

INT-0133

ED NATIONS
ECONOMIC COMMISSION FOR LATIN AMERICA
Washington, D.C. and Mexico City Offices

Ekam (31345)
C-PA (0133)
FIRST UNREVISED DRAFT
FOR COMMENTS
September, 1975

TOWARDS AN EVALUATION OF INTERNATIONAL SUBCONTRACTING
ACTIVITIES IN DEVELOPING COUNTRIES

Interim Report upon Completion of Field Work
on "Maquiladoras" in Mexico

by

Wolfgang König
Regional Economic Advisor

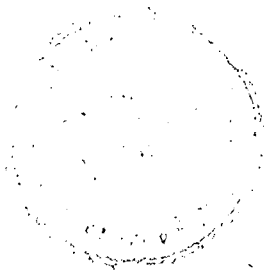


TABLE OF CONTENTS

	<u>Page</u>
PRESENTATION	v
I. APPROACH TO MAQUILADORAS	1
1. The subject matter and purpose of research	1
1.1 General background	1
1.2 Application of cost/benefit analysis	7
2. The interviews	16
2.1 Maquiladoras covered	16
2.2 Other interviews	18
II. LOCATION DECISIONS, OPERATING CONDITIONS AND COMMERCIAL PROFITABILITY	21
3. Location decision	21
3.1 Decision to locate in Mexico	22
3.2 Site selection within Mexico	24
4. Operating conditions	29
4.1 General characteristics of maquiladora activity	29
4.2 Legal and administrative framework	32
4.3 Labor force and labor relations	35
4.4 Problem areas	39
5. Commercial profitability	43
5.1 Maquiladoras	43
5.2 Host economy	45
III. ECONOMIC EFFICIENCY	47
6. General principles	47
7. Social opportunity cost of labor	52
7.1 Approach	52
7.2 Major findings	56
7.3 On employment generation	74
8. Other shadow pricing	76
8.1 Involving the public sector of Mexico	76
8.2 Involving the private sector of Mexico	81
8.3 Foreign exchange	82

	<u>Page</u>
9. Non-quantifiable effects	87
9.1 Working conditions and industrial environment	87
9.2 Learning effects and transfer of know-how	89
9.3 Linkage effects	92
9.3.1 Backward	92
9.3.2 Foreward	95
IV. SOCIAL PROFITABILITY	97
10. Considerations on macro-policy goals and conflicts	98
11. Migration	100
12. Distributional and related effects	105
12.1 Male versus female participation in employment	105
12.2 Income distribution at various levels	108
12.3 Patterns of ownership and operation	112
13. Investment/saving impact	115
V. UNCERTAINTY AND INSTABILITY	118
14. General costs in a dynamic perspective	119
15. Costs of downward adjustment of maquiladora operations	121
16. Summing up the determinants of maquiladora activity	124
VI. CONCLUDING REMARKS	127

PRESENTATION

Field work was done on a five-week tour of major Mexican border towns completed at the end of August and subsequently extended up into the first half of September to cover a number of maquiladoras in and around Mexico City. Complete data were collected from 31 plants that stand for approximately 20 per cent of the industrial volume of the maquiladora industry in Mexico.

The purpose of this interim report is to put the empirical material obtained into an analytical perspective with an anticipation of major results later to be detailed in a calculation of quantifiable effects. Comment are, however, particularly invited with respect to the adaption of standard methods of cost/benefit analysis to cases of international subcontracting activities in retrospect. The major attractiveness of such an approach is the possibility to single out the difference between the situation with and without those plants.

My research greatly benefited from the support given by colleagues and friends of the ECLA Washington, D. C., and Mexico City Offices. The theoretical framework was developed in Washington, D. C. beginning earlier this year and later refined in Mexico City from mid-June onwards, at the same time that the questionnaires were designed and the ground for the field work was prepared.

My thanks extend especially to the Directors and professional staff of the two Offices for guidance on research directions and logistics help. The field work itself was carried out with the very valuable collaboration of Eugenio Sánchez who accompanied me on the trips and did the bulk of the interviews with employees. Later he shared the tabulation of the data obtained in these interviews and prepared the presentation of all the statistics contained in this report. The efficient secretarial pool of the Mexico Office, in particular the very appreciated effort of Beatriz Osorio who transcribed the tapes, was highly instrumental in getting this document out fast. Last not least, I am grateful to the executives of the plants whose generous cooperation made an analysis possible on a solid empirical base.

Mexico City, September 24, 1975

/I. APPROACH

I. APPROACH TO MAQUILADORS

1. The subject matter and purpose of research

1.1. General background

There is quite some ambiguity concerning the definition and concept of the phenomenon conceived in Mexico as the "maquiladora industry". Terms that have been applied in the scarce literature on the topic are offshore assembly, contract manufacture, in-bond processing operations and, in the U.S. union language, "run-away plants". None of these terms seem to really fit the business practice in question which has been of rapidly increasing importance in international trade and investment in recent years. UN agencies such as the United Nations Industrial Development Organization (UNIDO) which have provided some technical assistance in the field have coined the corresponding practice "international subcontracting". This seems to be quite an adequate term for such business relationships involving principals in industrial and subcontractors in developing countries, relationships that are usually the result of a relocation of productive processes outside the country of the principal in order to take advantage of the corresponding wage differentials.

International subcontracting includes a wide variety of business practices, but crucial may be in most cases a dependency of the subcontractor upon the principal which may indeed take various forms and range from technical advice to foreign direct investment together with supply of all materials to be used. The subcontractor could be an independent firm or, which is more frequent, a foreign subsidiary, the parent company being the principal in the latter case.

Generally speaking, since the subcontractor becomes active upon the order of the principal, usually entailing precise technical specifications, he cannot be considered a full-fledged entrepreneur. The demand for his products is a derived demand, leaving the corresponding market effort usually up to the principal.

Some definitional qualifications may be in order. The concept of international subcontracting would also apply to cases that constitute more than mere maquiladora activities as they are understood in Mexico, where one expects that those plants would import all or the majority of their material inputs although Mexican authorities would like to see an increased sourcing of theirs in the local economy. This practice may indeed also comprise those export industries that rely highly upon local materials provided their productive processes constitute a relocation from within industrialized countries, actual or potential, in order to take advantage of differentials in labor costs between these nations and developing host economies. Such industries using domestic physical inputs much beyond ancillary services might not be easily identified. Conceptually-wise, however, they can be singled out without difficulty: they would use domestic materials, the weight and/or bulkiness of which is not reduced through their processing so that the cost of non-material inputs, that is, mainly labor, determines the location of operations. There are, in fact, a number of firms in Mexico which are not considered maquiladoras but could constitute international subcontracting activities. They operate under different customs regulations, most of all under the regime of "temporary imports". In our field work, however, we concentrated exclusively on maquiladoras in the traditional sense, i.e. those with a pronounced enclave character, so that these conceptual considerations were of no practical relevance to our work.

As another definitional qualification, in some cases a dependency of the subcontractor upon an order to be given by the principal before operations are initiated may not be an essential feature of international subcontracting. This would apply to standardized products for which there is a perfectly competitive market, a situation that may, however, be rare in the field of manufacturing, excepting perhaps some of the food processing industries.

Against the above conceptual background various conclusions about the nature and scope of international subcontracting may be drawn. First, although the comparative advantage of the host country occurs in terms of

labor costs, semi-industrialized countries with a relatively high wage level with the developing world like Mexico will also qualify as locations for subcontracting in those activities in which the skill requirements are high. International subcontracting then may not only express a division of labor between industrial and developing countries but might also be shaped along the line of comparative advantage within the developing world, permitting most of these nations to be involved. Second, since international subcontracting implies the specialization and division of productive processes, it favors the vertical integration of companies and thus may be actively sought by multinational corporations, but, on the other hand, foreign ownership of subcontracting firms will be a less critical issue to principals than the observation of high standards of quality and other specifications imposed upon the subcontractor. A major reason is that international profit shifting possibilities are not determined very much by ownership of maquiladora plants since the principal may, without difficulty, resort to transfer pricing.

Over the past ten years, an increasing number of developing countries has been progressively tied to the internationalization of production and marketing by an active promotion of theirs of international subcontracting activities within their economies. While there is considerable reservation towards this practice in some circles, rather on emotional grounds since a substantial employment, in their opinion "exploitation", of cheap labor in the Third World is involved, a realistic analytical approach would be to raise the question whether international subcontracting constitutes a means of improving the international division of labor through a better world-wide allocation of resources and thus leads to a win-win situation for both developed and less developed countries. This question would be answered in the affirmative by many developed countries for which international subcontracting has been an accepted practice for many years and others that are now actively trying to be host to this business.

In principle, the case for international subcontracting can be made on various accounts. The remarkable expansion of world trade in the

post-Second World War period derived its most powerful impetus from the growth of trade in manufactured products. Many developing countries, however, remained excluded from this and continued to rely heavily upon exports of raw materials that, on many occasions, proved to be a highly unstable source of foreign exchange and thus rather unpredictable condition of their capacity to import. International subcontracting offers them an important alternative. In fact, the cost and availability of labor being a major motive, this practice provides the only chance to export manufactured goods and to industrialize to those developing countries that, possibly because of a lack of natural resources and the narrowness of their domestic markets, cannot do so otherwise. Such diversification of their international supply will go hand in hand with the diversion of their domestic economic structure, at the same time that job opportunities for the unskilled, usually belonging to the vast pool of unemployed and under-employed, are increased. Adoption of international subcontracting might permit, for the first time, the introduction of significant economies of scale and directly lead, without marketing costs, to substantial manufactured exports on the basis of host economies' comparative cost advantage. Thus a strengthening of their trade balance will take place within the context of industrial promotion efforts. To some degree, there is also the chance of obtaining from abroad technologies that are in line with the domestic factor endowment.

Acceptance and promotion of international subcontracting activities by host governments in the developing world constitute, in most cases, an important element of an outward-looking-development strategy that has been adopted since the early 1960s. Included are notably a number of semi-industrialized nations such as Mexico which have realized that a conversion of high cost import substitution into export industries is difficult to accomplish in a short and medium run because the step towards international competitiveness is too great. Their experience has shown that diversification of exports is usually extremely slow and much more difficult than diversification of the structure of production and that the lack of harmonizing the two will lead to excessive protection accompanied by a considerable cost to society.

U.S. imports under tariff items 806.30 and 807.00 are a good indicator of the dynamics of international subcontracting over the past years. Such imports from the developing world increased in only five years from U.S. 395 million to U.S. 1 523 million in 1973. The dutiable value of these imports, which is a rough measure of the value added in the host economies, amounted to U.S. 177 million and 827 million, respectively. Such U.S. imports from Mexico amounted to over one billion U.S. dollars in 1974 with a value added of 464 million. In recent years, these transactions had been increasing for Mexico at a yearly rate of about 50 per cent.

An analysis of the geographic composition of such U.S. trade will probably reveal that there is a relative shift of U.S. originated international subcontracting activities from other developing countries towards the Western Hemisphere. Table 1 presents the development of U.S. imports from Mexico and Central America under tariff items 806.30 and 807.00 for selected years of the past decade (Central America is not involved in 806.30 trade, which, for Mexico, constitutes about 10-15 per cent of the total).

Research was originally supposed to concentrate on maquiladoras in Central America and, to some extent, in the interior of Mexico for the following reasons. First, it appears particularly important to evaluate the actual and potential role of subcontracting in the case of small countries that, because of the narrow size of their domestic markets and possibly poor resource endowment, have only limited possibilities to gain an industrial experience and to promote manufactured exports, that is, to have at their disposal the elements that are generally considered indispensable for a successful development strategy in an increasingly interdependent world. Second, subcontracting in Central America and in the interior of Mexico appeared at first sight "pure" in comparison with border-zone cases in Mexico where a variety of additional circumstances might complicate a conclusive evaluation of their impact upon the host economy.

Table 1

UNITED STATES IMPORTS FROM MEXICO AND CENTRAL AMERICA UNDER TARIFF
ITEMS 806.30 AND 807.00, 1966, 1970, 1973 AND 1974

(Millions of dollars)

Country and year	Total value	Duty free value	Dutiable value	(3) As per- cent of (1)	Yearly increase	
	(1)	(2)	(3)	(4)	(1) (5)	(3) (6)
<u>Mexico</u>						
1966	7.1	3.6	3.4	48.6	-	-
1970	218.8	138.3	80.5	36.8	45.9	54.5
1973	651.2	364.8	286.4	44.0	52.7	68.4
1974	1 032.9	568.9	464.0	44.9	58.6	62.0
<u>Costa Rica</u>						
1970 ^{a/}	2.1	1.5	0.7	33.3	16.7	16.7
1973	7.0	4.4	2.6	37.1	22.8	52.9
1974	11.3	8.0	3.3	29.2	61.4	26.9
<u>El Salvador</u>						
1970	0.4	0.3	0.1	25.0	100.0	0.0
1973 ^{a/}	4.7	3.5	1.1	23.4	193.8	175.0
1974	20.4	12.5	7.9	38.7	334.0	618.2
<u>Guatemala</u>						
1970	b/	b/	b/	-	-	-
1973	0.2	0.1	0.1	50.0	-	-
1974	0.8	0.4	0.4	50.0	300.0	300.0
<u>Honduras</u>						
1966	b/	b/	b/	-	-	-
1970	0.8	0.6	0.2	25.0	0.0	0.0
1973 ^{a/}	1.6	1.0	0.5	31.3	23.1	66.7
1974	1.9	1.4	0.5	26.3	18.8	0.0
<u>Nicaragua</u>						
1970	0.1	0.1	b/	-	-	-
1973	0.6	0.4	0.2	33.3	50.0	100.0
1974	1.2	0.9	0.3	25.0	100.0	50.0
<u>Belize</u>						
1966	0.3	0.1	0.2	66.7	-	-
1970	0.5	0.4	0.1	20.0	-37.5	-66.7
1973	2.1	1.5	0.7	33.3	10.5	16.7
1974	2.7	2.0	0.7	25.9	28.6	0.0

Source: United States Tariff Commission, Economic Factors Affecting the use of items 807.00 and 806.30 of the tariff schedules of the United States. T.C. Publication. 339 Washington D.C., September 1970; unpublished data provided by the United States Bureau of the Census.

^{a/} (2) and (3) do not add to total (1) because of rounding. ^{b/} Less than \$50,000. /Then,

Then, however, it was opted, for the time being, for a study that would concentrate exclusively on a representative sample of the total of maquiladora activity in Mexico. In doing so, we were convinced that preparatory methodological work would be sufficient to handle the more complicated border zone cases. Furthermore, it appeared increasingly important not to leave aside such cases since they are of overwhelming quantitative importance in the Western Hemisphere and Mexico has a long-standing experience in the field. Additional reasons were that the presumably pure cases in the interior of Mexico do also have their peculiarities in that many are operating on the basis of excess capacity, the major part of their output being sold in the domestic market, and that a thorough analysis of the total maquiladora activity in Mexico would also permit to derive some of the conclusions originally desired about the potential role of smaller countries in international subcontracting.

The general purpose of research which will be somewhat qualified in the next section of this report are to evaluate the costs and benefits of maquiladora activity in terms of employment, growth, the trade balance, and income distribution of Mexico. Furthermore, considerations will be given to learning effects and the transfer of technical as well as managerial know-how to this country. Thereby it is hoped to identify the types of subcontracting activities most desirable as measured against the needs of Mexican development; to evaluate the role and effects of foreign versus local ownership of subcontracting firms; to determine the degree of emphasis to be placed on international subcontracting in the future in view of ongoing industrialization and the efforts made to diversify the country's exports; and to recommend guidelines or an improvement of the Mexican policy towards maquiladoras.

1.2. Application of cost/benefit analysis

The major principle underlying a cost/benefit analysis is shadow pricing, the general objective of which will be briefly explained as an introductory step.

The task of economizing on scarce resources presents itself as a constant challenge in the projection of economic activities because goods

/and services

and services needed are usually available only because they are taken away from other productive uses. In mixed economies, the price system has a major regulatory function in the allocation of resources but actual prices would be good reflectors of social costs and benefits only if, among other things, there were perfect competition and full employment. In reality, however, commercial and social costs and benefits rarely coincide because of market imperfections. Market prices then are often not a reliable measure of the contribution of productive activities to society.

The necessity to particularly conduct cost benefit analyses in developing countries is seen in the light of pronounced distortions of their economies. A few examples may be in order. Deliberate interference with the price mechanism, monopoly power, and immobility often lead to significant imperfections in the modern labor market of these countries. Here, even an unskilled worker may earn three or four times as much as casual rural labor. Thus, his wage would suggest that labor is scarcer than it really is and therefore would tend to greatly exaggerate the real cost of using such manpower. Second, foreign exchange management often leads to currency overvaluation so that domestic prices get out of line with world prices, a situation that is bound to lead to import restrictions. There will then be a gap between the market price of goods and the real cost of providing them. There are a number of other important fields in developing countries such as capital markets in which distortions brought about by similar causes make market prices bad reflectors of real costs and benefits to society.

In view of this, hypothetical rather than actual prices would better reflect the real costs of inputs and the real benefits of outputs to society. If any input or output is valued at a different price from that actually paid or received, a social accounting price or shadow price is being applied. Such estimated prices may more closely reflect the realities of economic scarcity and the value of economic needs.

Adjustments to market prices are then a major exercise in the application of cost-benefit analyses. The theoretical framework for the corresponding procedures and the methodology itself are highly developed, most of all since the publication of the UNIDO Guidelines and

the OECD Manual. These highly professional works on project evaluation constitute the main theoretical body for the orientation of our research.

These standard methods for industrial project evaluation need, however, to be somewhat adapted to the special case of international subcontracting activities. In general, while they are usually applied to projects in the planning stage, they will be used here for an ex-post analysis. Furthermore, maquiladora activity presents some distinct features in comparison with other industrial activity that need to be carefully pointed out in order to justify some peculiarities embodied in our analytical approach.

First, for maquiladora operations, starting costs are relatively small, there is no prolonged gestation period; entrepreneurs are quickly in business. Second, these operations do not draw resources from the rest of the host economy by giving little or nothing in return as it happens to be the case with much other industrial activity, at least in the beginning of operations, social income usually being negative in the early years of their life. Third, the funds required for investment in physical capital are small in view of the relatively labor intensive nature of operations. Thus, any evaluation of the worth of subcontracting projects, if at all desired, would be made from a much different perspective than is usually done. By implication, we assume that marginal profitability comes rather close to average profitability, at least from a certain level of operations onwards. Fourth, maquiladora plants do not necessarily have an inherent tendency to grow. Beyond a certain volume of operations, the attainment of a rated capacity is not an issue. Rather becomes this volume a matter of the size of the labor force employed, the by far major input involving the host economy. Fifth, it is quite difficult to come up with long-term assumptions and projections on subcontracting activities, the future outlook for which appears relatively unpredictable. From the viewpoint of the host countries, this activity is autonomously determined, in part because it faces a derived demand generated abroad. Their host governments can often influence no more than the rate of expansion of these operations; in a number of countries including Mexico, incentive measures would just

/constitute

constitute the going price that competing host nations are paying to attract this activity. Sixth, foreign subsidiaries that generally predominate in maquiladora business are not competing for investible funds within the host economy. Similarly, it is unlikely that foreign investors would make their funds available to the host countries in the absence of the possibility to subcontract. Furthermore in the same context, there is hardly any competition between foreign and local businessmen for the establishment of maquiladoras, since as was pointed out above, ownership is rather a non-issue because to principals the observation of product specification and quality is more important and profits may be shifted freely through transfer pricing under any form of ownership. In fact, host governments have usually taken a different stand towards foreign ownership of maquiladora business that is quite different to their general policy towards foreign direct investment. In Corea, for example, local ownership of assembly plants was even restricted up to a certain percentage for some time; Mexico allows the maquiladoras to be wholly foreign-owned whereas this is hardly possible when foreign subsidiaries are established to supply the domestic market. Seventh, competition for local materials as inputs to maquiladora activity, however desirable in terms of linkages, is very limited given the enclave character of much of that business. Eighth, whereas other industrial projects are often evaluated in order to help governments in the selection of competing alternative projects, according to macro-economic guidelines, and to increase the amount and efficiency of savings and investment, this hardly applies to a social cost/benefit analysis of international subcontracting activities. Ninth, international subcontracting activities would not be expected to put any strain on the balance of payments of host economies which is quite typical for many other industries, at least during their early lifetime.

These special features of the maquila activity have two important consequences for the analytical approach followed in our research. First, points 1 through 5 above would determine that discount procedures used to aggregate returns and outlays at different times, i.e. the establishment

of a social rate of discount, do not apply. The social net effect per maquiladora employee can, in fact, be assumed to be quite constant overtime, except mainly for changes in the rate of wages and inflation as well as in productivity. In general, the nature of international subcontracting activities would rather make it advisable to put stress on an evaluation of current operating costs. Therefore, it was decided to confine the analysis to current operational benefit/cost ratios. This implies a decision in favor of a static rather than a dynamic analysis. Some of the implications of this merit a comment. Capital costs, however rudimentary, will be considered in terms of an amortization charge with the corresponding shadow price for the period under review. Single cash outlays such as the acquisition of land will be treated separately. The possibility of downward adjustments in maquiladora operations and shutdowns of plants will be handled in a kind of sensibility analysis in terms of uncertainty and instability in a separate chapter.

A concentration on static values has the advantage that no choice must be made between current and constant prices. The ratios as such have a considerable advantage over absolute numbers in that, for example, a positive net effect may not give any idea whether this represents a relatively large positive balance between small costs and benefits or a relatively tiny balance between very large costs and benefits. Furthermore, such ratios are expected to reflect different degrees of economic efficiency depending upon the nature of the plants, their location, ownership patterns, the degree of domestic materials used, etc.

Any period could be chosen to calculate such benefit/cost ratios. It was decided to base them on data for the whole of 1974 since a whole year might be relatively more representative and data collection from the books of the companies is facilitated if they are requested for a calendar year. Despite recessionary tendencies, 1974 appeared to be as good a year as any other for the evaluation of maquiladora activity in Mexico since there was again a 50 per cent increase over the previous year, as had been the case since about 1969.

Second, the special features of international subcontracting activity mentioned under points 6 through 8 above would offer particularly attractive analytical aspects. Inasmuch as foreigners provide investment funds, the host economy does not incur any cost on this account, since such capital does not have a social opportunity cost in terms of alternative domestic uses. Thus, these funds need not be considered in the calculation of benefit/cost ratio. This further strengthened the above proposition to concentrate on current operational benefit/cost ratios. Imported material inputs for reexportation, usually being made up by sophisticated parts and components, can also be left out of the calculations on the similar grounds. In other words, the rather impossible task of valuing imported inputs and exported outputs with their respective world market prices - reference to these prices will be made under section 6 below - does not arise.

The most attractive analytical consequence stemming from the points 6 through 8, however, is that it will be possible to evaluate the difference between the situation with and without maquiladoras in terms of a net monetary result. In other words, it can be answered the question of what the Mexican economy would have looked like had the maquiladora activity not been undertaken. Our cost benefit analysis will lead directly to this result. The reason is that whereas other forms of foreign direct investment may have to be considered in the light of the alternatives of (1) local ownership of production facilities, (2) importation rather than production of products in question and (3) doing without the products, in the case of international subcontracting the only possible alternative is simply not to do it. The possibility that otherwise independent entrepreneurial talents are being absorbed into foreign-owned maquiladoras can be taken into account in the estimation of the social opportunity cost of that manpower. In any case, however, these local managers would normally lack the capital to become industrialists and if they were to run labor intensive maquiladora operation with little investment, they would probably be quite subjected to the orders and scrutiny of foreign principals and thus come rather close to the status of employees.

An evaluation of the question of what would have happened in the absence of maquiladoras is also seen to be greatly facilitated by the fact that little externalities stem from this export oriented activity, whereas many other industrial projects might help or damage other production. It will, however, be necessary to consider, for part of the analysis, the maquiladoras in Mexico as a whole and not as isolated cases since it is only the evaluation of their combined impact upon Mexican labor, for example, that permits an answer to the question of what would have happened on that account in their absence. It should also be clear that this question is to be distinguished from the question of what would happen if the present maquiladoras would disappear. Issues arising in respect of the latter are separately dealt with in chapter V.

Exclusive concentration on the value added by maquiladoras in Mexico would, however, also possibly leave aside questions concerning profits generated by foreign subsidiaries. There are good reasons for doing so although profits transferred abroad are usually considered a real cost to the host economy. International subcontracting activities constitute often only a partial relocation of productive processes from industrial to developing countries upon which the subcontractor becomes active only after he has received an order from the principal to produce. The subcontractor then is not a businessman with full fledged entrepreneurial functions for which profits are usually attributed. Then there is the problem of imputing any profit theoretically to be accounted for by the maquiladora operations since the corresponding values on the books of these companies are entirely an arbitrary matter in view of ample possibilities of transfer pricing. In the light of these aspects it occurs that the only meaningful exercise with respect to profits would be to calculate that amount of actual or potential profits transferred abroad that would reduce a positive benefit/cost ratio to the one. More will be said on this topic in the below sections 5.1 and 8.1.

Turning to procedures and stages of analysis, it will first have to be realized that not all costs and benefits involved are of purely economic nature and that only part of them can be quantitatively

/measured

measured in monetary terms. In the analysis we will make a major distinction between quantifiable and non-quantifiable effects. As for quantifiable effects, much of the foregoing methodological considerations are relevant. However, detailed aspects involving calculation questions will be taken up in the below section 6.

In general terms, the analysis will have to begin with a consideration of gross benefits that Mexico derives from international subcontracting activities. These benefits amount simply to the value added locally to the extent of which there is a gross foreign exchange inflow, neglecting the exceptional cases in which maquiladoras sell in the Mexican market. Next, all local inputs into the maquiladora operations will be considered in terms of their social opportunity cost which in the language of the UNIDO Guidelines is understood as the "Maximum alternative benefits foregone" (page 52). Most crucial will be a realistic evaluation of the real cost of labor since this resource constitutes the major local input and the difference between its cost and the wage rate of maquiladora labor is bound to significantly influence overall results. It is on this field where much of our field work was concentrated.

The evaluation of the social opportunity cost of labor is closely related to questions concerning employment generation through maquiladora activity and, in turn, to patterns of migration involving the various sites of subcontracting in Mexico. All these phenomena will have to be considered in a comprehensive analysis. Then, the possibility and necessity to apply shadow pricing of foreign exchange will have to be taken into account for which simply a premium can serve that reflects a possible overevaluation of the Mexican peso. We will probably resort to the number used in evaluations of the Presidency of Mexico, in a way the central planning office of the country.

So far we touched upon the field which we call economic efficiency and in which a net monetary result will be established as a kind of distortionary difference between market and shadow prices. With the conviction that various quantifiable costs and benefits of maquiladora activities have been evaluated and measured on a comparable basis, we

/will proceed

will proceed to a next stage of analysis described as social profitability. Here, in the ultimate instance, we might attach certain corrective weights to some of the data. To mind come the social value of investment and various distributional effects including male vs. female participation in maquiladora employment, personal and regional distribution of income, etc. Some of such adjustments may also be made in the light of macropolicy considerations and the degree of compatibility of development policy objectives involving the maquiladora plants.

As for non-quantifiable effects, consideration will be given to the transfer of technical and managerial know-how as well as learning effects already mentioned elsewhere. In addition, it will be important to evaluate the impacts, if any, that stem from maquiladora activity on structural change and industrialization efforts in Mexico; working conditions; motivation; impact on incentives; etc. As far as instability and any dependency effects are concerned, a separate analysis on such a topic is in order given the footloose character of international subcontracting and the number of pertinent arguments that are often thrown into the debate on maquiladoras in Mexico.

Some of the purposes of research mentioned at the end of the foregoing section may now be restated in terms of the general possibilities that the application of a cost/benefit analysis offers. The Mexican government cannot directly select the activities in the private sector in general and in the field of international subcontracting in particular, but it may have, in the latter case, a considerable influence over the initiation and location of such industries. This is a field in which a social cost/benefit analysis is particularly helpful in the ultimate instance. Indeed, policies towards maquiladoras in Mexico seem to have been followed with little or no adequate analysis of social profitability. Therefore the danger exists that a pattern of industrial development of little or no advantage emerges or, what seems to be more likely, that there is little awareness of actual and potential net benefits that society may derive from this activity. If maquiladora activity is socially profitable, it is important to know how much.

A social cost/benefit analysis can therefore serve the rationalization of the corresponding decision-making processes in the public sector and perhaps also in parts of the relevant private sector. This would involve, among other things, clarification on the questions to which extent development priorities are effectively pursued as far as the maquiladora industry is involved and in which way the possible social profitability of these plants to the Mexican society can be increased.

2. The interviews

2.1. Maquiladoras covered

The places where we visited maquiladoras and, with the exception of one plant, conducted interviews with plant managers were, in chronological order: Monterrey, countryside in the State of Nuevo León, Matamoros, Chihuahua, Ciudad Juárez, Nogales, Mexicali, Tijuana, Compostela (of about 20 000 inhabitants and located in the State of Nayarit), Guadalajara, Mexico City, Puebla, and Tlaxcala. Complete data on the value added in Mexico and its breakdown as well as on other fields covered by the questionnaire were obtained from 31 plants. The major characteristics of these maquiladoras are presented in Table 2.

All foreign owned plants except one of Japanese ownership are of U.S. origin. "Other industries" of the sample comprise shrimp, coupon, paper products, metal products, lenses and helmet assembly or processing operations.

Employment data may be a first indicator of the relative importance of the sample in total maquiladora activity in Mexico. The 1974 average represents nearly 20 percent of the total average maquiladora employment reported by the Secretary of Industry and Commerce (SIC) for that year.

Twelve maquiladoras of the sample belong to U.S. parents that were among the Fortune Directory of the 500 largest industrial corporations for 1974. Six of these corporations occupied a rank among the first hundred, three among the next hundred. No plant of our sample belonged to U.S. industrial corporations in the second 500 largest group. We

Table 2
MAJOR CHARACTERISTICS OF SAMPLE FIRMS

Location	Total number	Ownership		Industry				Employment	
		Foreign	Mexican	Elec-trical	Electro-nics	Tex-tile	Other	1974 average	Present
1. <u>Border cities</u>	<u>23</u>	<u>20</u>	<u>3</u>	<u>4</u>	<u>12</u>	<u>2</u>	<u>5</u>	<u>11 965</u>	<u>12 803</u>
Matamoros	6	6	-	3	2	-	1	3 400	4 180
Ciudad Juarez	6	6	-	1	4	-	1	5 153	5 752
Nogales	4	3	1	-	2	-	2	1 115	976
Mexicali	3	3	-	-	1	1	1	1 080	975
Tijuana	4	2	2	-	3	1	-	1 212	920
2. <u>Interior</u>	<u>8</u>	<u>5</u>	<u>3</u>	<u>-</u>	<u>4</u>	<u>2</u>	<u>2</u>	<u>2 647</u>	<u>2 179</u>
Chihuahua	3	-	3	-	-	2	1	426	596
Compostela	1	1	-	-	-	-	1	206	78
Guadalajara	3	3	-	-	3	-	-	1 953	1 438
Puebla	1	1	-	-	1	-	-	62	17
3. <u>Total: 1 + 2</u>	<u>31</u>	<u>25</u>	<u>6</u>	<u>4</u>	<u>16</u>	<u>4</u>	<u>7</u>	<u>14 612</u>	<u>14 982</u>

Table 3
SAMPLE FIRMS BY SIZE OF EMPLOYMENT AND MAJOR CHARACTERISTICS

Present employment range	Total number	Ownership		Location		Industry			
		Foreign	Mexican	Border	Inter-rior	Elec-trical	Electro-nics	Tex-tile	Other
Up to 99	8	5	3	5	3	1	2	2	3
100 - 199	6	5	1	4	2	-	4	1	1
200 - 499	8	6	2	5	3	2	3	1	2
500 - 999	7	7	-	6	1	1	5	-	1
above 1 000	2	2	-	2	-	-	2	-	-
<u>Total</u>	<u>31</u>	<u>25</u>	<u>6</u>	<u>22</u>	<u>9</u>	<u>4</u>	<u>16</u>	<u>4</u>	<u>7</u>

/have made

have made sure to also include smaller firms involved in international subcontracting activities in Mexico. Table 3 presents a breakdown of the sample by labor force presently employed together with the major characteristics of the plants.

Other plants we visited and where we conducted interviews, but that do not form part of the above sample, were: two Mexican firms that had been maquiladoras sometime ago; two maquiladora cooperatives in the textile industry previously owned by Mexican businessmen; one foreign-owned maquiladora in electronics where time did not permit to collect all data; two plants in electronics in the State of Nuevo León, belonging to a Mexican firm with activities in 16 small villages and a total present employment of 1 600; a firm in Mexico City that in 1974 destined part of its operation to maquila activity; and a textile plant in Tlaxcala that started operations only three months ago.

An average of five hours was spent in each maquiladora. This included an explanation of the general purpose of our visit together with a detailing of research goals; an interview with the general manager and, in larger firms, also with the comptroller and chief of personnel; interviews of employees; and, without exception, a tour of the production facilities and thus an insight into the working conditions of all employees.

2.2. Other interviews

In order to evaluate the social opportunity cost of maquila manpower, related distributional effects and migration, etc., we interviewed a total of 622 persons. Their characteristics by location, sex, and major job classification are presented in Table 4.

These interviews were conducted exclusively in the plants we visited and with the permission of managers. In two cases we dropped one question from the employee questionnaire at the request of company representatives.*

* ¿Qué haría si perdiera el trabajo en la maquiladora? - ¿Encuentra otro trabajo en esta ciudad? - ¿Se regresaría a su lugar de origen? - ¿Su familia lo mantendría? - and others.

Table 4

MAQUILADORA EMPLOYEES INTERVIEWED, BY SEX, MAJOR JOB CLASSIFICATION AND LOCATION

Location	Total num- ber	Female			Male		
		Opera- tor	Super- visor	Secre- tary	Opera- tor	Super- visor	Techni- cian
1. <u>Border</u>	<u>431</u>	<u>298</u>	<u>44</u>	<u>21</u>	<u>42</u>	<u>19</u>	<u>7</u>
Matamoros	66	43	14	3	-	3	3
Cd. Juarez	105	69	13	10	4	6	3
Nogales	79	44	2	6	25	2	-
Mexicali	96	71	11	1	12	1	-
Tijuana	85	71	4	1	1	7	1
2. <u>Interior</u>	<u>191</u>	<u>154</u>	<u>25</u>	<u>4</u>	<u>8</u>	-	-
State of							
Nuevo Leon	28	13	9	-	6	-	-
Chihuahua	47	37	4	4	2	-	-
Compostela	20	13	7	-	-	-	-
Guadalajara	64	63	1	-	-	-	-
Puebla	17	13	4	-	-	-	-
Tlaxcala	15	15	-	-	-	-	-
3. <u>Total: 1 + 2</u>	<u>622</u>	<u>452</u>	<u>69</u>	<u>25</u>	<u>50</u>	<u>19</u>	<u>7</u>

Selection of the employees interviewed was at random, but influenced at times by the needs of production, that is, for example, that operators at a conveyer belt could not be called upon in some plants; in these cases, there were, however, usually other operators available. Company representatives were present at about 15 to 20 percent of these interviews.

The first hundred employees were interviewed on a one by one basis, later in groups of three. They first were briefly explained the purpose of our visit and that the interviews would be on a no-name basis so that the atmosphere was usually relaxed and quite cordial. At times, conversations with employees considerably extended beyond the mere filling out of the questionnaire because I was interested in bringing out in detail one or the other point, particularly alternative job opportunities and the general situation of employment of the respective towns.

Finally, in search for the unprotected wage level for unskilled labor outside maquiladoras --where I assumed that often less than the legal minimum salary would be paid-- and, thus, in search for the income margin to the extent of which the operator might benefit from maquiladora existence since with few exceptions he is paid at least this minimum salary, we interviewed another 60 persons in various cities (Matamoros, Ciudad Juárez, Nogales, Mexicali, Tijuana and Guadalajara). These people are in those occupations that constitute important alternative employment opportunities for operators in the absence of maquiladoras. They were approached wherever we thought to be able to get hold of the lowest-paid jobholders: hotels, restaurants, shops, streets (vendors, etc.) and other places where, in part, there are people considered to stand for disguised unemployment.

II. LOCATIONS DECISIONS, OPERATING CONDITIONS AND COMMERCIAL PROFITABILITY

3. Location decision

The relocation of productive processes outside the country of the principal occurs without exception in view of a significant cost saving opportunity, whereby the comparative advantage of the host country occurs in terms of intangible local inputs, i.e. mainly labor. This shift is sought because of a competitive drive in most cases and often a particularly pressing need for relocation results from the shortness of the product life cycle which is typical in the highly competitive electronics industry.

Mexico offers interested principals this cost saving opportunity, but to a different degree than do most other developing countries that are also trying to attract international subcontracting activities. Generally speaking, the wage level of this country is relatively high within the developing world. Nevertheless, up to 1974 and presumably the present Mexico has been among the most preferred places for maquila operations originating from the United States. The variables that enter the location decision of U.S. firms involved can thus throw some light on the specifics of the competitive position of Mexico. In particular, their evaluation might help to single out the industries and types of enterprises that are particularly suited for the Mexican policy of promotion to be effective. Also an insight into the location-decision-making process will provide an understanding of the nature of the business that has been attracted to the country.

The decision to locate in Mexico and site selection within Mexico go hand in hand. But a separation of the two may be in order since the foreign investor can choose from a great variety of places within the country. In fact, although there is some concentration in certain towns, many other Mexican places have been involved in maquila activity, along the 2,000-mile border with the United States as well as in the interior of the country. There are usually quite significant differences from

location to location in terms of climates; infrastructural conditions; administrative framework; labor relations; transportation and other distant costs; availability and quality of manpower; legal minimum salaries; etc. The distinction between these two types of location decisions is also useful in the light of the fact that the Mexican government, since 1971, has actively sought to promote the establishment of maquiladoras in the interior of the country.

3.1. Decision to locate in Mexico

Most foreign companies interviewed made careful studies of a variety of possible sites in different parts of the world before they finally decided upon the location of the labor intensive productive processes to be shifted out of the U.S. In a number of cases, Mexico also benefited from a relocation of part or the total of maquila operations that U.S. based multinational companies had entertained in Asia.

Political stability can be considered as an essential condition in the eyes of the foreign investor. The reason is that many companies are looking for a long-term involvement with the host economy, however rudimentary the corresponding linkages may be and however footloose the maquila industry appears to be in general. Some of the foreign companies tend to invest highly in physical capital, and any threat of expropriation, actual or potential, would disqualify the corresponding host country as a site for a subsidiary. In the context, the prevailing foreign investment climate in the host country is a factor of important consideration together with local labor laws and official operating conditions. As far as the latter are concerned, and in the light of increased competition for international subcontracting activities among actual and potential host countries in the developing world, there is a certain minimum of incentives as the going price for the attraction of this business. This price is to be paid in terms of waving the application of pertinent import and other regulations in order to facilitate the supply and reimportation of materials by principals in industrialized countries,

/leading

leading in effect to the creation of a kind of a foreign enclave in the host economy either as bonded plants or industrial free zones. In Mexico, the maquila industry can generally be considered as being made up by individual in-bond operations.

For the world-wide subcontracting activity in general, transport costs usually play only a minor role in total costs considerations and thus location decisions; but this is somewhat different in the particular case of Mexico, the only developing country with a common border with an industrialized country. This geographical proximity to the U.S. is in fact a particular attraction to many companies of this country. Even light products, the assembly and/or processing of which is located in Mexico, offer substantial such savings in comparison with alternative locations in other nations. A case in point is a maquiladora which employs about five hundred workers to sort each week 9 million coupons with a shipping weight of four thousand kilos. Distance costs are, however, not only to be seen in terms of the heaviness and/or bulkiness of products and corresponding ocean or air transport rates. First, ocean transport may unduly tie up capital in inventories for weeks. Second, many products are constantly undergoing changes, often of design, and therefore do not lend themselves to long production runs which otherwise would, in a way, compensate for higher transportation costs. Third, many productive processes depend to a high degree upon the engineering help from the parent company which might have to be obtained within a very short time span. The latter aspect may also include the time element in implementing new product specifications.

Mexico may not qualify for a number of subcontracting activities because of its relatively high-wage level for unskilled labor referred to above. However, in a number of important cases, this wage differential may not be of prime consideration in a location decision. This will be typical for those plants to be established that are relatively capital intensive and stand for a high degree of industrial sophistication. The availability of skilled labor, and, maybe even more important, of technicians and local managers, perhaps together with ready technical support from the parent company, will then be decisive.

/There

There are a few more variables that were considered when the decision to locate in Mexico, and not in another part of the developing world, was made. First, some executives with Asian experience considered the degree of language barrier to be such a factor for consideration. Second, in a number of cases, in which particular emphasis was on long-term involvement with the Mexican economy, active consideration was given to gaining access also to the domestic and other Latin American markets within the framework of regional integration. Third, in the case of a non-U.S. foreign maquiladora, consideration had been given to rising costs of the material base in the country of origin in the sense that the U.S. is seen to become increasingly competitive in the future. In fact, it would not be out of the question that Mexico were to be increasingly considered as a site for maquiladora operations by European firms in the years to come although this may involve a not too easy switch of their sources of supply, most likely to the U.S. where parts and components as inputs may be expected to be produced relatively economically due to economies of scales.

3.2. Site selection within Mexico

The great number of Mexican places involved in international subcontracting activity is striking, but simply reflects the fact that different companies have quite different needs. Again, in many cases, the site selection followed a very careful study of alternative locations. Among the few exceptions to this rule were a plant placed near the rancho of a foreign executive and the local political connections of a Mexican wife of a plant manager. As far as Mexican-owned maquiladoras are concerned, there is naturally little site selection, a fact that might make these maquiladoras slightly less efficient and flexible vis-a-vis their foreign counterparts.

The legal minimum salary does not appear to have been a significant factor in the location decisions of most foreign companies, but it should be taken into account that many of them were established quite a few

/years

years ago when the absolute difference between low-wage and high-wage areas was relatively small. Nowadays, after several recent across-the-board increases, wages for unskilled labor may be anywhere between some \$250 and \$600 pesos per week, as we encountered them on our interview tour. Thus they are of importance to newcomers and those established firms, mainly in the relatively labor intensive textile industry, that are located in high-wage areas in Mexico and facing increasing competition from other developing countries. A textile plant we visited that was established only three months ago can probably afford to plan an increase of its labor force of 60 workers up to a thousand only because it is precisely located in one of the lowest minimum-wage areas of the country.

Operating conditions at particular sites are often changing rapidly, but have played an important role at the moment in which the decision to locate was to be taken. First, there is some difference, significant in the eyes of some executives, between the free zone of Baja California, a few years back including also Nogales, on the one hand, and other parts in Mexico, on the other. Generally speaking, access to U.S. supplies other than materials is much easier in the free zone. The advantages of the zone include also a cost-saving aspect in terms of bonding costs and a less bureaucratic handling of the usual customs business of maquiladoras. Second, relations at the political level were important in a number of location decisions, although other characteristics of the sites in question appear to be rather adverse. In particular, this involved easy access to a state government which cares and has a close working relationship with the one on the U.S. side. Third, many companies regard highly the facilities offered by an industrial park, the existence of which was a decisive factor in their location decision and that usually house a significant portion of the total maquila activity of the respective town. Our interview tour took us to four such parks which, in part, greatly impressed us by their infrastructure facilities and zoning regulations that are much beyond the usual requirements in Mexico. Plant managers highly praised the professional character of these privately-run establishments that usually offer any imaginable deal to interested

foreign investors from a mere renting of facilities to their own constructing them as well as the so-called shelter plant program which significantly reduces the risk to be taken by the foreign investor. Fourth, some location decisions were highly influenced by personal promotions, such as those made by park owners, but involving Mexican lawyers and accountants that subsequently have been doing a good deal of business with the maquiladoras. Fifth, labor relations in general and the pattern of union activity in particular have influenced location decisions; but again, over the years the corresponding conditions have undergone some change so that in certain parts of the border, companies are regretting now their original decision without seeing an easy chance to relocate.

A particular geographical location in terms of transport and other distance costs has played an important role in many decisions on site selection. Considerations underlying them are manifold and merit some detailed presentation. First, in an attempt to minimize transportation costs to be incurred in Mexico, many companies established themselves along the border. However, it appears that the cost-saving potential of such site selection vis-a-vis locations in the interior of Mexico is generally overstated. A company in Guadalajara, for example, saw its transportation costs increased by only 25% when relocating from the border zone, an additional cost that was more than offset by savings in terms of the corresponding legal minimum wage differential. Executives of this company made the point that site selection should be part of a proper long-range planning and not be unduly influenced by too short a horizon. The possibility to locate in the interior of Mexico is however relatively recent (1971), and the first plants there had to overcome quite a few bureaucratic obstacles before being able to operate smoothly. Nowadays companies in Guadalajara enjoy a benefit they consider highly: a special customs unit the work of which led to the elimination of the usually substantial handling charges and provides for rapid customs clearance of products transported in sealed trailers to the U.S. side of the border. Second, to some companies located in Ciudad Juarez it is

/important

important to have the U.S. market wide open from the best possible geographical angle. Third, transportation facilities in and near U.S. border towns, rail, air, and ports (Houston and San Diego), were given important consideration. Fourth, the existence of a twin plant on the U.S. side may be a most decisive factor as it is in some cases for which the degree of dependence of each plant upon the other is 100 percent. In a number of cases, however, there were only storage facilities involved on the other side. Fifth, closeness to the parent company is important if there is some measure of dependence of its Mexican maquiladora upon ready support facilities involving usually the expertise of technicians from the parent. Also direct communication between the two and the ability to quickly control a rapidly changing technology might be an asset in the context. Sixth, closeness to a large consumer market in the U.S., such as California, is important when the products of maquiladoras are final ones and ready feedback from this market is needed, as happens to be the case in the textile industry. Last not least, considerations were also given to climatic conditions that are quite different among a number of towns.

Considerations given by foreign companies to the availability of manpower which are of prime importance in a number of location decisions, are particularly noteworthy for a developing country with widespread industrialized experience such as Mexico. Companies that have stressed this factor may be located either at the border or in the interior. Important is that the wage level is of relatively minor relevance to them and that the ability to attract manpower and to reduce the turnover rate may be decisive. As for unskilled labor, availability of manpower is an issue either if a specific location offers specialized people at the operator level as it happens to be the case with one place where sewing ability is widespread among the population or if the operator is expected to have more than an elementary education since the type of assembly or processing would require him to be above average. In some towns where there is a relatively tight labor market for such labor, companies had a problem with the turn-over rate which was particularly

/troublesome

troublesome when long training periods implied a substantial investment in human capital as it is the case in the coupon maquiladoras. Too much reliance on migrants in border towns is generally considered precarious since a relatively high number of them will eventually seek employment opportunities in the U.S.

Availability of manpower becomes of utmost importance with respect to skilled labor and professional staff when the productive process is sophisticated and a high technology business is involved. This would concern those companies for which Mexico is highly attractive vis-a-vis many other countries in the developing world, and, in the Western Hemisphere, North of South America, companies that probably render relatively large benefits this country as we will see later. Generally speaking, these foreign investors are looking for American styled management and this requires that their location should be as attractive as possible to such foreign as well as local personnel. There are in fact a number of locations in which companies cannot hold such professional staff so that corresponding recruiting and retaining factors as well as general living conditions become decisive. Companies would then choose locations where there are universities and technical schools including night schools on the U.S. side where young graduates can pursue post graduate studies. Furthermore, for foreign nationals the possibility to live on the U.S. side is of some importance, particularly in view of the schooling of their children. Also, they often expect this place to be of a decent size, would like the Mexican twin city to be rather bicultural, not overcrowded, and prefer an industrial environment to too much tourist orientation. As far as the interior of Mexico is concerned, important consideration is given to metropolitan-sized towns together with training institutions and comfortable living conditions where Mexican professionals may even be hired at a lower salary than in other parts of the interior of the country including the Federal District.

4. Operating conditions

Prevailing operating conditions for maquiladoras in Mexico may best be appreciated in the light of the general characteristics of these plants. Therefore this part of the interim report is initiated by a characterization of the maquiladora business in Mexico including the trends that it is undergoing. No attempt is being made yet to quantify, for our sample group, the various quantifiable aspects that have been registered during the interviews.

4.1. General characteristics of maquiladora activity

Most firms of the sample established themselves towards the end of the 1960's and in the early 1970's. A few, however, had begun operations, with special permissions, already back in the early 1960's when there was not yet a defined maquiladora program on the part of the Mexican government; and, on the other extreme, a few started operations as late as 1974 and early 1975.

United States principals of maquiladoras in Mexico usually availed themselves of the incentives provided by U.S. tariff items 806.30 and 807 right from the start of operations. The vast majority of products sent to the U.S. undergoes further assembly and/or processing; only a few are for final consumption. However, in a number of cases the processes applied on the U.S. side are of minor importance in the total of operations when, for example, this involves only quality control or sterilization of medical supplies. Some of the products eventually return to Mexico after further assembly and/or processing in the U.S. Also quite a few maquiladora products are eventually sold in third countries, Canada being an important final consumer market.

Certain types of products face a highly competitive international market, mainly of the electronics and textile industries. This may partly account for the fact that some U.S. parent systems with electronics maquiladoras in Mexico have also assembly plants in other parts of the world. A few have various maquiladoras in Mexico since the feeling prevails on the part of many plant managers that there is a limit to

/the growth

the growth of a company in one place in Mexico. Such sister maquiladoras in Mexico usually do not have any relation with each other and represent entirely different lines of production, but we also came across one case where there is some division of labor between two such plants in that they are supplying each other directly. Such a possibility on a larger scale, including independent plants, is considered by some experts as a pending next stage in maquiladora development in Mexico. In fact, many imported inputs are originally assembled and/or processed in Mexico by other maquiladoras and seem to quite unnecessarily involve the U.S. in a kind of a triangular operation. Then some parent systems have subsidiaries other than maquiladoras in Mexico, usually with Mexican capital participation, that are supplying the domestic market. Again, this usually involves different lines of products ("the Mexicans might not like or be able to afford fancy products such as fridges with ice and water through the door"), but if it is a similar product, the sales price in the Mexican market will amount to several times the price that maquiladoras would charge; the main reason for this is the amount of protection under which it is produced for the Mexican market at various stages of production.

World-wide recession has affected the volume of operation of most maquiladoras of our sample. However by July-August 1975 this industry was clearly recovering. In quite a few cases the rate of capacity utilization had not yet reached the average for 1974 although, as the employment data presented in Chapter I would show on the average, the level for 1974 appears to be surpassed. It also has to be taken into account that the rate of capacity utilization often depends upon the degree to which plant managers want to build some flexibility into their production systems. The plants that have been operating at full capacity throughout the last 18 months were either those the products of which face a very inelastic demand, as for example is the case with hospital supplies, or because the principal in the States has an outstanding distribution network and some monopoly power, possibly through product differentiation as was the case with one textile maquiladora.

/As far as

As far as a characterization of productive processes is concerned, a distinction between bench work involving predominantly hand operations, on the one hand, and, on the other, conveyer belt systems as well as machine operations may be in order. The former is highly labor intensive, movable capital per work place amounting perhaps to a few dollars. Also such processes do not change much overtime. The latter, by contrast, is characterized by a relatively high capital intensiveness, capital goods usually being mounted to the ground. Training time and capital intensiveness appear to be positively correlated but there are also exceptions such as shrimp processing with little investment but various months of training time. Another such example is the assembly of wiring for planes one piece of which may take the operator up to 180 hours to finish, a work that is highly skill-intensive with corresponding training requirements.

Engineering is mostly done in the country of origin since most parents prefer to maintain and retain a competitive base at home in terms of a fabrication of parts and components. In the case of some smaller and less sophisticated maquiladoras, however, almost 100% of the productive process had been transferred to Mexico.

The more sophisticated operations would face a tremendous problem if, in case of machine breakdowns, there were no technicians available for quick repair. Rather than relying upon continuous support from parents, in a number of plants there is clearly a tendency to become quite self-sufficient in every respect, leading, as it appears, to a progressive vertical integration of their productive processes. In the context, I heard various times the argument that the recent wage increases in Mexico will have to be compensated with the next level of technology, in a way paying for higher wages by relatively reducing the number of jobs available for local manpower. A number of plants have or are, in effect, establishing their own repair shops and are tending to employ more and more highly qualified Mexican tool makers. Such a trend seems to be relatively more pronounced for plants located in the interior of Mexico. In some businesses, a trend towards automatization is in part considered a way to survive a competitive struggle.

/Turning

Turning to entrepreneurial functions, there is clearly a trend towards centralized purchasing on the part of the parent company if this has not already been accomplished. This must partly be seen in the light of the fact that such activity is increasingly computerized. Centralized purchasing negotiations lead to shipment of goods from ultimate suppliers, which may be located anywhere in the world, directly to the maquiladoras, but in some cases they are first sent to the parent company which might perform some quality control before transferring them on to the Mexican side. As was mentioned before, some of these products might have originated in Mexico. Such is the case even in the shrimp industry where Mexican shrimp together with shrimp from other parts of the world is first shipped to Brownsville and then on to the maquiladora in Matamoros for processing and subsequent reimportation.

A sales and marketing function is usually of rudimentary nature in most maquiladoras. But in case the maquiladora is supposed to directly supply third country markets, be it in Latin America or Europe, there might be a tendency to take on more responsibility. There were two maquiladoras that had marketing managers for sales to Latin American countries. Also, in few cases, the prospects offered by the implementation of the GSP in Europe, might lead to a rise in sales activity from Mexican maquiladora sites together with an increase in the corresponding entrepreneurial function. There is only one maquiladora in our sample that sold modestly in the Mexican market, but projects such a business to be of US\$ 200 000 in the next year.

4.2. Legal and administrative framework

Over the past decade, the Mexican government has followed a policy of promotion of maquiladora activity through the implementation of successive legislative and administrative measures. These measures have been somewhat instrumental in attracting a large deal of this business. While no attempt is made in this interim report to describe and evaluate thoroughly the prevailing legal and administrative framework in which the maquila plants are operating, it should be pointed out that the incentives provided are rather modest in comparison with those offered

/by other

by other countries, most of all in Asia, which have followed a more defined policy of promotion. The success that Mexico has had as a site of this industrial activity is then greatly due to its unique advantages in terms of geographic location and availability of skilled and professional manpower. In view of this incentive differential, many aspects of the legal and administrative framework of the country are under discussion and even critique with demands, on the part of plant managers, for improvement. In the following, these issues are touched upon only in a brief manner, reflecting in part the viewpoints of executives.

Many plant managers are quite critical of a number of official operating conditions. This stems in part from the impression that there is a lack of local authority to handle effectively the problems maquiladoras are facing at different levels. However, almost without exception, these executives would concede that there has been a considerable improvement over the past few years. As one pointed out, "Mexicans are now aware that there is only so much blood in the stone". And plant managers themselves, with longer experience in Mexico, come to realize that they have to "play the game" to be "within the system" rather than running head on Mexican authorities. The funds set aside for mordida payments appear to be smaller and many companies have stopped such payments, partly in the light of recent revelations in the U.S. about such illegal practices in other countries, although there appears to be always a demand for such funds and a certain threat of harassment if it is not complied. But again, this situation appears to have improved significantly over the years.

Maquila operations are only in part in-bond operations since supplies have to be bought from Mexicans. This requirement often leads to bottlenecks in operations because of a frequently inadequate local supply. As a result, this merchandise has to be obtained somehow from the U.S. and some Mexican middleman will have to be paid dearly to get it from across the border and to provide the invoice needed to cover this transaction.

Dealings with the Mexican Social Security people present another problem in the eyes of some plant managers. The reason is that the risk

factor they were attributed and thus corresponding social security payments appear to them to be too high. Their requests for a change in this respect are often left unattended for long periods.

The requirement of a 4 percent sales tax on the value added in Mexico has been a much debated issue in recent times. There are a number of legal arguments that are not explored in this interim report; only a few other points may be made for the time being. First, such a sales tax appears to be unique among developing countries in search for international subcontracting activities. Second, the tax is an obstacle to any increase in maquiladora purchases from Mexican suppliers. Third, the amount of such tax payments is, to an extent, a matter of correct bookkeeping and any verification, if desired by Mexican authorities which does not occur for the time being, would have to be on the basis of these books and probably constitute a rather unusual scrutiny of in-bond operations, probably quite unacceptable to many plant managers. The point to be made is that any tax to be collected from in-bond plants and involving accounting practices may have a rather arbitrary tax base, i.e. perhaps lead to double-bookkeeping in some cases, and should therefore be seriously reconsidered. This argument should also be raised, on the same ground, with respect to the demand of some maquiladoras to be granted CEDIS. In principle, if taxes are to be collected by the host government from such establishments, it should rather be on a simple basis, let us say per square foot of space occupied or per employee. An elimination of the sales tax, to be sure, might, however, be a political issue at present. Nevertheless, there are quite a few companies that are exempted from the state quota of 1.8% of the sales tax and one or the other is permitted to pay only half of the 4 percent.

Bookkeeping may also be a problem area in case firms have maquila operations side by side with other production for the Mexican market. The productive processes might be separated by having two buildings side by side for each operation as we came across one case, or they might simply be all under one roof which we also saw. Separation of accounts here is a problem, as we noted, as might be that of materials.

/In other

In other words, serious consideration should be given to the possibility that a number of plants, mainly smaller Mexican ones, import illegally under the disguise of maquiladoras.

4.3. Labor force and labor relations

A number of diverse aspects come to mind under this heading. In the following, I will deal with questions concerning the quality of maquiladora manpower, relations at work, union activity and issues raised by the Mexican labor law. Again, this will in part reflect the viewpoints of plant managers and other employees of maquiladoras.

The quality and characteristics of maquiladora labor are quite determined by hiring practices. This holds particularly at the operator level whereas in the case of skilled labor and Mexican professionals there is considerable competition for talents. In fact, many plants are running into problems concerning the availability of skilled technicians at the advanced technological level, qualified managers and also bilingual secretaries.

At the operator level, personnel managers can be quite selective in their hiring process in most places we visited. The rejection rate of applicants ranges from 85 to 90 percent in some Ciudad Juarez plants down to about 20 percent in some plants located in Nogales where there is a tighter labor market. Records provided by one personnel manager in Ciudad Juarez showed that over a period of two years in the early 1970's, only 903 people were hired out of 3,519 applications handled. This amounted to a hiring ratio of 3.9 which had been increasing over the course of operations.

Although there are always exceptions to the rule, plants usually prefer single, young, local females without much previous work experience, "virgins in terms of industrial employment that need not be retrained or untrained" as one manager put it and that have just completed their elementary education unless the productive process requires them to be more prepared. A major aim of hiring practices is to assure a subsequent low turnover rate of manpower. Quite a few personnel managers

/have realized

have realized that operators with junior high school education quit a lot faster since they are sooner frustrated, we were told, and, as a consequence, have increasingly turned to manpower with only primary education, most of all if they are to do bench work only. Of a 239 turnover in a two-year period of the company mentioned above, only 44 had just attended the primary school, the others had higher education.

The selection process of applicants usually involves the checking of references, a manual dexterity test*, a check into vision --colored perception (deficient diet often leads to an elimination of applicants on that account), a physical to make sure that the applicant has no contagious diseases and is not pregnant, a check into hand-to-eye coordination, a general cultural test, etc. In one plant, of 957 persons rejected, 241 had poor vision, 152 were physically incapable and lacked manual ability, 150 had too low an educational background and 130 lacked in appearance. Of another group of 275 for the same two-year period, 176 did not show up for the eye test, 74 for training and 34 for the medical examination.

Many personnel managers conduct exit interviews when people resign. There appears to be a significant difference between the reasons provided by males and females. Males predominantly quit in order to go back to school and, next in importance but much less frequent, to take up jobs with better payment. Females resigned because they marry or, next in importance, to attend family problems or to go back to their place of origin. As far as lay-offs are concerned, there appears to be a tendency to turn first to migrants and to keep as much as possible those that are born in town.

Selectivity in the hiring process assures very good results in terms of productivity. In foreign plants, the productivity of operators is rated, almost without exception, far above U.S. standards. The

* I did such a test in one plant on the basis of a pin board and failed by remaining with 2 minutes and 45 seconds, 15 seconds above standard; in such a case the applicant would be considered for employment only if labor supply falls short of current needs.

United States worker is believed to perform better only when the productive process requires him to be involved in some decision making. This may account for the fact that in some cases productive processes have been reorganized into relatively more repetitive operations in Mexico. Productivity was indicated to be less than that in the States in some Mexican plants, which may lead to the conclusion that this is really a question of administrative efficiency. In general, it appears that productivity is positively correlated with the training time, although this needs to be checked against the data collected.

Relations at work can generally be characterized as very cordial. There are plants where executives and operators each use the familiar "tu". In most plants, higher positions are being filled as much as possible from within by a policy of internal promotion. An exception to this is one border town where there is a rigid separation between unionized operators and others at higher ranks, the so-called confidential people ("personal confidencial"). Here promotion would become effective in most cases only if membership in the union is being foregone.

Many foreign managers praise highly their Mexican professional staff. In some cases, imaginative local trouble shooters are a most important asset as well as those involved in quality control. This, in part, accounts for the general tendency among maquiladoras to Mexicanize, as much as possible, the upper ranks. This tendency might even be apparent when we will compare the composition of the average 1974 labor force of the sample with that at present. On the average, there might be one foreigner for every two to three local employees. We also came, however, across some U.S. owned plants, one with over 500 employees, that operate without any foreigner.

Nevertheless; there are also complaints on the part of foreign plant managers in that local engineers would not come up to standards or that Mexican management does not react fast enough to a new program. The latter reason presumably led to a substantial layoff of workers in one case. Some managers feel that the Mexican is not adequately committed to work while his family life would be given overriding priority,

/at least

at least much more than in the States. Mexican managers in foreign plants, in turn, are under the impression that foreign nationals often lack an adequate approach in the handling of affairs, partly with Mexican authorities, and that many problems at different levels, within and outside the plants, could have been avoided by a better understanding of the Mexican ambiente.

Cultural differences, without doubt, play a certain role in the context, but probably only very few managers would subscribe to the opinion of one plant manager that any such problems should entirely be seen as "differences in intelligence levels". It is, however apparent, that both sides try to do their best to overcome such difficulties, by applying, as one foreign executive with the intention to leave certain U.S. habits behind put it, a "mental therapy".

Union activity and strength differs from place to place, but, in general terms, they are much more pronounced in the East than in the rest of the border zone. In the East, there is somehow a strict separation of confidential and other people referred to above and many plant managers there characterize the behavior pattern of unions as unreliable, a situation that would not permit to establish a predictable long-range basis. In some places, unionized workers pay dearly for their membership, a 6% of their salaries, and receive in turn as a major benefit just a placement service for maquiladora employment. This 6% cut is usually discounted from wages right away by the employer as a service to the union, but this might not be an important detail because in the town in question two maquiladoras were on strike when we were visiting.

Those plants that are not unionized and prefer to stay that way often provide considerable fringe benefits to their employees. Firms that failed in their attempt to keep the union out, are believed to have been adversely affected in terms of productivity and quality of products. There are undoubtedly quite a few cases where union activity was an important variable in the decision to shut down a plant. Some managers felt that if the union should enter their plant it would be an indication that they have failed in the human relations with their workers.

Others welcomed the unionization even of supervisory personnel and considered the result quite positive. There are also plants that sought a collective labor contract right away from the start, often with a union of their choice at the local and, in one case, at a national level where union attitudes are believed to be more mature.

In the eyes of many executives, the Mexican labor law is quite a controversy subject matter and many would probably subscribe to the opinion stated by one that this law "is not geared to industrial society". In fact, to them it is quite an expensive law since the laying off of 500 workers would normally amount to a cost of some 300 thousand U.S. dollars in terms of indemnization payments. Some plant managers indicated that they would have substantially increased their labor force if it were not for the existence of this law. There are, however, also different attitudes on the part of some executives although they would represent a minority view. Their opinion is that each foreign subsidiary has an obligation to the host economy and that the labor law, which is considered alright, helps them to fulfill this obligation. It occurred to me that many managers might be less opposed to the law if it were generally observed within the Mexican community.

4.4 Problem areas

A few plant managers indicated that they would reconsider their original location decision in the view of a worsening of operating conditions were they not in a bind with relatively heavy investments in physical and human capital. Others maintained that many of the problems referred to above are not really relevant to the volume of their operation in that they are just normal and to be expected as well as controllable. The same managers however pointed out some problem areas at a more abstract level which they feel could affect their ability to function in the future. One refers to increases in legal minimum wages, the recent 22 percent of which has cost quite a few companies up to a million or more dollars. So far these increases

do not appear to have affected the volume of operations, except in the textile industry, but a major worry on the part of executives seems to be the unpredictability of such increases and the problems that future increases might cause in terms of their long-range planning which in some cases is up to 1980. These increases are believed to be rather arbitrary and, in the case of many border towns, not based on local facts. Future wage increases as a factor determining volume of operations were considered to be particularly relevant to the highly competitive electronics industry.

Another more general problem area was seen by one manager of a large plant in light of Mexican demographic expansion, the magnitude of which would make it impossible for any development program in Mexico to prevent social change adverse to business climate. A third such problem area with implications for the volume of operations was characterized as a "centralization of government", describing a lack of communication between the companies and Mexican authorities; the latter, it was claimed, would not sufficiently recognize the existence of the plants and shrinks away from a closer working relationship.

There are in fact quite divergent views in official quarters as regards the usefulness of maquiladoras to the Mexican society although it appears that the authorities directly involved in the official program on these maquiladoras have adopted competent viewpoints. The threat that plant managers seem to refer to could in part stem from the fact that with any new administration there is a high turnover of officials, often down to the subdirector level, and thus a considerable uncertainty as regards continuity in official promotion policies. Plant managers are therefore keenly interested in questions concerning the pending presidential succession and we talked to one executive that had just returned from Mexico City to obtain some insight on this lively topic before making a final decision with respect to a planned increase in the labor force of his plant which would make it the largest in Mexico at present.

/As regards

As regards Mexican owners of maquiladoras, there are additional problem areas that came out in long conversations with such businessmen.

In general, it appears that the response they get from Mexican authorities is somewhat slower and that they are facing the problem of gaining a measure of acceptability and confidence of foreign principals. They also seem to be impacted more directly by competition from other third world nations and, in part for that reason, operate under highly unstable contractual conditions. In the textile branch, contracts are usually verbal. Others are operating on just a three-months contract. An exception was a Mexican firm that at present handles twelve contracts in electronics with a duration of at least four years each. However, the Mexican businessmen pointed out that, in the ultimate instance, a contract is just a piece of paper the terms of which can be cancelled any time.

Another problem area that concerns the operator himself appears to be certain legal inconsistencies with respect to salary raises. I refer to the fact that a marginal increase in salary beyond the legal minimum salary may, in effect, lead to a drop in home-take pay. For example, in one town in which the minimum salary is \$64.80 pesos per day it would take an increase to bring this salary up to at least \$72 pesos or some 11 percent in order for the worker to benefit directly. The difference is made up by payments that in one form or another go to the government, including social security payments.

As for problem areas originating abroad, the recent worldwide recession is, without doubt, the most important single factor having affected the volume of operation of most plants. Then a number of companies have problems on the U.S. side with respect to the application of regulations governing the 806.30 and 706.00 tariff items of the United States Tariff Schedules. Interpretation provided by U.S. customs officials appear to differ from place to place. A few companies are in a legal battle over this and in one case a multimillion dollar argument is involved.

The U.S. Trade Reform Act is conceived as a positive challenge by some as much as a potentially dangerous legislation by others. Positive in the sense that it might provide incentives for manufactured exports to the U.S., dangerous in that it may lead to an elimination of incentives provided under the above mentioned tariff items and to imposition of restrictions on import trade. A cancellation of these tariff items would not wipe out maquila business in Mexico but could significantly effect some of its parts most of all the textile industry the products of which would face an import duty of up to 40 percent in the U.S. In the electronics industry where such duties are much lower, this cancellation might lead to a near elimination of the present profit margin arising out of the relocation of productive processes. Such cancellation would however also lead, without doubt, to increased purchases of materials in Mexico and in third countries.

Some plant managers would doubt very much that these U.S. incentives could be withdrawn. They point out that competition from Asia could become overwhelming to U.S. corporations and, even more importantly, the U.S. consumer electronics industry could be wiped out and thus the basis for the military electronics industry of that country. It is therefore believed that the U.S. authorities clearly recognize the drawbacks of any disincentive policy towards offshore assembly plants.

Finally, plant managers in the textile industry gave serious consideration to potentially adverse effects of the U.S. textile quota. This quota is seen to pose a serious limit to the expansion of their plants. Executives in related industries such as disposable paper products for medical purposes, also worry that implementation of similar quotas may effect their operations.

5. Commercial profitability

5.1. Maquiladoras

A general distinction should be made between the question of how much profit arises, for a parent system, out of the relocation of productive processes to Mexico and the rather subjective question of how much of this would correspond to the maquiladora itself and therefore, in terms of profit-taxes, to the host economy. The latter is only partly referred to in this section; more will be said on it in the below Section 8.1.

The main source of overall profits is of course the wage differential between Mexico and the U.S. the profit potential of which is seen to have been greater years ago. In a number of cases, the ratio between U.S. and Mexican labor cost, appears to have dropped down to 3:1 now. There are, however, also some activities for which this ratio may still be as high as 10:1 at the operator level. Wage differentials, as a source of profits, are usually supplemented by the quality of the Mexican labor in terms of relative levels of productivity. In some plants, U.S. standards are surpassed by more than 50 percent; the average may be around 30 percent. Offsetting items are additional costs arising out of the relocation in terms of capital, freight, logistic costs such as telephone, etc. Also in case of heavy capital investments the rate of capacity utilization will matter.

A comparison of unit production cost in the U.S. and Mexico presents quite a diverse picture within our sample. In two or three cases they are less than 25 percent of those in the U.S. In others, however, such as the electronics industry, they would rarely drop below 80 and be rather between 85 and 90. The reason is the highly competitive nature of that business and a relatively higher ratio of materials to labor. (One executive stated that one "goes to these extremes (meaning relocation) to save a few bucks".) One plant in electronics that resumed activities last year is still above the U.S. level. Many companies calculate a cost per man hour actually worked and involving all payments to Mexicans in terms of the value added in this country. Depending upon the scale and nature of operations this cost may be somewhere between \$1.50 and \$2.50 U.S. dollars.

/Overall

Overall profits arising out of the relocation of productive processes to Mexico as such may be calculated as a number per employee per year. A reasonable estimate of the average would probably be something like 8,000 dollars. However, this will not materialize right from the start of operations and whether it will be attained subsequently depends very much on the reaction of competitors of the parent system who might want to match the shift of production offshore and on the market structures, i.e. mainly the degree of competition, in an industry. The higher these profits, the more attractive, of course, is Mexico as a site for maquila operations. In the case of Mexican-owned maquiladoras, initial capital outlays are probably recouped within a period of two to four years.

As for foreign plants it could, of course, not be expected that the overall profits arising out of the shift of production to Mexico is credited to the subsidiary in this country. So far, any profit shown on their books is essentially a matter of good will. Pressure from Hacienda is absent; one or the other union may press for some profits in order to see the legally stipulated profit sharing by employees. On the other hand, U.S. authorities usually require the maquiladoras to account for an 8 to 10 percent profit margin over the value added in Mexico. Again this can lead to some double bookkeeping if the maquiladora is to show a loss for the purpose of avoiding any profit taxes that otherwise would have to be paid in Mexico. In fact, the majority of plants interviewed made a loss on their books for 1974. In some cases, this arose out of accumulated losses which, over a past period of five years, may be taken into account when coming up with the current net result; it appears, however, that past losses are not counted when the amount of current profit sharing is determined, usually involving rather small sums and a lot of paperwork. Other plants have shown profits, but only in a few cases would they be a six-digit number. Nevertheless some executives feel, as one put it, that they have an obligation to the host country which, together with the perspective of a long-run involvement with the Mexican economy, has them show something like a 10 percent mark up over value added locally.

/In view

In view of the fact that profit taxes in the U.S. and Mexico are equitable and that such payments made in Mexico can be credited against those arising in the U.S., the question can be raised whether the parent company could not be indifferent as to where profits are shown. The answer probably is that in the case of multinational companies there is a more global picture in determining profit shifting and that sites with reinvestment needs which are almost absent in the case of maquiladoras, are benefited as well as might be those with the most favorable tax laws.

In any case, if the maquiladoras were to show higher profits this would constitute an inflow of foreign exchange only to the extent that profit taxes to the Mexican Treasury ensue, plus, of course, a minor sum going to the employees. But again, these amounts can hardly be marked up by any measure on the part of Mexican authorities since they are entirely determined by transfer pricing.

5.2. Host economy

Data collected on the value added of maquiladoras in Mexico and its breakdown will permit to calculate commercial profitability of these plants from the point of view of the host economy. Various levels of such statistical demonstration come to mind. A first would be the contribution of maquiladoras to the net national product at factor cost in Mexico, possibly broken down by groups of income earners such as operators, skilled factory personnel and administrative staff. Second, it might be useful to single out the contribution of the maquiladoras to government finances including social security payments, the housing tax and the education tax. Third, the value of sales of public enterprises that are active in the field of public utilities can easily be determined. Fourth, the amount of sales of the private Mexican sector to maquiladoras may be demonstrated. Finally, the foreign exchange impact stemming from maquiladoras may be figured out although this involves a more difficult exercise. The reason is that the value added locally has to be adjusted for indirect imports by manpower employed in maquiladoras as well as by other Mexican persons and institutions involved.

/The representativeness

The representativeness of our sample would probably permit to present macro commercial profitability for the total of maquila activity in Mexico by blowing up sample data. But it should be taken into account that such an exercise is far less important than a calculation of social costs and benefits which is the subject matter of the following chapters.

III. ECONOMIC EFFICIENCY

After the general nature of cost/benefit analysis and its applicability to the evaluation of international subcontracting activities were considered in section 1.2, we will now deal with the various successive analytical steps necessary to establish the net monetary result stemming from these activities in terms of the difference between the situation with and without maquiladoras in Mexico. In doing so, we will elaborate further on methodological and procedural questions, the answer to which form the background to estimations of this result dealt with sections 7 and 8. Section 9 is dedicated to the non-quantifiable effects. Much of the analytical framework is already standard in project evaluation, but again, the going methodology needs to be adapted in one or the other aspect to fit the peculiarities of maquiladora activities.

6. General Principles

Divergence of shadow and market prices is, as we noted elsewhere, mainly a result of market imperfections that create distortions on both the demand and supply side; normally, the market equilibrium price will not equal the social value and cost of resources. What are the sources of shadow prices in the particular case of maquiladora activities? Except for cases in which maquiladoras are permitted to sell in the Mexican market --there is only one such plant in our sample with rather modest sales-- these firms will not affect supply to the rest of the domestic economy through forward linkages. Their consumption of local inputs, however, may have the following three major effects: decrease of consumption in the rest of the economy; increase of production of resources within the economy; and increase of imports or decrease of exports. Given the lack of significant backward linkages, an analysis will have to concentrate mainly on the first possibility and this in turn concerns mainly labor and ancillary services. The task then is to construct a set of shadow or accounting prices designed to establish the impact that stems from the use of these domestic resources by maquiladoras since these prices equal the real cost of the resources to the Mexican economy.

/In any

In any price system, actual or hypothetical, relative prices will matter since they provide guidance on the rate at which goods and services are to be exchanged for each other. In the construction of a shadow price set, border prices which are used in the OECD Manual may provide the corresponding basis. They are particularly suited for an evaluation of international subcontracting business since they represent opportunities open to a country in international trade including the terms on which goods and services are exchanged with other nations. In fact, the more a country is interested in the promotion of foreign trade oriented activities, the more justifiable and extensive can be the use of border prices as accounting prices. An orientation along the international price level may indeed be the only way to handle maquiladoras since this, more than any other price level, will reflect the corresponding real scarcities and therefore relative values of local inputs.

All internationally traded goods are simply valued with their world market prices. However, given the heavy reliance of maquiladoras on imported inputs --left out of our analysis for reasons already explained-- most of the resources they obtain from the local economy will not be fully traded goods. These national goods will be conceived to be either "international goods" or domestic labor. The former are traded only nationally probably because transportation costs do not permit their entering into international trade or because they are simply used only by the host country. As international goods, they are valued according to world market prices through an investigation along the stages of production they have gone through since it is assumed that they are made up by a number of fully traded inputs. This can at times be a difficult exercise because the number and nature of production stages may pose a problem. If these resources are unimportant in relation to total inputs and if it is difficult to get exact information on production, it should be resorted to a rough calculation method advised by the OECD Manual in terms of a so-called standard conversion factor. This factor is supposed to be oriented along the relationship between domestic prices for a variety of important fully traded goods and the corresponding world market prices.

/The market

The market prices of such national goods treated as international goods are likely to be higher than border prices, possibly because of some measure of protection and monopoly power. This as distortionary difference conceived margin will be one of the possible sources of benefits to the Mexican economy.

Some of the national goods and their inputs cannot be traded at all and valued according to border prices. They are considered as nontradables, an example being electricity. Nontradables are indeed mostly within the realm of the public sector in terms of public utilities. An appropriate shadow price for them will have to be based on an estimation of the proportions in which maquiladora demand for a unit of such inputs will increase production and/or reduce consumption elsewhere in the Mexican economy. If these nontradable commodities may be obtained only by diversions from various other uses, supply being possibly fixed, the concept of marginal social benefit would apply which is relatively difficult to estimate; in this case however, we might eventually assume market prices to coincide with shadow prices. If the demand by maquiladoras leads to an increase in production of such commodities, the concept of marginal social cost applies which is a value, in terms of accounting prices, of the resources required to produce an extra unit of the commodity. If a change in their supply does not lead to a change in their price, inelasticity of price with respect to quantity available is implied. The reason might be that maquila activity in the respective town is so small that its consumption of such resources is negligible with respect to the total market for these resources. Also public utilities may be produced at a constant cost over a certain range, marginal social cost being relatively independent of the amount supplied. In that case one would have to arrive simply at the cost of production, since each unit produced costs about the same at the accounting price. Thus one would not have to worry about the level of demand. But if the demand of maquiladoras is substantial and might be growing very fast overtime, current costs will be out of date.

Shadow pricing for labor, generally conceived as a nonreble, is also oriented along the international price level in the ultimate instance. Even the use of an unskilled operator has an effect on the balance of payments since, if not employed in maquiladoras, he might have produced something in another occupation with implications for external accounts. More on the social opportunity cost of labor will be said in the upcoming section 7.1.

Beyond considerations of border prices as general guidelines for shadow prices, we turn now to questions concerning the choice of a numeraire, a unit of account, on which calculations of costs and benefits are to be based. The OECD Manual uses for that purpose "uncommitted social income accrued to public authorities" whereas the UNIDO Guidelines prefer average consumption expressed in domestic currency and conceived as willingness to pay. Although the two works differ primarily only on matters of mechanics, the different choice of units of account reflects some difference of emphasis on outlooks, the OECD Manual on benefits of liberal trade policies by stressing the role of border prices and possibly assuming that in the future restrictive trade policies will be abandoned, whereas the Guidelines might imply that such restrictions will continue to exist.

It is interesting to note, that these numeraires are in reality multifaceted units of accounts with many specifications. In the case of the OECD Manual, it is for example considered that government saving and consumption may have different social values than private consumption and savings and that it is therefore desirable to select some category of income or expenditure to serve as a yardstick in terms of which the use of others are measured. Income accrued to public authorities is then stressed because a social cost/benefit analysis was understood to be essentially addressed to governments to help them solve problems of public expenditure in general.

For the purpose of this research we may first take into account that whereas social income in many other industrial activities accrues both in a form which can be spent abroad, foreign currency, and in a form which

/cannot,

cannot, domestic currency, no implicit choices on numeraires present themselves in the case of international subcontracting activities where the whole value added locally amounts to an inflow of foreign exchange. Thus we will stick to border prices. Second, we will not put into our numeraire qualities raised, for example, by an analysis of the use which will be made of the benefit, consumption or investment and of who gets the benefit, the rich or poor, government or private. By leaving such aspects out of consideration in the establishment of a unit of account, we will simply measure all costs and benefits in terms of a unit of foreign exchange or, by the same token, of domestic currency by which however has to be adjusted in terms of shadow pricing of foreign exchange. The advantages of this measure of value are its simplicity and the possibility that the above mentioned aspects can be treated separately, most of all in a subsequent stage of analysis where we will take up questions of social profitability. The limitation of our numeraire is that we will come up with only the distribution of the net result in the "first round" since in successive rounds other income groups might benefit. However, a multi-faceted numeraire would pose unmanageable calculation problem since we will handle 31 cases at a time, plants which have different characteristics, locations, etc. Again, successive rounds of benefits and costs may still be considered under the heading social profitability.

7. Social opportunity cost of labor

7.1. Approach

The use of Mexican labor by maquiladoras may have three major effects on the economy and society of this country: diversions of manpower from other uses; reduction of the pool of unemployed and of persons normally not in search for work; and training and improvement of skills of manpower. The latter aspect will be taken in the below section 9.2.

The concept of foregone marginal product is to be applied when maquiladoras are competing for labor within the Mexican economy, that is, the question will have to be raised of how much labor would have contributed to production if it had not been employed in these plants. The social cost of labor will then be the marginal social value of its product in the alternative employment measured by the market wage rate. This is easy to determine in the case of urban labor whereas rural labor may be scarce for only part of the year, the calculation of its cost requiring some guesswork, in addition to complications arising out of employment of people that worked on family-owned plots and in communal types ("ejidos") of agricultural organizations. For the calculations it is important to also determine whether the previous employer was forced by government or union pressure to retain more employees than he would have otherwise based on their marginal product. If not, it is the market wage rate which represents the workers marginal productivity in the modern wage sector.

If maquiladoras draw labor from the pool of the previously unemployed, its social opportunity cost is often considered to be zero since the net loss of productive services to the rest of the economy is clearly nil; the labor market would most likely be characterized by a significant labor surplus. However, the following considerations must also be taken into account. The first concerns a social value to be attributed to the disutility of effort, meaning that a certain reservation price may have to be paid before labor exchanges leisure for jobs. Such a reservation wage will be influenced by the level of family income

/and other

and other means of support including transfer payments; the acceptability of jobs; and psychological preferences. Second, in the case of migrants, costs of relocation of labor may have to be considered including those needed to provide additional housing and public services. Additionally, it may have to be taken into account that an extra job might increase the attractiveness of the respective city so much as to induce the migration of more than one potential worker. In case a new urban job draws a worker from rural areas who fills the position left open by the newly employed worker in the maquiladora, the social opportunity cost of the latter may be the corresponding rural marginal product plus the cost required to take care of the differential between living costs in urban and rural areas. In many Mexican border towns there is in fact a steady inflow of workers and families from other parts of the country, a flow that might be speeded up as employment opportunities are improved by maquiladoras. Third, the cost of any training required may also have to be considered. Is the training provided by maquiladoras there may actually be a benefit involved; this aspect will be taken up in the below section 9.2.

The foregoing considerations lead to the conclusion that the general employment situation and going wage rate in the places where maquiladoras operate are major variables in a calculation of the social opportunity cost of labor. This involves four major aspects in the typical case of a Mexican border town. First, it is common knowledge that the legal minimum salary can often not be enforced for a number of occupations as it is in the maquiladoras. Thus there might be a relatively sizable unprotected wage sector side by side with a protected one. Second, these towns have been characterized by a significant demographic expansion due to a continuous inflow of migrants. Third, official statistics based on the population census of 1970 register relatively low rates of open unemployment, some 2 to 4 percent, which are doubted by many circles. Fourth, the employment and wage rate situation appears to be significantly influenced by employment opportunities, legal and illegal, on the U.S. side of the border. In view of this aspect, the use of Mexican manpower by maquiladoras may in a way lead to an importation of labor or a reduction of its export. The social cost of imported labor would correspond

/to the wage

to the wage rate obtained by the worker; this would also be the case for workers who are employed by maquiladoras instead of working on the U.S. side. In addition, shadow pricing of foreign exchange may be involved.

Field work was initiated with the following successive hypotheses in mind, emphasis being on unskilled labor, the operator level. First, a number of persons may be voluntarily unemployed because they are expecting to obtain, sooner or later, jobs in the protected wage sector; in order for their search to be effective they forego possible occupation in the unprotected sector thus economizing on time. Second, these and others may also consider highly --above Mexican protected wages-- paid jobs in the U.S. through legal and illegal emigration. Third, the expectation of obtaining employment in maquiladoras and other firms paying the legal minimum salary as well as in the U.S. may lead to and explain some measure of chronic unemployment in Mexican border towns; implicit is a relatively high reservation price during the time such searching can be afforded. Fourth, there is an equilibrium level of chronic unemployment that is not only determined by the aforementioned employment possibilities as such and by the amount of differentials between protected and unprotected wages and between the Mexican and U.S. wages, but also by an inflow of migrants to the respective cities. Fifth, the better these employment possibilities and the larger these differentials, the higher will be this equilibrium level with the corresponding implications for the rate of inflow of migrants. Sixth, for males, the social opportunity cost of maquiladora labor is equal or above the wage in the unprotected sector assuming that this sector exists and supply of and demand for labor equate. Excepted from this hypothesis are those hired from the disguised unemployed, for example the vendors and shoeshine boys in the plaza, the last of which may earn more than his marginal product since the price for his service is usually established by convention. His real cost would be below the unprotected wage and may be even close to zero. Seventh, for females, a social opportunity cost equal or above the unprotected sector wage will also apply. Tradition and their family income situation might, however, lead to a relatively

/high reservation

high reservation price in their case. On the other hand, unprotected wages for females might be substantially below those for males. Eighth, for larger cities in the interior of Mexico, the foregoing hypotheses are to be adopted except that employment opportunities in the U.S. play a much lesser role and that this may depress the level of unprotected wages. Ninth, in the measurement of the real cost of maquiladora labor in small towns and rural areas where operators might be hired from the agricultural labor force, a distinction has to be made between hired hands and others that worked as family members or friends for small landowners who, in a way, took care of them. The cost of the former will be the marginal product foregone measured by the going wage rate assuming the minimum salary is not enforced and taking into account the number of days worked per year. The cost of the latter, similar to the case of the disguised unemployed in cities and for the same reason, is expected to be substantially lower and may reach zero.

7.2. Major findings

These findings are tentative to the extent that portions of the data collected during the interviews with employees have not yet been explored and pertinent official statistics on employment, wages, etc. are not yet taken into account in this interim report. It is, however, expected that the present approach, at the micro-level, has led to conclusive results that subsequently would not be significantly modified.

The major purpose followed in this section is to single out the sources of shadow pricing concerning maquiladora labor and to evaluate its underlying characteristics. This amounts, as was explained elsewhere, to determining any divergence of the shadow from actual wages, the difference of which as a discount is the distortionary margin to which the existence of maquiladora renders benefits to this manpower and to the whole of the host economy. These margins will later be calculated for presentation in the final report.

There are two major facts about maquiladora labor that need to be pointed out as an introductory step. First, that labor is far from being homogeneous. Even at the operator level there are significant differences from city to city, region to region and even plant to plant, the latter differences being largely determined by different recruitment policies. Second, at levels above the operator, that is skilled factory personnel and administrative staff, sources for shadow pricing hardly exist, a fact that emerged ever more clearly in the course of the first few interviews, so that we came to concentrate more and more on operators as we continued. The reason for the coincidence of shadow and market prices at higher ranks is mainly, other things being equal, that the more qualified labor will easily find alternative employment at the same salary. This will later be somewhat quantified, but as a conclusion should have become already apparent when we dealt with questions concerning recruitment policies and problems in the above Section 4.3. The only problem in the context is that part of the supervisory personnel shares quite a bit of the characteristics and alternative employment possibilities of operators, a situation to be later taken into account as an adjustment of the wage bill corresponding to job classifications.

/In the

In the following, we will thus mainly concentrate on operators. On the basis of data contained in Table 5 it becomes clear that the concept of foregone marginal product for a calculation of the real cost of labor applies to only a relatively minor part of maquiladora manpower. In fact, at the operator level, about 50 percent of the persons interviewed had no previous employment experience. This percentage drops down to about 30 percent if those are eliminated that had worked only in maquiladoras before. These data are confirmed by records of a personnel manager in Ciudad Juarez. Of a total of 543 applicants, 236 had not worked before. Of the 307 applicants with previous work experience, 48 had been operators and 36 performed only household work at home. Thus, not taking into account the latter, the percentage of those without working experience outside maquiladoras would also drop down to some 30 percent.

Among those with previous work experience, there is hardly anybody that held a job in agriculture before. Thus complications arising out of a calculation of the real cost of rural labor mentioned above will not be relevant for this research. Wages and salaries registered for the end of the previous job will serve as an orientation of our later calculation. In doing so, it may safely be assumed that previous employers were not forced by any pressure to retain more employees than they otherwise would have based on the marginal product of their labor force since the degree of compliance with the Mexican labor law is generally low. Difficulties arising out of those cases in which previous jobs were held sometime ago and/or in other cities with different living costs, will be obviated by establishing last earnings as a percentage of the legal minimum salary prevailing at the time for the respective place. Countrywide, there is a rather differentiated network of such minimum salaries; living costs of various parts of the country played a major role in the determination of wage differentials. This network will present by far the best available bases for the purpose of our calculations.

There were a number of persons whose previous salary was higher than the present one in maquiladoras either absolutely or in relation to the minimum salary. Without quantifying this group for the time being,

the reasons for this appear to be the following in order of importance: personal reasons; shutdown of firm or downward adjustment of operations; work being occasional; marriage; working conditions inferior; and migration. In fact, in the calculation of the real cost of labor, the frequently occasional character of previous works may play some role. In each case we registered the lengths of previous employment and the specific reasons for which jobs were switched. Working conditions played an important role in a number of cases.

As a matter of illustration, a 22 year old female supervisor left her job as a secretary in a furniture store at the legal minimum salary when she was 17 in order to be an operator in a maquiladora. She did not like the working conditions in the previous job and switched also in search for companionship. She is now a group leader with a salary of about 20 percent above the legal minimum salary and contributes some 50 percent to the family income, living with her mother and brother. She has completed primary school and commerce as well as studied up to the second year of secondary school and some nursing. Before, she worked from 8 a.m. to 5 p.m., her present working hours from 6:30 a.m. to 2:30 p.m. give her the chance to further her education.

Two more questions raised in the previous Section 6. with respect to the application of the concept of foregone marginal product have to be dealt with. First, maquiladoras hire hardly any persons from the pool of the disguised unemployed. A major reason is that personnel managers shop around for the best possible manpower when they pay the operator the legal minimum salary or more. It is however interesting to note that the disguised unemployed have relatively high incomes in border cities as we will see later, at times above the legal minimum. Second, with respect to a possible importation of Mexican manpower from the U.S. side of the border, data contained in Table 6 show that this is not really an important factor to be considered. Those with previous work experience in the U.S. are usually above average age.

Table 6
WORK EXPERIENCE IN U.S., OPERATORS AND SUPERVISORS

Location	Female		Male	
	Total with previous work experience	U.S. work experience	Total with previous work experience	U.S. work experience
1. Border	160	12	43	4
2. Interior	84	1	2	1
3. Total: 1+2	244	13	45	5

Before turning to the previously unemployed, a characterization of the general employment and going wage rate situation in the various cities we visited is in order. This subject matter was in part raised by some of our initial hypotheses and its evaluation will form an important background to much of what has to be said below.

The degree of compliance with the legal minimum salary for unskilled labor outside maquiladoras differs significantly from place to place. It is hardly observed in smaller cities and in the countryside. However, we were surprised not to be able to find any unskilled workers outside maquiladoras at less than the minimum salary in a few towns. By the same token, the size of the unprotected wage sector differs significantly from location to location. The social opportunity cost of labor will differ accordingly. Significant differentials occur even within the zone of influence of a major city, let us say, within a radius of 20 miles. Without recourse to pertinent macro-data, the following explanatory variables come to mind: (1) In much of the countryside, poverty prevails and jobs are simply not available; (2) some border towns are more integrated with the rest of the corresponding state than others; the more integration the larger the unprotected wage sector; (3) the size of U.S. twin cities and thus additional job opportunities play a role; (4) topographic conditions determining relative living

costs and thus the flow of migrants, are important for one border town in which it is for example impossible to construct the otherwise frequent and inexpensive cardboard type houses since the rainy season would wash them down into the canyon-like city; (5) other characteristics of cities, in particular the size of the service sector where women stand a relatively larger chance to play a role; and (6) the watchdog function of unions and social security people with respect to compliance with the minimum salary is more pronounced in some cities than in others.

In general, the unprotected wage level, wherever present, appears to bear some relationship to the prevailing legal minimum wage. The latter has a kind of signal effect, almost all people being quite conscious about its existence. Thus a certain moral pressure and the threat of penalties assure that a gap between the two levels would not significantly widen. This gap was probably closer last year before the recent raise legal in minimum salaries. We came across a number of persons for which this raise had not yet become effective. On the other hand, it appears that it is little incentive to employers to pay less than the minimum salary if the differential would amount to just a 10 to 15 percent margin. A relatively high level in the unprotected wage sector may partly be explained by the possibilities that vendors and others in similar jobs have in terms of raising the prices for their services established by convention, in line with inflationary tendencies about which they become increasingly aware.

The general characteristics of the unprotected labor market are that wages for males and females will not differ very much unless maquiladora employment constitutes a relatively small portion of the total of the economically active population of a location and that this market is quite competitive although it is typical that jobs are frequently obtained with the help of relatives and friends and that the more clever persons of the adventurer type with facilities to make easy contact are at an advantage. The most striking fact, however, is that there are good and well-paid ample employment opportunities in Mexican border towns for those able and willing although in one or the other place some searching time and costs may be involved. We thus became convinced that the official figures on open unemployment for these cities can be believed. The employment situation in the countryside and small towns in the interior, however, presents itself as a completely different picture.

/Before

Before we let some of the unskilled persons employed outside maquiladoras speak for themselves, a word on issues raised by job opportunities in the U.S. A major question in this respect was to which extent maquiladora employment might have prevented an exportation of Mexican manpower. This subject matter may be raised against the background of approximately eight million Mexicans residing illegally in the States and 600 thousand being caught and deported "voluntarily" in 1973 alone. Records provided by a personnel manager in Ciudad Juarez show that of 113 applicants, 62 had relatives in the States. The role of maquiladoras in the context, however, has to be judged in the light of the following aspects. First, these plants employ predominantly workers without previous working experience, as we saw, whereas those that want to work in the States have probably held jobs in Mexico before. Second, maquiladoras employ with preference local people that could have worked in the U.S. if they had wanted to, and not the migrants so much that might have come to a border town with an eye on employment opportunities on the other side. Third, illegal border crossing is relatively easy unless a person wants to penetrate the U.S. territory beyond a certain mileage; in general, there is no punishment if detected. But the type of work that can be found in the U.S. is often considered to be rather unpleasant. Whereas the legal minimum salary in Ciudad Juarez is about \$600 pesos per week, housemaids on the other side of the border in El Paso earn just about \$300 pesos per week. Wages in the nearby crops for work that is considered to be very tough are about \$1,000 pesos per week. Fourth, illegal migration to the U.S. is mainly made up by men for obvious reasons, whereas maquiladoras, at the operator level, employ predominantly women.

It is therefore concluded that maquiladoras do not play a role of significance in the prevention of exportation of manpower to the U.S. However, without much implication for the calculation of the real cost of labor, it may be worthwhile to note that quite a few operators, as indicated by them during the interviews, would consider seriously the employment opportunities in the U.S. should maquiladoras disappear.

/The reason

The reason is that once they are incorporated by the maquiladoras into the active labor force, after possible termination of this work, they would not want to be idle or in a job with a relatively low payment, apart from considerations given to general working conditions in Mexico.

As far as the interviews are concerned that we conducted with unskilled persons employed outside maquiladoras, it should be pointed out that this involved predominantly people who would not qualify for operator work given the highly selective hiring procedure of personnel managers of these plants. Nevertheless their approximate going wage rate might have to be considered as a lower floor of the social opportunity cost of maquiladora labor in a number of cases since we always raise the question of what would have happened in the absence of these plants. The following cases are from a total of some 60.

Matamoros, minimum salary \$465.50 per week: (1) A forty year old woman with eight children, that migrated six months ago from Ciudad Victoria, in the same state, is working in a laundry shop at \$175 pesos per week plus some little tip money since three weeks ago. During the first part of her stay in this town she earned her living by washing for whoever people she came across for approximately \$50 pesos per week. Household income is supplemented by the earnings of a 15 year old daughter washing occasionally and by another 12 year old one with a job as a housemaid. This woman, the case of which we considered typical for a newly arrived migrant, does not know what a maquiladora is. (2) A married female of thirty of age, born in town, works as a hotel maid at \$250 pesos per week, an income that is supplemented by another \$250 pesos earned by her husband who is a musician. Before, she held a job in a textile plant at \$300 pesos which she lost because of lack of work. To her it appears too difficult to apply successfully for employment in a maquiladora. (3) A fifty year old male vendor of fruits and juices that came from the state of Zacatecas twelve years ago is earning some \$250 pesos per week. (4) Another male vendor of twenty two years with two years in town and an investment of \$160 U.S. dollars in his merchandise, belts, makes about \$500 pesos per week. Ciudad Juarez, minimum salary \$494.20 pesos. (5) A twenty-seven year old female working in a shop downtown ever since she came to this city from Durango seven years ago is earning the minimum salary. (6) A twenty year old female, also working in such a shop, with five years in town is earning \$420 pesos; to enter a maquiladora appears to her to be too difficult in view of the tests required and therefore she never proposed this to herself. (7) A twenty year old female, born in town, and working at a foodstand for the past two months, is making

\$300 pesos per week; she will shortly take up a job in a shop where she is promised \$500 pesos weekly. (8) An eighteen year old female, born in town, owner of a stand with some investment selling fruit juices makes some \$600 pesos per week. (9) A twenty year old female that came to town as a child from the city of Torreón, works together with five other people at a larger foodstand for \$280 pesos per week for the past seven months. She does not know how to write and therefore would have no chance in a maquiladora. She found this work easily as did the cook and two other employees of this stand that are making between \$240 and \$280 pesos a week. (10) A fifty year old male, watching cars in an open street, who has been in town for the past 30 years and 13 years in this job, is making some \$220 pesos per week. (11) Male vendors of U.S. cigarettes who are all over the place in Ciudad Juarez are making some \$280 pesos per week; they are dependent on those Mexicans that have invested some \$2 000 pesos in this merchandise and that earn some \$1 000 pesos a week. (12) A twenty-two year old female that came a year ago from a rural area of the same state and is now pregnant, worked for eight months in the U.S. There she was caught and deported four times. (13) A twenty-one year old female, born in town, has held various jobs on the U.S. side in the crop and households since 14 of age. The loss of her border pass four years ago was no problem for subsequent illegal daily crossing of the border. She earned \$135 pesos per day last year in the crop but considers this work as too tough. She and the previous girl applied for jobs in maquiladoras but were never contacted. Prostitution is an alternative to them now and they speak in depreciative terms of maquiladora girls. Nogales, minimum salary \$453.60 pesos per week: In this town we tried hard but could almost not find anybody earning less than this salary. Exceptions were (14) a twenty year old waitress that came three years ago from Mexico City earning some \$400 pesos and (15) a twenty-five year old male gasoline attendant, one year in town from Guaymas, who makes \$400. We also talked to (16) nine girls at an age of 15-16, the majority of which has just a primary education and that were studying typing and shorthand under the guidance of an experienced person who is not paid for this work in a building belonging to Municipal authorities. They all expected to earn the minimum salary after a period of six months training. Mexicali, minimum salary \$594.30 pesos per week: (17) A thirty three year old female, since 20 years in town, works as a waitress at \$600 pesos plus tips per week for the past year and a half. She left a maquiladora after she had assured this job since the work schedule in the plant was irregular due to a lack of material. She had enjoyed her previous work, among other things, because she improved her sewing abilities. The present job was obtained through a sister who is working in the same place. (18) A twenty-six year old female, only one month in town from Guadalajara and in need to provide also a living for her children, works at \$350 pesos per week in a job that she found without difficulty on her

/own.

own. Her short work experience in the city included also waitress work in another restaurant where they did not pay her the promised minimum salary. (19) A twenty year old female working in a curiosity shop had previously been employed by a toys maquiladora until about a year ago when this plant closed; she had enjoyed that work. It took her three months to find her present job at the minimum salary. (20) Two shoeshine boys of 15 and 17 of age, born in town, work half days until they earn the \$30 pesos per day which they consider sufficient for their needs. One of them was in the United States before where he was caught; he now wants to go to secondary school. (21) A twenty-four year old male vendor of ice cream came to town for the first time, accompanied by a friend, only eight days ago from Sinaloa. They were supposed to be contacted by somebody to take them across the border. That person did not show up, however, so that they were broke after three days and had to look around for a job. Their present employer provides the merchandise and a little wagon for which, in turn, they have to hand over half of their sales. Yesterday he made \$75 pesos for himself and today at 7 p.m. he had earned \$60 pesos. Tijuana, minimum salary \$594.30 pesos per week: In this town we were unable to find any person earning less than this salary although we talked to people assumed to be in the lowest-paid jobs such as floor cleaners and street vendors. Guadalajara, minimum salary \$410.90 pesos per week: (22) A forty-year old cleaning woman, born in town and one year in this job, earns the minimum salary. Although it took her five months to get it she thinks that it is not difficult to find work at this salary. Immediately prior to her present activity she had worked in the kitchen and sometimes as a waitress of a restaurant at \$30 pesos a day. (23) Two girls of twenty of age each, one born in town and the other since six years over here, have been working for the past eight months at a stand, selling fruits and fruit juices, at \$350 pesos per week involving seven days work. It took them eight days to find these jobs, the first ones they ever held.

Table 7 with information on the characteristics of maquiladora employees without any previous work experience confirms the pertinent conclusions that could be drawn from the above, in particular that a lack of such experience is hardly to be explained by a lack of success in search for jobs in border cities. In the case of the interior, this is entirely different and we might have expected to find there more people in the category "searched without success". The reason is that in some places it is just not worthwhile to look for jobs because there are none around. The category "attended school" refers to those persons that came to the maquiladoras right from school at working age. "Minor

Table 7

CHARACTERISTICS OF PERSONS WITHOUT PREVIOUS WORK EXPERIENCE,
OPERATORS AND SUPERVISORS

Location	Total	Reasons of unenployment			
		Searched without success	Attended school	Minor age	Did not search
1. <u>Border</u>	<u>205</u>	<u>7</u>	<u>37</u>	<u>71</u>	<u>90</u>
Matamoros	33	1	7	7	18
Cd. Juarez	45	4	10	11	20
Nogales	33	-	5	11	17
Mexicali	56	-	12	22	22
Tijuana	38	2	3	20	13
2. <u>Interior</u>	<u>101</u>	<u>11</u>	<u>16</u>	<u>28</u>	<u>46</u>
State of					
Nuevo Leon	24	-	1	17	6
Chihuahua	25	7	6	4	8
Compostela	9	1	2	1	5
Guadalajara	29	3	4	3	19
Puebla	8	-	3	2	3
Tlaxcala	6	-	-	1	5
3. <u>Total: 1 + 2</u>	<u>306</u>	<u>18</u>	<u>53</u>	<u>99</u>	<u>136</u>

age" refers to those persons that did not qualify for a maquiladora job because they were of an age of under 16 and thus by law not permitted to take up a job although some of them might have been working and looking for work before.

The fact that as much as 45% of the total operators without previous experience at working age had not bothered to take up a job whereas only 6% searching could not find a job, highlightens the importance of a relatively high reservation price that much of this manpower in maquiladoras has established for itself. This is particularly significant in the case of border towns, in view of ample job opportunities, notwithstanding some margin the unprotected wage may be below the minimum wage in certain places. In fact, during our interviews we came across quite a few girls that had been suspended for some time in the past, three to eight months at a time, because of lack of work in maquiladoras, and that had not bothered to look for another job in the interim.

An explanation of this reservation price might first be found by recalling that maquiladoras shop for the best possible manpower which may in part come from the "better" families with higher than average incomes. This point remains to be confirmed by a later analysis of our statistical data. It might also be interesting to compare the level of education of these people with those of others. Second, without doubt, the disutility of effort plays some role among persons belonging to that 45% category. That leisure is valued highly, became even apparent in interviews of some males who appeared to be proud of that state of affairs. Third, of major importance however may be the acceptability of the type of work available. Many of the operators - who are never called workers (obreros) - consider themselves, to some extent, as an elite class, particularly among the unskilled generally. This may stem from the fact that after much scrutiny during the hiring process they have entered a place with a very pleasant working atmosphere and considerable fringe benefits that will be dealt with in the below section 9.2. In times of peak maquiladora activity, they were often able to substantially increase their salaries by working overtime. Many work

/only on a

only on a five day basis per week whereas in alternative occupations seven days of work might be necessary (shops, etc.). There is the Christmas party and bonus, additional holidays and the reshuffling of holidays so that quite a few days in a row can be gotten off. Many may take advantage of a favorable scheduling of shifts and further their education in the afternoon and evening. Then, they are not really many alternative jobs around that are as steady and as acceptable as the ones in maquiladoras. Although house work is a major alternative to many female operators, they would not like to compare themselves with housemaids. Jobs in offices and shops often require more than primary education. For unskilled males, alternative employment possibilities are almost equally inferior. They would be gardeners or work in metal processing activities involving heavy work or would take up any casual work that comes along for some time in construction, housepainting, gasoline attendance, etc. Almost without exception, alternative jobs are expected to be harder and to involve longer and less conveniently scheduled work hours.

In terms of shadow pricing, a high reservation price may mean that the social opportunity cost of much of the previously unemployed manpower is almost as high as the present wage earned. Whereas this may be true at the personal level, in purely monetary terms leaving aside a consideration of the attractiveness of working conditions in maquiladoras, what really matters for our analysis is the macro-level. From this angle of view it has to be concluded that earnings received by this manpower do have a rather low real cost. The reason is that, for the society as a whole, no sacrifice had to be incurred when this labor was employed by the maquiladoras. Its wages and related taxes to the government are an entirely added dimension since such payments had not occurred in the absence of maquiladoras. However, in later calculations allowance may be made for the 50% of the total of persons without previous work experience that were accounted for by those that attended school and were of minor age before taking up their present job. Also credit may have to be given to the possibility that maquiladora

/employment

employment by one family member induced others in the family to quit their jobs. It is hoped that information on total family income, the number and type of relatives in households and means of previous support of the operator while jobless will permit a conclusive analysis in this respect.

Two aspects remain pending in terms of issues raised, at the theoretical level, in the previous section 6, namely migration and costs of education required. As far as the former is concerned, the question was to which extent might maquiladoras be a factor in the pattern of migration with a possibility that costs of migration might have to be considered in the calculation of the social opportunity cost of their labor. In the following, we will address ourselves on this question but leave out other aspects of migration until the below Section 11. Table 8 containing pertinent information is again to be interpreted, to some extent, in the light of hiring goals and practices of personnel managers of maquiladoras, i.e. that preference is given to young local persons. The points to be made on the basis of totals in this table generally hold true for all places visited except Nogales. Although more than half of the operator manpower is made up by migrants, persons migrated on the average at an age of 13.6 years, i.e. substantially below the legal working age of 16. In fact, only about 15% of the total of migrants came to their present location in search for work and this may not necessarily have been for jobs with maquiladoras. Thus, cases are rather exceptional such as the one in which a girl came, with her sister, to Ciudad Juárez in search for employment by maquiladoras after her father, a miner, had gotten a lung disease in the interior of the State of Chihuahua and could not support his family any more. Also, our data appear to be confirmed by records of a personnel manager of a maquiladora in Ciudad Juárez who of 543 applicants registered 300 to be born in Ciudad Juárez (199) and in the same State of Chihuahua (181). It may also be noted from table 8 that the incidence of migration is relatively pronounced in the case of border cities involving predominantly people from other states, whereas in the case of the interior of Mexico, migration is less frequent and takes place on a small scale within the same state.

Table 8
CHARACTERISTICS OF MIGRATION AT THE OPERATOR LEVEL

Location	Total	Not migrated		Migrants									
				Total	Origin		Migra- ted in search of work	Weigh- ted average age	Weigh- ted average age	Time in town in years			
		Born in town	Com- muter		Same state	Other state				Less than 2 years	2 - 5 years	6 - 10 years	More than 10 years
1. <u>Border</u>	<u>340</u>	<u>144</u>	<u>2</u>	<u>194</u>	<u>72</u>	<u>122</u>	<u>26</u>	<u>22.9</u>	<u>9.1</u>	<u>15</u>	<u>57</u>	<u>59</u>	<u>63</u>
Matamoros	43	28	1	14	9	5	1	27.0	13.9	-	3	4	7
Cd. Juarez	73	31	-	42	25	17	3	21.9	10.2	2	8	15	17
Nogales	69	17	1	51	32	19	16	22.0	5.1	8	28	8	7
Mexicali	83	52	-	31	5	26	2	23.4	10.5	5	5	8	13
Tijuana	72	16	-	56	1	55	4	23.2	10.0	-	13	24	19
2. <u>Interior</u>	<u>162</u>	<u>76</u>	<u>10</u>	<u>76</u>	<u>43</u>	<u>33</u>	<u>15</u>	<u>22.2</u>	<u>9.0</u>	<u>4</u>	<u>23</u>	<u>22</u>	<u>27</u>
State of													
Nuevo Leon	19	11	1	7	6	1	3	17.9	5.5	3	2	1	1
Chihuahua	39	18	2	19	14	5	1	21.9	9.8	-	6	6	7
Coahuila	13	5	-	8	4	4	3	19.0	6.3	-	4	3	1
Guadalajara	63	25	-	38	19	19	7	23.7	10.3	1	8	11	18
Puebla	13	10	-	3	-	3	-	22.3	4.3	-	2	1	-
Tlaxcala	15	7	7	1	-	1	1	27.0	3.0	-	1	-	-
3. <u>Total 1 + 2</u>	<u>502</u>	<u>220</u>	<u>12</u>	<u>270</u>	<u>115</u>	<u>155</u>	<u>41</u>	<u>22.7</u>	<u>9.1</u>	<u>19</u>	<u>80</u>	<u>81</u>	<u>90</u>

/Clearly

Clearly then, as far as the manpower employed in maquiladoras is concerned, migration does not play much of a role and, consequently, for calculations of the social opportunity cost of labor. In this respect, the considerable steady inflow of persons into border cities appears as a phenomenon to be completely separated from maquiladoras since the typical migrant will not qualify for employment in these plants and, if in need, has to take work elsewhere, possibly in the unprotected wage sector if he cannot do better, or, in the case of females, in prostitution which is of substantial proportions. However, the question still remains whether these plants would not play some role at least as a general factor of attraction in the patterns of migration. This will be dealt with in the Section 11. On the question of costs that migration involves in terms of a needed expansion of public services in the respective towns, it may be remarked that this cannot be credited or better debited in terms of a calculation of the real cost of maquiladora labor to these plants if the purpose is to evaluate the impact of their existence. The reason simply is that maquiladoras were not instrumental in the change of locations of migrants they employ (except Nogales).

As for educational costs required, a look into the level of education of operators is in order which is presented in Table 9. "Primary with other basic" would refer to an operator with elementary (primary) school, plus, e.g., a course in hairdressing or English. "Superior" is anything beyond commerce and secondary school, beginning with "preparatoria" and ending possibly with a university degree (commerce involves 3 years of study as does secondary or junio high school; to finish primary it takes 6 years). Thus in this table, an operator is registered only in one category, the highest he attained.

Summing up columns (5), (7), (9), (10) and (12) as a per cent of total, it is established that only a minor part of operators of our sample, some 23%, have completed an education beyond the legally required elementary school. Thus any social opportunity costs of maquiladora labor on account of educational levels can be assumed to be quite low.

In general, the training period and level of education do not appear to be correlated. This is predominantly a question of whether

Table 9
EDUCATIONAL LEVEL OF OPERATORS

Location	Total number	Primary		Secondary		Commerce		Combination of commerce and secondary			Superior
		Com- plete	Incom- plete	Com- plete	Incom- plete	Com- plete	Incom- plete	Com- plete	At least one com- plete	Both incom- plete	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. <u>Border</u>	340	175	28	8	37	23	16	4	5	2	11
Matamoros	43	24	3	-	4	6	3	-	-	-	1
Cd. Juarez	73	33	-	4	8	9	8	-	2	-	3
Mogales	69	37	7	-	6	2	2	3	1	1	1
Mexicali	83	33	9	3	14	3	2	-	1	1	6
Tijuana	72	48	9	1	5	3	1	1	1	-	-
2. <u>Interior</u>	162	82	11	2	10	16	15	2	2	-	6
State of											
Nuevo Leon	19	10	3	-	2	-	2	-	-	-	-
Chihuahua	39	13	1	-	2	14	3	-	-	-	3
Compostela	13	8	1	-	1	-	-	-	-	-	2
Guadalajara	63	34	1	2	3	2	9	2	1	-	1
Puebla	13	7	-	-	2	-	1	-	1	-	-
Tlaxcala	15	10	5	-	-	-	-	-	-	-	-
3. <u>Total: 1 + 2</u>	502	257	39	10	47	39	31	6	7	2	17

/work to

work to be performed in maquiladoras involves manual dexterity or mental effort. An example of the former with a long training period is shrimp processing, for the latter, also with a prolonged training period, the sorting of coupons requiring more than elementary education.

In the context, but not strictly pertaining to the topic of this section, the impact of maquiladora employment on the pursuit of studies may be considered. There were a number of operators that left junior high school before completion because maquiladora work was a more attractive alternative to them. These in part as well as others stated that they would go back to school in the absence of maquiladoras. Thus maquiladora existence may incur a cost in terms of preventing people from completing higher education. On the other hand, however, there is the fact that quite a few operators study comfortably on the side, partly with incentives provided by the plants. These incentives are partly financial, including scholarships, others are just in terms of being able to work in a turn which does not interfere with the classes at school. In the case of one maquiladora of nearly 1 000 employees, twelve per cent of the women were studying on the side.

In conclusion, whereas skilled factory personnel and administrative staff do not appear to benefit much from maquiladora existence in monetary (income) terms - the question whether they would benefit on other accounts is taken up in the below Section 9.2 -, employment and earnings at the operator level, often constituting up to 90% or more of the total labor force of a plant, are a significant source of shadow pricing and thus benefit stemming from maquiladora existence. For presentation in the final report, a formula will have to be found that would absorb the diverse aspects elaborated upon above and permit the actual calculation of this benefit for our sample of maquiladoras.

7.3 On employment generation

A treatment of this topic would sum up much of the foregoing, but a number of questions to be raised will put pertinent findings into a somewhat different and complementary perspective. These questions are as follows: First, what is the contribution of maquiladoras to the general goal pursued by the Mexican Government to reduce unemployment in this country? If they do contribute, by how much? Second, may these plants increase the pool of unemployed and underemployed under certain circumstances? If so, in which way? Third, what is the value of the employment that maquiladoras normally generate? By giving an answer to these questions, one has to differentiate between maquiladora activity in border cities and large towns in the interior, on the one hand, and that in the countryside and small cities in the interior, on the other.

As concerns the first question, maquiladoras cannot be expected to contribute much to the goal of reducing unemployment --quite contrary to what Mexican authorities, as they state, assume and wish them to do-- since these plants are predominantly located in border towns where unemployment appears to be the least of the problem in comparison with the rest of the country. This is quite different for the minor rest of maquiladora activity located in the interior, particularly the countryside and smaller cities. Here they are providing employment predominantly to those that are searching for jobs or others that did not look for them since they are simply not available.

In answer to the second question, we have to take into account that much of maquiladora manpower, particularly at the operator level, is incorporated into the economically active population for the first time. In case the level of operations of the plants falls off, these people will not simply go back to their families, but rather join the ranks of those looking for work. In other words, in order for maquiladoras not to contribute to any unemployment or underemployment they would be expected, in the best of the circumstances, to grow continuously. It will also have to be taken into account the possibility of induced migration, i.e., for example, that as a result of one person being employed by them two more would

/come to

come to town. This question will be dealt with, in a wider context, in the below Section 11. Generally however, maquiladoras are not to be expected to contribute to unemployment in border towns given the relatively favorable employment situation there; again in other places, a downward adjustment of their operation is likely to have this effect.

An answer to the third question would in part have to recall what was said in the foregoing section about reasons underlying a relatively high reservation price of persons without previous work experience, that is most of all comparative acceptability to them of the type and conditions of work offered by maquiladoras. This will lead to the conclusion that the impact of the existence of maquiladoras on this account is highly beneficial as long as the employment they provide is stable or, even better, continues to expand. As an aside, under these conditions, the only negative point that could possibly be made is that the going wage rate for unskilled labor may be raised beyond the legal minimum with some remote chance of a relative decline in the number of available jobs as a result. The only groups in society that have felt a related impact, they consider adverse, are in certain towns the more affluent that had to pay higher wages to their housemaids as a result of employment expansion in maquiladoras.

Employment and its expansion is generally not considered an end in itself, but may be an important factor in promoting more a quality by proportioning part of increase in output to the very poor. Also, unemployment is considered to have a deep and distressing psychological impact on those affected and on society as a whole. In addition to relieving poverty, employment expansion may also mean to employ economic resources that would otherwise be wasted, something a developing country should not willingly permit. The particular benefit that stems from maquiladora existence is that their employment creation equals fuller exploitation of production potential whereas many other devices to increase employment are seen to lead to an absolute or relative decline in output when productivity falls off and/or less is saved as a result. Thus considerations given to self-respect and self-confidence; income

/distribution;

distribution; and additions to aggregate income and consumption at no cost in terms of output, would underline the major benefits stemming from the type of employment that maquiladoras provide.

8. Other shadow pricing

The main purpose of this section is to explore other possible sources of shadow pricing, again with the intention to evaluate a distortionary difference between shadow and market prices as a net monetary result stemming from maquiladora existence.

8.1 Involving the public sector of Mexico

A first major source of shadow pricing and thus net benefit for the Mexican public sector is closely related to wages and salaries treated in the above Section 7.2. With some minor qualifications later to be presented in the final report, this benefit will accrue, in terms of income taxes, social security payments, the housing tax and the education tax, as well as a few more minor taxes that in some states have to be paid, in same proportions as social income benefits do accrue to the respective Mexican manpower. Thus sizeable net monetary results are to be expected from later calculations.

The standard treatment of government taxes generally, i.e., customs duties, import or export taxes, sales taxes, etc., in cost/benefit analyses is as follows. Using border prices implies, that one, on principle, is not to take them into account, thus treating them entirely as distortionary differences. By excluding taxes from shadow prices, an activity evaluated is intended not to be encouraged to use inputs that happen to have low taxes on them since, otherwise inefficiency may easily result. Are taxation policies however more than a source of revenue for the State, are they for example supposed to influence the structure of production by influencing demand, then taxes are to be taken into account, shadow prices being pushed upward accordingly. The question then arises whether the structure of Mexican taxes involving payments to and of maquiladoras is the result of

/a well-defined

a well-defined development policy. It may appear, that the majority of payments for consideration do not stand for a deliberate attempt to influence production decisions, they are rather the result of a series of historical events in the development of Government finances. In the field in which there is, in effect, a deliberate policy on the part of the authorities, i.e. regulation of imports according to possibilities and needs of Mexican industrialization generally, maquiladoras are not involved given the in-bond character of their operations. Nevertheless, with the intention to evaluate the difference between the situation with and without maquiladoras, taxes will have to be considered if the impact of the maquiladoras was to take inputs away from other producers, analogous to the treatment of salary and wage related taxes in the case of labor. We would then have to ask whether the resources involved are in a fixed supply or can rapidly be expanded if the demand for them by maquiladoras increases. This will later involve a careful study of many items, since at stake is not only the four percent sales tax on the value added by maquiladoras in Mexico, but also all inputs, except labor, acquired locally that also carry this tax. In conclusion on this point, in as much as the impact of maquiladoras is to generate more production of inputs, taxes are to be excluded from shadow prices and thus will be another substantial benefit of maquiladora existence.

Questions concerning subsidiation and involving maquiladoras are somewhat related to the foregoing point. While one may expect subsidies to account for a mark-up of shadow prices, possibly beyond market prices, the general rule, however, is that such incentive measures are to be accepted as they are since they are granted through government which is assumed to be rational. The more basic justification is that activities should not become unprofitable in a number of cases where, otherwise, materials would be registered with too high a cost. In other words, subsidies are supposed to correct distortions rather than to imply distortions.

Maquiladoras, however, hardly enjoy any direct subsidies, except for one or the other deal that might have been made with local authorities on

minor accounts when getting established. Granting them the status of in-bond plants as such does, in effect, not mean a subsidization of theirs since Mexico did not have to forego anything in monetary terms; without this privilege they would just not be operating in this country. A minor indirect subsidization might be seen in terms of incentives generally provided as part of the Mexican border industrialization program, one important item in this being the subsidization of transport costs of goods sold in this zone and coming from the rest of the economy. Then, still more indirect, the creation of "centros comerciales", supermarkets in various places along the border, where the attempt is being made to capture part of the purchasing power of the population that usually would materialize on the other side of the border; the link to maquiladoras here were purchasing power generated by them. But all this is quite remote and, most of all, it has to be taken into account that any such subsidisation involving the plants indirectly is clearly the result of a well defined government policy towards the border region and thus, in terms of standard procedures of cost/benefit analyses, has to be neglected. As an aside, the industrial parks we visited are privately run and not in any way subsidized by Mexican development finance institutions as are others that house industries not belonging to the maquiladora fields.

Public utilities is another potentially important area for shadow pricing involving the Mexican public sector since the resources involved, as minor as they may appear, will probably add up to a significant portion of the total value added. How to treat them? Some would suggest to apply an internationally acceptable value. Since public utilities are generally more expensive on the Mexican than the U.S. side, a corresponding discount would render this field as another substantial source of benefits to the Mexican economy. This may, however, not be justified in view of the general condition of inadequate supply of these non-tradables along the Mexican border. If demand were deficient, one might resort to the concept of marginal social cost mentioned in the above Section 6, but in view of the fact that supply cannot expand in line with the needs that

/are partly

are partly generated by the heavy inflow of migrants, it will probably be necessary to use the concept of marginal social benefit. In doing so, it would be assumed that the social value of, let us say, electricity is higher than the estimated marginal social cost of supplying it. In fact, in some places, maquiladora demand for public utilities appeared to have caused some general problem of supply in the past. This, by the way, had some of them install facilities of their own; one industrial park, for example, has its own water supply and, on occasion, helps out the rest of the city if in need.

In conclusion on this point, the field of public utilities is unlikely to constitute a source of benefits of maquiladora existence. On the other end of shadow pricing, it might, however, not be justified to go as far as to establish for these resources a shadow price above the market price, amounting, in effect, to a net loss. In the context, it may be considered that installation charges for electricity maquiladoras have to pay increased significantly over the past few years. In any case, pertinent statistics on the municipalities involved will have to be studied for later calculations.

The question of profits was taken up on several occasions before. Now a final word is in order. It had been pointed out that profits transferred abroad are usually considered a cost to the host economy, but that there are important theoretical and practical reasons for not doing so in the case of international subcontracting activities, partly in the light of the limited extent to which entrepreneurial functions are being performed in the maquiladoras. We also saw that, on principle, the incentive to shift profits abroad is not great since taxes paid by maquiladoras can be wholly offset against the parents' tax liabilities in the United States. An incentive on another account is also absent, i. e. any profits shown in Mexico are not to be shared with local equity holders because there are none. The crucial question is, however, what maquiladoras could do with any profits attributed to them other than transferring them abroad. Their reinvestment needs are in effect relatively small given the labor intensive nature of their operations

/and the

and the fact that parents usually provide all equipment. In view of this, it has to be concluded that only that part of the profits would constitute a cost to the Mexican economy which could have been taxed by the authorities of this country, but that escaped abroad through transfer pricing. We would, however, again arrive at the question to which extent a maquiladora operation as such is entitled to profits. From a practical point of view, it might then be asked to which extent the host government has not exhausted the potential it has of taxing a hypothetical amount without losing the maquiladora activity to some other host country. To come up with a number on this is rather difficult and the consideration itself is precarious in view of the fact that the better the profit potential for parent systems with maquiladoras in Mexico, the better are the chances of expansion of these operations generally and thus the higher the positive monetary net result on accounts dealt with in sections above and below, accounts that would carry by far a greater weight. Thus it is decided not to consider as a cost to the Mexican economy the profits transferred abroad, actual or potential, including the rather hypothetical taxable part of those funds possibly shifted through transfer pricing. More as a matter of intellectual curiosity, however, we will figure out on an amount which would reduce a positive benefit/cost ratio to one.

In conclusion, we expect that later cost/benefit calculations involving a shadow pricing of resources provided by and involving the Mexican government sector will be another important source of net benefits stemming from maquiladora existence, mainly on account of a great variety of taxes involved in payments of and to these plants.

8.2. Involving the private sector of Mexico

The sources of shadow pricing involving this sector are purchases of maquiladoras of a great variety of other resources obtained in the Mexican economy. They refer to fixed assets, material, transportation services, rentals, repairs and maintenance, packaging material, bonding costs, handling charges and brokers fees, consultants and auditors fees, insurance, etc. As for valuation procedures, these resources will be divided into labor at its shadow price and internationally traded goods evaluated according to the international price level.

In general, the aforementioned items partly stand for significant sources of benefits. Since an investigation of national goods treated as international goods along previous stages of production is quite difficult given the number of plants for analysis, the attempt was made in the course of the interviews to determine at least some basic facts on them such as costs by U. S. standards, taxes involved, the foreign exchange component, import duties on components, the share of labor that went into the resources, reasons for overpricing by Mexican suppliers, conditions of supply (fixed, flexible, rationed) etc. It is of course clear that the answers we obtained on such questions could not be very precise. Nevertheless, since an investigation along the production stages of these resources is difficult, the information we obtained that way will be at least of some guidance in the application of standard conversion factors. Those items that constitute a major source of shadow pricing are without doubt bonding costs, handling charges, brokers fees, consultants and auditors fees. Also rent charged for building facilities in and outside industrial parks is an important field of net benefits. In the latter case, a point of departure may be a comparison of rents that maquiladoras pay in comparison with the going rate in Mexico and maybe the U.S., but more realistic will be a consideration of the underlying physical capital broken down into components such as labor, domestic materials,

imported inputs and import duties as well as other taxes, so that, on the basis of the lifetime of such assets, an amortization charge at an accounting price can be imputed for the period under consideration. A similar procedure may be applied in the case of fixed assets that were acquired by the maquiladoras from Mexicans; only a few bought plant and equipment in Mexico; the major items are buildings, office furniture and transportation equipment. Such investment did not lead, without exception in the case of foreign subsidiaries, to any liabilities to the Mexican economy, so that we can mainly concentrate on the underlying real physical resources that in part might have been removed from alternative production uses in the rest of the Mexican economy.

A special case in our analysis is the acquisition of land by maquiladoras - as happens with quite a few of them - since we are concentrating on current operational costs. Price, whether fair, speculative or subsidized will deserve important consideration as well as worth in terms of alternative uses since this factor of production is often considered to be relatively scarce given its non-multipliable nature. In most cases then, a realistic valuation may be to apply the market value. Still it may be intended to ask for the social value of possible alternative uses of this factor for the period under review.

In conclusion, quite a few sizeable benefits are expected to come out of our later calculations on the involvement of the Mexican private sector with maquiladoras, benefits that in the first round, accrue to local businessmen. The comparative social value of these benefits in monetary terms however is somewhat a different matter which would have to be judged in part by subsequent uses made of it, mainly in terms of consumption and investment, domestic as well as, particularly if located at the border, foreign.

8.3. Foreign exchange

If the relative prices of foreign and domestic resources do not reflect their relative scarcities, the evaluation of international

/subcontracting

subcontracting activities in Mexico can truly be made only by applying a shadow price to foreign exchange. This involves two steps. The first refers to establishing the net foreign exchange impact of maquiladoras which amounts to adjusting the gross inflow of foreign exchange, equalling the value added in Mexico by taking into account a great variety of possible indirect imports. But again, we have to be somewhat more precise if we try to compare the actual situation with that without maquiladoras. Important aspects are in part often overlooked when there are discussions on the foreign exchange impact of maquiladoras. For example, a Mexican production manager who, in the absence of the maquiladora, would have worked for a firm other than a maquiladora at the same salary, would have had the same propensity to import as he does now. In that case it cannot be maintained that the whole portion of his income he spends on the U.S. side reduces the foreign exchange contribution of his maquiladora. Rather does this maquiladora save the Mexican economy the amount that he would normally spend there. Thus, for administrative staff and skilled factory personnel, total income constitutes a net foreign exchange earning provided that the shadow price of this labor coincides with its earnings. Similarly, in the case of much operator manpower, adjustment of wages must be made for indirect imports roughly to the extent of only that part of the margin between shadow and market wages that is spent on the other side of the border. Some qualifications to this and involving the actual calculations will be presented in the final report. But it should be clear by now that these calculations would have to concentrate only on incremental income, a certain percentage of which will be spent directly or indirectly on the other side or on imported goods.

Guidelines for these calculations will be statistical data on consumption patterns in border cities published by the Secretary of Industry and Commerce for the early 1970's. For our period under review, complementary information on relative price developments and the impact of the centros comerciales, that all have occurred in the

/meantime,

meantime, will be factors of consideration. Indirect imports stemming from the use of maquiladoras of other domestic resources also will have to be carefully estimated. In addition, account will be taken of that part of the total income of foreign executives living on the U.S. side of the border that they spend in Mexico. In the interviews, this turned out to be a number anywhere between \$100 and \$200 dollars per month depending on the location and characteristics of the respective Mexican town. Furthermore, the foreign exchange contribution stemming from frequent visits of technicians of the parents to Mexico may also be important but only a rough guess is possible. As for the funds maquiladoras keep in checking accounts, a look into 9 cases with 7300 employees would suggest that this will not amount to more than a one per cent of their value added.

The second step concerns the fixing of the shadow pricing itself. Beyond the above statement that relative prices of foreign and domestic resources might not be a measure their relative scarcities, one has to consider a number of additional aspects. Foreign exchange reserves are an asset quite similar to that of stocks of capital goods for example. In fact, in developing countries, foreign savings are a good substitute for domestic savings. This however does not necessarily apply the other way around and, with this, we are involved in questions concerning a divergence of the foreign exchange from a savings gap. Prevailing conditions in these countries make it often difficult to increase the rate of savings. Even if they could, the substitutability of foreign and domestic resources may be an issue. Domestic capital goods industries might be operating at full capacity or, what is more likely in a number of cases, the country is in no position to make all the capital goods it needs itself, a situation which may even apply, to some extent, to a country like Mexico with a relatively diversified industrial structure. Then, there is a possible scarcity of foreign exchange itself, exports not being able to provide sufficient amounts of this asset so that restrictive measures in the external sector

/will ensue

will ensue and determine some measure of currency overvaluation. In fact, in cost/benefit methods, important consideration is given to the average of the percentage by which the domestic market price of goods imported by a country exceeds this CIF price expressed in domestic currency. The UNIDO guidelines base this approach again on some domestic willingness to pay, involving a premium above the official price of foreign exchange, which is needed to purchase these goods.

In the case of Mexico, additional considerations are in order. First, in this country restrictions are applied, to a good deal, through physically rationing goods via a license and quota system. The second point involves the maquiladoras directly on account of their contribution to the foreign exchange reserves of the country which is far from being marginal. On the basis of 806.30 and 807.00 U.S. trade figures, it would appear that the gross inflow of foreign exchange into Mexico stemming from maquiladora existence amounted to some \$460 U.S. dollars in 1974. If only some 40% of this, or some \$200 million dollars were retained, it would still be a considerable bolster which by itself has an impact on the price of foreign exchange and thus an implication for our accounting procedures.

Any social premium on foreign exchange determined would be used as a factor to multiply the previously figured out net foreign exchange impact of maquiladoras so that this result can be added to the net benefits stemming from maquiladoras existence. But how to figure out this premium? Apart from the complexity of the above considerations, this is normally also an explosive political matter. For these reasons we might simply resort to a premium used in evaluations in the Presidency of this country, where it is considered to be around 30% on the average.

This additional benefit is one that accrues to the economy as a whole. It cannot be directly attributed to the employees and other persons as well as institutions involved with the maquiladoras, but it may, with this in mind, also be broken down by social groups to which maquiladora labor and the others belong.

/In conclusion,

In conclusion, a significant benefit of maquiladora existence to the Mexican economy stems from their foreign exchange contribution, the magnitude of which is easily overlooked if one does not base calculations on the additional income generated by the plants and instead uses the propensity to import out of total current income. This positive net foreign exchange impact is substantially bolstered by shadow pricing of foreign exchange on the basis of a premium currently used in official quarters. This additional benefit, however, is rather unstable inasmuch as it would be wiped out by any devaluation of the Mexican peso which would reduce the shadow price premium to zero.

9. Non-quantifiable effects

A distinction between the net monetary results of maquiladora activity evaluated in foregoing sections and an evaluation of non-quantifiable effects is useful, particularly in the light of the possibility that a positive or negative result on one account may be more than offset by the contrary on the other account. However, since these effects cannot be easily compared, a final decision on the usefulness and viability of activities could easily become a matter of subjective viewpoints. Nevertheless, in the following sections we will deal with the major aspects that can only be presented verbally and that need to be considered in order to present a comprehensive picture of the impact of maquiladoras in terms of economic efficiency.

9.1. Working conditions and industrial environment

Working conditions have been touched upon in various of the foregoing sections and in order not to be repetitive it will be concentrated here on just some major aspects and complementary information. In general terms, after having seen the conditions of work of some 15,000 maquiladora employees, it may be stated that they are the better the bigger and more multinational a maquiladora is, excepting some of the smaller foreign subsidiaries that also care very much for high standards of work environment. At the bottom of the scale are clearly a few of the Mexican-owned maquiladoras. In one, the Mexican owner explained frankly that he just cannot afford any more to make social security payments; in another such plant, I came across to interview two female operators at an age of 12, working at a piece rate which rendered them an income of less than 50 percent of the going minimum salary and apparently none of the legally stipulated fringe benefits.

First, some bad points. From the work record registered on our employee questionnaires it would become apparent that also in a number of foreign plants, operators started their present job at an age below 16. Then, for a number of operators, their working condition is rather unstable in that they continue to be "temporaries" with contracts

limited usually to about six months, while they might have been working in the plant for over two years already. Executives stated that they try to keep the amount of these people low as a portion of total labor force. There were, in fact, quite a number of plants without any temporaries. Other operators were suspended for quite a number of months when the worldwide recession hit the maquila industry; some plants, in an attempt to be more equitable, did not lay off anybody but introduced a four-days week which, on occasion, appeared to have caused some unrest among the labor force. The worst possible cases however we heard of were those plants that shut down overnight and left without prior notice; this was supposedly the case of two or three maquiladoras in Nogales leaving behind machinery of no use for an adequate compensation of their abandoned labor force. Finally, full indemnization, according to the Mexican labor law, of workers that were let go appears to constitute rather the exception than the rule. Some operators with previous work experience in other maquiladoras that remarked on this, had either not received anything or a sum between \$1,000 and \$3,500 pesos. Also some manpower had resigned voluntarily, then not entitled to indemnization payments, with the financial incentive of the plants. Apparently workers have frequently been laid off with a promise of reemployment in better times; quite a few plants we visited were recouping such people now.

Positive aspects of working conditions predominate without doubt. In addition to the examples given elsewhere, mention may be made of substantial fringe benefits, in the case of one important plant for example, a 13 percent above basic salaries. There are heavily subsidized cafeterias; additional group insurance, medical, maternity, hospitalization, life and accident; credit unions; buses hired to transport workers, in one case twelve of them; classes in birth control and hygiene; availability of nurses and doctors; financial help to study English; air conditioning and music in plant; theater groups, rock bands and sports teams made up by employees; payment by the company of the employees' portion of the social security and income tax quotas; etc. While such fringe benefits, without doubt, help the respective companies in terms of

/efficiency

efficiency and levels of productivity, they must also be seen as contributing to a very pleasant working environment for much of the labor force. The personnel manager of one plant who tried to determine the attractiveness of maquiladora jobs to operators and conducted a survey among 338 of them got the highest scores on such proposed statements as "we get to know other people" (257), "we have more friends" (240) and "we came across new ideas" (237).

Some personnel managers found that operators, females in particular, undergo first some "cultural shock" when they take up their work in a highly organized industrial production process, but that they adapt themselves to this environment very quickly. An imposition of disciplined working habits would probably constitute an entirely new dimension in the lives of most operators. If this were to be particularly evaluated, reference might have to be made to aspects of modernization of life, steadiness of work and, last not least, to questions concerning the relative quality of employment offered by maquiladoras and referred to in the above Section 7.3.

There may be some spread effect of working conditions prevailing in maquiladoras in that official inspectors, as we were told, may want to see a matching raise in the standard of plants other than maquiladoras.

9.2. Learning effects and transfer of know-how

Important non-quantifiable effects may stem from maquiladora existence under this category. Many of the plants, particularly in the electrical and electronics industry, stand for the most modern technology which is relatively labor intensive and thus possibly in line with the domestic factor endowment. However, maquiladoras would appear to do very little by transferring such technology really on to the Mexican economy since too specialized processes and a division of very sophisticated productive processes are involved. Such technology is just not internalized by the host economy.

Given the fact that modern design and product equipment as well as techniques are imposed from abroad, productive processes in maquiladoras are only changed to the extent that usually liberty is given to

/imaginative

imaginative Mexican engineers to adapt it to local conditions in some way and that, as was mentioned elsewhere, the organization is at times broken down into more single repetitive operations in order to facilitate the tasks to be performed by operators. There is however a clear tendency for many plants to become more vertically integrated and self-sufficient in a number of technical aspects involving the establishment of their own tool shops. Interesting in the context was the statement of one executive that lower and middle management at the parent is often jealous with respect to the transfer of product knowledge to offshore sites. Then, as a rather exceptional case, we came across one nationalized Mexican manager with a patent of his own which appeared to keep him well in business with the foreign principal.

In view of the labor intensive nature of much maquiladora operation, concentration should be on the possible skill intensiveness of work and the knowledge spreading effects as possible non-quantifiable external benefits. Such effects would comprise products as well as processes and be brought about by training including of course skilled labor. Not only would the value of the labor force be increased to the maquiladoras, but also to employees themselves in that they might have to be paid more as a result, in order to be kept on the job, or, if they leave, their value is increased to other employers, perhaps paying even better. In that way, maquiladoras may reduce the cost of training to society and other employers.

An issue in this respect becomes the turnover rate that, as we noticed before, will be kept by plant managers as low as possible. Will the labor force not move on to other jobs, potential externalities benefiting the domestic economy will not materialize. In other words, such benefits through training will not arise if they are internalized by the maquiladoras. With a turnover rate of zero, a benefit could accrue only to the employees themselves in terms of higher wages and salaries.

What are the facts as we encountered them in maquiladoras in this respect? First, most of these plants follow a policy of internal promotion and would hire people from outside only if talents are not

/available

available from within. In one plant with close to a thousand people, 120 promotions became effective in terms of job classifications in 1974 alone. Second, at the operator level where training time may range from one day up to six months, skills and knowledge appear to be very specific to products so that hardly any knowledge spreading effects are to be expected. An exception is the textile industry, where girls with newly acquired sewing abilities stand a good chance to obtain attractive jobs outside maquiladoras. It is however interesting to note that in such cases the social opportunity cost of labor is considerably above the average. In this respect one might see a conflict between benefits in terms of learning and skill effects on the one hand and benefits in terms of income effects on the other. Third, as far as skilled manpower is concerned at the factory level or as administrative staff, the potential of knowledge spreading effect is substantial. Skilled technicians, such as trouble shooters and people in quality control as well as tool makers, together with young graduates from engineering schools and technological institutes are undergoing a constant learning process. One plant alone we came across, employs 150 Mexican engineers and there is frequent off-the-job training in the United States. In another maquiladora with about 600 employees, the present comptroller had begun as an office boy four years ago while studying on the side. Fourth, quite a few plants are cooperating with local universities and technical schools from which they may recruit part of their professionals. This is done through provision of equipment and logistics help for the design of classes.

Some Mexican technicians and managers held that in the absence of maquiladoras they could make out alone quite well since they had gained a substantial knowledge; others felt that present working conditions and a good salary has them got accustomed that much to a single work process that they are stagnating in terms of furthering their knowledge. Another two Mexican managers were running small maquiladora plants of their own on the side.

/In conclusion,

In conclusion, at the operator level, not much may be expected in terms of knowledge spreading effect benefiting the Mexican economy; after training and with a good performance the operator himself, however, may benefit through higher earnings. Substantial positive effects may be expected to accrue to the host economy if maquiladoras do not entirely internalize the knowledge acquisition of other maquiladora manpower. There is, in fact, a pool of several hundred if not thousand of skilled local technicians, engineers and managers, a talent about which there is apparently not yet much awareness in Mexico and which could eventually turn into a significant asset to the Mexican industrialization process.

9.3. Linkage effects

Industrial activity will normally have a number of important external effects through linkages with the rest of the economy. For example, a newly established project may cause a change in the real cost of its inputs if the additional demand thus created will lead to the establishment of a socially profitable activity to produce these inputs or to economies in already existing production. International subcontracting activities, however, with a typically pronounced enclave character cannot be expected to play much of a role in this respect.

Nevertheless it may be worthwhile to briefly look into the actual and potential of any such linkage effects since it is generally hoped that maquiladoras could increasingly be integrated, within limits, with the rest of the Mexican economy. Part of the following analysis will therefore also evaluate the obstacles in the way of such integration.

9.3.1. Backward

Data provided by the Secretary of Industry and Commerce for the first trimester of 1975 indicate that total materials bought by maquiladoras from Mexican sources constituted only 0.26 percent of the value of imported inputs, materials other than package material amounting to a bare 0.07 percent. The present enclave character of maquiladora activity could probably not better be demonstrated.

On the interview tour it appeared to us that plants located in the interior of the country may have some (higher) propensity to supply themselves from Mexicans; this, however, needs to be checked against the data collected. Newly established firms hardly consider the Mexican market for the time being. In fact, one manager of such a plant told us that they are not buying from Mexican sources in order to avoid any problem. One of the obstacles to such purchases are of course the U.S. tariff items 806.30 and 807.00 since duty must be paid on Mexican inputs whereas U.S. parts and components may be reimported free of import tax (unless they lose their identity in the course of processing in Mexico). On this account, the geographical location of Mexico, so advantageous in many respects, is a disincentive since at a longer distance to the subcontractor, the principal abroad may save all or part of the transport costs one way by having the former source locally. In order then for Mexican materials to be competitive, they must not only meet U.S. quality standards, but also have a price that is lower at least to the amount of the corresponding U.S. import duty; price and quality as well as product diversity, however, are general problem areas in Mexico.

United States import duties on products of certain industries are however not substantial, a major exception are of course textile products, so that more important may be the fact that parts and components are produced very economically in the States due to economies of skill. Quite a few executives indicated that they had carefully studied possible sourcing in Mexico and that this search might be intensified in view of the GSP implemented by industrialized countries, a possible incentive to bring up the Mexican content to a certain level.

Additional reasons for which an increase in local purchases by maquiladoras is difficult to accomplish are as follows. First, in addition to the trend towards centralization of purchases managed by the procurement people at parent companies, there is the obstacle that these companies often perform an inspection of inputs or even a quality control before they are passed on to the Mexican maquiladoras, a function

/that

that might not easily be transferred to the latter since many parents would operate on an "approved suppliers list" to be kept under their close control. Second, sourcing in Mexico is made difficult in those cases in which a principal himself obtained a contract only after he agreed upon with his customer on a sample, an example being U.S. wholesalers in the textile field. Under these circumstances, it would be rather impossible for the maquiladora operation to use any other material than that of the sample; to get samples from Mexico, in the first place, would probably be a remote possibility. Third, a few plant managers have actively tried to get certain Mexican materials such as metal stamping and zinc castings for which this host country appears to have a comparative advantage, but a lack of interest on the part of Mexican industrialists was the obstacle in these cases. One Mexican businessman even requested to be paid for making an offer; others simply did not respond even though searching was partly done with the help of the Mexican Institute for Foreign Trade (IMCE). The conclusion of maquiladora plant managers was that Mexico is just an excellent seller's market. It may in effect be assumed that comfortable profit margins protected by import restrictions lessen considerably any incentive that Mexican industrialists might have for doing business with maquiladoras on a competitive basis. To give another example, when the legislation governing maquiladoras was extended to apply to the whole of the country, a Mexican owner of a textile maquiladora at the border intended to become an intermediary between principals in the U.S. and Mexican producers in the interior of the country. He extensively toured the country and tried to make the necessary contacts, even offering to Mexican producers a higher price for shirts than they were charging in the domestic markets and pointing out the potential benefits to them of a more intensive use of their plant and equipment. Still, he was not able to get into such business because the producers enjoyed a comfortable profit and did not want to be bothered by additional business deals. The same maquiladora owner was unable to

/buy materials

buy materials in Guadalajara in February this year, since, as he was told, the whole production had been sold out until January 1976. He himself is now selling 60% of his production in the Mexican market, striving for a 100%.

In conclusion, significant factors originating abroad in combination with the protectionism under which much Mexican industrialization has been developed, account for a very pronounced enclave character of the maquila industry without that there is much chance, except for some cases in the interior of Mexico, that this could be changed in the short and medium run.

9.3.2. Forward

The potential of forward linkages may be seen in combination with learning and skill effects which may thus spread more easily, and perhaps also with some possibility of technology transfers. In principle, maquiladoras are supposed to be given permission to sell in the Mexican market if they would not be competitors to any local businesses. However, such sales are of rather negligent importance for our sample of plants. A number of executives indicated that this market may have a more active interest of theirs in the future, again plants in the interior of the country having a stronger inclination to serve it.

As for the particular obstacles to building up more pronounced forward linkages, it is of course an important fact that much of the Mexican industry is highly protected and that it would take the maquiladoras considerable import taxes to enter the domain of local businessmen. Second, for many maquiladoras, sales are managed by the parents so that a number of their products are sold in Mexico after they have passed through the States with or without further processing over there, the former being the rule. Then, some parent systems have other subsidiaries in Mexico established to exclusively supply the market of this country so that there is a division of labor

/between the

between the two types of subsidiaries, maquiladoras being at the margin of domestic sales. Third, for quite a few products of maquiladoras, Mexico would not be a market at all since they are unique items to be incorporated in quite sophisticated products in the States or the Mexican market is just too small and could be fully saturated within a short time span. Fourth, some maquiladoras would also take into account that if they are to sell in the Mexican market, U.S. customs authorities may be a problem in that they could raise the question of why they sell at a higher price in the host economy whereas the same products are entered into the U.S. under possibly much lower imputed costs in terms of value added in Mexico. Finally, the credit standing of potential Mexican customers is seen to be another obstacle. This was in fact a major consideration on the part of Mexican owners of maquiladoras at the border who felt that they might have a problem in collecting their bills from businessmen in the South.

In conclusion, the prospects of increased forward linkages appear almost as limited as those of backward linkages, again there might however be some tendency on the part of maquiladoras located in the interior of Mexico to take the domestic market more actively into account in the future.

IV. SOCIAL PROFITABILITY

Our evaluation of various categories of effects has been neutral up to this point, in particular with respect to the economic monetary result dealt with in sections 7 and 8 above. To be sure, this result would appear as being broken down by social groups and institutions involved, but we have not yet established any priorities which in social cost/benefit analyses is more and more the trend of the time.

To take social aspects into account might lead, in the extreme case, to a rejection of economic activities on these grounds, even though the economic result is positive. In that case economic expansion were to be sacrificed because of social motives and if, on the other hand, an activity is accepted because of these motives, but lacks economic efficiency, it were to be subsidized. Such possibility appears to be rather farfetched, but consider the case in which an evaluation of the economic monetary result of international subcontracting activities would establish, other things being equal, a shadow price premium for skilled manpower of maquiladoras almost offsetting the net social income effects of operators, thus rendering hardly any overall net monetary benefit, only positive non-quantifiable effects of the kind mentioned in the above section 9.2. In that case, social considerations may easily carry the decisive weight on the overall profitability and thus acceptability of these activities.

In fact, some cost/benefit analyses go as far as to attempt an integrated valuation approach and try to add up qualitative and quantitative aspects. In doing so, however, the crucial questions are, how relevant indicators for valuation are to be identified and who is to decide upon a scale of weights. Clearly, priorities are not supposed to be determined by the valuator, the one that does the analysis of economic activities. Then, has the government established any such priorities? If so, can it be assumed to have been rational?

These questions raise doubt about the feasibility of integrated valuation approaches so that we will, in this chapter, basically ask

/to which

to which extent is the economic result positively or negatively influenced by a number of important social considerations. In order to approach such topics gradually, we will, as a point of departure, consider first a number of socioeconomic goals and question, to which extent they might be in conflict with respect to acceptance and promotion of international subcontracting activities.

10. Considerations on macro-policy goals and conflicts

The direction of a social cost/benefit analysis is normally determined by a set of general objectives of national policy which has to be taken into account in an evaluation of international subcontracting activities in Mexico since these activities have, as we saw, consequences for employment, output, consumption, savings, foreign exchange, income distribution, etc. Improvement in these fields are not necessarily ultimate objectives. Policies geared to them are rather means than ends. In the ultimate instance, what will count is a contribution to the standard of living that economic activity may make, possibly besides furthering freedom and democratic participation in economic and other decisions. Thus, if we consider policy conflicts, this would refer to a conflict between means rather than ends.

Maquiladoras pay the legal minimum salary or more, employ predominantly unskilled workers with a high propensity to consume, are not capital intensive and make very little profits in the host country, excepting for the latter aspect the Mexican-owned plants. In view of these characteristics, two major conflicts involving goals of macro-policy might be seen in principle. The first is that employment creation may be in conflict with output expansion in a situation in which the availability of savings puts an effective strain on investment. The high employment for unskilled labor per unit of investment may be good for equality now but bad for the savings and thus investment rate and consequently for income and employment later. Thus, this conflict turns also into one of more equality and employment now than providing them later more abundantly. This conflict may increase to the extent that workers are able to maintain

/or increase

or increase real wages in the face of expanding employment and cannot be induced to increase their savings with the possible consequence that investment must be reduced elsewhere.

The second conflict relates to the fact that employment expansion is linked to the availability of consumer goods. The question that first arises is whether employment and production can be generated elsewhere to produce consumer goods which would satisfy the possibly deficient in supply. If supply cannot be expanded, there may be a shift of real income, via the price mechanism and inflation, to groups with some monopoly power on the market. Or, as an alternative that is not mutually exclusive with the foregoing possibility, the structure of production may be changed in favor of consumer goods at the cost of some industrial development potential.

A careful study of these questions however will reveal that the conflicts are very relative as far as international subcontracting activities are concerned. In fact, the special characteristics of the maquiladora industry determine that no absolute sacrifice has to be made on the account of any policy goal. Nobody is bound to lose, all groups are better off and each goal is furthered. The domestic investment potential is not adversely affected and, as far as a possible scarcity of consumer goods is concerned, in the ultimate instance an importation of them is possible at no additional foreign exchange cost. Beyond that, as far as the quality and value of production generated by maquiladoras are concerned, there is hardly any industrial activity that could be carried out at a lower social opportunity cost than that in these plants. As a foreign exchange earner, maquiladoras cannot be topped by any other device.

These considerations have to be borne in mind when we will approach the below topics, in particular questions of equality. With respect to the latter, it may also be recalled that the net monetary economic benefit of maquiladoras largely accrues to unskilled manpower, much of which is at the bottom of the income scale in Mexico.

11. Migration

Before we actually deal with direct distributional effects, we will first take up this related topic for final consideration after it was touched upon before in the above Section 7.2. There we saw that maquiladoras do not play a role in migration patterns as far as the labor force is concerned they employ. We had however left out of consideration the possibility that they may constitute a factor of attraction in the general pattern of migration of the places in which they operate. The example was that a job taken up by an operator might make the city that attractive that two more unskilled laborers come to town. If this were the case, the net effects of maquiladoras would be less beneficial and, in an analysis of social profitability, should be adjusted downward because of the following costs. First, migrants may belong to the more qualified and able among the labor force of the possibly very poor regions where they come from and where they are most needed. Second, substantial relocation costs may be involved for those that are changing places. This possibility is in part suggested by the fact that the social opportunity cost of labor even changes significantly within the influence zone of a larger city as was pointed out elsewhere. Third, border cities are losing ground with respect to an adequate provision of housing, sewage, medical care and the general revenue situation, implying that an inflow of migrants accounts for a considerable social cost on these accounts.

In the following analysis, again distinction should be made between border towns and places, particularly small ones, in the interior of Mexico, since in the case of the former, costs of migration would appear to be rather irreversible whereas for the latter, migration appears to take place on a small scale within the state as our Table 8 suggested. So we will concentrate on migration involving the border towns.

The proposition that maquiladoras are a factor of attraction in the pattern of migration could be rejected on the following grounds. First, migration to the border zone could be expected to take place mainly in view of opportunities on the U.S. side if the intention was to migrate

/in search

in search for well-paid jobs. Recalled should be the figures we mentioned on the amount of illegal Mexican residents in the U.S. and the number of persons deported alone in the year 1973, figures that are overwhelming in comparison with the data on the economically active population in the border zone. Second, persons that come from the interior in search for maquiladora employment may be expected to know that these plants, at the operator level, employ mainly females. Migration however occurs usually by the families - Table 11 below will tell us that only 5 percent of the total operators interviewed are living by themselves - and the employment possibilities of young daughters may not carry a decisive weight in the decision of the families to move to another place.

Nevertheless we were interested in a more empirical study of this question and presented the employees interviewed with a corresponding question.* In the course of the interviews, we realized that this was a rather subjective question and in quite a number of cases persons reported might not have been necessarily those that came exclusively in search for maquiladora employment. Also, in the case of a few plants we had to take into account that various employees interviewed appeared to report the same persons, for example, two or three engineers that reported apparently a substantial number of the friends with which they all had studied in another town or, in the case of the small town Compostela, many of the operators interviewed referred to the 100-150 persons from nearby places that had come and applied for a job in the maquiladora. Some adjustments in the figures tabulated were intended to take these aspects into account.

Table 10 contains the data collected on the basis of our question, leading to the following analytical observations. First, only 26% of the total employees interviewed reported migrants that came to town in search for maquiladora employment, a relatively small percentage which would clearly suggest that the plants are generally not a factor of

* ¿Han venido de fuera de la ciudad familiares o amigos de usted al oír del trabajo en maquiladoras? si, no, cuantos; ¿encontraron trabajo? si, no; ¿cuanto ganan? ¿trabajan en maquiladoras? si, no.

MAQUILADORA INDUCED MIGRATION REPORTED BY EMPLOYEES INTERVIEWED

/importance

importance in the overall pattern of migration. Second, relatively more employees at the border reported such migrants, i.e. every 3.3 employee, whereas for those in the interior it was only every 5.4 of the interviewed, a result that could have been expected. Interesting is, however, a breakdown of this by border towns: Matamoros 8.3, Ciudad Juárez 3.0, Nogales 2.4, Mexicali 4.4, Tijuana 2.7. Thus it would appear that if maquiladoras were to play at least some role in migratory movements, it would mainly concern those located in Nogales, Tijuana and, to some extent, Ciudad Juárez. It is interesting to note that only every 8.3 employee interviewed in Matamoros reported migrants, whereas this city is quite integrated with the rest of the state to which it belongs and maquiladoras there would more easily attract the persons in question. Third, employees may be expected to have a tendency to report friends and relatives of an equal or similar background so that it would be important to know the job classifications of those that reported relatively many/few migrants. It turns out that 100% of the technicians at the border reported at least one migrant, followed by 55% of the male supervisors and 32% of the female supervisors, both also at the border. Thus, were the maquiladoras to play some role in migration then probably more so in the case of those who are qualified, would find a job easily and may have moved anyhow to some place. Fourth, each reporter at the border reported on the average 4.9 migrants, the technicians alone as many as 17.4, which would confirm the foregoing conclusion. Among reporting operators at the border, those in Nogales again reported the highest average, 7.0, followed this time by Matamoros, 5.7, and Tijuana, 4.5, at the bottom being Ciudad Juárez, 2.7 and Mexicali 2.8. Summing this point up in combination with the second, we might see some, if it exists at all, maquiladora induced migration in the case of Nogales and perhaps Tijuana and Matamoros. Fifth, the following table will give some idea on how well the migrants did.

/Location

Location	Percent of total migrants		Found work in maqui- ladoras	Migrants found work in maqui- ladoras as per cent of total employed
	Jobless	Found work		
<u>Border</u>	19.0	81.0	64.1	79.1
Matamoros	19.6	80.4	43.1	53.7
Ciudad Juárez	20.4	79.6	71.5	89.9
Nogales	2.7	97.3	87.4	89.8
Mexicali	46.7	53.3	21.7	40.6
Tijuana	32.3	67.7	40.3	59.5
<u>Interior</u>	79.9	20.1	13.9	79.2

In those places with stronger possibilities of maquiladora induced migration (Nogales, Tijuana and Matamoros) they did indeed quite well, particularly Nogales, our most likely candidate, where only 2.7% remained jobless. Finally it is interesting to note that much of the small scale migration in the interior is frustrated by a relatively high percentage, 79.9%, of those without success in a search for jobs. If, however, they do find them, it will predominantly be in maquiladoras (79.2%).

In conclusion, maquiladoras generally do not appear to play a role as a factor of attraction in the overall pattern of migration involving border cities. In Nogales, where they may have such a role, migrants are highly successful in their search for work and are overwhelmingly absorbed by the plants. A more general final observation would be that maquiladora induced migration of importance may occur only in the case of those places for which the employment of the plants constitutes a relatively high percentage of the total economically active population.

12. Distributional and related effects

12.1 Male versus female participation in employment

This subject matter is often given a prominent role in much discussion on maquiladoras in Mexico. High female participation in this employment, it is claimed, gives rise to a number of problems which, if verified, could lead to adjustments of the net benefits we had arrived at. Some circles have made indeed reference to family conflicts that may arise if young daughters with a substantial income, possibly more than that of the father, become too independent and/or are given now too much responsibility in family affairs, a situation that is often seen instrumental in the supposedly high number of unwed mothers at the border. Furthermore, male-female roles are seen to be changing, the former being deprived of job potentials and thus adversely affected psychologically.

Data on factory personnel was collected not only by job classifications but also by sex, but have not yet been tabulated. We expect, however, that the overwhelming participation of females at the operator level is confirmed, in some cases they might even make up 95 or more percent of the total employees of a plant. On the other hand, there are the more sophisticated maquiladora operations. In one such case, when total employment was substantially above 1 000 in the past, a relatively high rate of females at the operator level dropped down to a 60 per cent participation rate of women in the total labor force of the plant.

Still it has to be asked why females predominate that much at lower ranks. This labor force is often considered more docile than that of the other sex and in this respect the potential of relative union aggressiveness may play a role in the eyes of some plant managers. On the other hand, it has to be realized that unions as they are would probably mainly be controlled by a small group in power without much democratic decision making. Then, it would appear that personnel managers might have found out that the turnover rate, an important consideration in the hiring process as we saw, is substantially lower in the case of female operators. In fact, the type of job to be performed may often be too tedious for males that are accustomed to do heavier work.

/Some

Some exceptions to the general rule of high female participation at the operator level would however suggest that personnel managers are biased on one or the other account. For example, we came across a plant in which sewing operations were predominantly performed by males and the manager assured us that their productivity is 20 per cent above those of females. Both sexes appeared to be working harmoniously together. In another plant there was a strict separation between the heavier processes involving males in metal processing and the less heavy providing occupations for females. We realized however also that the participation of males at the operator level was somewhat more pronounced mainly in those cities, especially one, in which the labor market for females had been relatively tight at the peak of the maquiladora activity sometime back. Also union activity was almost absent in such places.

But given the situation as it is, is the higher female participation in maquiladora employment really a socially adverse phenomenon? In the countryside where no jobs are available, it may have a particularly depressing effect upon the other sex. In large cities and the border towns, however, where employment possibilities are good, the high female participation should be considered rather a substantial advantage to society. If in a city like Ciudad Juarez with a population of 600 000, employment is given to 15 000 unskilled girls, a major contribution to modernization of life may actually be made at no cost to the rest of the population. The quality of employment and acquaintance with modern industrial processes may in fact help to change in their case certain traditional patterns and modes of behavior that are adverse to any promotion of economic development and that would condemn the women into a secondary role in a usually male dominated society. The fact that these females would earn the minimum salary or somewhat more can also not be considered a problem because then the same issue would have to be raised with respect to the more qualified secretaries and female shop attendants in the service sector that even may be earning more; any internal family problems that may arise in the context, cannot but constitute a transitional phenomenon in a progressive development of society.

/In conclusion,

In conclusion, the higher rate of female participation at the operator level can be considered a favorable phenomenon except in those places in which such maquiladora employment would constitute a high percentage of the total economically active population and in smaller towns and the countryside in which there may be some distressing psychological impacts on the other sex.

As an aside, on the distribution of maquiladora labor by age, a topic for which we also have not yet tabulated our empirical data, it may be said that whereas it holds generally true that the labor force at the operator level may be around twenty, there are a number of exceptions in which plants employ predominantly women at 35 and above, an example being shrimp processing where the training time and skill intensiveness are very high. Then, those plants that had been in existence for five or more years would usually register a higher average age for their operators. In general, whereas preference is given to young people, probably again in view of the attempt to reduce the turnover rate as much as possible, a continuation at work at a higher age is by no means discouraged. Quite a number of girls however drop out because of marriage and are then replaced by younger ones.

12.2. Income distribution at various levels

In a social evaluation of the economic net result of maquiladora existence, questions concerning the personal, functional and regional distribution of income are all somewhat related and will be taken up in this section, with emphasis on personal and regional distribution effects.

Income distribution is a field of mayor concern of Mexican authorities as stated on all political levels for some time, but the actual situation does not appear to improve, rather worsen overtime. In view of the fact that government is quite limited in its ability to influence the distribution of income, a possible valuation of the net social income effects of maquiladora existence as they are committed to various social groups involved may be particularly necessary. Then, in view of the highly uneven distribution of income in Mexico, positive or negative weights may be attached to the monetary net result in that, for example, to put it in simple terms, the consumption of a rich man would carry a lesser weight than that of a poor man.

Pending a study of data on income distribution in Mexico generally for consideration in the drafting of the final report, we will concentrate, for the time being, on pertinent data in Table 11 obtained in interviews with operators. The major findings to be derived from it are as follows.*/

*/ It may be noticed that for some cities the average operator income is below the minimum salary and for the total of operators it is only slightly above. The reason is that in this presentation we have not yet distinguished between those persons that are working at a piece rate, for example in the State of Nuevo Leon: part time; and in Mexicali a number of operators in two cooperatives at wages substantially below the minimum salary. The usually higher maquiladora income of other household members is to explained by the likelihood that the latter are working at higher job classifications, apart from the fact that the average operator income for some locations is substantially depressed because of the aforementioned reasons.

Table 11

HOUSEHOLD AND MAQUILADORA INCOME OF OPERATORS PER WEEK

Location	Total number of operators (1)	Legal minimum wage (2)	Average household income (3)	Average operator income (4)	Additional maquiladora income come by other household mem.		Operators living alone (7)	Operators living with family; contrib. of total maquiladora income to family income (in%)			
					Number of household holds (5)	Average additional income (6)		100% (8)	70%-99% (9)	30%-69% (10)	Less than 30% (11)
1. <u>Border</u>	<u>340</u>	<u>527.97</u>	<u>1 334.39</u>	<u>529.31</u>	<u>106</u>	<u>686.00</u>	<u>22</u>	<u>99</u>	<u>10</u>	<u>172</u>	<u>37</u>
Matamoros	43	465.50	1 277.50	468.20	19	554.00	2	10	1	25	5
Cd. Juarez	73	494.20	1 294.50	507.45	21	663.05	2	18	3	41	9
Nogales	69	453.60	1 105.75	473.99	29	665.07	9	30	3	23	4
Mexicali	83	594.30	1 444.17	565.70	11	868.63	5	18	3	47	13
Tijuana	72	594.30	1 501.40	599.07	26	747.50	4	23	3	36	6
2. <u>Interior</u>	<u>162</u>	<u>366.71</u>	<u>1 034.00</u>	<u>368.20</u>	<u>32</u>	<u>343.40</u>	<u>5</u>	<u>25</u>	<u>-</u>	<u>93</u>	<u>39</u>
State of nuevo Leon	19	266.70	646.84	137.90	10	138.00	-	2	-	9	8
Chihuahua	39	400.40	1 239.70	414.50	3	541.70	-	4	-	22	13
Compostela	13	292.60	514.23	200.00	4	200.00	-	3	-	8	2
Guadalajara	63	410.90	1 228.03	450.43	13	453.08	3	9	-	39	12
Puebla	13	392.00	1 133.60	454.23	2	647.50	1	3	-	8	1
Tlaxcala	15	262.50	538.70	257.00	-	-	1	4	-	7	3
3. <u>Total: 1 + 2</u>	<u>502</u>	<u>475.90</u>	<u>1 237.40</u>	<u>477.30</u>	<u>138</u>	<u>606.60</u>	<u>27</u>	<u>124</u>	<u>10</u>	<u>265</u>	<u>76</u>

/First,

First, average operator income does not constitute more than 50 percent of the total household income for no location; in Tlaxcala, it comes close to that percentage. Second, however out of a total of 502 households 151 or some 30 percent derive their total income from maquiladoras including twenty seven households of operators living by themselves. For this group, maquiladora income would carry, without doubt, a special weight. This percentage is relatively higher for border towns than for places in the interior given the greater availability of maquiladora jobs in the former that absorb then part or all of other working family members. Third, only for 15 percent of the households, income from maquiladoras would not carry a special weight since it amounts to less than 30 percent of the total household income.

Fourth, the average household income is positively correlated with the legal minimum salary except for the large cities in the interior, Guadalajara, Chihuahua and Puebla. It is however striking that in the case of small towns and the countryside, State of Nuevo Leon, Compostela and Tlaxcala, average household income exceeds the legal minimum wage by much less than the average. This may be considered a true reflection of the significant problem Mexico has with its regional distribution of income. The substantial margin of this average household income above the legal minimum wage in the other places, in particular certain border towns, confirms earlier conclusions about the relatively favorable employment and wage rate situation in this part of the country.

From the point of view of regional income distribution effects, we may then conclude that maquiladora existence in the countryside and small cities would carry a much higher weight. This is most likely true also for the personal distribution of income in that operators in border towns and large cities have good alternative job possibilities and are less dependent on the existence of maquiladoras. In the case of the countryside and small cities, an additional aspect may come into the picture. The persons employed by maquiladoras there might in effect be relieved from poverty at the expense of increasing in equality within the unskilled group

/of the

of the population generally. In other words, an operator in a maquiladora employment there will enjoy a level of consumption well above the average of his place.

This is however by no means a reason that maquiladoras should not establish themselves in these areas, rather the contrary. What is partly implied with this is that the legal minimum salary and the poverty level are quite out of line in those places and thus, by implication, with general earning possibilities as well as probably also the relative size of the unprotected wage sector. Whether this has an employment limiting effect is a question beyond our topic.

As for an evaluation of the net monetary benefits accruing to the public and private sector of Mexico, it may be interesting to note that the OECD Manual suggests to consider both capitalist consumption and saving as a cost to the economy since they involve a commitment of social income to purposes that are likely to be less valuable than the uses to which the government would put that income. However it may be remembered, that the net benefit to the private sector stemming from maquiladora existence does not go at the cost of any other income, it is not competing, so that for our purposes a negative weight might not be justified. Further considerations on this topic however have to await the statistical evaluation of this category of income comprising a great variety of different items. We would however have to ask beyond the question of what the income of businessmen means as such, to which uses they are likely to put.

Weights on the net income derived by the government sector are also a rather subtle topic. Instead of comparing funds in the hands of the government with those in the private sector, we may also extend a comparison to the net monetary income operators obtain. A final judgment would be one on the efficiency of government in the handling of its finance and within this field, a check into the effectiveness of Social Security and INFONAVIT, the housing program of the country. Many would however suggest that the valuator and analyst is to stay out of any such questions so that in the ultimate instance we might abstain from any further analysis in this field.

12.3 Patterns of ownership and operation

Rather than dealing with questions on weights to be attached to economic results in view of social aspects, this section constitutes a quick reevaluation of different sources of benefits by various major types of maquiladoras. We will therefore briefly deal with Mexican and foreign ownership, plants operating on the basis of excess capacity and cooperatives.

As for maquiladoras under Mexican ownership, we need not repeat what was said before on the relative wages paid and working conditions prevailing there, but should concentrate rather on complementary aspects that might determine how strong a source of net benefit this type of ownership is. A pronounced instability of operating conditions stands out for these plants. It is the dependence on verbal contracts or relatively short-term written contracts combined with a lack of financial capacity, that apparently prevent them from being soundly established. One of the firms in the textile field we visited had changed its name various times since it began operations back in the 1960's. Any upward change in the cost of domestic inputs, possibly because of inflationary tendencies in Mexico, will amount to a threat to the survival of their operations given the need to stick rigidly to conditions agreed upon with the principal at the beginning. Second, one may raise the question of how independent these local firms really are. In the case of the Mexican maquiladora that at present manages twelve contracts in the field of electronics, not only are the inputs imported but also machinery, technology and, to the extent necessary, foreign technicians; the buildings are rented. In fact, the Mexicans we saw operating appeared to use very little capital of their own, equipment and inventory costs usually being born by the foreign principal.

The conclusion that is to be drawn from these observations and our impressions from field work is that Mexicans with capital or that are accumulating such assets are currently or will soon be interested in the highly protected domestic market rather than wish to operate under the

/competitive

competitive conditions of maquiladora activity including the scrutiny of foreign principals. This appeared to be confirmed by conversation with owners of two plants that had been maquiladoras sometime ago and are now enjoying a rather comfortable profit margin when selling in the Mexican and, in one case also to a minor extent, in the LAFTA market. Two or three other cases we came across that had been doing exclusively maquiladora work last year, were concentrating now already strongly on the Mexican market, one with 60 percent of total sales striving for a 100 percent. Only in one other case were we told that the maquiladora operations are preferable and the reasons given were the larger volume possible and that foreign principals are relatively more reliable. Here however also, dependence upon machinery provided from abroad seemed to carry a weight.

In the light of this it may be concluded that the maquila industry is at present not a field of interest and chance to local capital. It can hardly be Mexicanized. Mexicanization however takes place, in a way, within foreign plants in that foreign nationals are being increasingly replaced by Mexican professionals.

In the light of the generally very favorable effects of the maquiladora industry and the limited scope for Mexican capital in this, a corresponding conclusion on foreign ownership is implied. Ownership as such however, as we noted elsewhere, is not an issue in terms of profit policies. This ownership, as it appears, assures efficiency not only to the parent system but is also instrumental in bringing about a relatively high degree of net social benefits to Mexicans, including the non-quantifiable. Plants with sophisticated production processes and thus in need for much professional manpower and skilled technicians are without doubt the more beneficial establishments among this group. Foreign ownership also appears to provide a relatively greater degree of stability than does Mexican capital since the commitment of the principal is substantially higher.

As for plants operating on the basis of excess capacity, we came across two such cases in one of which we collected complete data for 1974. Both are foreign owned and one is currently exporting, not under the maquiladora

regime, 75 percent of total production striving for 90 percent. Maquila operations had been phased out completely in one and in the other it was at the time we visited a rather rudimentary business. The ending of these operations had not adversely affected the workers in that all were transferred to other duties within the plant. From the statistical information of one of them it appears that salaries operators earned were substantially above the minimum salary. However, in terms of shadow pricing, the basis of excess capacity for maquila operations appears to render only limited positive net results since the use of local inputs may in effect be quite competing with other domestic uses. These operations are however not to be discouraged if they are performed by larger firms with a solid base in normal business so that a short term maquiladora contract would not amount to any instability projected on to the volume of employment of operators. In the case of very small plants, official unpublished statistics register quite a few of them, instability may be pronounced together with the possibility of illegal transactions referred to elsewhere.

As for cooperatives, there are at present twelve of them in the textile field, eleven alone in Mexicali, where we visited two. They shared major characteristics. Both had been formed after a prolonged strike that forced the Mexican owner out of business leaving machinery behind for the workers as indemnization. The establishments were now run by former operators. One has 50 members, the other 30 but additionally they are also employing temporaries, 16 and 20 respectively. Working conditions appeared to be much inferior to the general standard and the existence of the very operation seemed to be threatened by only two more months of work on store. One of the problems was social security payments, an obligation which they thought would not apply in the case of a cooperative and they could not afford for the time being. All operators interviewed were earning substantially less than the going legal minimum wage. Confidence in this type of venture did not appear to be very great on the part of members; a few had dropped out already without that the rest saw a possibility to pay them back their share. The most striking single fact about them was however that they had to operate still through the former owners in order to be able to do

/business.

business. Thus one operator opinioned that "exploitation is at least as high as it was before with less responsibility of the previous owners". The moral and logistics support that the cooperatives are receiving from government officials, including an attempt to eliminate the previous owners as intermediaries in the dealings with foreign principals, do not appear to be sufficient to give this type of maquiladora a long lasting chance. We were therefore rather pessimistic on the future outlook of these experiments.

13. Investment/saving impact

Considerations on this impact usually play a major role in much cost/benefit analysis because it might make a significant difference, in the ultimate instance, whether benefits are consumed or saved. Government attitudes towards the level of savings and investment in the whole of the economy are usually a guidance for any valuation procedures. As in many other developing countries, in Mexico the availability of savings is considered a constrain on investment. Investment of course is not considered an end in itself but understood as an indirect future consumption benefit. In cost/benefit analyses reference is therefore made to a so-called intertemporal distribution of benefits involving the difference between consumption and savings as well as discounting procedures which, as we stated in an initial section, do not apply to our analysis.

Given the fact that investment is more valuable than consumption in an economy with suboptimal savings rates, social income will then be corrected to allow for the disadvantages of being committed to consumption right away. In such procedures, the weight will be smaller or even negative the more consumption a persona has in total income.

Applied to our analysis, such valuation may be an interesting assessment of the extra income generated by maquiladoras. But two things have to be borne in mind. First, as was stated on a number of occasions, this is extra income that does not occur at the cost of any current saving or investment. Second, it may be expected that the investment/savings impact stemming

/from

from maquiladora existence is relatively small given the fact that much of the net benefits accrue to unskilled labor with a high propensity to consume and a correspondingly below marginal propensity to save. Thus a major investment/savings effect may only be expected from the net social income that is committed to the public and private sector.

Nevertheless we were interested in this topic at the operator level and Table No. 12 presents the information obtained through interviews of the workers. An interpretation of this data may take into account that savings by operators are quite determined by whether there are corresponding facilities around, in the places we visited in the State of Nuevo Leon there were no banks, or whether maquiladoras would have credit unions that can induce operators to put aside at least some income weekly, however small that may be; this was the case in at least one plant in Ciudad Juarez somewhat reflected by the data. It is interesting to note that the propensity to save is relatively high for those that do put money aside, probably even above the average for Mexico. Later we will have to check into their family income situation in order to get some better idea about the possible underlying reasons for this.

Table 12.

PROPENSITY TO SAVE OF OPERATORS INTERVIEWED

Location	Total operators	Operators saving	Average amount saved per week	Propensity to save out of current income	
				Operators saving	All operators
1. Border	<u>340</u>	<u>100</u>	<u>106</u>	0.198	0.059
Matamoros	43	14	98	0.210	0.070
Cd. Juarez	73	30	110	0.220	0.090
Nogales	69	10	128	0.270	0.040
Mexicali	83	20	126	0.220	0.050
Tijuana	72	26	82	0.140	0.050
2. Interior	<u>162</u>	<u>43</u>	<u>79</u>	0.186	0.057
State of Nuevo Leon	19	1	10	0.100	0.004
Chihuahua	39	11	81	0.190	0.060
Compostela	13	1	50	0.250	0.020
Guadalajara	63	18	99	0.220	0.060
Puebla	13	10	39	0.080	0.060
Tlaxcala	15	3	100	0.390	0.080
3. Total: 1+2	<u>502</u>	<u>143</u>	<u>98</u>	0.195	0.058

V. UNCERTAINTY AND INSTABILITY

Up to this point we have mainly studied aspects relating to the question of what would have happened in the absence of maquiladoras including social evaluation of the corresponding current costs and benefits of a static nature. In this chapter our perspective may be described by the question of what would happen if maquiladoras reduced the volume of their operations or even disappeared.

It may however not be realistic to put a dynamic analysis in the absolute terms of a complete disappearance of these plants since this is very unlikely to happen in the future. The worst world wide recession in 40 years which led to a substantial downward adjustment in the volume of operations of maquiladoras appears to have had already its worst possible effect since we found the maquiladora industry clearly in a phase of recovery. Thus our analysis would realistically concentrate on the footloose character of the industry and take up mainly questions relating to the effect that may stem on the Mexican society from pronounced fluctuations in its industrial volume.

Sensitivity analysis and theory of choice under uncertainty usually play some role in pertinent cost/benefit considerations. The former makes use of discounting procedures in order to illustrate the riskiness of projects, a method that would not apply much to international subcontracting activities for reasons explained elsewhere, and the latter is still a subject of some controversy. We will therefore limit the analysis in this chapter to a general evaluation of the risks that the rather wide range of uncertainty characteristic of these activities entails.

14. General costs in a dynamic perspective

Whereas non-quantifiable effects of a positive nature are not expected to diminish or even to become negative over time, it is mainly the net economic result on which to concentrate. We then can simply ask what are the variables bound to have some influence on the distortionary difference as a margin between shadow and market prices. Maquiladoras with a drive for competitiveness and efficiency can be expected to economize as much as possible on a number of inputs they obtain in the local economy. Thus, it will be natural that net income benefits accruing to the private sector of Mexico may be depressed over time unless maquiladora demand keeps growing. The net income going to the public sector however can be expected to be quite stable unless maquiladoras would adjust their operations downward.

Distortionary differences benefiting unskilled maquiladora labor however would carry a major weight in any consideration of the general costs of the plants in a dynamic perspective. Since a distortionary difference is a matter of prices, it is then a question to which extent inflation in Mexico may affect real wages. This in turn may have to be considered as a question of adjustment to inflation of legal minimum wages governing much of the margin of benefits operators will obtain. Inflation might therefore hurt mainly those unskilled workers who had earnings above the minimum wage and whose income is not adjusted upward when these wages are raised.

Related to the question of inflation is the purchasing power of foreign exchange overtime. If inflationary tendencies in Mexico are more pronounced than in the countries of the principals, maquiladoras may actually loose if the exchange rate is not adjusted. Thus a benefit rather than a cost may accrue, not directly to maquiladora manpower but to the host society as a whole. Similarly, any devaluation of the Mexican peso as such were to imply a corresponding cost.

The relative value of currencies and legal minimum wage policies then are important if costs to operators, stemming from price changes, are to be considered, variables that are quite under control of the host government.

Two more possible sources of costs to operator manpower may deserve attention in a dynamic perspective. First, any productivity increases in maquiladoras if not reflected in wage increases may imply a cost to this manpower and the host economy. Second, skills that are acquired in maquiladoras and are internalized by them over long periods by preventing what might be considered a normal turnover rate may constitute another source. This, in a dynamic analysis, would however have to be taken into account in the shadow pricing of labor.

In conclusion, general costs of maquiladoras in a dynamic perspective are not a factor that would demand major consideration other than that relating to appropriate incomes and social policy on the part of the host government.

15. Costs of downward adjustment of maquiladora operations

If however the volume of operation of plants is significantly adjusted downward, the distortionary difference may substantially narrow or even disappear and become negative. In fact, due to recessionary tendencies, maquiladora employment had been reduced by 50 per cent down from a previous peak level in some places we visited.

In general, persons and other agents involved with maquiladoras will probably give more weight to a substantial reduction in their income than to an equal increase. Furthermore, a downward adjustment of maquiladora operations in the aggregate may not sufficiently reflect all costs to these parties since internal instability can be expected to be considerable in view of the great diversity of the maquiladora industry.

Given the composition of domestic inputs obtained by maquiladoras, costs of downward adjustment in the operation of the plants is essentially a matter of employment of labor. In view of the high social opportunity cost of skilled manpower, the focus of analysis would narrow down to the operator level. How is this group really affected by a downward adjustment? Answering this question, we partly have to recall findings relating to prior work experience and would distinguish between those 30 per cent that had work experience before outside maquiladoras and the rest that did not. Furthermore, distinction has to be made again between operators at the border as well as large cities and others.

The minority group with previous work experience will without doubt join the ranks of the unemployed unless they find a job right away in another establishment. The latter prospect will not be bad for those in border towns and large cities whereas the rest of people in small towns and the countryside can probably be expected to incur considerable searching time and costs before they are reemployed elsewhere. Employment of the former group will be at the minimum or the unprotected wage. Had they earned substantially above the minimum before in maquiladoras as did operators in Nogales before the recession, they are likely to suffer a considerable loss in income as happened to be the case with quite a few operators in Nogales reemployed by other maquiladoras. How many will find again a job at the

/minimum

minimum (or even above) will depend on the relative size of the protected wage sector. Those that do not, would have to content themselves with a wage at or above the unprotected level. Whether this level would decline as a result of downward adjustment of maquiladora operations will depend on a variety of factors including the number of operators searching for work in relation to the total level of employment in a location. This level bears however also a certain relationship to the minimum wage in large cities and may be rather sticky downwards for reasons mentioned elsewhere. The by far lowest unprotected wage level in border towns and large cities was determined by us in Matamoros where it appeared to be about 50% of the minimum wage. Thus in the worst of the circumstances, operators would have to accept a decline of half of their earnings as a result of a downward adjustment of maquiladora operations.* In the small towns and the countryside, by contrast, those laid off will hardly have a chance to earn again the minimum salary outside maquiladoras with a strong likelihood that the unprotected wage level which is already very low would decline further as a result of their supply.

Of the 70 per cent of total operators without previous work experience, a small group, 15 per cent of them that had searched without success before would be in a situation similar to that of those considered in the previous paragraph. A major weight in the total of operators without previous experience however carry those that had not searched at a working age (45 per cent). Given their relatively high

* Before going on the interview tour we had taken notice of the frequently launched argument that a substantial loss in maquiladora employment would push female operators into prostitution. Considering that in Matamoros, the first border town we visited, several thousand female operators had lost their job over the past eight months some of which might have ended up in prostitution, we actually made an attempt to establish such a fact. Our enquires had us however realized soon that this activity attracts almost exclusively girls outside places who have no knowledge of any previous maquiladora operator and have been in town for a very short time under conditions that fell far short of their initial expectations and would have them leave town within a short time span. We thus became convinced that the above argument does not bear any relationship to reality.

reservation price they would appear to be the least affected group. They make up nearly 30 per cent of the total of operators interviewed.

We have not yet analyzed the rather great variety of answers obtained on one of the questions put to them, namely what they would do had they lost their job at the maquiladora. Offhand from the mere tabulation of data it would appear that only a minority of them would just stay again with their families. Many may in effect now join the ranks of those looking for work and again the above considerations for those would apply that had worked before. They might however be less willing to accept a job in the unprotected wage sector and thus not possibly contribute to a depression of its level. There were however also those operators that indicated they would, after losing their job in the maquiladora, concentrate exclusively on studies as well as consider marriage (as funny as this may appear, such answers must be seen in the light of the traditional role of women in society). Finally, those that had attended school or were of minor age before they took up their present maquiladora job might may be considered to belong in corresponding proportions to one or the other group referred to before.

In conclusion, a significant downward adjustment in maquiladora operations will have a major adverse effect in those areas in which the maquiladora industry is not pronounced, that is, in smaller towns and the countryside. These are precisely the places where their presence would normally render substantial positive net income effects. In other locations the possible costs of this adjustment are not irreversible in that it is likely to be just a matter of time before operators are reemployed, possibly however at some income loss. In case of the nearly 30 per cent of total operators that had not worked before because of a high reservation price, costs at the personal level may be marginal. On the macro-level however they would be fully felt inasmuch as this manpower would again prefer to stay unemployed thus sacrificing the income that for the first time had been generated for them by maquiladoras.

16. Summing up the determinants of maquiladora activity

Uncertainty and instability are now viewed from the wider perspective of general and specific influences that may make an impact upon volume of operations of maquiladoras. In the context, economic planners and government authorities generally, may perhaps first take three interrelated questions and their answers into account which are as follows: Are there influences that will have an irreversible impact? Not very much, for the maquiladora industry in the aggregate involving hundreds of plants with quite different characteristics. Are influences unpredictable? Not really, if the government planner makes a careful evaluation of all possible determinants of international subcontracting activities. Are influences controllable? Very little from the view point of the host country.

Among the few controllable determinants are operating conditions generally and to some extent the domestic wage level. The former should not be considered as means which could prevent costs to be incurred in a recession. If they are conceived that way, subsidization of maquila operations may occur which may not be justified on grounds of efficiency. Operating conditions are however extremely important for a degree of stability to be maintained and for providing scope for expansion of this industrial activity. No host country would want to let these conditions decline so that a downward adjustment of maquiladora operations would ensue.

As far as wages are concerned, much of the situation is governed by actors and factors playing a role in the determination of the legal minimum wage, an evaluation of which would be beyond the scope of this report. It should however be pointed out that a careful cross-country analysis in the wage field may be extremely helpful. In this, it has to be distinguished between wage rate differentials between the host country and that of the principal on the one hand and those differentials existing among the group of competing developing countries on the other. The

former should generally not constitute a field of too great a concern in times of inflation. The fact is, that even if wages in the host economy should go up several times as much as those in the country of the principal, the absolute wage differential could still increase. In other words, if the ratio between wage rates in the U.S. and Mexico is 3:1 and U.S. wages go up by 10 percent, a 29 percent wage increase in Mexico would still permit the absolute wage differential to increase somewhat. Differentials between Mexico and other developing countries however are to be carefully studied, particularly overtime, because should Mexico lose one or the other plant due to this factor, it would be a rather irreversible development.

Autonomous determinants predominate by far, a vivid example being the recent worldwide recession. In the context, it may generally be asked whether fluctuations in the economic activities of industrialized countries would project themselves in a more pronounced way onto the level of maquiladora operations. There are pro's and con's. On the one hand, political influences in the countries of principals, notably unions, together with the wish of parent companies not to lose their industrial base at home may, in a recession, lead to a relatively stronger contraction of the plants offshore. On the other hand, an increase in competition among principals that characterizes much of a recessionary phase may subsequently lead to a more intensive search for low cost production sites in foreign countries and thus relatively strengthen maquiladora operations. The maquiladora industry in Mexico has probably been impacted on both accounts. Some of the bigger companies left when recession hit hard, others in the same industry are now in the phase of recovery, considerably building up their volume of operation.

As for the specific determinants, autonomous from the viewpoint of the host economy, we may make a distinction between possible influences by economic sectors. First, major changes in the tastes of consumers may have an impact although this might be a less important determinant for maquiladora business as such. Second, any type of official measure on the part of authorities in industrialized countries that would constitute an incentive or disincentive for principals to relocate may be of substantial influence. Third, as far as the private sector in the industrialized countries itself is concerned, market structures in which principals operate may be the most important field from which major sudden influences may be expected. It would probably most of all be the typically oligopolistic surprises which may lead to disruptive effects, positive or negative, on international subcontracting activities in developing countries.

Finally, uncertainty and instability may also be considered from the perspective of the maquiladora industry itself by singling out those cases that would receive more priority in a Mexican policy of promotion and others whose viability is seriously in doubt because of certain inherent characteristics. As far as the latter are concerned, we may first consider characteristics of productive processes and types of operations. The plants with a rather limited usefulness, also taking into account Mexico's competitive position in the field of international subcontracting, are those whose operators perform mainly bench work, with hardly any investment, may be not even in movable capital per work place and other plants the life cycle of the product of which is very short. Included are also operations that have seasonal character such as the toys and in part also textile industry, plants which by implication serve predominantly the final consumer market abroad, possibly through the intermediation of brokers in industrialized countries with no production facilities of their own; plants furthermore that may have maquiladora operations just because the foreign principal is utilizing its

capacity to the fullest extent. Second, the more adverse types of establishments by ownership and size are Mexican ones and cooperatives that operate on a verbal or no contract, again possibly through brokers; the small plants, local or foreign, with a lack of commitment, those that change names and places and do not commit much physical capital of their own. Third, an evaluation of these less acceptable plants by location may not be too conclusive, but uncertainty and instability would characterize those labor intensive operations with low skill requirements that are located in high wage cost areas in Mexico; also others that may have just grasped the chance provided by the 1971 legislation to operate in the interior of the country, somehow without any major commitment to the idea of maquiladora operations.

As for plants that are very favorable to Mexico and deserve priority in a policy of promotion, there are, first judged by characteristics of their productive processes and types of operations, those plants that are relatively capital intensive with a high fixed cost portion and capital goods mounted to the ground, that have conveyor belt systems and machine operations and are looking for further automatization and vertical integration, thus being increasingly dependent on skilled local manpower and professionals. Included are also those maquiladoras the production facilities of which constitute the relocation of a high percentage or all of the previous production of principals; to some extent also those plants that do occasionally maquiladora operations on the basis of their own excess capacity but that are large and for which such operations would be a minor part of the total, possibly plants that are likely to pass skill and knowledge acquisition on to the local economy through products and processes. Furthermore, highly favorable are those whose foreign derived demand is relatively inelastic and who operate through principals with excellent distribution systems and some degree of monopoly power on foreign markets. Second, by ownership and size it is the large subsidiaries of multinational corporations that render major benefits where a plant of 1,500 employees does much more for the country than 50 plants with 30 people because of working

/conditions

conditions and the potential of skill and learning effects. Such establishments would of course normally have the favorable characteristics of the aforementioned point. Third, in terms of location, favorable would be in principle all plants that decide to locate in small towns and the countryside in the interior of Mexico, particularly those looking for a longer term involvement with the Mexican economy and offering some prospects for favorable linkage effects; labor intensive operations even with low skill requirements in low wage cost areas that may still have a chance to compete with such countries as Haiti. There may be a rather indiscriminate acceptance of plants in these locations provided their contractual and operational conditions are reasonably stable. Then highly favorable are those maquiladoras that establish themselves near universities and technological schools because they are precisely the ones with production characteristics referred to above. Mentioned here may also maquiladoras whose parents are somehow directly committed, e.g. through a contract with the Mexican owner of an industrial park. Finally, whether a plant should be located in the interior solely for the foreign exchange aspect meaning that indirect imports of those deriving income from its operations would be substantially reduced, might be questionable since a substantial foreign exchange contribution is made anyhow and the plants would be given undue importance in foreign exchange management and currency policy of the host country.

VI. CONCLUDING REMARKS

A full-fledged cost/benefit analysis permits to make a comprehensive analysis of the maquiladora industry in Mexico beyond purely economic aspects to include other fields of importance to society. The most attractive feature of the methodological approach adopted is that much of the research answers the question of what would have happened in the absence of maquiladoras.

The effects stemming from these plants upon the Mexican society were evaluated from three angles. First, a study of economic efficiency established, in principle, the monetary economic net result in terms of social income effects as well as addressed itself to a number of important non-quantifiable influences. Second, all pertinent social effects stemming from the existence of maquiladoras have been evaluated under the heading of social profitability. Third, given the special characteristics of international subcontracting activities, in particular its so-called footloose character, an analysis of dynamic aspects of maquiladora operations was conducted with reference to uncertainty and instability.

As for the manpower employed by maquiladoras, a substantial social net benefit in income terms accrues at the operator level. It is particularly pronounced in small towns and the country side in the interior of Mexico, whereas in larger cities and border towns corresponding effects are relatively small at the personal level. The reason for the latter is a relatively favorable employment situation in the respective places as well as a high reservation price of much operator manpower, involving in particular those persons, in the majority, without previous work experience and, within this group, a considerable number that was not looking for jobs at working age. At the macro-level however, their income at a shadow price is fully to be counted as a net benefit since no cost in terms of foregone output had to be incurred.

Maquiladoras do not make much of a contribution to the general goal of reducing unemployment in Mexico since they are predominantly

located in areas for which such a problem is minor. Our empirical analysis confirms the official data that establish very low rates of open unemployment in border towns. However, the type and quality of employment offered by maquiladoras are to be highly regarded and determine that a large number of youths are willing to take a job for the first time in their lives.

Shadow pricing of other domestic resources used by maquiladoras would suggest that substantial net monetary benefits accrue also to the public and private sectors of Mexico. In the former case, such effects are closely linked to salary payments to operators and a number of taxes involved in payments of and to the plants.

The net foreign exchange impact of maquiladoras is highly favorable and in current discussion two points are usually overlooked. First, in the case of the relatively large pool of skilled Mexican technicians and local professional staff which would have, in the absence of maquiladoras, worked in some other plant at a similar salary and that therefore have had the same propensity to import, maquiladoras actually make a foreign exchange contribution to the whole extent of their salary since these plants are saving the country the amount of foreign exchange that this employees would have spent on the other side of the border under any circumstance. Second, at the operator level, gross foreign exchange inflows equalling wage payments have to be adjusted downward only to the extent of that portion spent abroad of the income which is incremental.

The potential of non-quantifiable benefits is high at the level of skilled factory personnel, engineers and managers of Mexican nationality, a pool of talents which is undergoing a constant learning process and from which substantial knowledge-spreading effects may materialize if the private Mexican sector were to become aware of the usefulness of this asset to the general industrialization process of the country.

The maquila industry in Mexico has a pronounced enclave character without that there is much chance for a change in the short and medium run. One of the major obstacles to an increase in backward linkages is the fact that Mexican industrialization generally is developed under a high degree of protectionism at various stages of production.

Empirical data collected for consideration of the social profitability of maquiladoras permit to conclude that these plants are not a factor of importance in the overall pattern of migration involving border towns; that the high participation of females in maquiladora employment is generally to be considered favorable and that positive personal and regional income distribution effects stem from their existence. Considered in a wider perspective of questions relating to macro-policy goals and conflicts, the maquiladora industry stands out by the fact that its effects are in no way in conflict with development objectives and priorities. There is in fact hardly any other industrial production with an equally low social opportunity cost; use of capital as it involves foreign subsidiaries does not imply any real cost to the Mexican society. As a foreign exchange earner, the subcontracting activities are a unique device for which there is no close alternative for the time being. In the general process of industrialization of Mexico, the maquiladora industry would thus constitute an important and challenging complement.

Given the great diversity of the maquiladora industry, those establishments may be singled out to be in the best of the host country interest that are large and belong to multinational companies that shift sophisticated and relatively capital intensive productive processes to Mexico and therefore are in need to employ local professional manpower. The interest of and chances for Mexican businessmen in this industry appear to be very limited for the time being. However, a Mexicanization in plants is under way in that foreign subsidiaries increasingly tend to replace foreign managers and technicians by local professionals; ownership of plants is a non-issue in terms of profits since they can be determined and shifted through transfer pricing by principals under any type of organization. Beyond the general characteristics of international

/subcontracting

subcontracting activity, no special dependency effects can generally be seen to arise for Mexico in terms of a need for special additional controls and regulations of the activity. Much as foreign trade, the maquiladora industry just stands for worldwide economic interdependence and a pronounced division of labor involving specialized productive processes, amounting in effect to a mutual beneficial practice within the scope of industrial corporation between developed and developing countries.

Analysis of aspects relating to uncertainty and instability generally considered characteristic of the maquiladora industry, lead to the conclusion that any downward adjustment in the volume of its operation is most of all felt as a cost on the macro-level and for operator manpower in the countryside and small towns in the interior. At the personal level in the other places, however, where this industry predominates in size, costs of downward adjustment will have a lesser impact. The reasons are again the relatively favorable employment situation with alternative job opportunities and the high reservation price of much of operator manpower. After the worldwide recession had led to a substantial contraction of the maquiladora industry in Mexico, it now appears to have entered a phase of consolidation and recovery.

Considering that there is a going price for the attraction of international subcontracting activities that many developing countries are prepared to pay in terms of waving corresponding import regulations, the Mexican promotion policy appears to have consisted so far mainly of a rather indiscriminate acceptance of any type of labor intensive production to be shifted from abroad to this country. Thus, the maquiladora industry may be seen to have developed in a laissez-faire fashion troubled by a corresponding instability. Since the host country must give more weight to a substantial reduction in its income than to an equal increase, a more certain level of maquiladora operation should be preferred even at some cost in terms of expansion. The key to this is more selectivity and a clearly defined policy including official operation conditions for maquiladoras.

/These

These considerations would lead to ask for a clear perception of the benefits to be expected from the maquiladora industry in the future. An answer will have to take into account the potential of further relocation of productive processes from industrialized to developing countries. May there be a saturation point in the short run for example? It does not appear so. This potential will simply exist as long as there is a wage differential between industrialized and developing countries and the international trade and investment system is an open one. In principle, then, Mexico may be expected to have an indefinite future in the maquiladora field.

Finally, it is important to carefully evaluate the competitive position of the country in the worldwide international subcontracting activities. Besides its unique geographical advantage, Mexico is a most attractive site to those companies that are relatively dependent upon skilled factory personnel and professional manpower. In view of this, the necessity arises to keep improving local skills at all levels, permitting in effect that income increases can be maintained despite much competition from other developing countries in terms of wage differentials.

