grain prices is inevitably beneficial for the small rural producers who are net purchasers of foodstuffs becomes highly dubious if not simply mistaken.

8. *Changes in Capital formation.* Since the Debt crisis in 1982, and the process of structural reforms was put in motion, the Mexican economy, experienced a sharp decline in the capital labour ratio with respect to previous periods, which is illustrated by the trend in investment per worker. From 1940 to 1982 public investment per worker grew at an average rate of 4.7 per cent a year, in contrast, between 1983 and 2000 total investments per worker collapsed. The growth rate of private investment per worker during the period 1982-2000 is less than half the growth rate experienced during the 1940-1982 period. (Graph VIII) The contraction in public investment was not offset by private investment, whose growth proved insufficient. These results contradict the assertion that public investment was crowding out private investment, and seems to confirm suggestions that at the level of development in countries like Mexico, public investments act as a catalyst for

private capital accumulation, and constitutes a crucial determinant of total factor productivity<sup>10</sup>.

**Graph VIII**  
**INVESTMENT PER WORKER**



**Source:** Own calculations based on: Nacional Financiera (1978), La Economía Mexicana en Cifras; INEGI (1999), Estadísticas Históricas de México; Presidencia de la República, Informe de Gobierno, Several years

The decline in public investments was defended on ideological grounds as part of the “private sector based strategy”, but in practical terms it was reduced as the easiest way to balance the public budget. Public gross capital formation represents only 2 percent of GDP, which induces a critical deficit in investments, which has not been replaced by private investments.

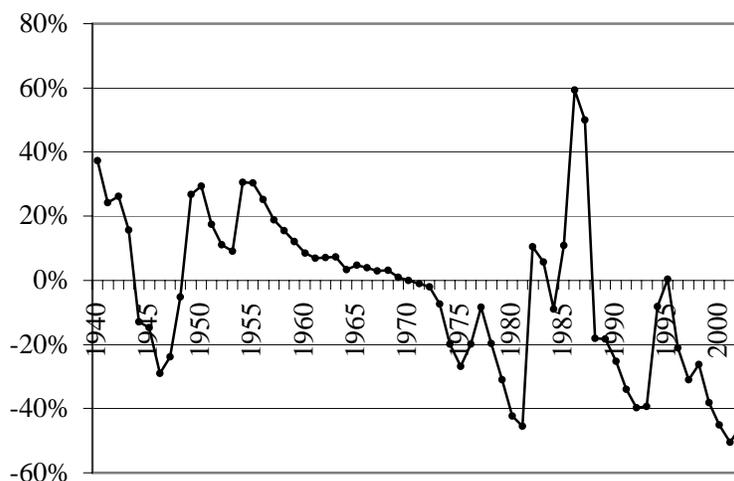
9. *The overvaluation of the currency.* Since 1988 (starting with the Salinas Administration) macroeconomic management policy maintained a permanent overvaluation of the currency.<sup>11</sup> The arguments behind such a policy were that it would reduce inflation and lower inflation will help to achieve low interest rates which would stimulate the inflow of portfolio capital and the level fix capital formation.

<sup>10</sup> Ishan, J and Kaufman, D. (1996). "The Forgotten Rationale for Policy Reform: The Productivity of Investment Projects". WB WPS No 1550. The authors suggest that for developing countries, capital formation has to represent at least 24 per cent of GDP and public investments no less than 50 per cent of that, in order to maintaining robust growth.

<sup>11</sup> Which incidentally proves that the macroeconomic mismanagement was not an exclusive prerogative of the “populist governments”.

The overvaluation of the of the peso is illustrated the in graph XI, as the deviation of the short run exchange rate from its long run value in purchasing power parity theory terms (PPP).

**Graph IX**  
**DEVIATION OF THE OBSERVED EXCHANGE RATE FROM ITS LONG RUN VALUE**  
 $[(S-E)/E]$



**Source:** Own calculations based on: Nacional Financiera (1978), La Economía Mexicana en Cifras; INEGI (1999), Estadísticas Históricas de México; Presidencia de la República, Informe de Gobierno, Several years

Since 1988 the overvaluation of the currency has only has been interrupted by the 1994 crisis. In 2002 the short run deviation of the exchange rate from its long run value was more than 40 Per cent. This is reason enough to expect adverse effects on the competitiveness and profitability of the Mexican trading sectors, which in turn inhibits investment and therefore growth in productivity.

*10. Inefficients in the Mexican financial system.* The preceding account of Mexico's recent growth performance could partly be explained by weakness in its financial system. For its level of development, Mexico has an extremely underdeveloped banking system and stock market. Its weakness became more evident under the new strategy than in the previous one. During the import substitution strategy the financial system played a less crucial role and, thus, posed less of a growth constraint since in the state coordinated, inward-oriented development strategy applied during the 1940-1982 period, the estate was a major investor, it did fix the interest rates and through the development institutions financed a larger proportion of private sector investments. That active role was reduced or scraped down in the outward-oriented,

giving room for a larger presence of the private in the strategy adopted subsequently. Once the private sector was “designated to take the lead in investing”, the financial system was not prepared to perform its intermediating role. This resulted in the misallocation of savings in projects and assets with low returns, which manifested itself in reduced productivity growth. The weak financial system constituted a handicap for domestic producers, reducing their ability to compete effectively in a global context. The emphasis on the benefits of liberalizing capital flows has made the Mexican financial system more linked with the world capital markets and rendered it even more vulnerable and less capable of completing its task of allocating resources among investors.

If the evidence that links trade liberalization and FDI with economic growth is weak, the evidence of the benefits of liberalizing capital flows is even weaker:

“There is plenty of evidence that financial liberalization is often followed by financial crash-just ask Mexico, Thailand, or Turkey-while there is little convincing evidence to suggest that higher rates of economic growth follow capital-account liberalization.” Rodrik (2001). P. 2 and 3.

The list of reforms to be added to the initial ones does is never ending: “tax reform to make up for lost tariff revenues; social safety nets to compensate displaced workers; administrative reform to bring trade practices into compliance with *WTO* rules; labor market reform to enhance worker mobility across industries; technological assistance to upgrade firms hurt by import competition; and training programs to ensure that export-oriented firms and investors have access to skilled workers.. As the promise of trade liberalization fails to materialize, the prerequisites keep expanding. For example, Clare Short, Great Britain's secretary of state for international development, recently added universal provision of health and education to the list”, Rodrik, 2001.

Another reason for the feeble effect of the exports boom upon GDP growth, productivity, employment and incomes is related to the structure of import tariffs and the level of effective protection given to manufactures and agriculture. The Mexican tariff has lower up-grading to protect national value added than the USA, China or India and lower as well compared with the majority of countries with which Mexico has signed trade agreements. Additionally, Mexican exports of manufactures is being granted lower tariff preference in the USA and in the European markets than Mexico is granting imports from these countries.

#### **IV. STRUCTURAL REFORMS, NAFTA AND THE ENVIRONMENT. SOME THOUGHTS**

The North American Free Trade Agreement (NAFTA) came into effect on January 1, 1994. The agreement was label as one step more in the dramatic trade liberalization which Mexico initiated in the mid 80s. NAFTA was innovative in many ways. One novelty is the North American Agreement on Environmental Cooperation (NAAEC), which contains a set of rules of conduct for the implementation of effective cooperation on the preservation, protection, and improvement of the environment in member countries, (Vega ET. Al. 2005). Never before a free trade agreement crafted to construct only a mere Trade Zone, was complemented by commitments on environment protection. But also the NAAEC was as well innovative. In fact, "...The North American Agreement for Environmental Cooperation established procedures for the resolution of conflicts that have not been considered in previous trade agreements" (Vega et al 2005, pg. 42)

Criticism generated by serious or false preoccupations for the feasible negative impact of trade expansion on the environment gave origin to intensive campaigns in the USA rejecting the trade agreement unless a parallel document on the environment was signed. Protectionist groups, environmental ONG opposed NAFTA agreement and together with trade unions joined forces to demand the USA government to included labour and environment parallel agreements. They found support of some Mexican ONGs and trade Unions. But "... by far, both documents reflect much more the agenda of USA society, government and companies, than the Mexican labour and environmental agenda. The programme of the NAAEC is above all biodiversity agenda than a conservationist agenda. It is above all a *gray* and *brown agenda* than a green one, which is the agenda dealing with the problems of capital interest for Mexico. The mayor, exclusive preoccupation of the NAAEC is the cleaning up of the 100 kilometres south of the border line by completing sewage and sanitation infrastructure and water supply and enforcing antipollution measures for industries. The NAAEC is not concerned with the preservation of the environment in the rest of the 1.9 million squares kilometres country".<sup>12</sup>

#### **The arguments linking trade with the environment.**

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<sup>12</sup> Author's interview with Proffessor Blanca torres from Colegio de Mexico. Proffesor Torres was member of the Joint Public Advisory Comitte responsible for evaluating the work of the CEC on the first anniversary of NAFTA.

Two main concerns were presented by the groups opposing NAFTA. The first related to the relation between growth and the environment and was based on the existence of the “Environmental Kuznets Curve”. Some economists suggested that Environmental Kuznets Curve confirms that at early stages of development environment will decay as the economies growth. The environmental worsening will stop and will start to improve when the economies reach the turning point (Grossman et al, 1991). The turning was set somewhere between 3000 and 5000 per capita GDP, in 1985 Purchasing Power Parity dollars. Since Mexico’s environmental degradation was critical when the NAFTA negotiations started, the defenders of the agreement accepted that a side effect of the expected benefits of the expansion of trade will be the temporary worsening of the environmental situation. Therefore adequate measures should be taken. As Gallagher (2005a) states, a turning point of 5000 dollars was very convenient since Mexico was near to this level of development when the country was negotiating NAFTA. The agreement was expected to accelerate the Mexican stagnant economy and push the country rapidly, in a couple of years, towards the 5000 dollar per capita GDP. At the impulse of the free market the Mexican environment problems will be over.

As we have analyzed before, Mexico is a widely open economy. But neither the reforms, not NAFTA, have help to induce faster growth. Since the debt crisis, per capita GDP has remained almost unchanged but environmental degradation is continuing. In effect, environmental degradation in Mexico has deteriorated even further since trade liberalization started. According to INEGI during 1985-2002 which Mexican economy reached the levels of income beyond the 5000 per capita GDP considered as the turning point, soil erosion, municipal solid waste, and urban air and water pollution have increased faster than GDP and population growth. The only positive development is the reduction in Carbon dioxide emissions per capita that have gone down thanks to the actions taken in Mexico City, far away from the border. “INEGI estimated that 10 percent of GDP from 1988 to 2002 — an average of more than \$50 billion per year — went down the drain (or up the stack, etc.). In other words, for every dollar that the Mexican economy grows, 10 cents is thrown away. In effect, environmental degradation is like an additional tax placed on the Mexican people, a tax that gives nothing in return. Wasting \$50 billion per year hurts a lot; given that close to half of Mexico’s 100 million people live on less than \$2 a day.

Then ... If liberalization is not a guarantee of growth, and countries with strong government intervention like China are growing faster it could be that growth is not the automatic response to for protecting the environment and reaching the famous turning point” (Gallaher, 2004). Government action is needed. At this point we have to ask if the NAAEC has strengthened or weakened the capacity of Mexican authorities and of the Mexican society at large, to protect its environment.

The second argument evolved around the supposition that Mexico was on the brink of became a safe heaven for polluting USA and Canadian industries which will move south of the border to take advantage of laxer Mexican regulations and country’s lower enforcement capacity. The argument has both protectionists, anti-trade elements as well as the interest on protecting the border zone from the effects of the “gray contamination”, that is the toxic emissions from industrial activities. Emissions do not respect frontiers and pollution originated in the Mexican side can fly to the north. Evidence does not support this argument. Polluting industries have not moved south. The reason being that the costs of implementing environmental regulations are small (less than two percent of sales), vis a vis the factors that determine comparative advantage. These costs do not affect the decisions of a firm about where, when and how much to invest. Besides, the costs of moving from one country to another are enormous and they growth with the size of the firm (Grether and de Melo 2004). Only “foot loose” companies are capable of moving more easily.

Mexico’s abundance of unskilled labour attracts manufacturing assembly plants mainly in auto car parts, electronics and electric machinery (Puyana y Romero, 2006). On average, the assembly fragments of these productive processes are less capital intensive and less pollution- intensive than more capital-laden manufacturing activities such as cement, pulp and paper, and base metals production, which are the sectors that have been contracting in Mexico, form that some authors have suggested that NAFTA had induced changes in industrial productive structure that is less polluting than during the ISI model Schatam et al 2005. Nevertheless these authors suggest that the assemble companies in the electronics sector have not introduce new, environmental friendly techniques that have being adopted elsewhere, due to the lack of security and stimuli for investing in innovation (Schatam et al 2005). It is more the high number of new maquila factories installed in the border zone than the technology they use, the cause of environmental damage, conclude Schatam et al, 2005.

The fast growth of maquila industries in the USA-Mexican border is producing tension upon resources affecting the environment. The maquila (the Mexican nick name of ensemble industries) sector has near 2000 plants along the border, while fewer than 500 in 1982 which employ over one million workers. The increase in production for exports is as large as the one in number of plants and jobs. There are evidences that "... Industrialization of the border has greatly increased the amount of hazardous waste being generated in the region, but tracking is woefully inadequate. Mexico does not keep an inventory of hazardous waste and, unlike the United States, Mexico does not have a law requiring industries to publicize basic environmental data on their operations", Mary E. Kelly,1999. Maquila producers had the obligation to return to the country of origin all waste. That obligation ended in 2001 as greed in NAFTA "According to data from the U.S. Environmental Protection Agency (EPA), only 91 of the 600 *maquiladoras* along the Texas-Mexico border have returned waste from Mexico through U.S. Customs ports since 1987. The GAO concludes that, although Mexico is trying to create a stronger waste-management program, the Mexican government does not know how many *maquiladoras* are generating hazardous waste, the amount of waste generated or the final disposition of that waste" Mary E. Kelly,1999. The hazardous waste generated by *maquiladoras* is usually disposed of illegally, dumped into the water supply or buried in the desert region of north-eastern Mexico.

In reference to agriculture, there are at least two effects of the changes in production induced by NAFTA: one is the more intense use of water due to the growth of the production of fruits and vegetables and the displacement of poor small producer to less fertile, dry lands. Mexican government does heavily subsidize water for agricultural and livestock production, which in effect constitutes a costly subsidy to USA consumers, Polasky, 2002.

Another negative effect of trade upon agriculture is the intensification of the use of pesticides and fertilizers. One percent increase in the use of pesticides in the USA for the cultivation of corn, results in 77,000 additional tons of nitrogenous, phosphorous and potassium. Since corn exports to Mexico have induced a 1 percent in USA production it can be concluded that these exports respond for a 1 percent increase in pollution, Ackerman, et al, 2003.

Two additional effects of the changes in the commercial flows in agricultural products are soil erosion and biodiversity impacts. The first resulting from the conversion to cropland of dry areas, the second effects is generated by the imports of GM products which contaminate the entire sector. A major negative environmental impact of expanding imports of US corn into Mexico is the menace against genetic diversity Nadal (2000).

### **The Institutions Of North American Agreement on Environmental Cooperation**

Binational Mexico- USA Cooperation on environmental matters on the border region is older than NAFTA and NAAEC

Cooperation between both governments on environment programmes formally began with the La Paz agreement in 1983 to protect, improve and conserve the environment of the border region, which was formulated to orient the U.S. Environmental Protection Agency (EPA) works with the counterparts in the Mexican government. In 1992, the environmental authorities of both governments released the Integrated Environmental Plan for the Mexican-U.S. Border Area (IBEP) and in October 1996 was launched the Border XXI Program that builds on the efforts of the IBEP and increases the scope to include environmental health and natural resources issues. This Border XXI program is an innovative binational effort which brings together the diverse U.S. and Mexican federal entities responsible for the border environment.

There are nine binational working groups developing cooperative activities. These are: Air, Water, Hazardous Waste, Pollution Prevention, Emergency Response, Environmental Health, Natural Resources, Environmental Information, and Cooperative Enforcement and Compliance Work Groups.

### **The institutional structure under NAAEC**

The North American Agreement on Environmental Cooperation (NAAEC), created several institutions responsible of the tasks of implemented the Agreement, to enforce the regulations and to stimulate cooperation on environment security mainly on the Mexican-USA border. For that purpose several organizations were established. Graph No. 10 shows the institutional structure responsible for the environment, at multiparty, binational and Mexican level.

#### ***A. Trinational – NAFTA - institutions***

1. *The North American Commission for Environmental Cooperation (CEC)*. Created to facilitate joint activities. The CCE, facilitates public access to environmental information, prepares reports and processes citizen submissions.

The CEC consists of

- a) A governing body, the Council of Ministers;
- b) A Secretariat that provides the Council with technical support; and a channel for NGO influence,
- c) The Joint Public Advisory Committee (JPAC).

2. *North American Fund for Environmental Cooperation (NAFEC)*. Provides funding to small communities for environmental projects

***B. Binational –Mexican-USA- institutions.***

Established in 1993 under an agreement between the U.S. and Mexico, were two institutions to help deal with the extensive environmental problems on the U.S.-Mexico border:

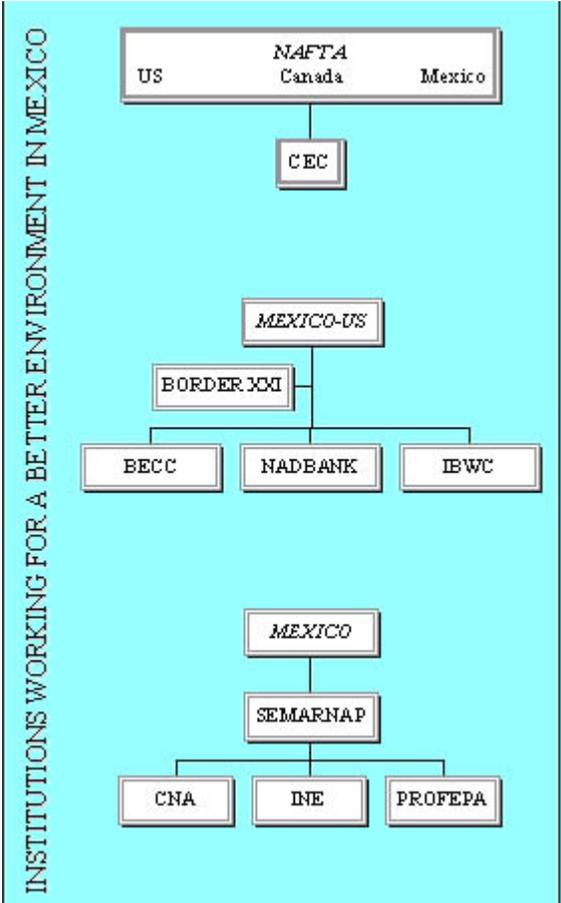
1) *The Border Environment Cooperation Commission (BECC)* is an autonomous which supports local communities and other project sponsors in developing and implementing environmental infrastructure projects related to the treatment of water and wastewater, and the management of municipal solid waste. As such, the BECC identifies, assists and certifies projects for financing consideration from the North American Development Bank (NADBANK) and other sources. Recognizing the limited ability of many communities to develop quality projects, EPA has granted \$10 million to the BECC for technical assistance for water-related projects in the U.S. and Mexico.

2) *The North American Development Bank (NADBANK)* is a sister institution to the BECC and was established to provide loans and loan guarantees to projects certified by the BECC. The NADBank is capitalized by funds from both the U.S. and Mexican governments and by charter must make its loans at market rates. To date, the NADBANK has been able to fund only six projects on the border although NADBANK is delivering institutional assistance to several other projects from the 21 that BECC has certified. In total, NADBANK is providing grant-funded technical assistance to almost 30 communities for eventual certification and financing. To improve affordability and financial viability of projects, EPA has established a cooperative agreement with the NADBANK for the

administration of \$170 million in EPA construction grant funds that can be used to structure loans in the U.S. or Mexico to help meet NADBANK charter requirements. In addition to the BECC and the NADBANK, there is another key bilateral environmental management agency, the long-standing International Water Boundary Commission (IBWC).

3) *The International Water Boundary Commission (IBWC)*, the IBWC focuses on water rights and infrastructure serving the border region. The commission plans, builds and operates several wastewater treatment plants on both sides of the border using grant money from the United States and Mexico. The IBWC has both a U.S. Section and a Mexican Section, each with its own Presidential appointed Commissioner.

**GRAPH NO 10**  
**ENVIRONMENTAL AUTHORITIES IN NAFTA**



Source: “Environmental issues in Mexico under NAFTA”, *NAFTA Forum Series*, <http://www.usmcoc.org/n10.html>

### ***C. Mexican National Environment Protection Agencies***

To implement the NAFTA and the NAAEC agreements President Zedillo reorganized Mexico's environmental agencies into a single, cabinet-level secretariat. During his administration the Six Year Plan was approved aiming to consolidate the centralization of the environmental authority, increased social participation in decision making and to enlarge the use of economic incentives. The new structure is as follows:

1) *The Secretariat of the Environment, Natural Resources, and Fisheries (SEMARNAP)* coordinates all the agencies responsible for implementing the country's sustainable development strategy.

2) *The National Ecology Institute (INE)* is responsible for developing and reviewing environmental policies and regulations and environmental impact statements, included hazardous waste.

3) *The National Water Commission (CNA)* develops water quality standards, regulates and charges for discharges to water bodies under federal jurisdiction (all rivers, coastal waters and most lakes)

4) *The Office of the Attorney General for Environmental Protection (PROFEPA)* is Mexico's primary enforcement agency and runs Mexico's environmental audit program.

### **Are NAFTA Governments Serious About Environment?**

Evaluations of the way institutions are working and the capabilities they have to fulfil the objective of the NAAEC vary from highly positive to pessimistic. Some Mexican experts agree on one topic: without NAAEC Mexican environmental policies and problems could be worse. For instance: the reforms introduced under Zedillo administration were radical thanks to the influence of NAAEC (Puyana, 2006b). The same is argued by Schatam et al, (2005). Other authors take a more sober stance: the NAAEC institutions do not have any power to enforce the agreement, they have not teeth, the founding is poor and contradictions emerging from different national priorities makes it almost impossible harmonious joint work. "Because all this the CEC The three-nation agreement has been systematically monitored by authorities, ONGS, and academics. The results of the evaluations are mixed about the relations between trade and environment but a clear picture

seems to emerge on the effectiveness of the programmes set up to prevent environment damage.

The NAAEC "... show signs of weakness amidst the overwhelming force of international commerce" (Cevallos, 2004) In Mexico's new economic model based on exports and FDI, the big multinationals dominate production and exports as well as finance system and internal trade. The NAAEC and the CEC "have not been able to contain the environmental damages caused by increased trade and the interests of big corporations," says Alejandro Calvillo, head of Greenpeace-Mexico, which was established in 1993 to monitor the potential impacts of regional free trade, Cevallos, 2004

The mission of the CEC is to prevent potential environmental conflicts emerging from trade relations and to monitor compliance with the NAAEC. Doubts about the seriousness of the governments to comply with the commitments agreed on environment arise when analyzing the budget of CEC.

**What are the results?** There may be several options to evaluate the impact of NAFTA on the environment. One of these is to look at the way institutions are working, are they adequately finance to address all problems that arise as integration progresses and trade growths.

One element to be consider are the ways in which the procedures to solve conflicts of interest. It looks that the process to solve complaints on environment, as everything else in NAFTA, are protracted, expensive, verdicts may or may not be enforced even if accepted by governments and in the case of USA, national laws prevail over the verdicts of the panels of experts or at the WTO deliberations.

For example, so far, the 67 claims filed cover issues related to biodiversity, unregulated logging, and contamination of water supplies, storage of toxic waste and the construction of environmentally harmful mega-projects, among others. Just nine of the claims have been finalized and made public, though three more are slated for dissemination in the near future. The rest of the cases, most of which were filed by organizations or people from Mexico, have been set aside due to failure to meet the formal requirements or because of decisions by the NAFTA members.

One of the NAAEC's provisions frequently criticized by environmental ONGs is the one that allows "the accused governments to state that certain denunciations will not be

processed or that the results of investigations will not be made public. Furthermore, the party filing the claim does not have the right to respond to the arguments used by the accused to defend itself from the charges, Cevallos 2004. As Greenpeace director Calvillo stated, the CEC has proved to be inefficient to fulfil the job and "...little remains of its strength", quoted in Cevallos, 2004. Gathering the proves implies expensive and troublesome procedures. Collecting the proves demands long work and time. The CEC has not sufficient administrative capacity to enforce resolutions (Puyana 2006a). Table No. shows the history of the process to solve conflicts.

It is important to emphasize one element on the settlement mechanism which goes against transparency: "...Meanwhile, the application of Chapter 11 on investor disputes has agitated many environmental groups. Basically, Chapter 11 provides a secret arbitration procedure when an investor claims that one of the NAFTA countries took an action that was "tantamount to expropriation"<sup>13</sup>, (Hufbauer, 2001). The effect of such a provision is to put hurdles on government actions to protect environment since any provision can be taken as "tantamount to expropriation" and it is very likely that the results will favour capital over environment ( Puyana, 2006 a).

**TABLE VI. Complaints presented at the CEC**

	Active (1)	Closed (2)	Cases concluded (3)	Total
Canada	6	12	4	22
Mexico	5	23	6	34
United Estates	2	8	1	11
<b>Total</b>	<b>13</b>	<b>43</b>	<b>11</b>	<b>67</b>

Fuente: <http://www.cec.org/citizen/status/index.cfm?varlan=espanol>

(1) Cases or petitions under scrutiny or on which the expedient is being prepared.

(2) Cases closed, not followed

(3) cases concluded

Source our calculations based on "Plan Operativo CCA, 2006-2008"

<sup>13</sup> Under this provision, some eight claims with environmental overtones have been lodged, totaling \$2 billion. So far, one case (Ethyl) was settled out of court for \$13 million; in one case (Desona) the arbitration decision went for Mexico; in one case (Metalclad) the arbitration went for the company with an award of \$17 million (the original claim was \$90 million). The award is now being challenged in Canadian court (the tribunal sat in Canada). The most controversial case, still under arbitration with a claim for \$1 billion, is Methanex (Canadian company vs. California)

Chart No 1 presents a good summary of the weakness and potentiality of NAAEC and its institutional architecture.

### CHART NO 1

Strengths	Weaknesses
Increased cooperation between NAFTA governments	Inadequate support of governments to NAFTA institutions
New Trilateral and binational environmental institutions	Poor funding and management of institutions
Specific projects for environmental improvement	Too many initiatives to be effective
Incentive for better environmental protection in Mexico	Increased trade puts pressure on existing infrastructure
Greater interaction between NGOs	Inefficiencies discourage NGO use of institutions
Economic integration increases harmonization effect	Investor-State disputes could chill environmental regulation
Improved access to environmental information	Overload of information and descriptive reports
Citizens have access to a complaint mechanism	Complaints take too long & do not assure corrective measures
Dispute settlement for persistent non-enforcement	Dispute mechanism design makes unlikely its use
Specific initiatives for the US-Mexico border	Insufficient to cope with environmental border problems

Source: Hufbauer , G.C., “NAFTA and the Environment: Lessons for Trade Policy”, in: [tp://www.cec.org/pubs\\_info\\_resources/databases/index.cfm?varlan=english](http://www.cec.org/pubs_info_resources/databases/index.cfm?varlan=english)

### **Financing the Protection of the Environment.**

While annual trade amongst Mexico, Canada and the United States has risen since 1993 to more than 720 billion dollars by 2005, the CEC's budget remains at two million dollars, financed by its member countries in three equal parts. In real terms, the CEC budget for 2004 was 2.2 million dollars less than in 2003 and in 2006. CEC's future is not bright because governments, especially USA government, want to further cut its funding and its power (Puyana, 2006a and 2006b). In average, the CEC has been allocated 2 million dollars a year, to finance its own administrative activities and projects on: environmental conservation; environment, economy, and trade; enforcement cooperation and environmental law; information and public outreach program; human health and the environment. Almost 50 percent of the budget goes to human health and the environment programmes. Around 18 percent the projects under the programme: conservation and to environment, trade and the economy. The very important programme related with information and public outreach activities gets only 3 percent. Since the NAAEC open the doors to actions taken by citizens, it is curious that this programme is so poorly budgeted.

### **Founding NADBANK.**

One of the most important elements for the implementation of the NAAEC was the creation of the North American Development Bank NADBANK. It was conceived to reduce the criticism that NAFTA was concerned with trade and too pro capital and that it failed to include something similar to the funds the European Union established to support less developed members and the sectors that will bear high adjustment costs. The North American Development Bank (NADB) and its sister institution, the Border Environment Cooperation Commission (BECC), were created to address environmental issues in the U.S.-Mexico border region. Both initiated operations in November 1993 with the signature of the Agreement between the Government of the United States of America and the Government of the United Mexican States Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank.

The programme of the bank was to finance sanitation and water projects for poor small communities within the border area. Those communities are poor and have not the financial capacity to repay the loans at commercial interest rates. During years the NADBANK was unable to reach its targets. The NADBANK was supposed to finance works for at least 10

billion dollars during the firsts 10 years of existence. To overcome difficulties the NADBANK chart was reformed in year 2000. The main change was to expand to 300 kilometres the border area. The amended Charter went into force on August 6, 2004. So far, the results are not very promising, as can be derived from the projects so far financed. Table No presents the summary of the NADBANK activity. Table VII

So far, projects for 2.3 billion dollars have been approved by the bank, compromising about seven hundred fifty million dollars of its capital. Far away from the target to finance up to one billion dollars a year. Almost one third of the approved projects are located in the USA border area. Since both the USA and Mexico pay equal sums of capital, see Attachment No 1, we have that Mexican government that is Mexican tax payers, is financing projects in the USA territory!

The most pressing environmental problems affecting Mexico are located far away from the USA border. Coastal regions of Michoacán, Guerrero and Chiapas are exposed to annual hurricanes, tempests and flows dumping thousand of families into misery and killing hundreds more every year. Industrial pollution, toxic emissions from obsolete auto mobile park affects the densely populated area of Mexico Distrito Federal the home city for over 20 million inhabitants. Mexico City suffers, as other large cities do, from chronic deficit of sewage and clean water. Large, very extensive parts of the Mexican territory are affected by intensive soil erosion and deforestation.

**TABLE VII. NORTH AMERICAN DEVELOPMENT BANK**  
**SUMMARY OF PROJECT FINANCING ACTIVITIES. June 30, 2006.**

	<b>Total Cost</b>	<b>Total NADB Funding</b>	<b>Participación fianaciamento NADB</b>
Poyectos en Estados Unidos	608.389.821	229.773.893	31%
Poyectos en México	1.642.727.732	519.969.149	69%
<b>Total</b>	<b>2.251.117.553</b>	<b>749.743.042</b>	<b>100%</b>

NADB Quarterly Project Report June 30, 2006.

[http://www.nadbank.org/english/publications/publications\\_frame.htm](http://www.nadbank.org/english/publications/publications_frame.htm)

## V CONCLUSIONS

The Mexican economy changed rapidly from the industrialization model led by the State, to the “outward growth” model based on exports and the multiplier effects of the external sector. The reforms were carried out by means of liberalizing capital investments and opening up trade. The effects of these reforms have not been entirely favourable in terms of economic growth, as measured by the Mexican per capita GDP, which has been virtually stagnant for the last two decades. So has been productivity and employment.

The evaluation of the effects of this commercial liberalization, should as in the case of any public economic policy take account of the net volume and quality of employment generated, the increase of productivity and income. The growth of exports, the control of inflation or the reduction of the national debt are not ends in themselves, they are ways, tools towards ensuring the greater wellbeing of the entire society. From this point of view, the results registered to date cannot be considered fully positive.

Long lasting overvaluation could be one of the mayor reasons behind the lack of strong positive linkages between the formidable expansion of manufactured exports and sectoral and overall economic growth.

There is no clear impact of growth on environment, in the sense predicted by the Lorenz Curve which predicts that growth alone will induce environment conservation. And there are northern clear linkages between NAFTA and faster Mexican economic growth. In fact Mexican economy has rather stagnated since the eighties and when growth periods have been registered the trickle down effect has failed to appear. Employment did not expand and poverty did not fade out.

The funding of the programmes is insufficient and diminishing, suggesting that the political will is residing. The NADBANK has lagged behind targets due to inadequacy of the rules for financing projects and because of the rather limited of the geographical scope of it mandate reduced to only 300 kilometres each side of the frontier. Mexico is supporting projects financed on the USA area.

The increases in the maquila activity and the intensification of road traffic have induced negative effects on the environment. Those two factors have intensified air pollution and unsafe hazardous waste

Coordination amongst the different institutions at trilateral, national and binational levels has proved to be troublesome due to different national priorities and different financial capacities.

The CEC has commended a giant number of highly technical studies; nevertheless, more analysis is needed on the relation amongst economic growth and environment.

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