14. Labor Policy in the Maquiladoras: Changes Under NAFTA

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1. Introduction.

The topic of “Structural Change, Equity and Efficiency” within the North American Free Trade Agreement (NAFTA) remits us to the problems involved in economic integration between developed and underdeveloped countries, and thereby, to the topic of maquiladoras or international subcontracting. In the North American context, 'structural change' depends on the ability of Mexican industry to modernize its productive facilities and, to some extent, this means accepting subcontracting arrangements with U. S. and Canadian companies. In this same measure, the ability to reconvert Mexican industry also depends on the willingness of the maquiladora industry to expand their traditional subcontracting operations in Mexico from simple assembly to a more complete range of manufacturing activities. 'Equity', within the sphere of international subcontracting operations, hinges on the possibility of raising real salaries as well as enforcing minimum working standards within these binational work places. And 'efficiency' is what will give coherence to NAFTA, by increasing the productivity of the new North America companies, turning three very different countries into partners, joined in the common cause of increasing their share of the world market.

2. Changes Under NAFTA.

There are specific incentives in NAFTA designed to encourage the development of international subcontracting operations. There are incentives for U. S. companies to upgrade their maquiladora subsidiaries from assembly to manufacturing, for Canadian companies to expand their incipient subcontracting operations in Mexico, and for Mexican companies to reconvert their productive facilities in order to export the product of their work as subcontractors or suppliers. The objective of this article is, first, to explain how these NAFTA incentives for 'structural change', via subcontracting, work and then, to move on to the issue of 'equity', concentrating especially on the question of whether salaries in maquiladoras are going up or coming down after NAFTA. The issue of 'efficiency' in the maquiladora industry cannot be developed properly due to the fact that no statistics on capital investments are kept, thus preventing measurement of productivity growth.

Historically, the role of the maquiladora industry in Mexico’s development process was limited to the industrialization of the northern border zone, even though it advanced this goal by creating an enclave of foreign-owned maquiladora companies in this region and by allowing their functional integration with companies in the United States. However, the maquiladora program was carefully designed so as to isolate it from the rest of Mexican manufacturing, located in the interior of the country. At first, this made sense because, in the middle sixties when the maquiladora program was created, Mexico had no intention of altering its import-substitution policy. On the contrary, the second stage of import substitution was just beginning, in capital goods as well as intermediary parts and pieces, hence requiring the extension of import protection to precisely these same types of goods that could be imported duty free under the maquiladora program.

It may seem contradictory that Mexico would have authorized an industrial development program for the border that was diametrically contrary to its policy for the rest of the country. But the maquiladoras were just one in a series of many special programs for that northernmost region that were adopted, first, in order to attract population to the zone and, then, to begin developing an economic base for their sustenance.[1] Time and time again, integration with the U. S. economy proved to be the only realistic, albeit short-term, solution for this region, given its distance from the center. Supposedly, the long-term solution lay in import substitution, which was to have created a national industry capable, eventually, of supplanting foreign presence along the northern border; but meanwhile, maquiladoras created jobs and secured much-needed foreign currency. However, the bastion-at-the-border approach to the maquiladora industry began to change after the 1982 crisis, as it became increasingly evident that the import substitution model had failed and could not be revived. The new approach, consolidated later with NAFTA, gave maquiladoras a central role to play in Mexico's new industrial development policy.

The first change came in a maquiladora decree emitted in August 1983[2] which gave national suppliers the same right to temporary duty-free imports as maquiladora companies had. This, together with another December 1989 decree[3], lay the groundwork for the role the maquiladora industry was to play in the new open-market developmental model. Now the maquiladora industry is seen as a market for Mexican intermediary goods as well as a channel through which Mexican manufacturing industries can hook up to international subcontracting networks. Special modalities of the maquiladora program were created in order to help Mexican industries reconvert, that would either supplement or replace traditional product lines with new subcontracting operations. The modality of "excess-capacity maquiladoras" allows part of the installed capacity of a Mexican industry to be used to house maquila operations; the figure of "sub-maquiladoras" confers maquiladora status to smaller Mexican industries in order to facilitate their subcontracting arrangements with larger, longer-established maquiladora companies; and the "shelter" modality permits Mexican companies to administer foreign maquila operations. Along with these new forms come "transfer operations", by which duty-free temporary imports of capital and intermediary goods can be transferred from maquiladoras to Mexican companies that are subcontracted either by a maquiladora or directly by a foreign company.[4]

But this new developmental role depends, in part, on decisions made in the United States and, while apparently very open to maquiladora exports, this country has really not encouraged the increase of value-added in Mexico in anything over and beyond traditional concepts such as salaries and basic services. Before NAFTA, the U. S. only allowed duty-free importation of U. S. goods, temporarily exported for assembly, if these goods had not been transformed by any industrial process, over and beyond mere assembly, while abroad. Upon their return to U. S. customs territory, if these parts and pieces were found by the customs officer to have been transformed abroad, they would be subject to duties. In such a case, the maquiladora would be required to pay duties on the parts and pieces of U. S. origin, as well as on the value-added in Mexico. Since U. S. intermediary goods constitute, by far, the greater part of total costs, maquiladoras have carefully avoided this punitive tariff by limiting themselves to simple assembly; that is by refusing more complex subcontracting operations that would involve industrial transformation of U. S. intermediary goods.

An exception to this assembly-only rule for U. S. imports of maquiladora goods was made when NAFTA negotiations began in the late1980s, through the United States General System of Preferences (USGSP). Increasing numbers of maquiladora products were included in this program —around seven per cent of total maquiladora exports in 1993. The USGSP constituted an alternative to the above-mentioned customs rules for some maquiladora exports, due to its requirement that at least twenty five per cent of the product imported under its auspices be Mexican intermediary goods, salaries or other sources of value added in Mexico. The problem was that relatively few maquiladora products qualified for this program because they normally did not have twenty five per cent national content; fewer still were selected as beneficiaries of the program and renovated on a yearly basis within it. When NAFTA came into effect in 1994, the maquiladora products that were being imported in 1993 under the USGSP were given immediate duty free access to the U. S. market, along with an additional 81 per cent of all maquiladora exports; only 12 per cent were subject to a calendar of programmed reductions in normal U. S. tariffs during a five to ten year period.[5]

NAFTA offers an alternative to this disguised form of U. S. protectionism that has prevented the deepening of U. S. assembly operations. By creating an alternative to the above-mentioned customs rules, NAFTA allows U.S. intermediary goods to be returned duty free, regardless of whether they have been transformed or not while abroad. Thus, the principal barrier preventing progress in the maquiladora industry, by limiting it to assembly work, has finally been lifted. Intermediary goods of U.S. origin can be used in manufacturing processes in Mexico and returned duty free to the U. S., thus increasing value-added in Mexico, whether it be in maquiladoras or regular manufacturing companies. The point is worth stressing because sophisticated manufacturing processes is what may finally bring some semblance of equity in "production sharing" between Mexico and the United States since it would require more qualified work which, in turn, is the basis for higher salaries. What has kept salaries down is the unqualified nature of assembly work and what should bring them up, at least to general manufacturing levels, are the higher requirements of more complex industrial transformation.

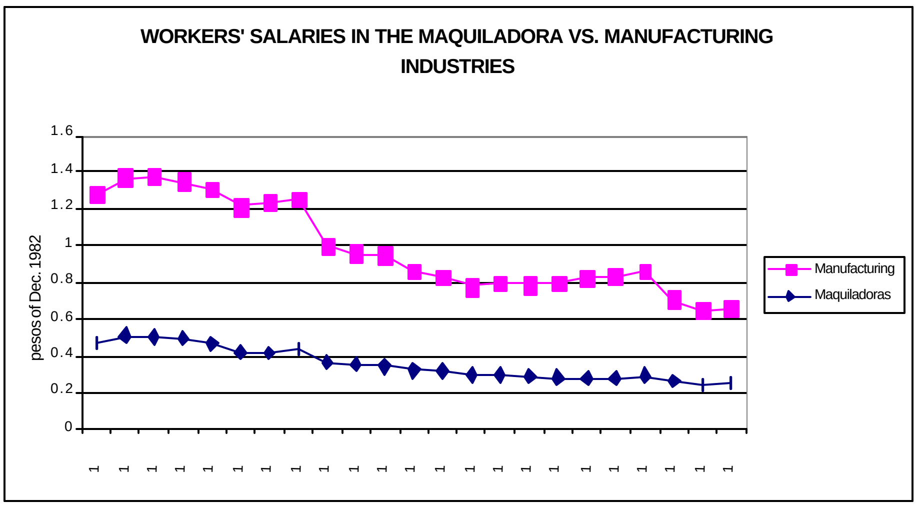
The four years after NAFTA for which data is available is not long enough of a period to allow any definitive conclusions to be established about the effect free trade is having on salaries in the maquiladora industry; but there is no more recent information available. What can be done, at least, is to compare the situation before NAFTA with what has happened since then, in order to put recent events into historical perspective. The maquiladora industry contracted in 1994, with a negative growth rate of -1.4 per cent and only a modest recovery of 2.2 in 1995 (see Table 1 "Maquiladora Establishments in Mexico, 1974-1997" in the Statistical Annex); but since then, during 1996 and1997, it has been expanding at a rate of 13 per cent per year. Although these are not record highs for maquiladoras, having reached growth rates of 26 per cent in the 1980s, still it is significant when put into the context of the recession that has afflicted the rest of Mexican industry during this same period. Hence, maquiladoras are fast becoming one of the country's most important economic activities. If 'importance' is measured by the amount of foreign currency procured, then this industry is now even more important than the petroleum industry. Starting in 1984, maquiladora growth began to spread from the northern border to the interior of the country, so the number of establishments outside the original border zone has increased from 5.7 to 36.2 per cent of the total between 1974 and 1997. This shift is important because it brings the maquiladora plants closer to traditional manufacturing centers, facilitating the kind of interaction with Mexican companies that above mentioned maquiladora decrees, as well as NAFTA, are trying to promote. This should make structural change via subcontracting more feasible.

There has been modest growth in the use of Mexican intermediary goods in maquiladora operations, up from 1.5 per cent in 1994 to 2.3 per cent in 1997 (as can be seen in Table 2 "Origin of Intermediary Goods Used in the Maquiladora Industry" in the Statistical Annex). This is the first important increase in the purchase of Mexican intermediary goods. Even though the percentage still is ridiculously small, the tendency is upwards and, were it to continue in the years to come, the impact on the rest of Mexican industry would be favorable. Also, it should be noted that this same amount of Mexican intermediary goods, when measured in absolute terms instead of as a percentage, increased from $11,754,730,000 to $33,640,410,000 pesos in real terms, that is after having deflated these figures in order to adjust for run-away inflation. Were this tendency to continue it would help vindicate the government's emphasis on the maquiladora industry's role in industrial restructuring, especially if it could be proven that the intermediary goods consumed by the maquiladora industry were of Mexican origin, and not just imported parts and pieces assembled in another maquiladora company.

Use of Mexican intermediary goods in maquiladora operations, however, is only part of the expected change under NAFTA, since they constitute only one of the various components of 'value-added in Mexico'. By far, the main source of 'value added in Mexico' are salaries, which is the aspect we are most interested in analyzing because of its equity implications. The year 1997 ended with 2,717 maquiladora companies operating in Mexico, employing 898,786 people, but no matter how many jobs are created, the bottom line is that if the maquiladoras do not pay decent salaries, they cannot be considered to be much of a success.

3. Labor Policy in the Maquiladoras.

In analyzing the level of salaries paid in this industry it is important to compare them to the rest of the manufacturing industry, of which maquiladoras are part. Thus, the manufacturing industry will act as a control group that will help put maquiladora salaries into proper perspective. The following graph of "Workers' Salaries in Maquiladoras vs. Manufacturing" presents a twenty three-year data series that will help appraise the relation between real salaries paid to direct workers in both of these industries.[6] (based on data in Table 3 "Nominal and Real Salaries in the Maquiladora and Manufacturing Industries" of the Statistical Annex).



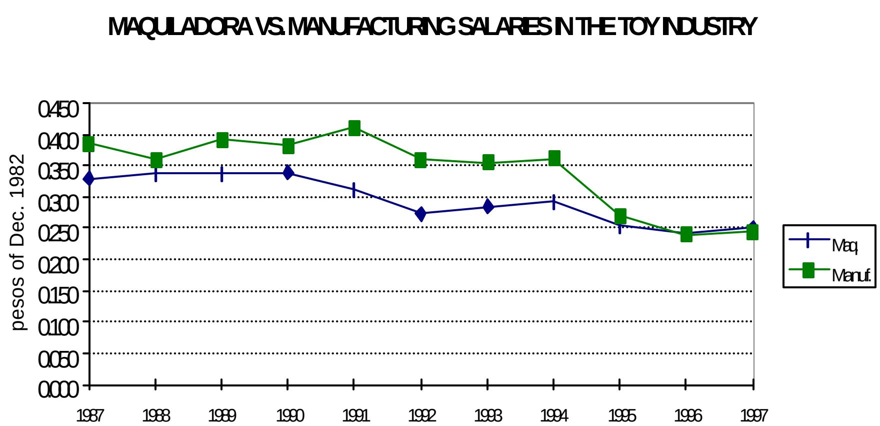
Perhaps what is most striking about this graph is the initial difference between real salaries in the two industries. This is due to the fact that at the beginning of the period studied, Mexico still had a closed economy; the lack of effective competition which this created, for large companies that could sell their goods at prices way over production costs, also allowed unions to raise salaries above what was customarily paid in the informal sector of the economy for comparable work. The maquiladora industry did not have access to Mexico's captive consumer market but rather had to compete in the world market; so it inserted itself in the Mexican labor market at salary rates that were customary in the informal sector. This, in part, explains the 41 per cent difference between salary levels in the two industries in 1975 and also the fact that this discrepancy continued to increase until 1981, the last year of the closed economy, in which the divergence reached 49 per cent.

After the 1982 crisis, manufacturing salaries went into a free-fall, due both to problems accumulated during the import substitution period as well as new ones, related to the adoption of open-market policies. The extent and duration of this decline is a rough indicator of the trauma suffered. As a result of six years of 'correction', the difference between the maquiladora and manufacturing industries was significantly reduced; that is, until the 1988 recovery in manufacturing when . manufacturing salaries bottom and begin to raise again, thus reversing the aforementioned trend. By the end of 1994, manufacturing salaries had regained a significant distance from maquiladoras. However, a new bout of NAFTA-related imports, together with the 1995 crisis, affected manufacturing salaries, this time during a period of two years before building back up again. On the other hand, no dramatic collapse occurred in maquiladoras because they had 'adjusted' their salaries to market levels from the beginning; rather, the same depression in their level continued throughout the period, with slight raises registered in 1982, 1994 and 1997.

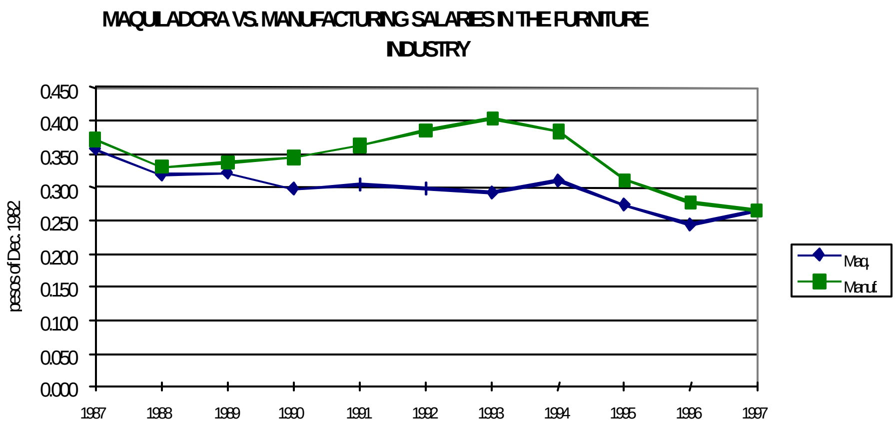
The specific point that interests us here is that, even after fifteen years of severe adjustment, manufacturing salaries are still superior to maquiladora salaries. A difference of 36 per cent persisted in 1997 between salaries in the two industries. This can best be explained in terms of the diverging skill requirements between the two industries. Simple assembly operations, like those carried out in the maquiladora industry, cannot sustain salaries as high as those paid for the greater spectrum of skill levels required in the manufacturing industry. The flip side to this explanation is that maquiladora salaries would be susceptible to increases under NAFTA because, by constituting an alternative to the punitive tariff rules that had previously restricted maquiladoras to assembly work, they would need a more specialized work force to carry out more sophisticated industrial transformation processes. That is, maquiladora salaries should converge with manufacturing salaries when and where more complex operations are undertaken within maquiladoras. In order to test this idea, we will compare salaries in the different subdivisions of the maquiladora industry to those paid in equivalent manufacturing classes.

The manufacturing classes are selected *ad hoc* on the basis of their similarity with the products and processes that characterize the different subdivisions of the maquiladora industry. The idea that the more closely related these product and process, the closer the salary levels should be between the manufacturing branch and the maquiladora subdivision. The period covered begins in 1987, due mainly to statistical considerations[7]; and ends in 1997. It should be noted that this decade starts when manufacturing salaries are close to the bottom of their free-fall, so the two salary levels are at their closest point when the comparison begins. The decade ends four years after NAFTA came into operation, so its effect on salaries should begin to show up by the end of the period. The branches of the maquiladora industry that are compared to their manufacturing counterparts are, according to the degree to which maquiladora and manufacturing salary levels have converged between them by the end of the decade: on one extreme, the toy and furniture industries; in the middle, the shoe, electric/electronics, clothing, tools and transport industries; and at the opposite end, the chemical and food industries.

The toy industry was one of the first to participate in the maquiladora industry; it is the second highest-paying maquiladora subsector. Within the manufacturing toy industry, the opposite is the case; not only was it hard hit by import competition but it has been unable to reconvert in conformance with the new dictates of the open-market economy. It should be noted that the two industrial branches are not completely identical, since the maquiladora branch assembly of toys includes some sporting goods whereas in the manufacturing branch plastic molding of toys cannot be separated from plastic molding of some shoes. Despite these differences, the productive process is similar in the two industrial branches and, hence the skill level also. As can be see in the following graph, "Maquiladora vs. Manufacturing Salaries in the Toy Industry" (see Table 4), the resemblance between salary levels is striking, throughout the entire period., having completely converged from 1995 onwards.

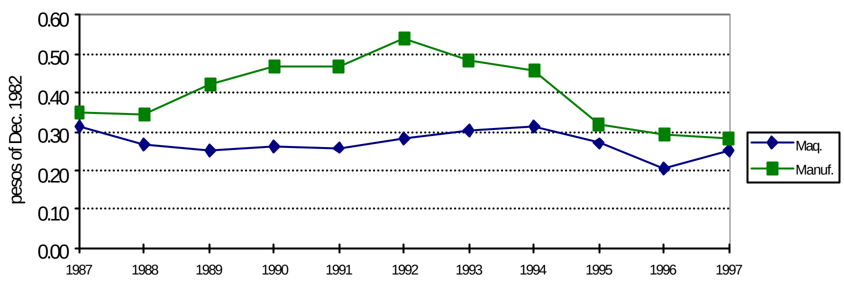


In the graph below, "Maquiladora vs. Manufacturing Salaries in the Furniture Industry" (see Table 5), the similarity between the two industrial branches is also evident. In 1988 salaries were roughly equivalent and, despite a diverging tendency in the middle, maquiladora and manufacturing salaries had come back together again by 1994, completely uniting thereafter. The maquiladora subsector of this industrial branch hires a predominantly male work force, consisting mainly of skilled carpenters who are paid on a piecework basis; they often work extra hours because their craft is in high demand in the labor market. In the manufacturing branch, the product, the processes and the type of workers hired are all very similar to the maquiladora subsector. 'Furniture' is one of the oldest, most traditional manufacturing industries, although it seems to be reconverting successfully, since its exports are increasing. The main difference with respect to the maquiladora subsector is the modern form of organization that characterizes the latter and which is reflected in the larger size of its establishments; the similarities, however, are much greater than the differences and this is shows up in their respective salary levels.



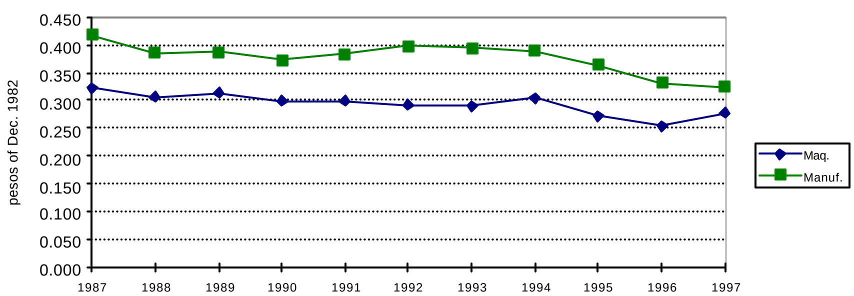
"Maquiladora vs. Manufacturing Salaries in the Shoe Industry" (see data in Table 6), as can be seen in the following graph, do not converge completely by the end of the period studied, so it is catalogued in the second group of industries that are on the verge of equalization. Both products and processes are very closely matched in the two 'Shoe' industries, so the skill level should be similar also. Perhaps the very small difference that remains between their salaries could be explained terms of the variety and the quality of shoes made, with the manufacturing branch covering a greater range than in the maquiladora subsector. The two salary levels are very close at the beginning and the end of the period, with a tendency towards diversion in the interim, from 1988 to 1994. This tendency to move apart —observed also in the 'toy' and 'furniture' industries— can be explained by the recovery experienced in Mexican manufacturing in general, accentuated in this case by the successful restructuring that this particular industry underwent. In any case, the gap did begin to close the very year NAFTA went into effect and has continued narrowing since then.

MAQUILADORA VS. MANUFACTURING SALARIES IN THE SHOE INDUSTRY



"Maquiladora vs. Manufacturing Salaries in the Electric and Electronic Industries" (based on data in Table 7) run in close but parallel tracks, although they do begin to unite in 1997. It is an interesting graph because the persistent, constant distance between the two lines would apparently defy the hypothesis —that greater similarity between final products and their productive processes should translate into converging salary levels. Both product and process are very similar in this industrial branch; however, not only is the distance between the two lines relatively small but also it clearly begins to close in 1997.

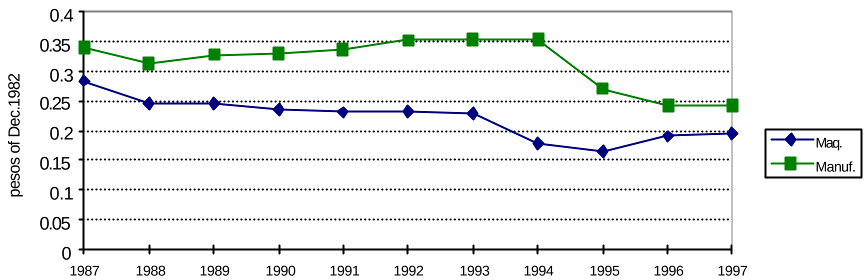
MAQUILADORA VS. MANUFACTURING SALARIES IN THE ELECTRIC AND ELECTRONIC INDUSTRIES



The graph of "Maquiladora vs. Manufacturing Salaries in the Clothing Industry" (also see Table 8) is another case in which one would have expected an even greater likeness between salaries, due to the similarity between productive processes and skill levels in the two industrial branches. However, by the end of the period the tendency is increasingly towards convergence; the difference narrows in 1996 and

1997, roughly to what it had been at the beginning of the period. The gap in the middle can be explained in much the same terms of variety and quality, as in the 'shoe' industry. From 1988 onwards, salaries in the manufacturing industry raise during the same period in which most national manufacturing branches begin to recover from the 1982 crisis, but they fall again notoriously the year NAFTA came into effect. The reduction in maquiladora salaries, however, dates from the year before NAFTA, which raises questions that cannot be answered without further research, but salaries begin to raise from 1995 onwards.

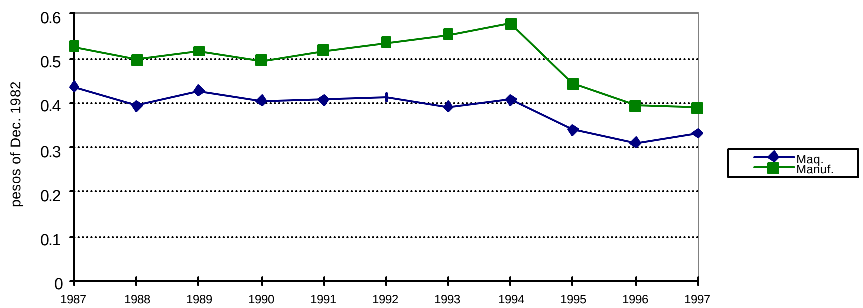
MAQUILADORA VS. MANUFACTURING SALARIES IN THE CLOTHING INDUSTRY



The following graph of "Maquiladora vs. Manufacturing Salaries in the Tools Industry" (based on data in Table 9) shows salaries in both branches that have always been fairly high in relation to the rest of their respective maquiladora and manufacturing categories, because the work in both is highly qualified. The maquiladora branch repairs tools and machinery, temporarily imported into Mexico, whereas the manufacturing branch carries out fabrication, as well as assembly and repair, of machinery and equipment. Their salaries have moved on parallel tracks, much like those of the 'Electric and electronics industry', except for the period between 1990 and 1994 when the manufacturing sector experienced a recovery. Upon entering the TLCAN salaries fell, although they did turn upwards just this last year in the maquiladora branch.

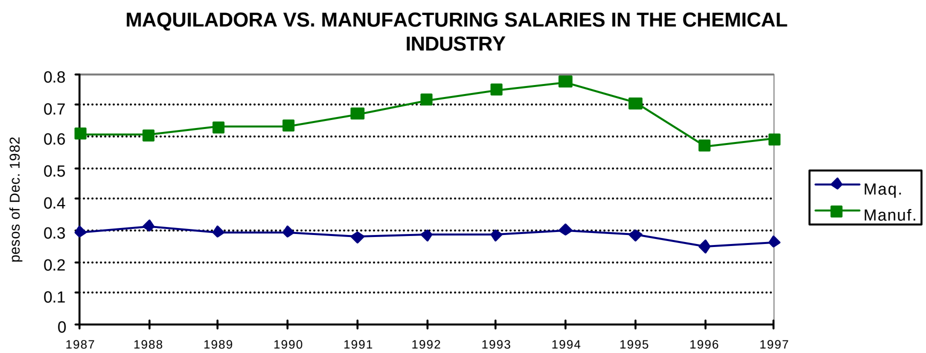
The transport industry is the last sector in which there are some signs of convergence. As can be seen in the following graph, "Maquiladora vs. Manufacturing Salaries in the Transport Industry" (see Table 10) salaries are beginning to move towards each other by the end of the period even though there is still a very significant difference between the two. The productive process is similar in the larger assembly plants of both industries, where sophisticated techniques are used.

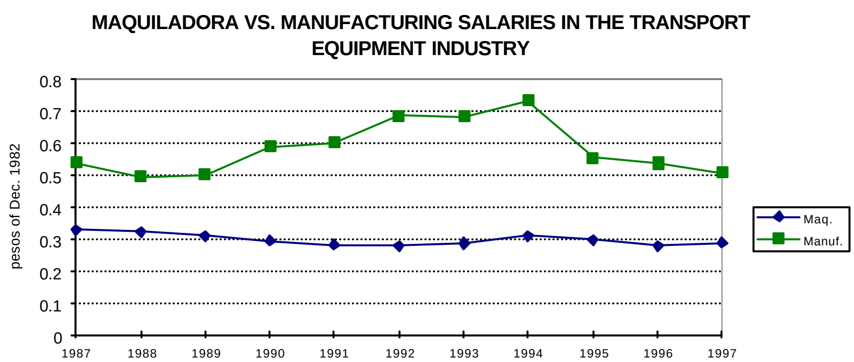
MAQUILADORA VS. MANUFACTURING SALARIES IN THE TOOLS INDUSTRY



However both industries include important segments of other types of establishments which, in the case of manufacturing, are associated mainly with the fabrication of autoparts whereas, in the case of the maquiladora industry, with much less sophisticated activities such as the polishing of hubcaps. These differences in product and processes help explain the absolute distance between the two salary levels. The change towards convergence at the end of the decade is due mainly to movements in the manufacturing branch, whereas the maquiladora salary, on the contrary, remained stable over the decade, with a upwards movement in 1997. Perhaps this can be explained by the fact that the manufacturing branch was hard hit by NAFTA and the 1995 crisis. In addition, the presence of strong unions in the manufacturing sector and their absence from the maquiladora subsector could also have helped push salaries up during the 1989 to 1993 recovery and bring them down with industrial restructuring, carried out in order to absorb the shock of increased imports and reduced demand.

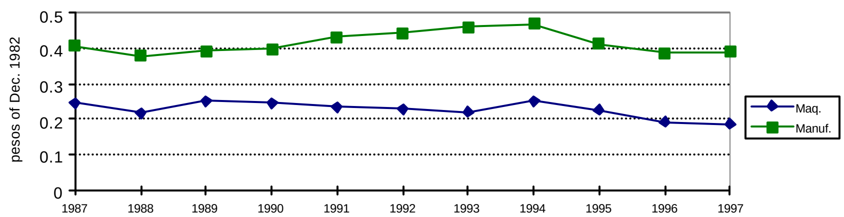
At the opposite end of the spectrum of maquiladora subsectors are the chemical and food industries in which salary levels are maintaining or increasing their distance from their manufacturing counterparts. As can be seen in the following graph, "Maquiladora vs. Manufacturing Salaries in the Chemical Industry" (based on data in Table 11), although the salary level in this maquiladora subsector is normal by maquiladora standards, it is completely out of line with the manufacturing branch. It should be noted that the manufacturing salary in this branch even stands out with respect to the others, selected expressly on the basis of their affinity to assembly work. This is because there is little or no assembly work in the large-scale continuous-process chemical plants that dominate the manufacturing. Therefore, although the product areas are comparable, there is little or no point of comparison between the productive processes. Labor requirements for plastic injection in the chemical subsector of the maquiladora industry are totally different from those of the manufacturing branch. Therefore, the lack of an appropriate counterpart for the maquiladora operations changes the expected correlation with the manufacturing branch from convergence to divergence, in this case.





Finally, the graph below of "Maquiladora vs. Manufacturing Salaries in the Food Industry" (based on data in Table 12) is another example of equivalent products areas, with very different productive processes. In the maquiladora subsector, middle-aged women are employed to sort and pack, manually, different types of food products. Due to its very low skill requirements, this product area is the lowest paying of all maquiladora subsectors. On the contrary, the manufacturing branch is a modern industry, dominated by foreign capital, with a work force that is only about 20 per cent female. Whereas it is not, by far, among the highest paying manufacturing activities, it has maintained certain stability, indicating its crisis resilience and its ability to reconvert to the new open market conditions. The distance between the two salary levels is considerable, with a tendency to increase not only in the middle of the decade but also at the end, after NAFTA went into effect. It is the only case in which the gap between maquiladora and manufacturing salaries actually increased in the post NAFTA period.

MAQUILADORA VS. MANUFACTURING SALARIES IN THE FOOD INDUSTRY



4. Conclusion.

The objective of this Paper was to explain the structural advantage that the manufacturing salary has maintained over the salary level registered in the maquiladora industry during the twenty-three year period studied in the first graph. Although the divergence between salaries in these two industries has been diminishing, due to the negative impact that a succession of crisis has had on the manufacturing industry, there was still a 30 per cent difference between them in 1997. In order to explain this persistent difference, we disaggregated the data and compared the two industries on the sectoral level. These sectoral comparisons, for which data was available over a ten year period, proved that the divergence observed between manufacturing and maquiladora salaries is actually concentrated in three specific sectors: food, chemicals, and transport; in all the rest of the sectors, salaries are either similar or converging. Thus, products, productive processes and skill requirements are confirmed as important explanatory variables, both in the case of salary convergence and in the cases of salary divergence.

In most sectors —'toys', 'furniture', 'shoes', 'electric/electronics', 'clothing' and 'tools'— salary convergence coincided with notable product and process similarities. On the other hand, where the salaries do not converge — i. e. in the 'chemical' and 'food' industries— there was no reason to expect them to do so because no suitable counterpart for the productive process carried out in the maquiladora subsector could be found within the manufacturing branch. The 'transport' industry is an intermediate case between the 'chemical' and 'food' sectors, on one hand, and those sectors where maquiladora and manufacturing salaries are similar and converging, on the other. Although there is a movement towards convergence in 'transport', the absolute difference between maquiladoras and manufacturing is still great which perhaps is due to the fact that product and process are similar in assembly plants but not in the rest of the subsector.

Therefore, on the basis of our sectoral analysis, we can conclude that the variables of product, process and skill levels do explain the differences observed in salary levels between the maquiladora and manufacturing industries. This is not to say, however, that these same factors account for all movements observed in the two salary levels. The dramatic swings observed within the different manufacturing branches seem to be the combined effect of economic recovery and industrial restructuring,; but this would be the object of another study, sector by sector, within the manufacturing industry. Neither can it be concluded that the initial upturn in maquiladora salaries, observed after NAFTA and after the 1995 crisis, constitutes a new tendency; it is still too soon to claim anything of the sort. If the maquiladora salary continues to strengthen, in relation to the manufacturing salary, research should begin at the sectoral level, looking for a relationship between productive processes, skill requirements and salary levels.

Statistical Annex

TABLE 1 MAQUILADORA ESTABLISHMENTS IN MEXICO, 1974-1997.

Year	TOTAL EST.	RATE OF ANNUAL GROWTH	EST. IN THE BORD. ZONE	RATE OF ANNUAL GROWTH	EST. IN THE INT. OF THE COUNTRY	RATE OF ANNUAL GROWTH	INTERIOR AS % OF TOTAL	BORDER AS % OF TOTAL
1974	455		429		26		5.7	94.3
1975	454	-0.2	418	-2.6	36	27.8	7.9	92.1
1976	448	-1.3	406	-3.0	42	14.3	9.4	90.6
1977	443	-1.1	398	-2.0	45	6.7	10.2	89.8
1978	457	3.2	406	2.0	51	11.8	11.2	88.8
1979	540	18.2	480	15.4	60	15.0	11.1	88.9
1980	620	14.8	551	12.9	69	13.0	11.1	88.9
1981	605	-2.4	533	-3.4	72	4.2	11.9	88.1
1982	585	-3.3	514	-3.7	71	-1.4	12.1	87.9
1983	600	2.6	533	3.6	67	-6.0	11.2	88.8
1984	672	12	595	10.4	77	13.0	11.5	88.5
1985	760	13.1	672	11.5	88	12.5	11.6	88.4
1986	890	17.1	770	12.7	120	26.7	13.5	86.5
1987	1,125	26.4	926	16.8	199	39.7	17.7	82.3
1988	1,396	24.1	1,140	18.8	256	22.3	18.3	81.7
1989	1,467	5.1	1,327	14.1	328	22.0	22.4	90.5
1990	1,703	16.1	1,477	10.2	461	28.9	27.1	86.7
1991	1,914	12.4	1,406	-5.0	508	9.3	26.5	73.5
1992	2,075	8.4	1,525	7.8	550	7.6	26.5	73.5
1993	2,114	1.9	1,535	0.7	579	5.0	27.4	72.6
1994	2,085	-1.4	1,489	-3.1	596	2.9	28.6	71.4
1995	2,130	2.2	1,446	-3.0	684	12.9	32.1	67.9
1996	2,411	13.2	1,579	8.4	831	17.7	34.5	65.5
1997	2,717	12.7	1,735	9.0	983	15.5	36.2	63.9

SOURCE: Instituto Nacional de Geografía y Estadística (INEGI), Estadística Nacional de la Industria Maquiladora de Exportación, 1974-1997.

TABLE 2 ORIGIN OF INTERMEDIARY GOODS USED IN THE MAQUILADORA INDUSTRY,1979-1997

YEAR	TOTAL INTERM. GOODS 1/	IMPORTED INTERM. GOODS	NATIONAL INTERM. GOODS	NATIONAL AS A % OF TOTAL	PRICE INDEX (Dec. 1982)	NAT. INTER. GOODS (DEFLATED)
1979	36,410.5	35,895.3	515.2	1.4	29.4	1,754.77
1980	40,792.7	40,095.7	697.0	1.7	37.8	1,845.38
1981	55,386.9	54,679.4	707.5	1.3	48.2	1,469.37
1982	110,346.0	108,928.2	1,417.8	1.3	76.3	1,859.08
1983	349,318.9	344,782.9	4,536.0	1.3	145.1	3,127.11
1984	637,769.8	629,299.0	8,470.8	1.3	240.0	3,529.66
1985	989,439.6	980,548.9	8,890.7	0.9	378.6	2,348.43
1986	2,684,371.2	2,653,200.0	31,171.2	1.2	705.0	4,421.20
1987	7,706,729.2	7,588,323.3	118,405.9	1.5	1,634.5	7,244.25
1988	17,879,487.0	17,582,455.0	297,032.0	1.7	3,500.0	8,486.63
1989	23,274,034.0	22,913,026.0	361,008.0	1.6	4,200.9	8,593.62
1990	29,958,614.0	29,445,060.0	513,554.0	1.7	5,320.4	9,652.63
1991	37,583,278.0	36,911,382.0	671,896.0	1.8	6,526.5	10,294.81
1992	44,634,261.0	43,803,707.0	830,554.0	1.9	7,538.1	11,018.15
1993	56,000,039.0	55,028,796.0	971,243.0	1 .7	8,273.3	11,739.55
1994	70,289,807.0	69,250,362.0	1,039,445.0	1 .5	8,849.6	11,745.73
1995	142,437,236.0	140,055,443.0	2,381,793.0	1 .7	11,946.8	19,936.60
1996	222,137,525.0	217,872,211.0	4,265,314.0	1 .9	16,054.0	26,568.60
1997	284,657,833.0	278,143,294.0	6,514,539.0	2 .3	19,365.2	33,640.41

1/ (millions of pesos)

SOURCE: INEGI, Instituto Nacional de Geografía y Estadística (INEGI), Estadística de la Industria Maquiladora de Exportación, 1979-1997.

TABLE 3 NOMINAL AND REAL SALARIES IN THE MAQUILADORA* AND MANUFACTURING INDUSTRIES

YEAR	SALARY PER DAY IN MAQUI LADORAS*	PRICE INDEX Dec.1982	MAQUI LADORA DAILY SALARY (DEFLATED)	GROWTH RATE OF REAL SALARIES IN MAQUI LADORAS	SALARY PER DAY IN MANU FACTURING	MANU FACTURING DAILY SALARY (DEFLATED)	GROWTH RATE OF REAL SALARIES IN MANU FACTURING
1975	0.067	14.0	0.477	-	0.112	0.805	-
1976	0.084	16.3	0.513	7.5	0.141	0.861	6.9
1977	0.107	21.1	0.508	-1.0	0.184	0.874	1.5
1978	0.123	24.6	0.499	-1.6	0.210	0.853	-2.4
1979	0.138	29.4	0.471	-5.7	0.248	0.844	-1.0
1980	0.159	37.8	0.421	-10.7	0.301	0.797	-5.6
1981	0.202	48.2	0.420	-0.2	0.393	0.817	2.5
1982	0.336	76.3	0.440	4.9	0.621	0.815	-0.2
1983	0.529	144.6	0.366	-16.9	0.918	0.635	-22.0
1984	0.846	240.0	0.352	-3.7	1.460	0.608	-4.2
1985	1.298	378.6	0.343	-2.7	2.310	0.610	0.3
1986	2.268	705.0	0.322	-6.2	3.821	0.542	-11.2
1987	5.195	1,634.5	0.318	-1.2	8.365	0.512	-5.6
1988	10.468	3,500.0	0.299	-5.9	16.913	0.483	-5.6
1989	12.605	4,200.9	0.300	0.3	20.788	0.495	2.4
1990	15.461	5,320.4	0.291	-3.2	26.645	0.501	1.2
1991	18.486	6,526.5	0.283	-2.5	33.611	0.515	2.8
1992	21.048	7,538.1	0.279	-1.4	41.184	0.546	6.1
1993	23.248	8,273.3	0.281	0.6	45.896	0.555	1.5
1994	26.236	8,849.6	0.296	5.5	50.489	0.571	2.8
1995	31.973	11,946.8	0.268	-9.7	52.782	0.442	-22.6
1996	39.213	16,054.0	0.244	-8.7	65.328	0.407	-7.9
1997	49.821	19,365.2	0.257	5.3	78.600	0.406	-0.3

Does not include technicians

SOURCE: INEGI, *Estadística de la industria maquiladora de exportación*;1975-1997; *Estadística industrial anual, 1975-1982*; *Encuesta industrial anual 1983-1986; Encuesta industrial mensual 1987-1997; Índice de precios* of the Comisión Nacional de Salarios Mínimos, 1974-1982; and *Índice de precios al consumidor* del Banco de México, 1983-1997.

TABLE 4:MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE TOY INDUSTRY

Year	MAQUI LADORA SALARY	MANU FACTURING SALARY	PRICE INDEX Dec.1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC.
1987	5.379	6.298	1,634.5	0.329	0.385	0.85
1988	11.805	12.557	3,500.0	0.337	0.359	0.94
1989	14.200	16.435	4,200.9	0.338	0.391	0.86
1990	18.039	20.325	5,320.4	0.339	0.382	0.89
1991	20.329	26.817	6,526.5	0.311	0.411	0.76
1992	20.540	27.109	7,538.1	0.272	0.360	0.76
1993	23.499	29.312	8,273.3	0.284	0.354	0.80
1994	25.834	31.972	8,849.6	0.292	0.361	0.81
1995	30.380	32.221	11,946.8	0.254	0.270	0.94
1996	38.798	38.640	16,054.0	0.242	0.241	1.00
1997	48.457	47.404	19,365.2	0.250	0.245	1.02

* Manufacturing class 3223: Fabrication by mold or extrusion of foot wear and plastic toys.

SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación*; and *Encuesta industrial mensual, Resumen anual* 1987-1997.

TABLE 5: MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE FURNITURE INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec.1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC..
1987	5.840	6.077	1,634.5	0.357	0.372	0.96
1988	11.141	11.562	3,500.0	0.318	0.330	0.96
1989	13.519	14.202	4,200.9	0.322	0.338	0.95
1990	15.786	18.341	5,320.4	0.297	0.345	0.86
1991	19.778	23.715	6,526.5	0.303	0.363	0.83
1992	22.467	28.997	7,538.1	0.298	0.385	0.77
1993	24.136	33.411	8,273.3	0.292	0.404	0.72
1994	27.505	33.977	8,849.6	0.311	0.384	0.81
1995	32.524	37.250	11,946.8	0.272	0.312	0.87
1996	39.193	44.515	16,054.0	0.244	0.277	0.88
1997	51.432	51.141	19,365.2	0.266	0.264	1.01

* Manufacturing classes 2711 and 3520: Fabrication of wooden and metallic furniture and accessories.
SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación*, and *Encuesta industrial mensual, Resumen anual* 1987-1997.

TABLE 6:. MAQUILADORA VS. MANUFACTURING* SALARIES IN THE SHOE INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec. 1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC.
1987	5.112	5.703	1,634.5	0.31	0.35	0.90
1988	9.266	12.000	3,500.0	0.26	0.34	0.77
1989	10.586	17.620	4,200.9	0.25	0.42	0.60
1990	13.882	24.978	5,320.4	0.26	0.47	0.56
1991	16.881	30.460	6,526.5	0.26	0.47	0.55
1992	21.368	40.538	7,538.1	0.28	0.54	0.53
1993	25.095	39.942	8,273.3	0.30	0.48	0.63
1994	27.559	40.297	8,849.6	0.31	0.46	0.68
1995	32.292	38.204	11,946.8	0.27	0.32	0.85
1996	33.011	46.930	16,054.0	0.21	0.29	0.70
1997	48.535	54.790	19,365.2	0.25	0.28	0.89

* Manufacturing class 2500: Fabrication of shoes and the leather industry

SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación*, and *Encuesta industrial mensual, Resumen anual* 1987-1997.

TABLE 7: MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE ELECTRIC AND ELECTRONICS INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec. 1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC.
1987	5.273	6.813	1,634.5	0.323	0.417	0.77
1988	10.695	13.498	3,500.0	0.306	0.386	0.79
1989	13.195	16.266	4,200.9	0.314	0.387	0.81
1990	15.953	19.778	5,320.4	0.300	0.372	0.81
1991	19.535	25.051	6,526.5	0.299	0.384	0.78
1992	21.957	29.928	7,538.1	0.291	0.397	0.73
1993	24.062	32.521	8,273.3	0.291	0.393	0.74
1994	26.859	34.420	8,849.6	0.304	0.389	0.78
1995	32.442	43.459	11,946.8	0.272	0.364	0.75
1996	40.785	53.076	16,054.0	0.254	0.331	0.77
1997	53.742	62.773	19,365.2	0.278	0.324	0.86

* Manufacturing class: 3700: Fabrication and assembly of electric and electronic machinery, equipment, appliances, accessories, articles, and their parts. Note that changes in the Industrial Survey from 1995 onwards included some new products in this class

SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación*, and *Encuesta industrial mensual, Resumen anual* 1987-1997.

TABLE 8: MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE CLOTHING INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec.1982	REAL SALARY IN MAQU ILADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC..
1987	4.633	5.560	1,634.5	0.283	0.340	0.83
1988	8.619	10.909	3,500.0	0.246	0.312	0.79
1989	10.348	13.755	4,200.9	0.246	0.327	0.75
1990	12.550	17.552	5,320.4	0.236	0.330	0.72
1991	15.041	22.016	6,526.5	0.230	0.337	0.68
1992	17.493	26.523	7,538.1	0.232	0.352	0.66
1993	19.007	29.265	8,273.3	0.230	0.354	0.65
1994	15.833	31.282	8,849.6	0.179	0.353	0.51
1995	19.577	32.372	11,946.8	0.164	0.271	0.60
1996	30.553	38.919	16,054.0	0.190	0.242	0.79
1997	37.996	47.056	19,365.2	0.196	0.243	0.81

* Manufacturing class 2400: Fabrication of clothing and other textile articles (excludes class 2433 which is 'Fabrication of cotton')

SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación*, and *Encuesta industrial mensual, Resumen anual* 1987-1997.

TABLE 9: MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE TOOLS INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec.1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC..
1987	7.137	8.592	1,634.5	0.437	0.526	0.83
1988	13.777	17.396	3,500.0	0.394	0.497	0.79
1989	17.927	21.665	4,200.9	0.427	0.516	0.83
1990	21.502	26.296	5,320.4	0.404	0.494	0.82
1991	26.510	33.747	6,526.5	0.406	0.517	0.79
1992	31.089	40.396	7,538.1	0.412	0.536	0.77
1993	32.364	45.788	8,273.3	0.391	0.553	0.71
1994	35.946	51.026	8,849.6	0.406	0.577	0.70
1995	40.638	52.961	11,946.8	0.340	0.443	0.77
1996	49.848	62.967	16,054.0	0.310	0.392	0.79
1997	64.183	75.453	19,365.2	0.331	0.390	0.85

* Manufacturing Class 3512 and Branch 3600: Fabrication of agricultural utensils and hand tools; fabrication, assembly and repair of machinery, equipment and its parts (except electronics).

SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación* , and *Encuesta industrial mensual, Resumen anual* 1987-1997.

TABLE 10: MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE TRANSPORT INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec.1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC.
1987	5.335	8.768	1,634.5	0.326	0.536	0.61
1988	11.189	17.300	3,500.0	0.320	0.494	0.65
1989	12.946	21.041	4,200.9	0.308	0.501	0.62
1990	15.497	31.207	5,320.4	0.291	0.587	0.50
1991	18.284	39.076	6,526.5	0.280	0.599	0.47
1992	20.850	51.586	7,538.1	0.277	0.684	0.40
1993	23.583	56.408	8,273.3	0.285	0.682	0.42
1994	27.311	64.777	8,849.6	0.309	0.732	0.42
1995	35.140	65.851	11,946.8	0.294	0.551	0.53
1996	44.234	85.963	16,054.0	0.276	0.535	0.51
1997	55.635	98.189	19,365.2	0.287	0.507	0.57

*Manufacturing class 3800: Construction, reconstruction and assembly of transport equipment and its parts.

Note that from 1995 onwards this class was divided in two:. 3841 and 3842; both are included in order to maintain data homogeneous with previous years.

SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación*, and *Encuesta industrial mensual, Resumen anual* 1987-1997.

TABLE 11: MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE CHEMICAL INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec.1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC.
1987	4.823	9.962	1,634.5	0.295	0.609	0.48
1988	10.943	21.204	3,500.0	0.313	0.606	0.52
1989	12.438	26.495	4,200.9	0.296	0.631	0.47
1990	15.751	33.659	5,320.4	0.296	0.633	0.47
1991	18.136	43.875	6,526.5	0.278	0.672	0.41
1992	21.573	53.993	7,538.1	0.286	0.716	0.40
1993	23.639	61.898	8,273.3	0.286	0.748	0.38
1994	26.761	68.571	8,849.6	0.302	0.775	0.39
1995	33.965	84.373	11,946.8	0.284	0.706	0.40
1996	39.973	91.367	16,054.0	0.249	0.569	0.44
1997	50.980	114.555	19,365.2	0.263	0.592	0.45

Manufacturing class 3000: Chemical industry. Note that starting in 1995 the *Encuesta Industrial Mensual* disaggregates this class in greater detail, including new substances and products.

SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación* ; and *Encuesta industrial mensual, Resumen anual* 1987-1997

TABLE 12: MAQUILADORA VS. MANUFACTURING*
SALARIES IN THE FOOD INDUSTRY

YEAR	MAQUI LADORAS SALARY	MANU FACTURING SALARY	PRICE INDEX Dec.1982	REAL SALARY IN MAQUI LADORAS	REAL SALARY IN MANU FACTURING	SAL. MAQ. / SAL. MANUFAC.
1987	4.038	6.662	1,634.5	0.247	0.408	0.61
1988	7.612	13.302	3,500.0	0.217	0.380	0.57
1989	10.670	16.553	4,200.9	0.254	0.394	0.64
1990	13.139	21.173	5,320.4	0.247	0.398	0.62
1991	15.365	28.153	6,526.5	0.235	0.431	0.55
1992	17.194	33.520	7,538.1	0.228	0.445	0.51
1993	18.225	38.164	8,273.3	0.220	0.461	0.48
1994	22.389	41.615	8,849.6	0.253	0.470	0.54
1995	27.194	49.283	11,946.8	0.228	0.413	0.55
1996	30.889	62.204	16,054.0	0.192	0.387	0.50
1997	36.397	75.747	19,365.2	0.188	0.391	0.48

*Manufacturing class 2000: Fabrication of food.
SOURCE: INEGI, *Estadística de la Industria Maquiladora de Exportación Encuesta industrial mensual, Resumen anual* 1987-1997

Notes

1 Eliseo Mendoza Berrueto, "Historia de los programas federales para el desarrollo económico de la frontera norte", Mexico: El Colegio de México, 1982, p. 48.

2 "Decreto para el Fomento y Operación de la Industria Maquiladora de Exportación" in Diario Oficial, August 15, 1983.

3 "Decreto para el Fomento y Operación de la Industria Maquiladora de Exportación" in Diario Oficial, December 22, 1989.

4 For more on this point see Mónica Gambrill, "On Changing our Position Towards Maquiladoras" in Rafael Fernández de Castro, et.al., Sectoral Labor Effects of North American Free Trade, Austin and Mexico City: University of Texas at Austin, UNAM/ITAM, 1993, pp. 305-315.

5 MónicaGambrill, "NAFTA and the Mexican Maquiladora Industry: Implications for Canada" in C. Paraskevopoulos, R. Grinspun y G. Eaton, Economic Integration in the Americas, Cheltenham, U. K.: Edward Elgar, 1996, pp. 78-87.

6 Direct' workers are those involved directly in production on the shop-floor; the category of 'workers' includes neither technicians nor administrative employees and that of 'salaries' does not include fringe benefits. Please note that all salaries are presented in real terms, that is, adjusted for inflation.

7 Even though the *Estadística de la Industria Maquiladora* reports information on the different maquiladora subsectors since 1979, the *Encuesta Industrial Mensual* —which is the source of information on the manufacturing industry— did not disagregate its statistics sufficiently in order to identify counterparts for the majority of the maquiladora subdivisions, until 1987 when it expanded its survey.

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