Trade Liberalization in Mexico: Some Macroeconomic and Sectoral Impacts and the Implications for Macroeconomic Policy[1]

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TRADE LIBERALIZATION IN MEXICO: SOME MACROECONOMIC AND SECTORAL IMPACTS AND THE IMPLICATIONS FOR MACROECONOMIC POLICY

(Draft only for discussion)

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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 as a consequence 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.

Starting in December 1982, with Miguel De La Madrid's administration, Mexico gradually abandoned the import substitution model adopted since 1940, and started to liberalize the economy, and dismantle the "industrialization lead by the state model" in the more adequate terms proposed by Ocampo et al 2000. The economic role of the government was reduced by selling off most public enterprises, deregulating many aspects of the economy, such as transportation, telecommunications, banks, financial institutions, and practaically all productive state enterprises but Petróleos Mexicanos and the Comisión Federal de Electricidad and severely reducing government spending. The process also included opening up the country to foreign capital flows and the elimination of most trade barriers.

Great national economic instability has been the frame in which the state implemented the reforms and adopted the new development model. In effect 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. These episodes have defined the speed of introduction and the nature of the instruments of economic policy favoring a free market, whose results in terms of economic growth are far from those hoped for.

This work consists of an analytical effort to explore the impact of trade reforms on the performance of the Mexican economy. In order to meet its objectives this work has been organized in the following manner: Second section considers the policies adopted to manage the exchange rate and the long term tendency to engineer an appreciation of the Mexican peso, as a tool to control inflation. Foreign trade policy changes are analyzed in

section three and the effects of such changes presented in section four. Section five concludes the paper.

II Opening Up The Economy To Foreign Concurrency

Between 1983 and 1984 the Mexican authorities started to dismantle the protection afforded to its industry. During those two years, 16.5 per cent of imports were excluded from import permits, and the average tariff rate was reduced to 22 Per cent. On Abril 22, 1985 México signed a Bilateral Trade Agreement with the United States (USA): "Entendimiento entre los EUA y México sobre Subsidios y Derechos Compensatorios". 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.

The results in terms of international trade were remarkable. From 1980 to 2000 exports grew at an average rate of 7.9 per cent a year; 2 per cent more than in the 1940-1982 period. This result was achieved despite the fact that the value of mining and oil exports shrank considerably during this 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

Año	**Total Exports**	Exports Maquila	Non maquila exports	**Total Imports**	Imports Maquila	No Maquila Imports	**Net value added Contributed by maquila**
1980	**7.36**	1.03	6.33	**8.95**	0.74	8.21	**0.29**
1981	**7.88**	1.08	6.8	**9.53**	0.78	8.74	**0.3**
1982	**17.77**	2.09	15.68	**11.98**	4.91	7.07	**-2.82**
1983	**18.61**	2.61	16	**7.41**	1.77	5.64	**0.84**
1984	**16.76**	2.82	13.94	**8.26**	1.95	6.32	**0.87**
1985	**18.04**	3.43	14.61	**11.75**	2.45	9.3	**0.98**
1990	**15.5**	5.3	10.2	**15.8**	3.9	11.9	**1.4**
1991	**13.6**	5	8.5	**15.9**	3.7	12.2	**1.3**
1992	**12.7**	5.1	7.6	**17.1**	3.8	13.3	**1.3**
1993	**12.9**	5.4	7.5	**16.3**	4.1	12.2	**1.3**
1994	**14.4**	6.2	8.2	**18.7**	4.8	13.9	**1.4**
1995	**26.8**	10.5	16.3	**24.3**	8.8	15.5	**1.7**
1996	**28.9**	11.1	17.8	**26.9**	9.2	17.7	**1.9**
1997	**27.5**	11.3	16.3	**27.44**	9.1	18.34	**2.2**
1998	**27.9**	12.6	15.3	**29.7**	10.1	19.6	**2.5**
1999	**28.2**	13.2	15	**29.4**	10.4	19	**2.8**
2000	**28.2**	13	15.2	**29.2**	10.2	19	**2.8**
2001	**27.5**	13.32	14.18	**29.8**	10.19	19.61	**3.13**
2002	**26.8**	13	13.8	**28.7**	10.09	18.61	**2.91**
2003	**27.9**	13.12	14.78	**29.5**	10.22	19.28	**2.9**
2004p	**29.04**	13.48	15.56	**30.32**	10.52	19.8	**2.96**

Cálculos propios. 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 2000, Table IA.

Table IA
COMPOSITION OF EXPORTS
(Percentage)

	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003
Agriculture	9.9	6.5	8.1	5.1	4.2	3.5	3.2	2.9	2.5	2.5	2.4	2.8
Manufacture	23.0	29.7	56.0	84.9	94.4	86.7	90.9	90.1	88.0	89.7	89.1	86.5
Mining and oil	64.2	63.8	35.8	10.1	13.0	9.9	5.9	5.5	9.3	7.6	8.4	10.5

Source: Nacional Financiera (1990), La Economía Mexicana en Cifras, 11 edición;
Presidencia de la República, Informe de Gobierno, Several years.

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 V). 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).

As Table II shows, the FTAs with some ALADI and Central American countries have not contributed to an increase in the share of those regions in the Mexican market.

TABLE II.
STRUCTURE OF MEXICAN IMPORTS

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TOTAL	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
NAFTA	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%
ALADI	3.30%	3.30%	2.00%	1.90%	2.10%	2.00%	2.00%	2.24%	2.73%	3.21%	3.78%
Central America	0.20%	0.20%	0.10%	0.20%	0.20%	0.20%	0.20%	0.19%	0.21%	0.37%	0.51%
European Union	11.90%	11.40%	9.30%	8.70%	9.00%	9.30%	9.00%	8.62%	9.69%	9.86%	10.56%
EFTA	0.80%	0.70%	0.60%	0.50%	0.60%	0.50%	0.50%	0.49%	0.54%	0.52%	0.54%
NICS	3.40%	3.50%	3.00%	2.90%	3.30%	3.30%	3.70%	3.96%	4.89%	6.08%	4.98%
Japan	6.00%	6.00%	5.50%	4.60%	3.90%	3.60%	3.60%	3.71%	4.80%	5.54%	4.45%
China	0.60%	0.60%	0.70%	0.80%	1.10%	1.30%	1.40%	1.65%	2.39%	3.72%	5.51%
Rest of the world	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): Ireland, Norway and Switzerland.
NICS: 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
TOTAL	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
NAFTA	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%
ALADI	3.10%	2.60%	3.60%	3.60%	3.40%	2.50%	1.60%	1.54%	1.71%	1.68%	1.56%
Central America	1.00%	0.90%	0.90%	0.90%	1.00%	1.10%	1.00%	0.80%	0.91%	0.92%	0.91%
European Union	5.40%	4.60%	4.20%	3.70%	3.60%	3.30%	3.80%	3.37%	3.37%	3.47%	3.68%
EFTA	0.30%	0.30%	0.80%	0.40%	0.30%	0.20%	0.30%	0.35%	0.29%	0.11%	0.07%
NICS	0.50%	0.50%	1.00%	0.90%	0.70%	0.70%	0.70%	0.43%	0.53%	0.46%	0.41%
Japan	1.30%	1.60%	1.20%	1.50%	1.00%	0.70%	0.60%	0.56%	0.39%	0.74%	0.71%
China	0.10%	0.10%	0.00%	0.00%	0.00%	0.10%	0.10%	0.12%	0.18%	0.41%	0.59%
Rest of the world	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.
NICS: 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 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 that gained most of the growing Mexican import market, are countries with which Mexico has no FTA. 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 ten-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 signficant 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, and in terms of commerce, investments, and migration, it was already intense when NAFTA commenced.

Second, tariff protection levels, from which preferences were granted, were considerably low. At the time of signing the agreement, the average Mexican tariff was 10 percent, and US tariff was around 2.1 percent (Clinton 1997). Almost half of Mexican exports entered under the GSP program, whose major beneficiary was Mexico. Another important fraction was geared towards the *Maquila*s. The rest was subject to a 4 percent tariff (Clinton 1997). 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. When it comes to agriculture, quotas and restrictions on trade were maintained, and a longer liberalization period was agreed upon.

Fourth, in the case of investments, it is possible that 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:

- achieving more secure access to the US market;
- using trade agreements to underpin domestic policy reform;
- attracting foreign investments;
- securing faster and sustained rates of economic growth;
- granting access to a procedure for settling disputes agreed to by consensus; and
- 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 (Brour 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, in

terms of the GDP growth benefits from NAFTA were expected to near 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 be relegated (?). 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

The evolution of some macroeconomic variables

*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).

*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.

TABLE V.
MEXICO: Distribution of exports and imports by markets of origin and destination.
1994, 1998 Y 2001.

MARKETS	IMPORTS			EXPORTS			TOTAL TRADE		
	MILLIONS $U.S.			MILLIONS $U.S.			MILLION $U.S.		
	1994	1998	2001	1994	1998	2001	1994	1998	2001
----WORLD----	79,345	125,242	168,276	60,817	117,442	158,547	140,162	242,684	326,823
TRADE AREAS									
NAFTA	71.2	76.2	70.1	87.4	88.9	90.5	78.2	82.3	80.0
-Union Europea-15-	11.4	9.4	9.6	4.6	3.3	3.4	8.5	6.4	6.6
-EFTA-	1.1	0.8	0.9	0.7	0.4	0.5	0.9	0.6	0.7
-ALADI-	3.3	2.0	2.8	2.6	2.5	1.8	3.0	2.3	2.3
Central Am. C. Market	0.2	0.2	0.2	0.9	1.1	0.9	0.5	0.6	0.6
PARTNER COUNTRIES									
USA	69.1	74.3	67.5	84.9	87.6	88.5	76.0	80.7	77.7
CANADA	2.0	1.8	2.5	2.4	1.3	1.9	2.2	1.6	2.2
GERMANY	3.9	3.6	3.6	0.6	1.0	0.9	2.5	2.4	2.3
JAPAN	6.0	3.6	4.8	1.6	0.7	0.4	4.1	2.2	2.7
SPAIN	1.7	1.0	1.1	1.4	0.6	0.8	1.6	0.8	0.9
U. KINGDOM	0.9	0.8	0.8	0.4	0.5	0.4	0.7	0.7	0.6
FRANCE	1.9	1.1	0.9	0.9	0.3	0.2	1.5	0.8	0.6
HOLAND	0.3	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.3
SWTIZERLAND	0.6	0.5	0.5	0.3	0.2	0.3	0.5	0.3	0.4
BELGIUM	0.4	0.3	0.4	0.4	0.2	0.2	0.4	0.2	0.3
NORWAY	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
ISLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LIECHTENSTEIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HONG KONG	0.4	0.2	0.3	0.3	0.2	0.1	0.3	0.2	0.2
ITALY	1.3	1.3	1.2	0.1	0.2	0.2	0.8	0.7	0.7
CHINA	0.6	1.3	2.4	0.1	0.1	0.2	0.4	0.7	1.3
THAILAND	0.3	0.3	0.4	0.0	0.1	0.0	0.2	0.2	0.2
S. KOREA	1.2	1.5	2.1	0.1	0.1	0.2	0.7	0.8	1.2
TAIWAN	1.3	1.2	1.8	0.0	0.0	0.1	0.8	0.6	1.0
MALASIA	0.6	0.7	1.2	0.0	0.0	0.0	0.3	0.4	0.6

Own calculations based on Banco de México: *Bancomext (2002) World Trade Altas 1993-2000, CD versión.*

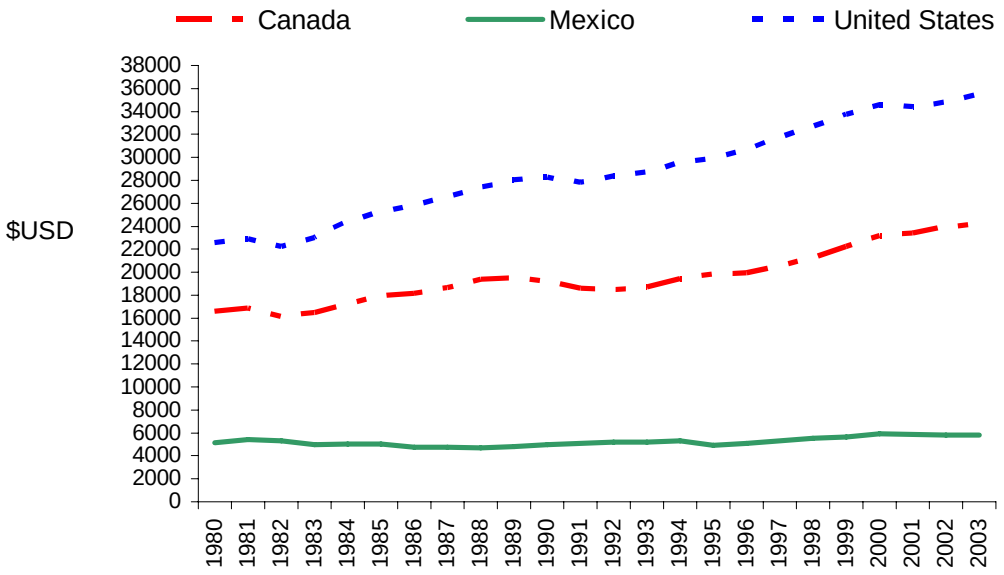
¿Is convergence taking place? One of the explicit arguments in favor of NAFTA frequently presented to public opinion on both sides of the border was that, by freeing trade and investments, Mexico would achieve faster economic growth. This would result in economic convergence between the two economies, 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.

To analyse the path of the member countries' GDP per capita, we first have to measure the sigma convergence for the 1930 – 2000 period, combining Madisson's data (1998) for the 1930–1986 period with our own calculations to complete the series up to the year 2000, all of them based on the World Bank's World Development Indicators (2002). After having

found positive values of sigma convergence, that is, detecting divergence over a 56-year period of time, Graph I indicates the GDP per capita trajectory for all three NAFTA member countries. 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.

Graph II. Per capita GDP of NAFTA Countries (constant USDollars 2000)

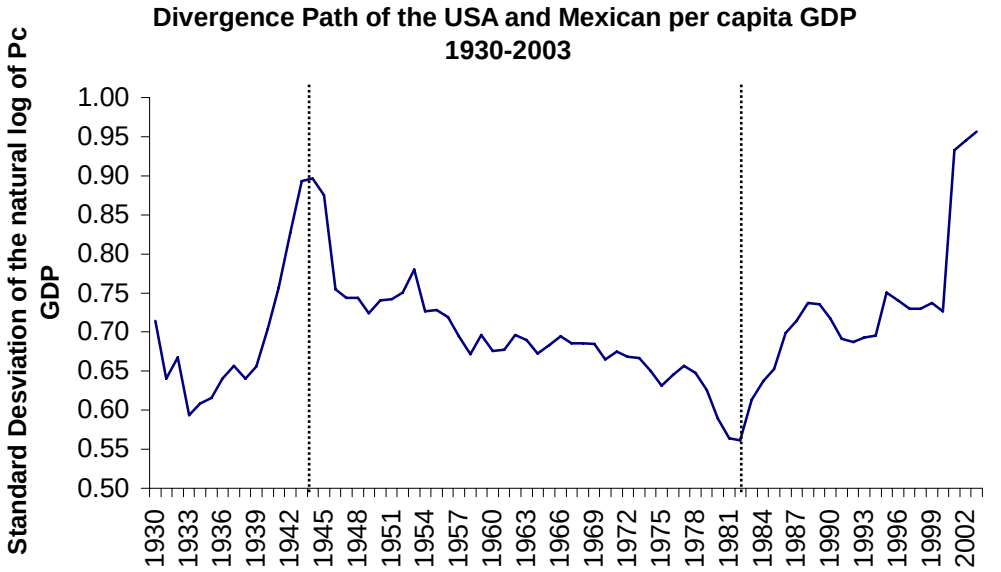


Source: *World Bank, World Development Indicators, 2005 CDR*

As previously settled, sigma convergence is indicative of the speed of convergence or divergence of per capita incomes. Graph 3 presents the sigma convergence for the 1930–2000 period of time; that is, the trajectory of the standard deviation of the natural logarithms of the GDP per capita belonging to the three countries. It is possible to distinguish three periods: (i) 1930–44, when the prevalent trend was the augmentation of dispersion. During these years, the entire world was undergoing deep perturbations related to the 1929 crisis and the Second World War. (ii) 1945–1982, which includes the post-War reconstruction years in the Japanese and European economies, and was the period when the world economy grew like never before, making it the "golden age of Capitalism", (Scott, 1991). These have been the only years when the value of the standard deviation was negative, that is, the expansion of these three economies was such that by 1982, they reached a point where the distance separating them was the smallest ever registered. (iii) 1982–200, which 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 seven years after NAFTA and the privatization process had been set in motion. During these years, the standard deviation increased, and the three economies grew distant from each other. Neither the export push nor the NAFTA effects could change the sign of this trend.

GRAPH III



Source: Puyana & Romero's calculation based on Madison (1999) & World Bank

B

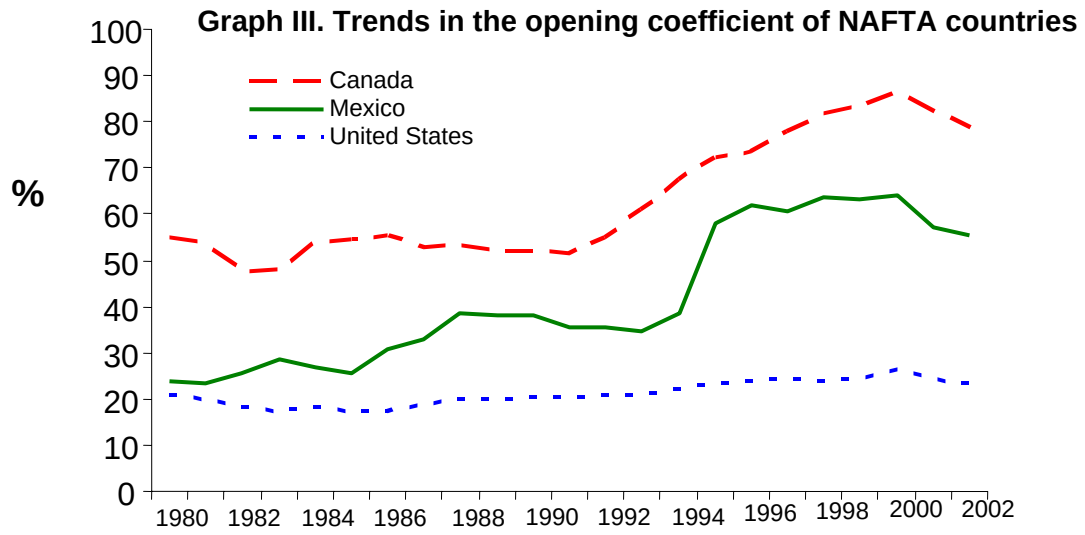
Based on this exercise, it is possible to assert that convergence was shown exclusively during the period of fast growth of these economies. This process took place throughout a stage marked by the second post-war reconstruction, when the world order was kept relatively closed (Promfett, 1999); most of the developing countries, including those of Latin America, were implementing with varying degree of emphasis, policies of import substitution (Krugman 2002); and there was convergence between the Southeast Asian countries and developed countries, when the former still adopted the most essential elements of their interventionist economic model (Rodrik, 2003). Among NAFTA members, convergence slowed down and started reversing in 1982, the year when the three countries, specially Mexico, liberalized their economies. This turnaround in the course of events did not restrain the widening of the gap, and the results looked as if they could

coincide with Quah's conclusions (1995) relating to the European Union, –in the sense that growth and convergence precede the opening, and growth cannot accelerate convergence.

To make a deeper analysis of NAFTA convergence, due to the emphasis on opening when designing policies, 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. Our results reinforce the previous conclusions about the widening of the gap between NAFTA member countries, specially between Mexico and the United States, between 1982 and 2000. For NAFTA countries, and particularly for Mexico, we found a very small or a non-existent correlation between the extent of openness and GDP growth. To come to this conclusion, we took as a measure of openness the external coefficient as a ratio of GDP. Successful liberalization of trade policies would presumably result in an increase in the coefficient of imports and exports to GDP. It can be assumed that lower import tariffs and export taxes would reduce the domestic prices of importable goods and exportable goods. Since the external coefficient of an economy is inversely associated with differences in relative prices (the ratio of local prices of importables to exportables), the more open an economy (i.e. the lower the level of import substitution), 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.

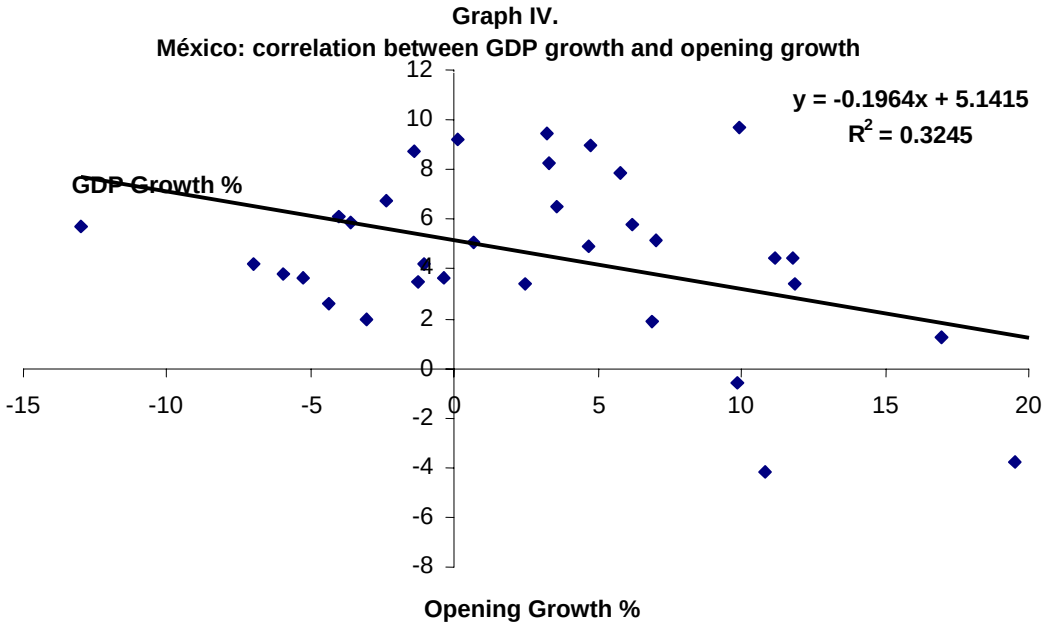
In principle, if the export sector is characterized by higher productivity than the rest of the economy, then, in those countries that reallocate resources towards exports, the export-GDP ratio should increase and these economies should grow faster. By closely linking domestic prices to international 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 these economies have practically been completed, economic growth is lower and erratic.

We will start out by mentioning that the American economy is less open than the Canadian and the Mexican (Graph III). This statement, however, does not imply that the American economy is more protected by tariff or non-tariff barriers. It only suggests that the American domestic market is wider, that Americans export a lesser amount of products, and that the external content of their economy is smaller, –due to higher productivity, among other factors.



Source: *World Bank, World Development Indicators, 2005 CDR*

It is possible to detect a negative correlation between the high growth of the external coefficient relative to GDP in Mexico, and the expansion rate of its economy. Graph IV presents the two-variable value of simple correlation results from 1960 to 2000. 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. The interesting, and therefore worrying, aspect is that we did obtain a positive and significant correlation between the two variables in the Canadian case, and we actually observed 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).



Sectoral effects of the reforms

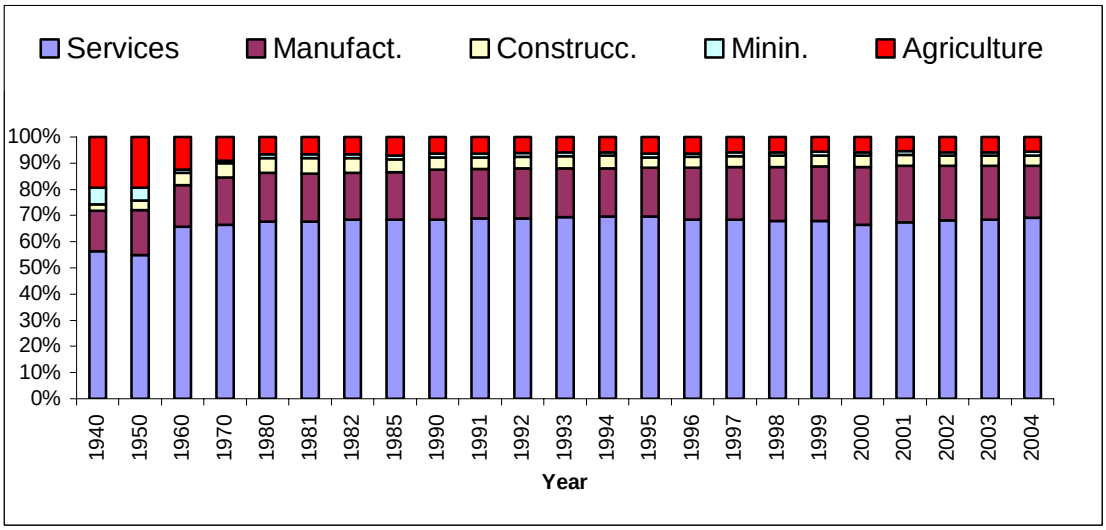
The evolution of the Mexican manufacturing sector

Contrary to what was expected in theory, so far, there are no marked changes in the structure of the Mexican economy. As presented in Graph V, the production of the tradable sectors has stagnated as a source of GDP, as has employment. The explanations are several. It has been suggested that the contribution to GDP of the Mexican tradable sectors, agriculture and livestock and manufacturing, corresponds to the country's level of development. We argue that there has been a premature decline in their contribution, since it does not correspond to the normal transformation that characterizes the development process and that it is a symptom of 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[2]. We calculate—on the basis of the Chenery-Syrquin norm[3] that with Mexico's current per capita GDP,

[2] Inocme from illegal traffic of drugs or arms can induced similar effects,
[3]Chenery and Syrquin, (1986).

agriculture ought to contribute between 12 and 15 per cent of total GDP and manufacturing nearly 30 per cent (Romero and Puyana 2004b).

GRAPH V

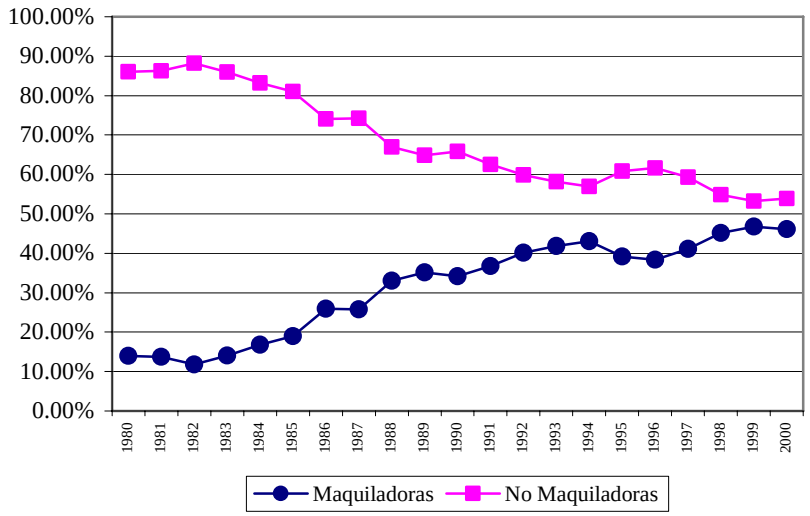


In the case of agriculture, the speed of liberalization, the urban bias, still evident in Mexican economic policies, the chronic deficit in public spending and the distortion of international agricultural prices induced by the developed countries' support policies, all help to explain this trend.

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 trade agreements, especially NAFTA, in increasing the weight of manufacturing in the total GDP and employment. As can be seen in Graph VI the share of the *maquilas* in total exports increased from 14 per cent in 1980 to 46 per cent in the year 2000. *Maquila* and the PITEX (a program similar to *Maquila)* accounted for as much as 87 per cent of total manufactured exports from Mexico.

Graph VI

CHANGE IN THE STRUCTURE OF MEXICAN EXPORTS 1980-2000



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

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. For the *maquilas* to achieve sustainable growth they should have increased productivity above that of their competitors and kept costs lower than theirs. 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 margin for increasing productivity. In view of this, the impact that the *maquila* has had on the national economy has been less than was expected and seems to suggest that this form of industrialization does not necessarily 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. (Puyana and Romero: 2005b). By the end of 2000, the contribution of the *maquila* to the Mexican GDP was slightly above 1.58 per cent, which corresponds to an advance of 0.04 percentage points of the GDP since it was first established in the late 60s.

After 1994 there was a significant growth in this share, which then dropped and still has not recovered. This minimal contribution to the national value added shows that the integration of the value chain is limited and that the links between the non-*maquila* industry and the *maquila* is not increasing either. 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 contributiom of the manufacturing sector to the generation of GDP, as shown in Table 10. In fact, the relation between the growth of *maquila* exports and the increased share of manufacturing production in GDP is very low (one percent of the 0.08 per cent growth of the latter). The policies stimulating the *maquila* and the PITEX programmes prevented the creation of the linkages that were expected. The *maquilas* had to import all their components and, up to 2001, were forced to export the whole of their production, as a measure of protection for national industry. They could not supply the demand for imports from mexican *maquilas*. Additionally, *maquilas* were not allowed to meet the domestic demand for their products originating from industrial national plants (Puyana & Romero, 2005). The reforms introduced by NAFTA eliminated these restrictions (and created others). Today the *maquila* has to conform to national regulations as well as those of NAFTA.

In Table 6 some variables relating to the performance of *maquila* and non-*maquila* manufacturing are shown. The difference in growth of the *maquila* is evident in nearly all the variables, particularly in the number of jobs created:, which rose from 300,000 in 1988 to one million three hundred thousand in 2000, as well as in remuneration. The difference is less in value added and productivity. There were periods in which the *maquila e*xperienced extensive growth, with a greater increase in employment than in value added and, on occasion, even the average wages outstripped productivity, suggesting that there were certain rigidities in the labor market. At that time, the period 1988-2000, employment in non-*maquila* manufacturing showed a substantially lower increase (33 percent), so that total employment in manufacturing remained unchanged. However, average remuneration in the *maquila* increased by 13.7 percent over the period, or almost double that of the other manufacturing sector.

TABLE VI

TABLA 6.
MÉXICO: TENDENCIES IN Mexican EXPORTING MANUFACTURES: MAQUILA AND NO MAQUILA

	NO MAQ.	MAQUILA	NO MAQ.	MAQUILA	NO MAQ.	MAQUILA	NO MAQ.	MAQUILA	NO MAQ.	MAQUILA
YEARSAños	EMPLOYEES		WAGES		VALUE ADDED		Average Wages		Average Productivity	
	Millions persons		Millions 1993 pesos				000 pesos of 1993 per worker			
	TOTAL									
1988	3.03	0.37	61575	6072	178416	7562	20.29	16.43	58.79	20.47
1993	3.31	0.53	79694	9324	219934	11529	24.08	17.72	66.45	21.90
1995	3.07	0.62	66625	10781	217582	14174	21.73	17.33	70.95	22.79
1999	3.91	1.14	80482	19736	296631	24243	20.58	17.26	75.85	21.20
2000	4.10	1.29	89853	24021	317092	27481	21.90	18.69	77.30	21.39
	AUTOMOTRÍZ									
1988	0.27	0.07	7032	1360	16416	1746	26.26	18.50	61.31	23.75
1993	0.35	0.10	9828	2059	25417	2686	28.24	19.93	73.03	26.01
1995	0.32	0.12	7983	2390	23000	3199	24.73	19.79	71.25	26.49
1999	0.46	0.19	11207	3936	40408	5005	24.27	20.27	87.52	25.77
2000	0.50	0.22	13114	4688	47401	5469	26.18	21.72	94.62	25.33
	ELECTRICO Y ELECTRONICO									
1988	0.25	0.13	4999	2291	8763	2843	19.72	18.10	34.56	22.46
1993	0.29	0.16	6478	3015	11372	3670	22.16	19.32	38.90	23.51
1995	0.31	0.19	6443	3569	12401	4574	21.11	18.83	40.63	24.13
1999	0.49	0.33	10180	6633	23550	7787	20.66	19.97	47.79	23.44
2000	0.57	0.39	12434	8366	27737	9297	22.00	21.57	49.08	23.97
	VESTIDO									
1988	0.22	0.03	2393	296	6091	387	10.98	9.58	27.94	12.51
1993	0.23	0.05	2902	538	7393	698	12.59	10.60	32.06	13.75
1995	0.23	0.08	2450	812	7103	1156	10.52	10.07	30.49	14.33
1999	0.39	0.22	3928	2243	9912	2961	9.96	10.09	25.14	13.33
2000	0.42	0.25	4638	2728	10395	3386	10.96	10.94	24.57	13.58

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.

The growth of employment in *maquila* manufacturing would induce three principal effects.

1.- It would create jobs that, in the case of the demand for unskilled labor not specific to manufacturing, would have been filled by the unemployed or persons linked to informal activities with inferior productivity and lower incomes.

2.- Or, it would absorb the surplus labor coming from the agricultural sector, or have a "vent of surplus" effect (Lewis, *date?*), with net gains for the economy, since it relocates the redundant labor force to more productive activities. If the size of the demand for labor had not upset the balance of the market, there would not have been any noticeable increase in wages, although there would be in the total productivity of the economy and the share that the manufacturing sector held in overall employment and GDP.

3.- M*aquila* absorbed part of the labor 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

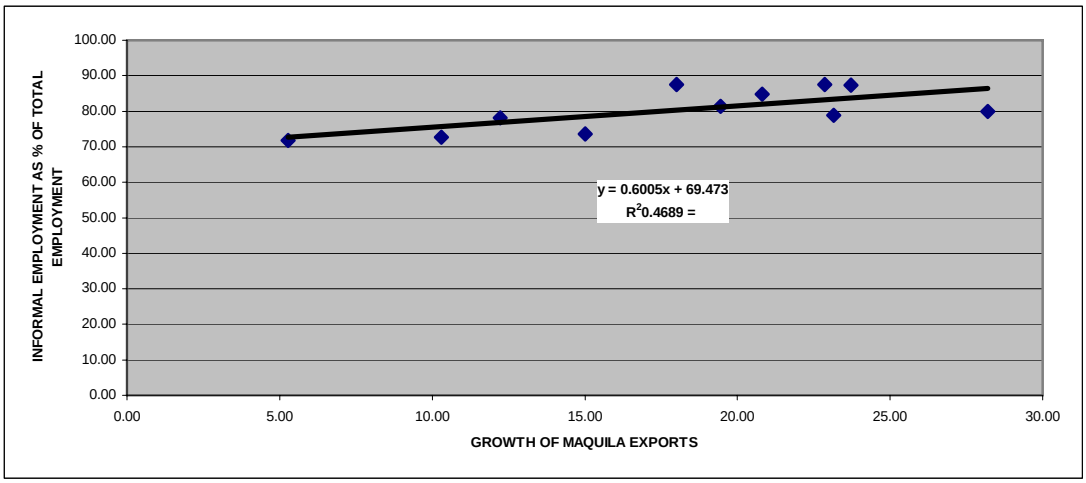
more skilled type of labor, at lower wages and in jobs that requiring less demanding technical skills, and not form the informal or the rural sectors. The *maquila* could absorb this labor force without increasing wages. This is the most probable path.

These suppositions are based on the weak relation between the growth of *maquila* exports, employment in manufacturing and real average wages in the manufacturing sector.

On the other hand, a significant, direct connection can be found between growth of *maquila* exports and informal employment, in the sense that the growth of *maquila* exports did not reverse the or reduced the increase in the weight of informal employment. Graph No. VII. Neither did enlarged the participation of manufactures in total employment, Graph No. VIII

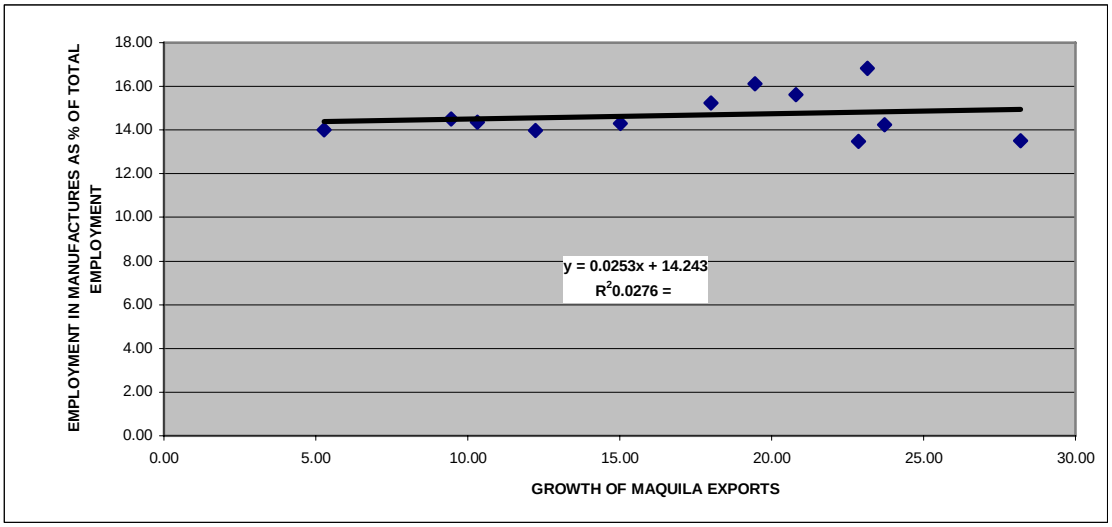
GRAPH VII

Mexico: Correlation between the Rates of Growth Of Maquila Exports And The Share Of Informal Employment In Total Occupation



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

GRAPH VIII
Mexico: Correlation between the rate of change of maquila exports and the share of amnufacture employment in total national occupation. 10990-2000



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

A direct relation was found between the rate of growth of maquila employment and the share of informal employment in total national employment, suggesting that the first did not change the observed expansion of the later. See ANNEX Graph I

As we have explained, wages can increase as a result of sustained gains in productivity. From the facts in Table VI and the foregoing analyses it is possible to suggest that the growth in productivity in the maquila was limited and very much 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. This result contrasts with the significantly positive relation of the non-maquila exports to its productivity, explicable because of the effort made to increase non-maquila productivity in order to face the pressure of competition, as suggested by Puyana and Romero (2005b). as illustrated in ANNEX Graph II, the productivity gap between maquila and non maquila sectors has widened. The comparison of these two tendencies could support the supposition

regarding the movement of factors from manufactures to maquila, thar is to less productive activities, with less value added per worker.

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 more value added, without an increase of the share of labor costs either in total value added or in the total labour cost per unit of produce.

One of the comparative advantages of a country that attracts manufacturing activities characterized by the fragmentation of the productive process into several components that can be undertaken in different locations is the ratio of remuneration to productivity. Low wages are neither the only incentive nor the more important. 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. And with low productivity wages had to be contained in order to face international competition. The abundance of work and the evolution of employment in manufacturing allowed this. We found that the relation between the growth in sales of the *maquila* and of the average remunerations of the non-*maquila* manufacturing sector is negative (and very feeble of the *maquilasector)*, Annex Graph II and Puyana and Romero (2005 c). This partially explains the low impact that maquila 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. See Table VII.

Table VII

MEXICAN NON OIL PERFORMED BY COMPANIES WITH FOREIGN DIRECT INVESTMENTS

	1993	1994	1995	1996	1997	1998	1999	2000
Non oil	58.0%	62.2%	62.2%	65.6%	65.2%	64.5%	61.0%	61.3%
Agricultura	4.5%	8.2%	11.0%	15.0%	17.8%	15.0%	14.4%	15.2%
Mining	44.8%	31.4%	40.4%	47.8%	45.0%	39.6%	39.9%	36.0%
Manufactures	62.6%	66.3%	66.4%	68.7%	67.9%	66.8%	63.1%	63.3%
Maquila	69.0%	72.5%	73.7%	73.4%	71.6%	69.9%	66.2%	60.9%
No-Maquila	55.5%	59.5%	60.0%	64.7%	64.5%	63.8%	59.7%	66.3%

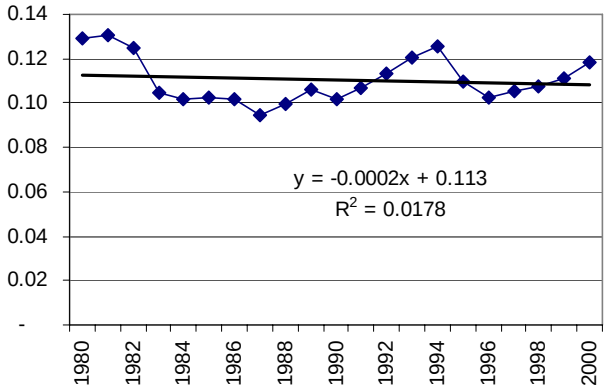
Fuente: Own calculations base on information provided by the banco de México

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 IX 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 IX

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**.**

The fluctuations in real wages during the period 1980-2000 were related to the real rate of exchange. During 1980 and 1982 the peso was over valued and it raised the real wages. The debt crisis in 1982, put an end to this real gain in wages. 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 peso remained undervalued until 1988. After that date, an overvalued rate of exchange was favored, as a mechanism for stabilizing prices, but implying lower domestic production. The results are obvious: lack of stimuli for the production of tradable, especially the labor intensive products and other national primary products, recourse to informal low productivity activities, unemployment and an increase in the volume of imports in the GDP. Once again, this policy ended dramatically with the exchange crisis of 1994. The response to the crisis was the real devaluation of the peso during 1995-1996 and the fall in real wages. One again, between 1997 and 2000 (and continuing into 2003) 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 VIII, 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 VIII

REAL AVERAGE WAGES BY TYPE OF WORK

(Thousands of 1990 pesos)

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

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.[4]

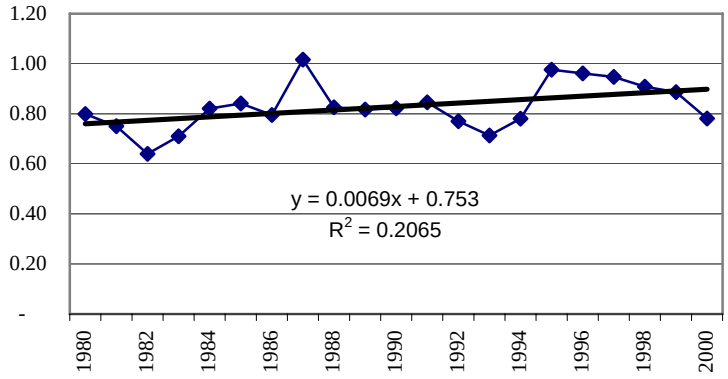
Labor without any social benefits increased in recent years, rising from 61 per cent of the active population in the year 1991 to 63 per cent in 2000. According to the employment surveys, the percentage of the labor force that does not receive any income, or receives only twice the minimum wage accounted for 66 per cent and 65 per cent of the work force in the years 1991 and 1997, respectively.[5]

In contrast with the tendency to stagnation of real wages in the last twenty years, remuneration from capital investment shows a slight upward trend (statistically significant), during this period, see Graph X

GRAPH NO. X
EVOLUTION OF REAL RETRIBUTIONS ON CAPITAL*
(Thousands of pesos 1980)

[4] Ibid. p. 455

[5] 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).



*Median average of: Gross surplus of exploitation between capital assets, deflated by the consumer price index
Source: INEGI (National Institute for Statistics, Geography and Data), System of National Accounts, Mexico 2000.
Survey of Assets, Depreciation and Accumulation of Capital of the Banco de México, 1980-1995; as well as personal estimates.

The levels of labor productivity and the rates of growth of total factor productivity

Faster growth of productivity was another effect the reforms and the liberalization of trade regimes were supposed to deliver. Figures I.1 and I.2 present two versions of the relationship between trade and productivity. In Figure I.1 we show the log of the levels of annual average labor productivity and the log of the level of real exports (both series for the Mexican manufacturing sector, 2 digits SIC) for the 1989-2000 period. In Figure II.2 we show the annual rate of growth of total labor productivity (TFP) and the annual real rate of growth of exports (also for 2 digit SIC, manufacturing industries) for the 1989-2000 period.

GRAPH XI

Figure 1
EXPORTS AND LABOR PRODUCTIVITY IN MEXICAN MANUFACTURING
1989-2000

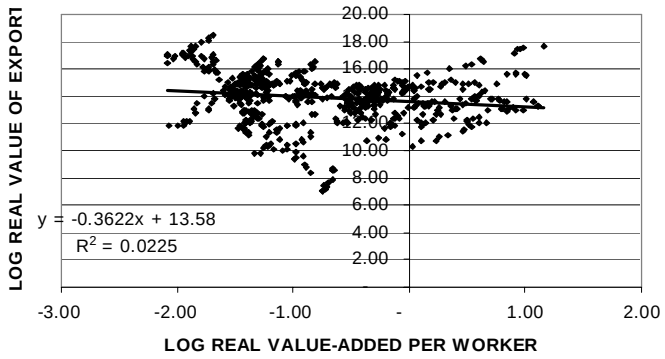
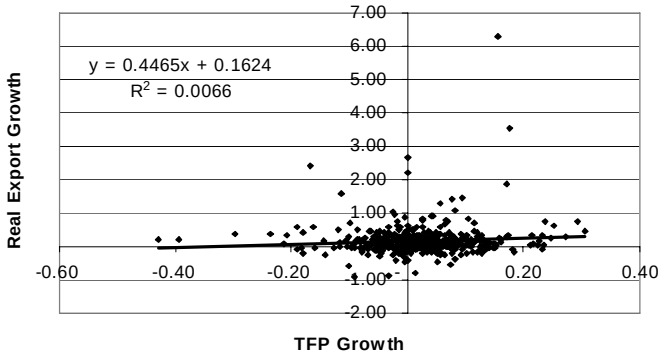


Figure 2
EXPORT GROWTH AND TOTAL FACTOR PRODUCTIVITY GROWTH IN MEXICAN MANUFACTURING
(1989-2000)



Source: INEGI (National Institute for Statistics, Geography and Data), System of National Accounts, Mexico 2000.
Survey of Assets, Depreciation and Accumulation of Capital of the Banco de México, 1980-1995; as well as personal estimates.

Within the manufacturing sector, the levels of labor productivity and the rates of growth of total factor productivity do not appear to have any significant relation with the measure of manufacturing exports. (The first relation is negative with a correlation coefficient for panel data for 49 manufacturing industries for the period 1989-2000 of -0.1501, and the second also for 49 activities and same period, with a 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.

We argue that for the case of México trade liberalization has not being accompanied by improvements in technical efficiency nor in the increase in the rate of economic growth, we

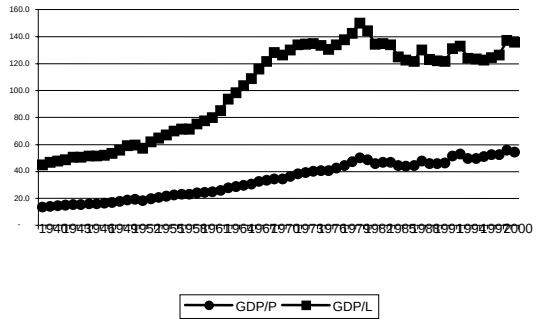
elaborate on the subject and suggest some explanations for this “unexpected” and unfortunate outcome.

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 (980) 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 (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 than 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 XII presents the behavior of GDP per capita and average product of labor for the 1940-2001 period.

GRAPH XII

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

Dividing the graph into two periods: one corresponding to the strategy of industrialization via import substitution (1940-1982); and the other corresponding to the trade liberalization period (1983-2001), two distinct trends in each of the two variables emerge. In both variables the slope for the first period is steeper than for the second. By contrast, in the second period we find a negative slope for GDP per worker and a positive, but almost flat slope for GDP per capita. From this observation the first fact can be established: the average productivity of labor 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.

From 1940 to 1982 the GDP per capita grew at an annual rate of 3.1 per cent, the average product per worker at a rate of 3.2 per cent, and the rates of participation declined slightly. With this information we arrive to the following conclusion: the continuous increase in product per head during the 1940-1982 period was totally the result of an uninterrupted increase in average labor productivity during that period. 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. This means that the modest increase in income per head during the 1982-2000 period was mainly a result of the increase in the participation rate, and not of increases in average labor productivity, which actually declined.

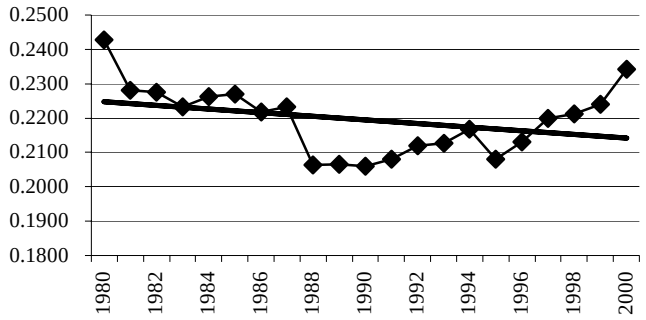
During the 1983-1988 period income per a head decreased at a rate of 1.2 per cent, and this happened despite and increase in the participation rate at 1.2 per cent a year. But what was not

expected was that, after the economic reforms had time to mature, the growth rate and the rate of labor productivity did not rise much. The average growth rate of the income per head during the 1989-2000 periods was 1.5 per cent a year. This modest increase in income per head, was not the result of a high rate of labor productivity (labor productivity only grew at a 0.34 per cent a year during this period), but due to the increase in the participation rate, which grew at a rate of 1.2 per cent.

To deepen our understanding of the sources of stagnation of the long run growth rate of the Mexican economy, as expressed by the growth rate of income per head, we need to explore further the evolution of Mexican labor productivity, but before we begin that exercise, we need to first decompose the growth rate of labor productivity into its main components.

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. GRAPH XIII. The average growth rate for the economy in this period was (-0.3%), though the trend was positive for the 1990-2000 period.

Graph XIII
AVERAGE TOTAL LABOR PRODUCTIVITY
(Thousands of 1980 pesos)



Source: INEGI (National Institute for Statistics, Geography and Data), System of National Accounts, Mexico 2000.
Survey of Assets, Depreciation and Accumulation of Capital of the Banco de México, 1980-1995; as well as personal estimates.

Fifteen sectors contributed the most to the growth rate of labor productivity in 2000. In that year the net growth rate of labor productivity was an outstanding 4.9 per cent Table IX Only two of them were manufactures (automobiles, meat, and diary products). Their contribution to the total labor 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 [4]. Two of the three main contributors to the increase of labor 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 IX
CONTRIBUTIONS OF THE FIRST FIFTEEN ACTIVITIES TO THE GROWTH OF TOTAL LABOR PRODUCTIVITY OF MEXICO

CIIU	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%
	TOTAL	**-1.35%**	**0.52%**	**0.16%**	**-0.24%**	**-3.94%**	**3.08%**	**2.81%**	**1.02%**	**1.19%**	**4.94%**

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

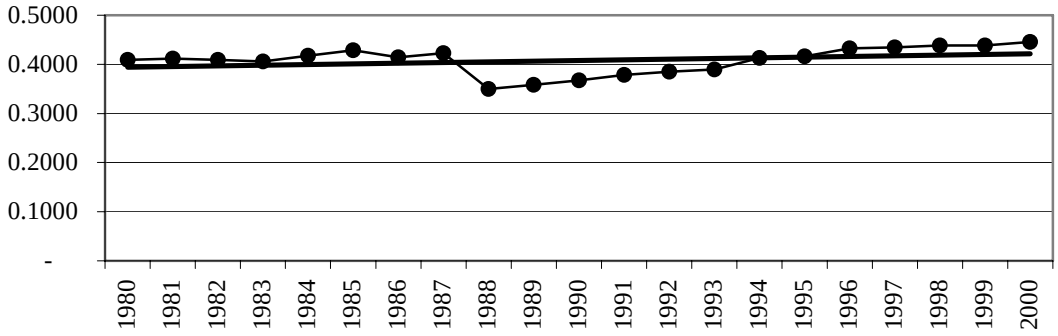
This result confirms our conclusions about the dynamism of the Mexican economy. The increase of productivity registered in the aggregated data, for example in the year 2000, was generated to a large extent by increased relative prices in the non-tradable sectors and not by an increase in labor productivity 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 labor productivity in the manufacturing sector during 1980-2000 period was slightly positive, 0.33 per cent. Graph XIV

[4] 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.

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



Source: INEGI (National Institute for Statistics, Geography and Data), System of National Accounts, Mexico 2000.
Survey of Assets, Depreciation and Accumulation of Capital of the Banco de México, 1980-1995; as well as personal estimates.

From 1990, it is clear that 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. The automobile sector registered a spectacular increase in its contribution to manufacturing GDP from 3.7 per cent in 1980 to 8.9 per cent in 1999 and 10.4 per cent in 2000. In fact, the growth rate of total labor productivity recorded by the entire manufacturing sector (presented in Graph V.1) was induced by the re-composition of the manufacturing sector toward a few successful activities. A point worth mentioning is the fact that since 1989 the Mexican manufacturing sector has experienced a reallocation of the labor force towards activities with lower capital labor ratios; a trend that has adversely affected total labor 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 labor 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.[5] This industrial policy ended

[5] 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 20003 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%.

in 2004, exposing the industry for the first time to unhindered international competition. If as a result of the disappearance of the protection that favored iis growth, this industry were to stop growing, labor productivity in the entire Mexican manufacturing sector will decelerate as well. [6]

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.

Trends in the agricultural sector.

The liberalization of the Mexican economy covered also the agricultural sector. So did NAFTA. The agreement submitted the agricultural and livestock sector to the progressive phasing out of tariff barriers.

Schemes of regional integration have constituted an element of trade policy aimed at seeking marginal gains in productivity for the industrial sector, a "second best option" as against import substitution protectionism, and a way of embarking on the second stage of industrialization. The agricultural and livestock sector was either excluded from such schemes or protected by special policies, such as the Common Agricultural Policy in the case of the European Union. In the GATT, the Uruguay Round was the first to program negotiations in the agricultural and livestock sector (Finger, 1993), and the conflicts that came to the surface around this subject caused the Round to be prolonged to the point of endangering the signing of the definitive accords. In the Doha negotiations, the same disagreements have shown that the conflicts of interest between the developed and the developing countries are apparently insurmountable as long as the former refuse to reduce subsidies or to open their markets to the latter's exports.

As regards Mexican agriculture, NAFTA was a key element in the policy of modernization of the sector which had begun with the reform of Article 27 of the National Constitution, the measures adopted on joining GATT, and those implemented in the framework of the structural adjustment programs. Sectoral policy instruments were supposed to induce the

[6] 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.

changes in the allocation of factors of production necessary to raise productivity. They were intended to stimulate shifts of employment, capital and land away from those activities unable to compete with imports from the United States and Canada, towards those competitive in national and international markets. These movements were expected to induce gains in efficiency through changes in: i) the productive structure, which would now favor increased cultivation of fruits and vegetables and reduce that of basic grain and oil-seed production; ii) the use of, and remuneration of, factors, which would reduce overall sectoral employment, while ensuring a rise in aggregate wages, resulting in land and investment being devoted to more competitive products offering higher returns to these factors; iii) commercial exchange: with increasing importation of basic grains and oil-seeds and exportation 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 agricultural and livestock sectors of Mexico and its NAFTA partners. In the list of critical products, those scheduled for opening only in 10 and 15 years during which tariffs and quotas would apply (the lists marked with the numbers 4, 5, and 6 in table No X), 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. This was because Mexico accepted as early as 1990 (during the Houston meeting) that it "…would not be treated as a developing country in the negotiations, which meant that it would not receive preferential treatment in such matters as periods of transition for the elimination of tariffs".[7] Likewise, Mexico decided to import maize in excess of the quotas, without the respective tariffs, and thus exposed its market more rapidly than expected to competition. This was in response to the pressure from the groups of producers (stock-raisers, millers) and the fact that the final products manufactured from grains and meat products had been freed from tariff burdens.

[7] Cameron, Maxwell A., and Brian W. Tomlin (2000).

Table X

LIBERATION OF MEXICO-U.S. TRADE IN AGRICULTURAL GOODS *
(Millions of dollars)

Período de transición	Exportaciones de México a EUA		Importaciones de México provenientes de EUA		Comercio Bilateral	
	Valor absoluto	Participación porcentual	Valor absoluto	Participación porcentual	Valor absoluto	Participación porcentual
1. Inexistencia de aranceles o desgravación inmediata (A)	1,600	61.5	1,500	52.3	3,100	56.7
2. Período de transición de cinco años (B)	177	6.8	131	4.6	308	5.6
3. Período de transición de diez años (C.)	375	14.4	875	30.5	1250	22.8
4. Periodo de transición de quince años (C+)	75	2.9	0	0.0	75	1.4
5. Período de transición de diez años con TRQ	330	12.7	155	5.4	485	8.9
6. Período de transición de quince años con TRQ	45	1.7	208	7.2	253	4.6
Total	2,602		2,869		5,471	

***** Based on trade for 1991.
A: Immediate; **B**: Linear to 5 years; **C**: Linear to 10 years; **C+**: 15 years, linear in 10 and then 5; **TRQ**: (Tariff Rate Quota) **C** or **C+** quota.
Source: Taken from: Hufbauer, Gary Clyde and Jeffrey J. Schott (1993), NAFTA: An Assessment (Revised ed), Institute For International Economics, Washington D.C. p. 48

In integration agreements "between unequal partners", one mechanism for granting preferential treatment to the less developed is through the margin of preference as regards third-party countries, or the difference between the tariff applied to non-members and that applied to participants. In the case of customs unions, this preference is granted via the common external tariff which responds to the development needs of the weakest partner. In free trade zones, which do not include a common tariff, it is expected that the more advanced countries will give greater protection in their markets to the exports of the less advanced members than will be accorded to their own exports. In the agricultural sector, the United States has an average external tariff close to 2.8 per cent, while Mexico applies to non-members an average tariff of 22 per cent.[8] This difference in the tariff on third-party countries —the Most Favored Nation tariff (MFN)— marks the rank of preferences and protection accorded to each country's national production and imports from member countries, and is at the core of regional integration agreements. Graph XIV illustrates the reciprocal tariff preference resulting from such divergences in the MFN as applied by Mexico and the United States. While Mexico grants in its market a protection of 14 per cent against imports originating in the United States (and to its national production), Mexican

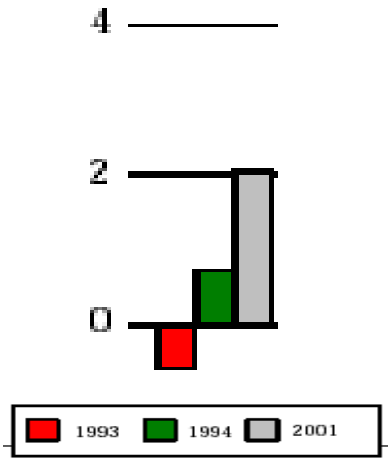
[8] For the methodology of the calculation of the MFN rate and that between Mexico and the US, see USITC (2003).

sales to that country receive a protection of only two per cent. On the other hand, the US tariff on agricultural goods fell two and a half percentage points from 3.5 per cent to 1 per cent, while Mexico reduced its own in favor of the United States by 6.7 points, from 14.5 to 7.8 per cent.

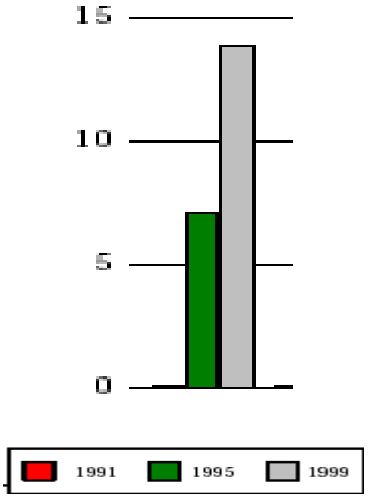
As a result of the United States' unilateral preferential agreements, the average of the applied tariffs is lower than that of the MFN rates, and in all cases the effect is to reduce the preference granted to Mexico in respect of those countries, generally by 50 per cent (Romero and Puyana 2005c).[9] This means that the degree of protection enjoyed by Mexican farm products in the United States is low and real revaluation in excess of this percentage, or gains in productivity or reduction of the profit margin in non-member competing countries, can eliminate the advantage of access to the US market that Mexico enjoys. In contrast, the degree of protection granted to the United States vis-a-vis other countries with which Mexico has not signed agreements may, on average, be above 20 per cent. Graph XV

GRAPH XV
MARGINS OF PREFERENCE IN THE AGRICULTURAL SECTOR BEWEEN MEXICO AND THE UNITED STATES BEFORE AND AFTER NAFTA

From the US to Mexico



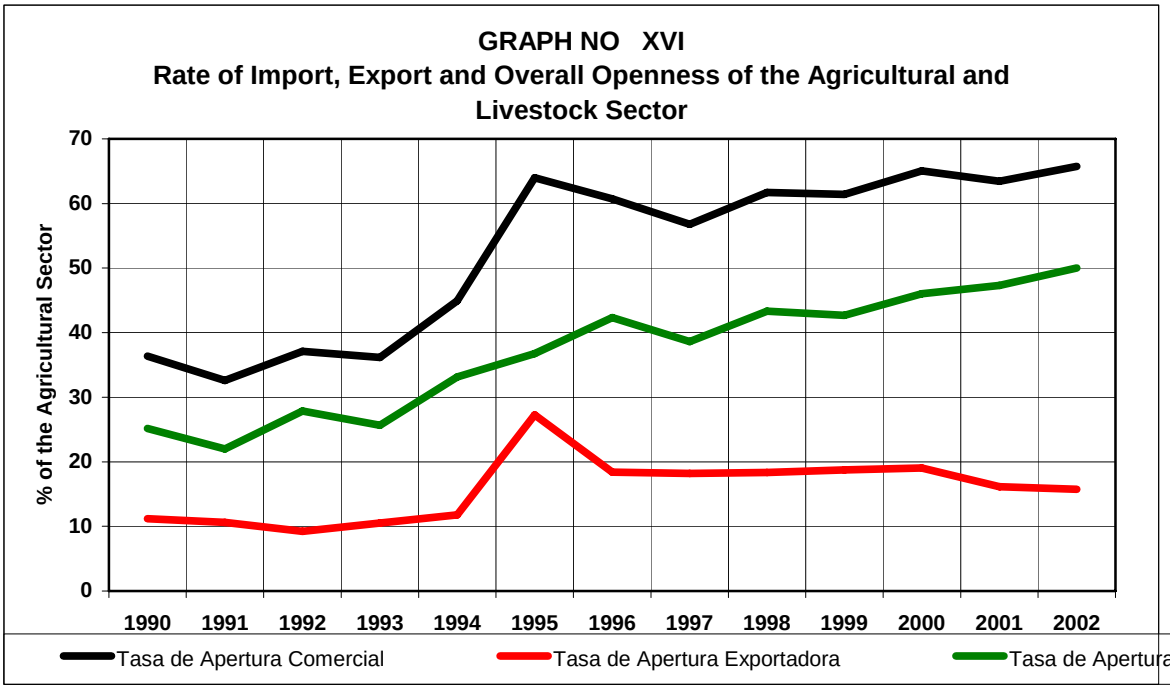
From Mexico to the US



[9] These are: the Generalized System of Preferences (GSP); the Caribbean Basin Economic Recovery Act (CBERA), which regulates the application of the Caribbean Basin Initiative (CBI); the Caribbean Basin Trade Association Act (CBPTA), based on the LRECC; the Andean Trade Preference Act (ATPA), modified as the Andean Trade Promotion and Drug Eradication Act (ATPDEA); and the Africa Growth and Opportunity Act (AGOA). In addition to the above-mentioned, the United States has signed trade agreements with Chile, Singapore and the Central American countries.

Source: Taken from US. International Trade Commission N. T.A.-2111-1, Publication Number: 3621/Aug. 2003

In order to gauge the degree to which the effects hoped for by the negotiators and analysts of NAFTA were attained, we first measure the degree of openness of the agricultural sector, which is illustrated in Graph XVI. It is important to note the factors that contributed to a sustained increase in the degree of openness in agriculture since 1993. Firstly, there was a substantial and significant rise in the extent of openness during 1994-1995, when devaluation accelerated exports; secondly, imports contributed substantially more to increased opennessand came to represent 50 per cent of GDP; thirdly, exports, though growing, represented less than 20 per cent of GDP. The increase in openness as a result of an expansion of exports was substantial during 1994-1995, but stagnated by 2000 and then started to decline. With a coefficient of openness of 66 per cent of GDP, one would indeed expect a strong transmission of movements in external prices to internal prices, with positive effects on location of factors, productivity, employment and income.

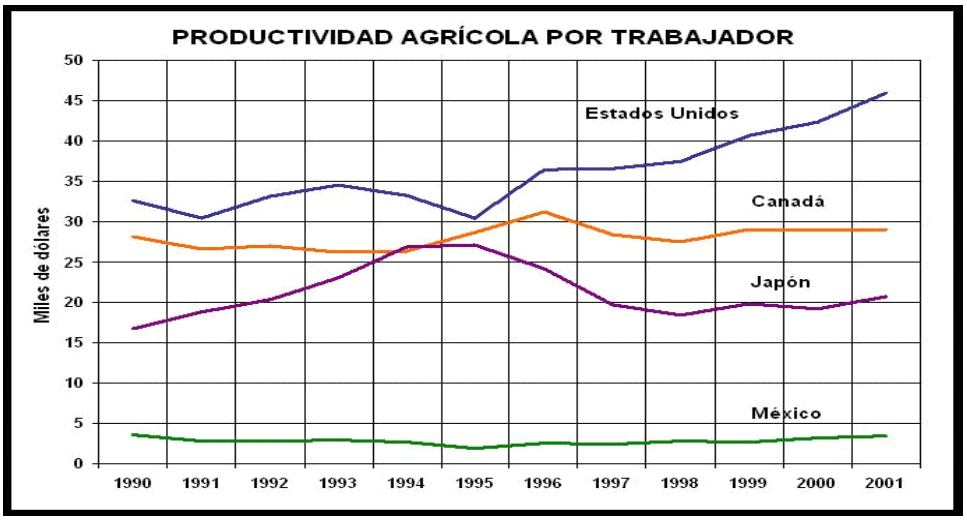


Source: Our own calculations based on INEGI, Sistema de Cuentas Nacionales, several years

The trends in sectoral productivity. Since 1993 there have been gains in efficiency since value added per worker has risen. Yet, in spite of all the improvements that have taken place since 1993 —relative to both the economy as a whole and the livestock sector— agricultural productivity is still the lowest among all activities in the economy. But between

1993 and 2001, productivity growth in agriculture was more than twice that for the rest of the economy. As a correlative to these gains, agriculture has not absorbed workers and has lost weight in overall employment. Even if agriculture had maintained its participation in overall employment, there would have been gains in efficiency, since the growth of the agricultural GDP outweighed the growth of total employment (Puyana y Romero, 2005). Nevertheless, the gap between the productivity of Mexican agriculture and that of Canada and USA continues to widen, as shown in Graph No.XVII

GRAPH NO.XVII



Source: World Development Indicators, World Bank 2005

Effects on production. In the years prior to the entry into force of NAFTA, the growth of the sector was less (1.7 per cent annual average) than that for the economy as a whole (4.0 annual average), a difference that was maintained following the implementation of the agreement, although the breach started to close. In effect, agricultural production increased at a rate of 2.2 **per cent** during the 1993-2000 period, the most dynamic area being the production of fruits and vegetables.[10]

As a result, the effects of a fall in prices induced rises in the volume of production and productivity, partially maintaining the overall value of production and income (or returns on capital). But this mechanism was only partially successful since the deterioration of

[10] Para un análisis sucinto de la evolución de la producción ver Yunes, 2002

world prices was greater than the increase in volume of production. The adjustment of prices outstripped the adjustment in quantities,, resulting in a fall in the value of the agricultural and livestock sector's output, and in its share in overall GDP

Liberalization of the Mexican agricultural sector did link more closely than before, domestic and international prices and induce a decline in producers' internal prices of the main products, such a grains, beans, fruits and vegetables. This meant that both exportable and importable products had lost prices. Though, in order to preserve income, producers have responded with increases in volume of produce and improvements in yields, (Puyana y Romero 2005c.)

Changes in agricultural employment. Another foreseeable effect of the opening of the agricultural sector to foreign trade, related to productivity, was to make a large part of the rural workforce redundant as a result of the change towards a less labor-intensive mixture of products.[11] If the excess workforce failed to find employment in other rural activities, or in other areas of the economy, wage rates in these zones would tend to fall.[12] This situation would affect the landless agricultural laborers and those smallholders who supplemented their incomes as wage-earners in other agricultural activities. "In the rural areas wages fall because labor is unable to transfer from agriculture to other activities and, as a result of the opening to foreign trade, which tends to reduce the weight of rain-fed maize, which is a labor-intensive activity. This leads to the new production being less labor-intensive than that prevalent before the opening of the economy, which means that real wages have to fall in order to restore full employment […] The fall of real wages as a consequence of the economic opening make the need to implement policies to mitigate this effect of the greatest urgency. The opening to trade is not, however, the only reason for carrying out a program of public works; poverty in the countryside and the low wages are a sufficient justification even without this factor."[13] The magnitude of employment loss varies,

[11] In a paper on the effects of NAFTA presented at the Symposium "NAFTA and agriculture. Is the experiment working?" coordinated by Schwentesius in 1988, De Janvry and Sadoulet evaluated the effect of NAFTA's redefining of the country's comparative advantages away from cereals and towards the production of fruit and vegetables on employment, income and international emigration (De Janvry, 1998) p. 34-35.

[12] See Levy, Santiago and Sweder van Wijnbergen (1992); Romero and Yunes (1993); Casco and Romero (1997).

[13] Casco y Romero (1997) p. 82.

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. However, in our analysis we found that agricultural employment stagnated between 1993 and 2004, in absolute numbers, and a declined sharply in relative terms. This result too is significant when we note that the increase in employment in manufacturing industry (*maquila* or non-*maquila*), or rural activities other than in farming, has not been on a sufficient scale to compensate for the loss. The informal tertiary sector, of low productivity and lower incomes, has therefore ballooned. What has been favored is actually the transfer of jobs towards less productive activities. Despite gains in sector productivity and the stagnation of employment, real wages in the agriculture and livestock sectors fell noticeably with the exchange crisis of 1994-1995 and have not yet recovered. In 2001, average wages in the agricultural sector were 16 per cent less than in 1993 and average incomes in the livestock sector were 5.1 per cent higher, despite the fact that productivity did not increase in that sector.

Changes in allocation of arable lands. A marked shift in the relative weight of fruits and vegetables in the value of total output and the proportion of lands occupied by these crops was registered, which indicates the gaps in productivity and incomes for the producers devoted to these products. The higher profitability of fruits and vegetables, strengthened as a consequence of the guaranteed preferential access to the US and Canadian markets, ought to have attracted productive factors and brought about significant increases in production and productivity. As can be seen from Fig. 8, while production has increased, the proportion of the land occupied has remained stable.

Not all lands and climates are suitable for these kinds of production. There are high initial costs that make it difficult to extend these crops to new areas, such as the investments needed in the case of fruit trees, which require a long period between planting and the first marketable harvests. Lack of investment in irrigation limits the potential for cultivating vegetables, as does the insufficiency of transport networks for enabling highly perishable products to reach points of sale. The amount of land allocated to fruits and vegetables could have increase if needed investments had taken place. Not the least of the problems is the poor functioning of the markets (goods, capital and technology). The domestic markets are

not competitive; they are dominated by oligopolic and monopsonic structures: The maize market is controlled by no more than 27 agents with considerable market power. In other grains, concentration is even greater and reduces the proportion of the final price that producers receive to less than 30 per cent. The same is true of the fruit and vegetable sector, which is the most oriented to the export market (the avocado market is controlled by 7 wholesale traders, that for oranges by 5, and that for tomatoes, by only 8 buyers), the producer receives no more than 30-35 per cent of the final price (World Bank 2001).

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. The per capita consumption of livestock and poultry products has been registered.

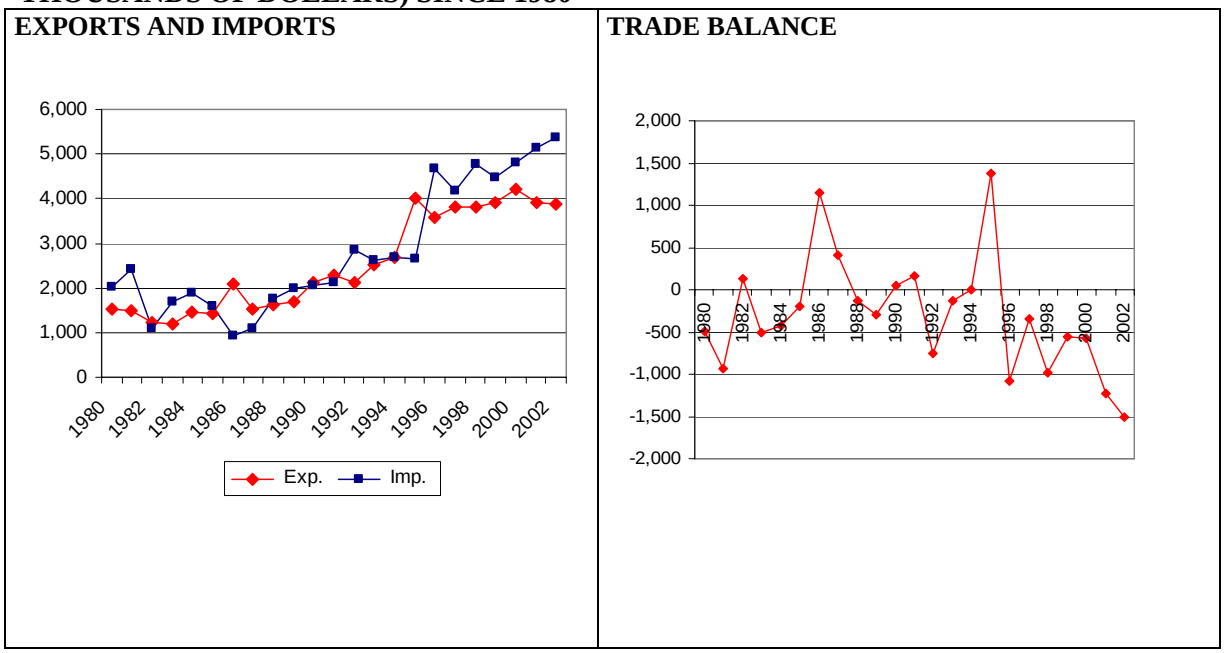
The effects on external trade equilibrium. From 1993 to 2002 external agricultural trade grew, in real terms, at a slower rate than total external trade. Following a notable increase between 1993 and 1995, agricultural exports slowed down. Imports have been more dynamic and the sector's external trade deficit has increased, Graph XVIII. As a result of the foreign exchange revaluation, equilibrium in the domestic market has been achieved through imports and not via increases in production capable of satisfying demand (Romero and Puyana, 2004 b). 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.[14]

[14] During 1993 a reduction of the trade deficit was noted, accompanied by a strong appreciation of the peso, which indicates that the real exchange rate is not the only factor explaining the flow of trade; differing growth rates in income between countries also explains to a large extent these results.

To study the export progress of a country or a sector considering only the rates of growth of foreign sales is insufficient, especially when one is evaluating special trade agreements like NAFTA which aim at giving privileged access to partners' markets. It is important to establish whether the preferential advantages in access to the market agreed upon have enabled the country to achieve a greater share in the total imports of its partners.

GRAPH XVIII
FOREIGN TRADE IN AGRICULTURAL AND LIVESTOCK PRODUCTS (IN THOUSANDS OF DOLLARS) SINCE 1980



Source: Romero and Puyana, 2004

Our analysis suggests that Mexico has not been able to maintain the fraction of the US market that it occupied in 1993. Mexico has reduced its presence in the US market on being pushed aside by external competitors; this is the conclusion suggested by our calculations of Revealed Comparative Advantage or index of specialization,[15] which measure the competitiveness of a product, or its competitive advantage, by means of the growth of its share in the destination market. A fall in value registered over a year would imply a loss of comparative advantage. Those products qualified as examples of Mexico's success as an 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 and

[15] Revealed Comparative Advantage (RCA), or Specialization Index (B. Balassa, 1967).

that other exporters are gaining ground in this field. 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 Mexican foreign sales of these products grew less than the total imports effected by the United States from the rest of the world; this means 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. Moreover, as we pointed out in the previous section, 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 on the part of competing countries greater than those achieved by Mexico.

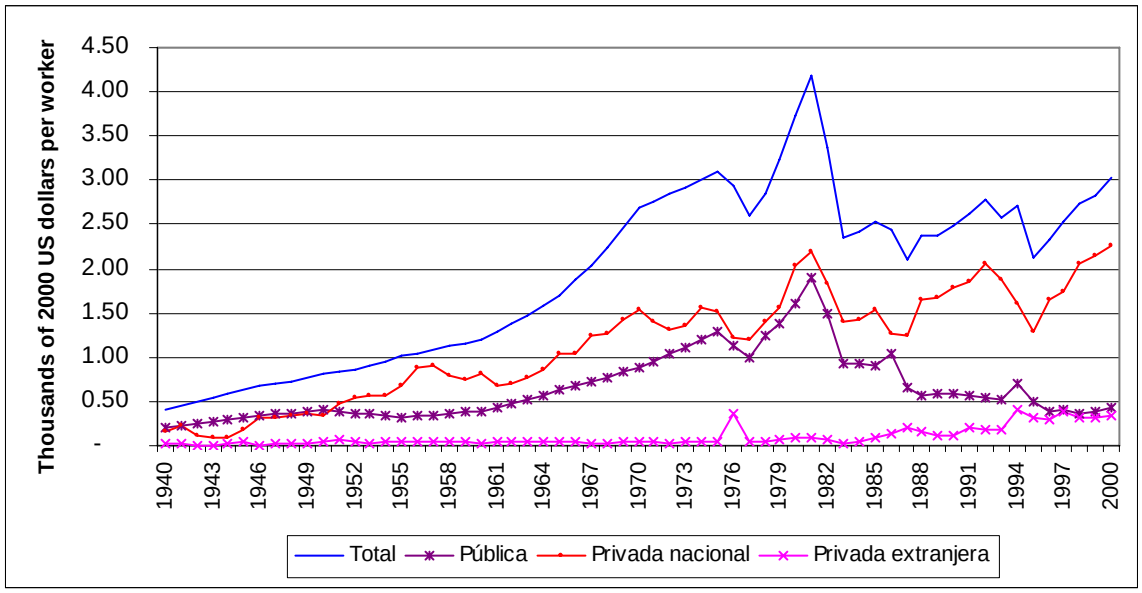
The fact that products already established on the market and enjoying a majority share in US foreign purchases are unable to make further advance may be an indication of the difficulty of gaining new ground or maintaining that already gained when one is the majority exporter. It may be simply that buyers seek to diversify their suppliers, for reasons of taste, novelty or differentiation of products, etc.

VII. Other Factors That Could Explain The "Unexpected" Results of liberalizing the economy.

There are at least three other factors associated with the "outward-oriented", "private sector based strategy" that may explain part of the stagnation of productivity and income per head in México. The first factor is the decline in public investment. 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 labor 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 XIX) 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 [16].

Graph XIX
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.

The second factor is the overvaluation of the currency. Since 1988 (starting with the Salinas Administration) macroeconomic management policy maintained a permanent overvaluation

[16] 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.

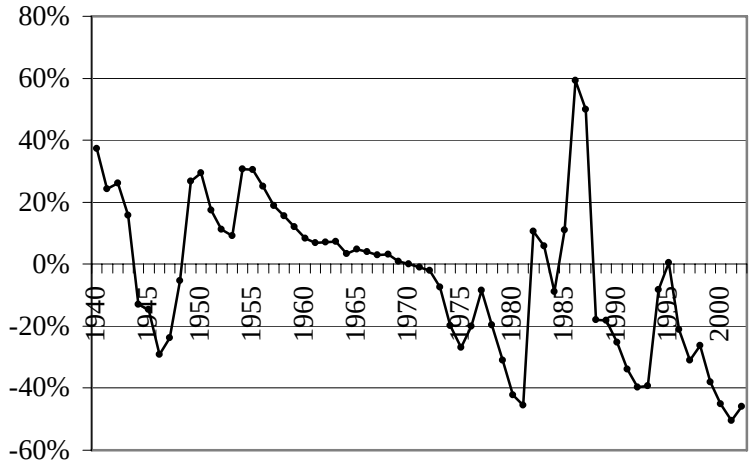
of the currency.[17] The arguments behind such a policy were that it would reduce inflation and lower inflation will help to achieve positive real interest rates which would stimulate the inflow of portfolio capital and the level fix capital formation.

The overvaluation of the of the peso is illustrated the in graph XX, as the deviation of the short run exchange rate (S) from its long run value (E) in purchasing power parity theory terms PPP[18].

Graph XX

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.

[17] Which incidentally proves that the macroeconomic mismanagement was not an exclusive prerogative of the "populist governments".

[18] Purchasing power parity, or PPP, is simple the name for the following equation: P=EP*, where E is the exchange rate and P and P* are Mexican and US consumer price indexes, respectively. It could be rewritten, E=P/P*.

The third factor is the inefficient 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 with economic growth is weak, the evidence of the benefits of liberalizing capital flows is even weaker:

"In theory, the appeal of capital mobility seems obvious: If capital is free to enter (and leave) markets based on the potential return on investment, the result will be an efficient allocation of global resources. But in reality, financial markets are inherently unstable, subject to bubbles (rational or otherwise), panics, shortsightedness, and self-fulfilling prophecies. 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.

An orthodox view expressed by the Mexican Minister of Finance Francisco Gil, is that the disappointing results of the "structural reforms" undertaken in Latin America lies not on the nature of these reforms but in the insufficiency of them and he adds a long list of actions to be taken if the fruits of liberalization are to be harvested (Gil Díaz 2003 P. 7-11). 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.

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 favorable 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 public 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.

Due to the aggressive liberalization of the Mexican economy, the compromises acquired in NAFTA and the 40 or more trade agreements signed with all types of countries there is

very little margin left in the frame of trade policy. To overcome the lack of productivity growth, the stagnation productive employment and the symptoms of the Dutch Disease, action should be taken in the arena of public investments, and to induce vertical integration of production in order to increase the value content of total production and of exports. For that active sectoral policies have to be instrumented, which means that the government has to renounce to the principle it has applied during the last two decades and a half that: “the best sectoral policy is no sectoral policy at all”.

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. Maintaining a competitive exchange rate is not an easy task when the capital account has been fully liberalized as Mexico did almost twenty years ago. Even more difficult it in presence of strong flows of foreign currency such as remittances from Mexicans workers abroad, and of oil bonanzas. Nevertheless a planned correction in the relative value of the peso to the dollar has to be put in motion if the stagnation of the economy is to be overcome.

Mexican public investment in social and physical infrastructure has been as dramatically reduced as the economy was liberalized, reducing the competitiveness of the economy and limiting the capacity of the country even to assimilate new technologies, let alone to develop them.

Mexico is one of the oil exporting countries with the lowest non oil fiscal income generated in direct and indirect taxation. The petrolization of the fiscal accounts makes the economy extremely dependent on the path of international oil prices. Further more it is one of the reasons of the low savings and investments ratio to GDP, both public and private. Mexico has to increase investments in tradable sectors and in infrastructure. At the Mexican level of development a more active and aggressive public investments policy is needed since the experience during the last two decades has shown that private investments have not fully replace the fall of public investments. Contrary to what was emphasizing prior the crawling out effect of private investments has been confirmed.

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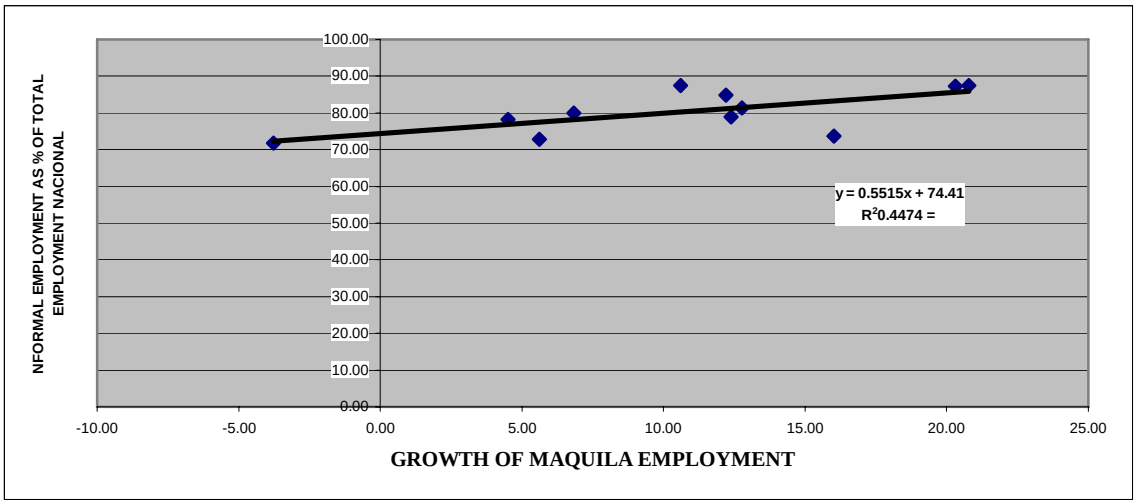
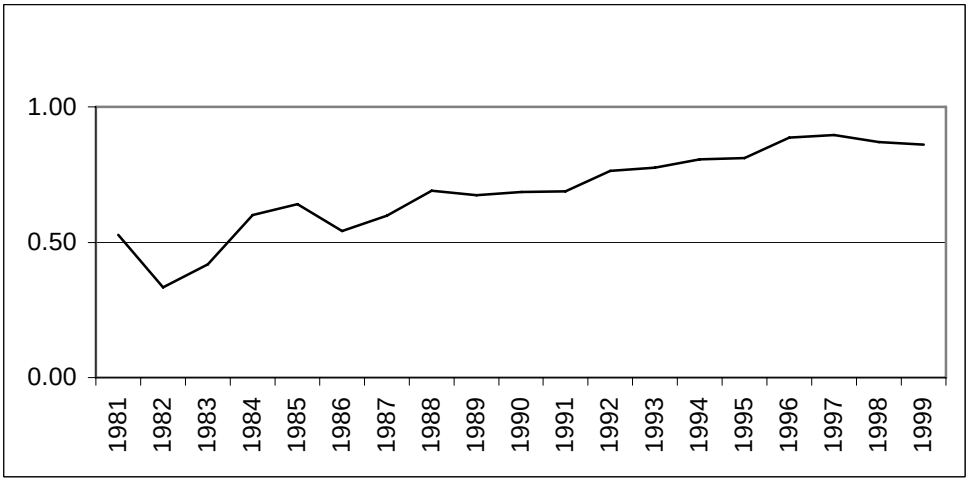
ANNEX

Annex Graph I
MAQUILA AND INFORMAL EMPLOYMENT RELATION

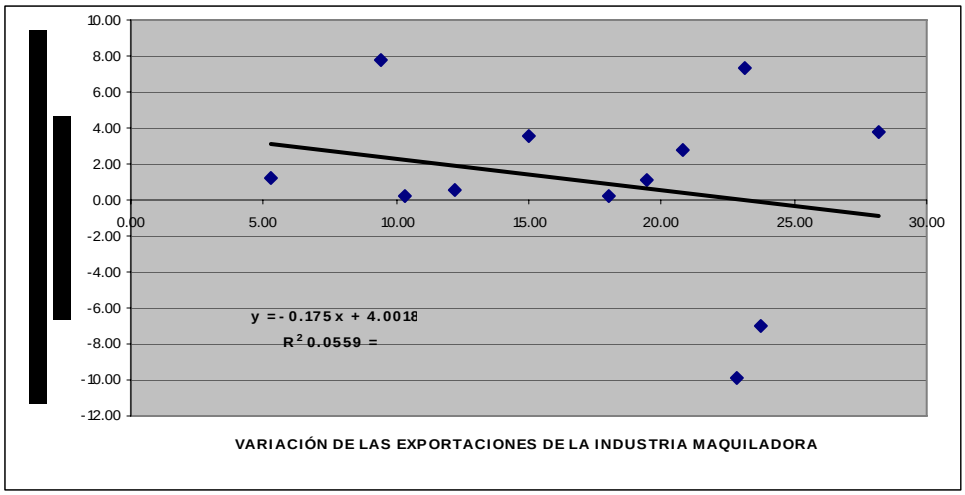


Source: Own calculations based on INEGI, SNCN, several years

Annex Graph II
MEXICO: STANDARD DEVATION OF MANUFATURE AND MAQUILA ACTIVITY
1985-1999



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



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