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**INDUSTRIALIZATION PROCESS, EMPLOYMENT,
AND INCOME DISTRIBUTION IN MEXICO:
ISSUES AND STRATEGIES**

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ABSTRACT

This paper evaluates Mexico's past and present development strategies in terms of their equity and employment implications. It concludes that the current neoliberal stabilization efforts are likely to result in increased income concentration, also leading to the dampening of aggregate demand and economic activities. Given the gravity of the current crisis in Mexico, the paper argues for the urgency of an alternative revitalization strategy with a human face. Such a strategy should include three elements as the cornerstones of future development: the structural shift within the modern sector toward more competitive, higher-value added, more labor-intensive, and diversified activities; development of the lagging sectors based on the principle of collective self-reliance; and the articulation of linkages in productive and marketing structures between the leading and lagging sectors.

RESUMEN

Este artículo evalúa las estrategias mexicanas de desarrollo, tanto pasadas como presentes, considerando sus implicaciones en términos de equidad y empleo. Se concluye que los esfuerzos de estabilización neoliberales actuales tienden a provocar una creciente concentración del ingreso, causando también el desaliento en la demanda agregada y en el nivel de actividades económicas. Dada la relevancia de la crisis presente en México, el artículo plantea la urgencia de una estrategia de revitalización alternativa más humanitaria. Tal estrategia debería incluir tres elementos como claves para el desarrollo futuro: el cambio estructural dentro del sector moderno hacia actividades más competitivas, de mayor valor agregado, trabajo intensivo y actividades diversificadas; el desarrollo de los sectores rezagados de la economía bajo el principio de autonomía colectiva; y la articulación de lazos en las estructuras productivas y de comercialización entre los sectores más adelantados y los más rezagados.

Of all the economic problems facing the Latin American continent today, none has been so devastating in its consequences as the external debt: with an ever aggravating debt burden confronting the continent, most Latin American countries have ceased to develop and improve the living conditions of their people. The worst of it is that for most of them the crisis of the 1980s has actually meant a process of de-industrialization as well as of immiserization: both unemployment and underemployment have been steadily rising; per capita income in most of these countries is lower today than in 1980, and has declined by as much as 10 percent for the region as a whole.

The earlier response to the crisis took the form of austerity measures. However, as growth becomes stifled, unemployment is rising and real incomes are falling, a new approach now seeks a strategy focused on outward orientation, liberalization of domestic markets, and the enhanced role of the private sector, all of which are perceived to be essential to promote self-sustaining growth along with continued servicing of the external debt. Although the liberalization of markets—outwardly and inwardly—offers enormous potential for economic recovery, skeptics argue that the neoliberal strategy hardly addresses the more pressing issues of widespread poverty. With austerity measures causing soaring hyperinflation and unemployment throughout the 1980s, the working poor in Latin America have suffered particular hardship. Given the rate of population growth of nearly 2.5 percent per year, five million new jobs have to be created annually simply to keep unemployment from rising further. On the other hand, manufacturing activity, which used to serve as the main source of absorbing new entrants to the labor force, has steadily declined. As the recession deepens, the neoliberal strategy is unlikely to enhance prospects for improving the living conditions of the population at large or to create more equitable societies.

Mexico is no exception in terms of the severity of the crisis: it has carried one of the largest debt burdens in the hemisphere with continuing recession and rising unemployment. The current reform measures are not likely obviate its principal immediate problems of employment and poverty. Thus, it is clear that an alternative development strategy—in particular, one that is oriented toward productive employment and a more equitable distribution—is needed if Mexico is to meet its current and prospective economic challenges. The purpose of this paper is to suggest the main elements of such a strategy.

The paper begins with an analysis of Mexico's current crisis, proceeding to a critical review of its past and current development strategies in Section I. This is followed in Section II by an evaluation of their implications for industrialization as well as for employment and equity. Section III of the paper explores alternative possibilities for Mexico's future development, which are based in part on the lessons drawn from East Asian experiences. Finally, the main points of the argument are summarized in the concluding section.

I. The Nature of the Crisis and the Analytical Framework

Mexico is now in its seventh year of economic hardship since 1982 when the debt crisis surfaced openly. Mexico has since carried out austerity measures that slashed government spending and imports, shoving the economy into a painful recession. The conditions now are more dire than in 1982: the external debt has steadily climbed to over the $100 billion mark by the end of 1988, starting from some $80 billion in 1982; real GNP in 1988 was lower than in 1981, as per capita income fell at an average annual rate of 1.5 percent between 1981 and 1988; the provisions of such basic need goods as health, education, food, and shelter diminished; and inflation soared into the triple-digit range, drastically eroding the working poor's real wages which were slashed by nearly half. As the crisis deepens, it has begun to threaten political stability in the country: hundreds of thousands of Mexicans have demonstrated against government austerity policies and leftist opposition parties have been calling for a halt to debt repayment.   The government seems unable to placate either left or right, capital or labor.

Especially of concern should be the widespread impoverishment of the working population. To demonstrate the distributional consequences of the debt-induced recession, Mexican household incomes between 1981 and 1987 are compared in Table 1. The share of "poor" households—defined as those earning less than twice the legally stipulated minimum wage income—rose by almost 25% from 47% in 1981 to nearly 60% in 1987. The income share of the "poor" also increased substantially from 10.6% to 16.3% over the period. This may give an impression that the average household income of the "poor" rose somewhat .   What really happened was that a significant portion of the middle income groups—about 20% of the groups earning between 2 to 14 times the minimum income in 1981—became impoverished and fell to the category of the "poor" by 1987. This downward shift of middle income Mexicans pulled up the averages of the "poor" in relative terms, and in addition the real minimum wage rate actually fell by about 40% over the same period. Thus, the real incomes of both the middle and the remaining poor fell sharply.   An interesting phenomenon is that contrary to the popular belief, the "rich"—made up of those earning more than 14 times the minimum—did not gain ground either: the proportion of the "rich" fell from 8.3% to 5.1% with this group's income share also declining from 40.2% to 34.8%. The survey showed that about 40% of the "rich" in 1981 shifted into the officially defined "middle" income groups by 1987. Mexico's debt crisis seems to have affected every one, rich or poor; it may have contributed to improving the relative distribution of income by making everyone poorer.

Table 1

The Distribution of Income in Mexico: 1981-1987.

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Household income as multiples of minimum wage	1981		1987	
	% of population	% of income	% of population	% of income
0 - 2	46.87	10.59	58.61	16.31
2 - 4	21.88	13.48	19.95	16.84
4-14	22.92	35.72	15.39	32.01
14 & more	8.33	40.21	5.12	34.83

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Source: Division of Socioeconomic Studies, National Bank of Mexico: _National Survey on the Values of the Mexicans,_ 1981 and 1987.

The immiserizing effect of the debt crisis has been closely related to a recession-induced de-industrialization in Mexico and its unprecedented consequences for industrial employment. For instance, between 1983 and 1986, manufacturing output grew at an average annual rate of 1.8% while manufacturing employment and hours worked actually fell by 0.1% and 1.7%, respectively. In the meantime, in a country where a million young Mexicans enter the work force each year, an additional five million workers became openly unemployed, swelling the rank of the total unemployed to 6.2 million by the end of 1988. At present, more than half of all Mexicans are considered as living in poverty, as the proportion of the under- and unemployed working population is officially estimated to have reached 54 percent in 1988, a drastic jump from the 40 percent estimate in the pre-crisis period.[1] (Underemployment refers to the situation in which a person, although employed, does not earn sufficient income to guarantee some minimally adequate living standards.)

Thus, the twin problems facing Mexico are massive underemployment and widespread poverty. Foreseeable prospects for the recovery of the economy are not encouraging. A recent projection shows that the economy will have to grow at a sustained rate of close to 11 percent per year to the year 2000 to furnish jobs for the newcomers to the labor market as well as for those left unemployed over the past seven years.[2] Even if one disregarded the existence of the country's debt obligation, such a fast-track growth would be tantamount to a miracle. Mexico has historically never experienced such a rapid growth. The irony of the whole crisis is that because of the severity of the current recession, Mexico now more than ever needs to incur more debts for

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[1] For details of estimation, see the Appendix.

[2] Rolando Corteza & Enrique Gonzalez Tiburcio, "México hacia el año 2000: desafíos y opciones," paper presented at the Universidad Nacional Autónoma de México, seminar, February 20, 1989.

productive investment to resuscitate the faltering economy. What is called for now is a far-sighted, preemptive alternative development strategy coupled with outside commitments for some resource transfer. Without such a vision for Mexico's future, even the issue of "pay or don't pay the debt" will not make much difference.

In order to evaluate the alternative strategies open to Mexico it will be useful for subsequent discussions to postulate an analytical framework. Relegating the details of the model to the appendix of this paper, we postulate a dichotomy of the Mexican economy between the modern, higher-income, mostly urban, formal economy and the subsistence, lower-income, mostly rural, informal economy. We shall refer to the former as the high-productivity (HP) sector, and to the latter as the low-productivity (LP) sector. The working population in the LP sector, as opposed to that in the HP sector, consists of the labor force considered as either unemployed or underemployed in the sense that the workers, even if fully utilized, earn inadequate income to maintain a minimum standard of living. Thus, employment and poverty in Mexico are considered a closely interrelated issue in the sense that the proportion of the population considered as destitute is roughly equal to that of the labor force classified as unemployed or underemployed. This distinction will thus help us to direct our attention to the central feature of poverty—the phenomenon of unemployment or underemployment.[3]

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[3] The quantitative nature of linkages between growth, employment, and poverty is elaborated in Kwan S. Kim and James A. Hanson, "Equitable, Productive Employment Targets for the International Development Strategy," *World Development* 10(5), 1982: 417-427.

II. Strategies and Consequences

Before evaluating policy options available to Mexico, it is important to understand the country's past and present strategies as well as the resulting processes of industrialization. This will allow us to explore their implications for future development, if there are to be drastic changes in development strategy.

1. Inward Orientation

The import substitution policies adopted by Mexico prior to the current shift toward trade liberalization had significant implications for employment.[4] Protection of import substituting industries, which acted as a tax on unprotected sectors of the economy, adversely affected the development of agriculture and nontradable industries—thus by implication, that of the LP sector—as it led to the worsening of the terms of trade against LP-sector goods in domestic markets. The efficiency of industries producing exclusively for domestic markets was impaired by distorted tariff structures and heavy reliance on import restrictions. Moreover, the maintenance of an overvalued exchange rate to support modern sector industries encouraged the import of foreign capital goods by reducing import goods prices to domestic producers. This not only deepened the capital intensity in the HP sector[5] but has also made the country increasingly dependent on capital goods imports.

These policies thus had limited effects on employment. Available studies confirm that industrial employment growth in the Latin American countries that pursued import substitution has been slower in relation to their manufacturing output growth than that of East Asian countries that pursued a more outward-looking strategy.[6] The favorable access to capital markets by larger establishments and the monopsonistic labor market that usually results from the policy bias against smaller establishments in inward-looking countries served to reduce the overall demand

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[4] For an excellent analysis of Mexico's past industrialization strategy, see René Villarreal, *El Desequilibrio Externo en la Industrializacíon de México* (Mexico: Fondo de Cultura Economía, 1976).

[5] Interestingly, a study found that in Mexico, after plant size and production composition were accounted for, there was no significant difference in the capital intensity between American firms and domestically owned firms. See R. Hal Mason, "The Transfer of Technology and the Factor Proportions Problem: The Philippines and Mexico," New York: UNITAR Research Report, No. 10, 1971.

[6] For a fuller discussion, see H. Chenery, S. Robinson, and M. Syrquin, *Industrialization and Growth: A Comparative Study* (New York: Oxford University Press, 1986). For other details of empirical studies, see the Appendix to this chapter.

for labor.[7] The pace of growth in industrial employment in the latter group of countries, including Mexico, has generally fallen short of that of increases in labor supply.

2. Liberalization of Trade

The economic reforms started by the de la Madrid administration include liberalization of foreign trade. Many import licenses have since been done away with. Import tariffs have been slashed by 80 percent, which has resulted in a flood of cheaper, better made imported products, shutting down many factories in Mexico. On the other hand, nonoil exports, accounting for nearly two-thirds of the country's total exports, have emerged as the most dynamic sector in the economy with textiles, autoparts, petrochemicals, and construction material leading the way.

The policy incentives favoring exports have contributed to increased profits in the export sector, and consequently to its expansion. But it should be noted that unlike the case of East Asia's newly industrializing countries, there are two significant factors—rather specific to Mexico—inhibiting the export sector's contribution to the generation of employment and the working poor's incomes. First, recent studies show that in Mexico exportable goods are more capital-intensive in production than import substitutes or nontradables, and that the direct and indirect effects on employment—at least in the short run—are more limited under export expansion than they would be under alternative choices.[8] The tenuity in indirect employment of exports is explained by the fact that Mexican exportables have in general a low local content, as production in industrial exports heavily depends on imported components and parts. For example, a Mexican-made refrigerator is sold to the U.S. only because the motor used for it can be imported from the U.S. The removal of policy biases against exports in itself cannot be a guarantee for significantly raising industrial employment in Mexico.

Secondly, Mexican exports are concentrated in a few products and large firms. For example, a recent survey by BANAMEX reports that as of the mid-1987:

> Forty-five of the economy's 72 subsectors were actively exporting, yet only 12 products from 5 subsectors accounted for half of the sales, and 35 products from 14 subsectors for 75%. In agriculture, 40% of the dollars earned were from

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[7] An example of this is Mexico's modern-sector, market-oriented agriculture which has been concentrated in highly mechanized large farms. Average holdings of large farms has been more than five times that of small private farms in Mexico. Because of large farms' advantage in factor markets, they tend to employ labor-saving technologies. See Lyn Squire, *Employment Policy in Developing Countries—A Survey of Issues and Evidence* (New York: Oxford University Press for the World Bank, 1981): 163.

[8] See Santiago Levy, "Foreign Trade and Its Impact on Employment: the Mexican Case," *Journal of Development Economics*, vol. 9, 1981, 47-65. Also see Kwan S. Kim and Gerardo Turrubiate-Marin, "Estructuras del comercio exterior y sus efectos en el contenido de los factores, el empleo y la distribucíon del ingreso en México," *Trimestre Económico*, 50(4), 1983: 2173-2192. In the longer run, of course, export promotion policies could eventually alter the factor intensity in favor of labor.

coffee and 35.3% from tomatoes and vegetables. Seventeen subsectors sold one sole product. Exporting companies tend to be large ones, especially those producing motors and automobile parts. Other important shipments are from a few large companies, such as the brewery industry.[9]

Thus, the benefits from exports tend to accrue to a small proportion of the economically active population. Clearly, Mexican exports must be diversified; more products, more subsectors, and particularly, more medium and small firms must take part.

Finally, as shown by a recent study,[10] the differences in the commodity composition of foreign trade hardly seem important in their consequences for the distribution of income, when both the direct and indirect interindustry linkage effects are considered. But when direct effects alone are taken into account, production per unit of output in the nontradable sector generates slightly greater factor income than that in the export sector. Thus, the strategy for stimulating domestic demand appears to produce a somewhat larger income, in particular to the lower income groups, than does the export promotion strategy.

III. Action Programs for Revitalization

What then are the specific, feasible strategic choices to Mexico for promoting self-sustaining growth that could simultaneously forge a new future of equity and harmony for its people? This section formulates concrete action programs in the framework that differentiates between the LP and HP sectors. The programs are designed to be consonant with the multiple developmental goals of growth, equity, and basic needs for Mexico.

As already alleged, the reality now is that Mexico, in the midst of a deepening crisis, is a downtrodden economy of 85 million people with a massive under- and unemployed work force and consequent poverty. The immediate issue is: can the country's HP sector ever be expanded at a sufficiently fast rate to absorb not only a million new entrants to the work force each year but also some of those remaining in the LP sector? To answer this question, we have developed an analytical simulation model based on past and current information on demographics, growth in output, and employment in Mexico (refer to the Appendix). Our results reveal that under all reasonable scenarios assumed about past and future growth in the Mexican economy, absolute poverty in Mexico cannot be alleviated by direct employment in the HP sector alone. This seems particularly true in the light of the stagnation Mexican industry has been experiencing. Mexico is not likely to be able, at least within the immediate future, to achieve growth with justice without a

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[9] *Review of the Economic Situation of Mexico*, Vol. LXIII, No. 75, December 1987: 408.
[10] Kwan S. Kim & Gerardo Turrubiate-Marin, "Structures of Foreign Trade and Income Distribution: The Case of Mexico," *Journal of Development Economics*, 16, 1984: 263-278.

comprehensive employment and poverty-alleviation strategy. It is imperative that the approach to the solution of employment and poverty problems in Mexico be based on a *two-pronged* approach. On the one hand, we need to consider both the volume and pattern of economic growth that could provide maximum "productive" employment. On the other hand, as part of the broad framework of a federated development strategy policy, we must include programs aimed at working with the poor in order to lift their productivity and incomes at least above abject poverty.

We may now turn to a set of specific policy actions within the context of a policy framework in which those pluralistic goals of development could be attained in a mutually consistent manner. The action program for Mexico's future development can be seen as falling into three broad areas: the restructuring of the HP sector, balanced convergence in domestic production and consumption structures, and enhancement of the productive capacity of the poor.

1. Restructuring HP Sector

If the liberalization of trade is to have a quantitatively significant impact on employment and incomes of the poor, the HP sector must be restructured in the following three aspects.

First, growth in the HP sector must be more labor-absorbing. Otherwise a large proportion of the entrants to the labor force will continue to be residually consigned to low-productivity work or underemployment. Future industrial policy should not only be concerned with higher growth rate of modern sector output but also with increases in its higher employment elasticity. At present, the pace of expansion of the modern sector is constrained by external market conditions, sizable external debts and resource bottlenecks in the domestic economy. In this context, a larger scope for maneuverability must be obtained in enhancing the HP sector's labor intensity.

The existing data attest to a relatively low value of elasticity of employment with respect to output in Mexico's modern sector. According to a World Bank study,[11] the employment elasticity for Mexico was estimated at an average of 0.45 for the period of 1960 and 1970, and V. Brailovsky's estimate was a somewhat lower one of 0.4.[12] The Mexican figures contrast with other export-oriented Asian countries, such as South Korea, which registered an employment elasticity of 0.67.[13]

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[11] World Bank, *World Economic and Social Indicators* (quarterly), and also Lyn Squire, *Employment Policy in Developing Countries—A Survey of Issues and Evidence* (New York: Oxford University Press for the World Bank, 1981): Table 41. The data pertain to nonsubsistence, commercialized sectors in the economy.

[12] "Industrialisation and Oil in Mexico: A Long-Term Perspective," in T. Barker & V. Brailovsky eds, *Oil or Industry?* (London: Academic Press, 1981).

[13] For details of estimates, see the Appendix, footnote 46.

The adoption of a more labor intensive industrialization strategy should also improve the household distribution of income through changes in the functional distribution of income. Since wage income, as a rule, is less concentrated than property income, a labor intensive industrialization improves the distribution of income by raising the wage share. An examination of the Taiwanese experience confirms the relation between industrial growth path and income distribution. Taiwan is an example of the country that has achieved rapid economic growth with equity. Among other factors that contributed to improved income distribution, the labor intensive bias of its manufacturing must not be overlooked. It resulted in increased wage share, which rose, for instance, from 0.41 in 1951 to 0.55 in 1972, paving the way for improvement in the overall distribution of income.[14]

The low employment elasticity in Mexico can be attributed to the past industrial policy of overprotecting the domestic industry, and in particular of subsidizing the use of capital, which has encouraged a capital-intensive production in the modern sector. Thus, for Mexico to ensure a more equitable, employment-creating pattern of growth, it will be necessary to eliminate subsidies given to the large users of capital, and the use of labor, on the other hand, must be more encouraged. While in order to ensure an optimal resource use, an equal treatment must be provided in the end to both users of capital and labor, generalized and specific labor force training programs would tend to reduce per unit labor costs, which should further encourage the demand for labor.

The pattern of aggregate growth can also affect the labor intensity in the HP sector. For Mexico, the importance of nontradable activities must not be overlooked. As already discussed, expansion of nontradable activities appear to create a larger number of jobs than that of tradable activities, at the same time improving the economic position of the poor in relation to other income groups. There is no assurance that trade liberalization will be more beneficial in terms of employment and equity implications for the country. Thus, future trade policy will have to be concerned with some balancing of activities in the tradable and nontradable sectors.[15]

The second aspect of the restructuring strategy has to do with intersectoral linkages of HP-sector activities. Owing largely to the past policies of neglecting the development of capital and intermediate goods industries, Mexican industry has not generally been well-integrated inwardly.[16] Thus, the longer-term restructuring goal—through the strengthening of industrial

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[14] Taipei: Directorate-General of Budget, Accounting and Statistics, *National Income of the Republic of China*, 1974. For a full discussion, see for example J.C.H. Fei, G. Ranis, & S.W.Y. Kuo, *Growth with Equity: The Taiwan Case* (New York: Oxford University Press for the World Bank, 1979).

[15] This argument leads to a need to articulate the concept of an "optimum degree of openness" for policy purposes.

[16] A possible exception is the automobile industry in which the local content is as high as 70%, simply because the industry has been in existence for a long time.

integration and intersectoral linkage—will have to be the achievement of a more efficient national productive system, which is inwardly integrated and competitive abroad. Greater efforts must then be made to promote an integrated development of industries that can foster a more efficient linkage of productive process and markets, thereby providing increased opportunities for productive employment and incomes for the working poor. Industries that may be targeted for development should include those having a broad reach and ample growth of domestic demand (food products, textiles, wearing apparel, and domestic appliances); those that produce raw materials or intermediate goods widely used by other sectors of the economy (petrochemicals, steel, and cement, among others); and those that form the basis of technological development and structural change (capital goods, biotechnical products, electronics, etc.)[17] Along with the development of a competitive export sector, it is important that selective and efficient import substitution, in particular in the areas of capital goods industry, is advanced as part of the self-sustaining process of balanced growth. Import substitution must proceed through a progressive rationalization of the existing industrial structure, as Mexico's import substitution sector has so far failed to link, in any significant degree, to the country's total productive sector.[18]

Of course, the streamlining of industry for improved efficiency should have no less priority. Strengthening the tradable sector is especially important in the light of trade liberalization. The structural-change strategy must include action programs to facilitate industrial reconversion consisting of the phasing-out of obsolete productive structures; to promote the financial and physical restructuring of private enterprises for a better business environment; to reorganize the parastatal sector to become more efficient and competitive; or simply to privatize inefficient state-owned firms.

In this connection, it is well to note the "hidden crisis" of deteriorating performance in Mexico's state-owned enterprises. Mexico's state enterprises still sit on top of the commanding height of the economy with the public sector spending accounting for close to 40% of GDP in 1982.[19] The Mexican government has recently been selling off a number of state-owned companies.   The firms that were sold off were generally small and medium, economically insignificant ones (with the exception of AeroMéxico).   Furthermore, because of the lack of

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[17] For details, see the Plan Nacional de Desarrollo (PND) and the Programa Nacional de Fomento Industrial y Comercio Exterior (PRONAFICE).

[18] According to R. Villarreal, the raw materials used by Mexico's import substituting sector constitute 20 percent of all national imports and its coefficient of imports to value added is 30 percent. See "The New Industrialization Strategy in Mexico for the Eighties," in S. Weintraub eds., *Industrial Strategy and Planning in Mexico and the United States* (Boulder, Colorado: Westview Press, 1986): 53.

[19] For details of the study on Mexican state enterprises, see Kwan S. Kim, "The Public Enterprise Sector in Mexican Development: Performance and Issues," in Edgar Ortiz eds., *Public Enterprise: Current Issues in North American and Caribbean Countries* (Mexico City: CIDE, 1987): 369-76.

private-sector capital, most of these state firms were sold to local governments, rural cooperatives, government-controlled unions, and other social sector groups. The state still owns more than 400 large enterprises which account for 90% of the value of output produced by the publicly owned sector. They include most of the basic industries—banking, finance, oil, mining, textiles, electricity, railroads, newsprint, aviation, sugar, etc. The problem of the public enterprise sector has been its lacklustre, money-losing performance. Many state companies have been subsidized by the state, thereby contributing to Mexico's debt —external as well as internal. The Mexican government's internal debt totals over $50 billion. Although the size of internal debt is much smaller than that of external debt, the former represents a heavier drain on the Mexican Treasury than payments on the latter. This is because of the need to push up domestic interest rates above foreign rates for debt servicing. In 1988 nearly four-fifths of each peso spent for debt service went for domestic debt, with the remaining accounting for foreign debt. It appears that Mexico's economic problems would still remain unresolved even if its external debt were totally written off. Thus, Mexico's future challenge is to reequip the industrial sector that has so far been dominated by inefficient public-sector enterprises, to expand its productive capacity, and at the same time to improve industrial productivity in order to make the economy more competitive as both an exporter and import competitor in world markets.

Finally, it is important to look at the role of the "in-bond," border industry (maquiladora) in the context of its overall effects on the Mexican economy. Foreign investors' enthusiasm for border industry comes essentially from cheap Mexican labor and the U.S. tariff provision that allows duty-free movements of American goods across the border as long as the items are assembled in products re-imported to the U.S. For Mexico, the border industrial zone has been one viable sector of an economy teetering on the edge. At a recent count in 1988, the nearly 1000 assembly plants along the border generated more than 300,000 jobs to Mexicans, bringing in $1.5 billion worth of foreign exchange, which has been second only to petroleum earnings. Given the estimate of about 1.5 positions in the local economy indirectly generated by each maquiladora job, the total employment generated approximates close to three-quarters of a million. The border industry will likely serve as an important source of job creation and foreign exchange earnings for years to come.

There are, however, serious constraints to the maquiladora program; in essence, it cannot be relied on as an important means of steering a faltering Mexican economy. First, most of Mexican workers in maquilas still receive rock-bottom wages.[20] Secondly, the domestic content in maquiladoras is at an extremely low level of two to three percent, as there is no extensive transportation and communications network linking the border zone to the interior and basic

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20 As of the end of 1987, the minimum daily wage was estimated at $2.91.

infrastructure for production remains inadequate along the border. Therefore, the longer-term issue facing Mexico is what may have to be done to ensure an increased level of local content, and at the same time, to strengthen the linkage of maquiladora industries to the rest of the economy.

More importantly, the ulterior benefit that can be derived from direct foreign investment should lie in the transfer of technologies for indigenous adaptation and dissemination. A point to note is that given the present situation of highly elastic labor supplies in Mexico, the country's open-economy oriented industrialization strategy may focus on developing a stronger international competitiveness in labor-intensive products that utilize already standardized international technologies borrowed from the developed countries. These products include such items as electronics parts and components, synthetic textiles, petrochemicals, iron and steel, and shipbuilding. These are the examples of industries that South Korea started with in the early days of cheap-labor based export-oriented industrialization.[21] Unlike the development of advanced high-technology industries that will require a long period of costly research and investments, standardized technologies are more readily absorbable, and more successfully internalizable through international subcontracting.

In the longer run, of course, Mexico's ultimate policy objective from foreign investment should be absorption, adaptation, and indigenous development of advanced technologies as a way to expedite entry into the ranks of advanced industrialized countries. In the case of Korea, the priority in government policy has been acquisition of foreign technologies at all costs, even by ceding to foreign ownership. Korea's centralized administrative system has been instrumental in enhancing the indigenous capacity for absorbing technologies by mobilizing resources and creating research and development infrastructure.

Mexico's official policy governing high-tech industry, on the other hand, emphasizes the administrative control of foreign firms, the targeting of domestic content and exports, and the acquisition of know-how and R&D.[22] The key instrument has been incentive measures. Firms registered for high-tech projects are typically exempted from tariffs on inputs. Unlike Korea, however, Mexico does not compel the development of indigenous capacity for assimilating, or innovating on, borrowed technologies. Consequently, Mexican manufacturers typically face domestic supply problems: lack of supplies and inadequate supply conditions. Despite the high gross value added of the products of the informatics industry, domestic value-added has remained rather low. Only a small core of domestic firms have been able to design and develop

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[21] For details, see Kwan S. Kim, "The Korean Case: Culturally Dominated Interactions," in Lee Tavis eds. *Rekindling Development: Multinational Firms and World Debt* (Notre Dame, IN: University of Notre Dame Press, 1988): 173-203.

[22] The technology policy is contained in the 1981 draft decree.

their own products. Without a comprehensive, far-reaching technology policy to promote indigenous R&D efforts, Mexico is unlikely to become an important exporter in high-tech manufactures.

The third area of the restructuring strategy concerns small industry development. Specifically, the restructuring plan should call for active promotion of small-scale establishments and the introduction of a rationalization scheme for integration with larger units. Small industry development deserves special attention because of both its importance to the economy and its implications for equity. Mexico's small- and medium-scale establishments—here broadly defined to include those "informally-organized," own-account worker establishments—account for more than 90 percent of the total industrial units and about 50 percent of employment in the manufacturing sector. However, small-scale industry appears to have been severely affected by the economic recession of 1982. Despite the recent government effort to help with access to financial resources, evidence at hand suggests that the level of employment in this sector is not much different from the period prior to the crisis. The state will have to come up with a more comprehensive policy framework to facilitate access of small businesses to the financial market, to stimulate investment in research and development, and to provide fiscal incentives, including a temporary protection from imports where appropriate.

The Taiwanese experience in small industry development should provide a positive lesson for Latin American countries. Taiwan's success in export push can be attributed to the kinds of products that are internationally marketable and flexibly adjustable to the vagaries in international markets. The country's export structure represents a highly flexible, diversified basket of goods produced by a myriad of small- and medium-sized firms. They make up 98.2 percent of all Taiwanese corporations.[23] Small firms allow for the diversification of products and flexibility in structural adjustment in response to changes in international market conditions. In the case of Taiwan, export products have been able to find niches in the industrialized country markets, although they are not generally high-technology oriented.   Small firms are basically family-owned businesses and there is a close bonding between co-workers with great incentives for the establishment to thrive.

The liberalization of foreign markets currently on-going in Mexico is opening up new opportunities for many intra-industry links that can be advantageously exploited by smaller units, either as manufacturers of components and parts or as agents able to undertake certain processes and operations for larger units. At the same time, competitive world markets will require Mexican industry to operate at much higher levels of efficiency. It will thus be necessary to gain industrial efficiency through a rationalization of industrial structure. One such framework entails

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[23] "A Survey of Taiwan," *The Economist,* March 5, 1988: 9.

assignment of different roles to be played by large and small units: the large ones serve primarily as assembly plants, putting together for the marketing of viable products the components and parts produced by the myriad of smaller firms.[24] With such an arrangement, the large unit would be in the driver's seat in developing and passing along new technologies down to the hierarchically lower units. Smaller firms often lack the necessary information on new technologies available in the market, and require proper assistance to restructure their businesses as well to develop new technical and managerial skills. As for small units whose technology and type of output do not fit into a vertical production linkage with the larger unit, the formation of production cooperatives can be encouraged to secure commercial economies of scale.

2. Articulated Market Structure

Another crucial element in the equitable, productive employment strategy is the maintenance of demand for basic needs output largely produced in the LP sector. The inequity and the extreme poverty of the people at the bottom of the income scale have already been described. The problem with the unequal income distribution is that it creates a "disarticulated" economic structure in the sense of a fundamental imbalance in market demands for, and supplies of, basic and nonbasic need goods: the high-income group tends to demand an increasingly large proportion of nonbasic need goods—and frequently through imports—that are not produced in the LP sector, while the poor cannot afford to purchase nonbasic goods produced in the modern sector. Stagnating rural incomes and low urban subsistence wages in the LP sector generally mean that the market for the HP sector's output is limited to the urban, high income classes. For instance, the slackening pace of growth in the case of Mexico's consumer durable goods seen during the past decade can be attributed to sluggish growth in the domestic markets. Such deceleration in growth also reduced the possibilities of diversifying industrial production by discouraging the domestic production of intermediate and capital goods required by the industry itself.

In this respect, the South Korean experience is illuminating. Contrary to the popular conception of Korea as an all exporter, the thrust of its industrialization was really based on the two-pronged approach of subsidized export promotion and protected import substitution. The simultaneous development of import substituting industries by means of domestic market

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[24] This arrangement called "the system of systemization" is popular in the current effort for industrial restructuring in South Korea. Korea's industrialization strategies in the past relied heavily on development of industrial conglomerates at the expense of smaller units. For a fuller account, see Kwan S. Kim, *Política Industrial y Desarrollo en Corea del Sur* (Mexico City: Unido/Nafinsa, 1985). In Taiwan, small firms—frequently run on an extended family system—operate as "satellite" factories serving "parent" factories. For a fuller account of the Taiwanese experience, see J. Woronoff, *Asia's "Miracle" Economies* (Seoul: Sisayongsa, Inc., 1986): Chapter 2.

protection must be viewed as having contributed equally to rapid industrial growth. The state-initiated development of capital and intermediate goods throughout the 1970s, despite initial setbacks and destabilizing effects on the economy, proved in the longer run to have contributed to substantial reductions in the country's import coefficients and to sustained expansion of domestic markets.[25]

Thus for Mexico, unless appropriate measures for balanced development are taken, economic growth is likely to lead to accentuating the existing dual society in which the better-off section continues to enjoy a further accumulation of wealth and high incomes while the other group lags desperately behind.   In this context, it is important that a more broadly defined industrial policy aimed at expanding the domestic market through a fairer income distribution is instituted.   In this way, the modern sector could continue its dynamic growth and provide employment opportunities.

Of course, the ideal strategy for economic revitalization in the present context of the Mexican economy calls for income redistribution in favor of the working poor.[26] Such a strategy would be doubly beneficial: first, given the differences in the propensity to spend, the redistribution favoring the poor raises aggregate demand and output in the economy with excess capacity. Secondly, as discussed in the previous section, in the open economy the demand for imported luxury goods by the rich can be switched to domestic goods produced by the poor, which should raise domestic demand and activities.

Although reactivation policies through a drastic change in income distribution are not an option in the current political reality of Mexico, there are still certain steps that can be taken in the evolutionary process of change. For instance, such specific policies for preventing the poor from being 'left behind' would include the guaranteeing of a parity in the urban-rural terms of trade as well as in the real minimum wage rate, which should be allowed to keep pace, at least, with growth in per capita gross national product. The safeguarding of real incomes of the working population at the bottom of scale is an essential means of attaining a more equitable income distribution, which is not only desirable in itself but also because it provides a stronger domestic market for the modern sector's output, thereby also stimulating employment.[27]

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[25] For details, see Kwan S. Kim, *Política Industrial y Desarrollo en Corea del Sur* (Mexico City: Unido/Nafinsa, 1985): 34-39.

[26] There is a growing literature on the Kaleckian thesis of redistribution and growth. See for example, S. Marglin, *Growth, Distribution and Prices* (Cambridge, Mass.: Harvard University, 1984) and A. Dutt, "Stagnation, Income Distribution and Monopoly Power," *Cambridge Journal of Economics* 8, March 1984: 25-40.

[27] A simulation result based on 1968 data for Peru shows that given the difference in spending patterns by rich and poor, a redistribution of 10 percent of national income in favor of the poor would increase industrial employment as much as 5 percent. See Adolfo Figueroa, "Income Distribution, Demand Structure and Employment: the Case of Peru" in F. Stewart eds., *Employment, Income Distribution, and Development* (London: Frank Cass, 1975): 20-31.

It is likewise essential that the overall demand for the production of the LP sector does not decline in relation to aggregate output growth, if both the absolute and relative incomes of the poor are expected to rise. Our policy simulations in the Appendix show that the poverty-alleviating effect of increasing the income elasticity for the demand for the LP sector's output is substantial in the case of Mexico. It is conceivable, however, that increased aggregate demand through redistribution triggers expectations of inflationary pressures and devaluations, leading to capital outflows, or results in reduced private investment if profits are expected to decline. Under these circumstances, policies to curb capital flight or increased public-sector's role in investment would be needed to accompany redistribution policies.

Other policies that can be suggested to raise the demand for the LP sector's output include increased access to urban and international markets through construction of infrastructure and improved market arrangements. Public works and self-help housing projects would be other types of programs that could maintain or even increase demand for the services of low-productivity workers.

The point of contention here is the importance of safeguarding a balance between tradable and nontradable activities. In recent years, Mexico has witnessed a flood of imports as well an unprecedented surge in nonoil exports. But exports have not been able to compensate for the decline in domestic demand. In particular, since the basic need goods demanded by the poor in a developing economy are largely nontradable ones, it is important that the fruits of opening up trade are not harvested at the expense of the domestic market.[28] The basic need goods both in kinds as well as in quantity terms must be made available, and it is essential to safeguard adequate provisions of such basic goods as housing, water, energy, education and health services, and transportation for the masses.[29] In Mexico, almost all the basic need oriented government services have been concentrated in large urban areas, catering mainly to the nonpoor segments of the population. For instance, a study has shown a severe gap in the provision of educational services between the urban and rural areas in Mexico; it concludes that Mexican children are obliged to go to cities in order to acquire any formal education beyond the

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[28] With the recovery of the economy, it is important not to lose sight of the domestic market. The Mexican economy has a tendency to soak up imports when it expands.

[29] There is also a good theoretical argument for supporting the basic needs sector in developing countries.   In a poor economy characterized by industrial concentration and excess capacity—these conditions are currently shared by all Latin American debtor countries—a redistributive policy oriented toward the satisfaction of basic need goods is shown to have a stimulating growth effect. See A. Kouwenaar, *A Basic Needs Policy Model: A General Equilibrium Analysis with Special Reference to Ecuador.*(Rotterdam: Erasmus University, 1987), and R. Vos *From Crisis to Equitable Growth: A New Development Agenda for Latin America* (Aldershot, N.Y.: Grower Publishers, 1987).

primary level.[30] Thus, in order to ensure an industrial structure capable of satisfying the basic needs of the people, the expansion of tradable-sector activities needs to be complemented by a viable domestic market integrated with activities of the LP sector.

3. Self-Help in the LP Sector

Throughout President de la Madrid's six-year term Mexico has gone through a unprecedented economic recession. The recession has affected the vulnerable and poorer classes in society most severely, as unemployment has doubled and the real income of the working population has been halved. In agriculture, there are now more landless peasants than before the famed revolution.[31] The recession has also caused the shift of many workers from formal employment into informal activities, either tradable or nontradable.   Reduced domestic activities and incomes have at the same time created generalized excess capacities in the country's formal industrial sector.

The final, critical aspect of the equitable, productive employment strategy thus concerns the impoverished LP sector itself. If drastic redistributive policies favoring the poor are considered a remote possibility in the current political environment of Mexico, the alternative strategy should seek efforts for raising real wages through improved productivity. In particular, the pertinent issue that must be addressed is: how can one ensure that those remaining in the impoverished sector of the economy will not be left behind? The calculations in the Appendix indicate that in the present context of the Mexican economy, expectations of resolving the problem of worsening income distribution by means of a growth-oriented strategy alone are highly unrealistic.   An equitable development strategy will require a substantial effort to improve the productivity of workers in the LP sector, through better health and education for the workers themselves, better training and managerial techniques, technical progress applicable with small investments, and substantially greater access to capital and infrastructure.   In the Mexican context, it seems particularly important that the government reinvigorate social programs oriented toward the working poor in primary health and education.   Evidence from other developing countries generally shows that targeting the working poor results in large gains in productivity by improving

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[30] According to the study by F. H. Harbison, et al., *Quantitative Analysis of Modernization and Development* (Princeton: Princeton University Industrial Relations, 1970), Appendix VIII, B, the enrollment ratio in post-primary education in Mexico City was 60 percent but only 12 percent in outlying Oaxaca.

[31] For a fuller account of the crisis, see Kwan S. Kim, "Mexico's Debt Crisis and Adjustment Policies," in R. Tremblay eds., *Issues in North American Trade and Finance* (Montreal: University of Montreal, 1987): 55-70.

the quality of human capital. Social benefits resulting from policy intervention are known to exceed its costs in the long run.[32]

The urban informal sector is now an important area for policy intervention. As the prospects for an early recovery of the modern, industrial sector are bleak, it is more important that special assistance—for instance, easing legal requirements for business, providing training in managerial skills, and liberalizing the credit markets—is targeted on the retrenched, working poor to help start up small-scale enterprises and build a sustaining base for self-employment in the private sector. Adjustment assistance will be especially necessary to help those informal activities producing tradables.[33]

Traditional Agriculture

Any strategy for Mexican development must center around traditional agriculture, on which rural living standards primarily depend. In Mexico, essentially small-scale traditional agriculture, as opposed to modern sector commercialized agriculture, constitutes about 70 percent of the agricultural labor force. The traditional sector consists of small private farms of less than five hectares and most of the communal lands (ejidos), producing mainly beans and maize. In contrast, the size of an average land-holding in the modern agricultural sector, which produces mostly such cash crops as wheat and cotton, is more than five times that of the former.[34]

The issue with Mexican agriculture is not only that the distribution of farms by size is highly skewed, but also that increases in both labor productivity and per acre yields have been mainly confined to large farms. The reason for the discrepancy in productivity growth is that large farms in Mexico have had more direct contact with government programs offering subsidized inputs and institutional credit, while smaller subsistence farms rely on informal sources which tend to charge much higher interest rates. The traditional smallholder farms are small and geographically dispersed; their access to support services, inputs, and marketing facilities has been inadequate. The past policies of an overvalued exchange rate also served to finance the purchase of tractors on large farms. As a result, mechanization and the use of fertilizers have been concentrated in modern sector farms, which has led to increasingly labor-saving technologies in the modern sector.[35]

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[32] L. Demey & T. Addison, *The Alleviation of Poverty under Structural Adjustment* (Washington,D.C.: World Bank, 1987): 28-42.

[33] For details of successful cases, see L. Demey & T. Addison, op. cit.

[34] See Lyn Squire, 1981, op. cit. p. 163. The data in this section largely come from chapter 12 of the cited work.

[35] As early as in 1960, large farms in Mexico owned as much as 75 percent of all farm machinery. L. Squire, op. cit. p. 159.

The point to make here is that there is no convincing reason to assume that large farms are operated in a more efficient manner. On the contrary, one of the most persistent findings of empirical research is that labor intensity and per acre yields decrease as farm size increases.[36] Thus, with equal access to institutional credit, small farms could be operated equally more efficiently. Large farms are also relatively more capital-intensive. Their monopsonistic labor markets generally serve to reduce the overall demand for wage labor. Their segmented capital markets provide incentives for substituting capital for labor.

Thus, both efficiency and employment gains can be made by giving more positive support to small-scale traditional agriculture. There are two specific areas for policy intervention. The first concerns the removal of the past discriminatory incentive measures that have favored both commercial farms and mechanization. Secondly, the restructuring of the traditional sector must be based on specific action programs that include improved price incentives; adequate access to inputs and credit; and a greater use of high-yielding varieties and improved production technologies through agricultural research and dissemination via extension services.

Such a restructuring effort would undoubtedly require more resources. With tighter resource constraints facing the government, of course no subsidization effort can be extensive. It will be necessary to be selective and extremely cost-conscious; resources must be targeted to those most in need, and only for most cost-effective programs. The burden of the costs will have to be shared by the relatively well-to-do. At the same time, alternative schemes for development based on the principle of rural self-help seem inevitable if rural incomes are to rise without excessive subsidization. One such strategy would be for the public sector to provide incentives for implementing projects that are locally designed on a cooperative basis; villages should be expected to contribute labor and local resources to communal projects with appropriate public-sector support. There have been a number of cases of community development movement where programs for rural self-help have been successful. For example, a good case is Korea's Saemaul (New Community) Movement for self-help, which has formed the main pillar of rural development in Korea.[37] It was a rural community development started in the early 1970s to overcome the rural poverty long suffered in Korea. The factor most stressed in the Movement was a self-help spirit: in the longer run the community members must be able to identify their own problems and to solve them by themselves with minimal resource transfer from outside. The role of the public sector was to provide mainly technical assistance by helping peasants coordinate

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36 See for instance, P.A. Yotopoulos & J.B. Nugent, *Economics of Development: Empirical Investigations* (New York: Harper and Row, 1976): 100-102.

37 Ban Sung-hwan, "Development of the Rural Infrastructure and the Saemaul Undong," in M.G. Lee, eds., *Toward a New Community Life*, Reports of International Research Seminars on the Saemual Movement (Seoul: Seoul National University, Institute of Saemaul Undong Studies, 1981).

programs for farm management and extension services of agricultural research. The most significant lesson drawn from the East Asian experience is that a "top-down" approach relying on the state bureaucracy cannot provide a self-sustaining basis for development: a self-sustaining development is only made possible by a "bottom-up" approach based on the self-perceived interests and initiatives of the grassroots populace.[38]

Decentralized Industrialization

Another point to note in the strategy for employment generation is that there is considerable scope for improving the incomes of the rural poor by providing opportunities for employment in nonfarm activities. In comparison to many Asian countries where rural incomes derived from nonfarm activities are substantial, the Mexican rural population primarily lives on incomes from farming activities. In Taiwan, for example, the poorest families, represented by those with the least land, earned about two-thirds of their total income from nonfarm activities.[39] Early nonfarm incomes were derived mainly from male labor in rural infrastructure and female labor in home-based handicrafts, which were later organized into small factories in response to export demand. Taiwan's experience shows that it is possible to foster a more equitable distribution of family income by a spatially dispersed pattern of industrial location, which provides opportunities for off-farm activities to rural households.

One clear reason for the widening urban-rural gap in Mexico is that the country's public sector services, productive infrastructure, and industry are all geographically concentrated in a few urban centers throughout the country (Mexico City, Monterrey, and Guadalrajara). For instance, the 1987 census showed that 44 percent of Mexican industrial establishments were located in Mexico City alone. This contrasts with Taiwan where businesses established in all cities account for about 25 percent of the total.[40] As a result, in Mexico the masses of the rural working population have been denied access to alternative sources of earnings from nonfarm activities unless they migrate to the city. Unlike those of Taiwan, Mexico's industrial policies in the past gave special encouragement to large-scale, capital-intensive industry, which generally results in a centralized pattern of industrialization. The overconcentration in a few "urban poles of growth" also reflects the character of Mexico's centralized planning and implementation systems, and is

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[38] For a similar experience in Taiwan, see Joint Commission for Rural Reconstruction, *JCRR: Its Organization, Policies, and Contribution to the Agricultural Development of Taiwan* (Taipei, 1973), and Samuel P.S. Ho, *Economic Development in Taiwan, 1860-1970* (New Haven: Yale University Press, 1978): Chap. 9.

[39] The share of non-agricultural income is about 80 percent in rural Japan, and 30 percent in rural South Korea.

[40] *Industrial and Commerce Census of Taiwan*, General Report, Taipei, 1971.

evidence that the countryside and the rural regions have not been given equal opportunities to share the benefits of economic growth.

From the perspective of comparative advantage, the possibilities for rural industry would include activities related to agriculture, such as production of farm inputs and implements, food-processing, and other agrobusinesses. It is also conceivable that rural production could be geared to export activities. Of course, the sectors targeted for rural industry must be identified for each local area, as rural economic conditions differ from region to region in Mexico.

Industrial decentralization to rural areas would avoid the costs in labor transfer, also expediting the process of modernizing agriculture through direct contact with industrial activity. Apart from its economic implications for rural development, it should also relieve the burden of social overhead expenditure and the diseconomies of scale, which are caused by the overurbanization phenomenon in Mexico. At present, uncontrolled settlements and shanty towns are nowhere as vividly evident as in Mexico City.[41] The city suffers from a severe traffic congestion with 3 million cars in circulation and nearly 130,000 industrial facilities, and is constantly threatened by the level of smog on the edge of safety limits.

The Mexican government has rightfully been concerned with the problems of urban concentration. In 1985, the financially-strapped government introduced a package of incentive measures to induce firms to relocate out of the Mexico City metropolitan area. The package was, however, narrowly focused on fiscal incentives by making tax credits available to firms transferring to a few selected regions. It has not yet resulted in any discernible impact in so far as the effort for rural industrialization is concerned.

Mexico needs a more comprehensive, broadside approach to decentralization; tax incentives for rural entrepreneurs—still inadequate at current levels and in scope—should be raised and broadened, and rural credit should be increased to rural off-farm activities. Various means will have to be devised to provide additional rural infrastructure where necessary. In addition, other positive steps should entail a shift from the centralized planning and implementation system to increased local autonomy.[42] This is particularly important, given the country's unusual diversity of local conditions and possibilities; the decisions on priorities for a multitude of local projects cannot simply be made in the capital city. The details of a blueprint for decentralization are obviously beyond the scope of this essay.

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[41] The average annual rate of growth in city population has been estimated at 4.4%, and by the year 2000 it is predicted to become a city of 31.5 million people. See World Bank, "The Task Ahead for the Cities of the Developing World," Washington, D.C.: Staff Working Paper No. 209, 1975: 20.

[42] Of course, the national authorities should be responsible for ensuring that decisions taken at the regional or local level conform to national policy.

IV. Conclusions

The grave, economic situation facing Mexico during this "lost" decade of the 1980s reflects not only a financial crisis between creditor and debtor nations, but a social crisis that manifests itself as a syndrome of internal contradictions within a capitalist economic system. The financial crisis that was initiated by more well-to-do classes of society has led to an eventual socialization of external debt, and consequently to the more vulnerable classes carrying the burden of adjustment.

The resolution of the debt crisis calls for a just and equitable readjustment strategy. This paper raises questions about the incidence of existing adjustment policies on the more vulnerable economic classes in Mexico. It is argued that a more equitable, growth-sustaining strategy for structural reform should include three elements as the cornerstones of Mexico's future development. They consist of a structural shift within the modern sector toward more competitive, higher-value added, more labor-intensive, and diversified activities; the development of the lagging sectors based on the principle of collective self-reliance; and the articulation of linkages in productive and marketing structures between the leading and lagging sectors.

The main point of this paper is that in the present context of the Mexican economy reliance on growth alone, without a change in the distribution of income, is not likely to alleviate the problems of employment and poverty within the foreseeable future. It is imperative that Mexico's future economic growth be seen as a means of providing productive employment and meeting basic human needs.

Appendix : The Simulation Model

This simulation model postulates a dichotomy of the economy into the high-productivity (HP) sector—modern and mainly urban—and the low-productivity (LP) sector—traditional and mainly rural. The purpose of simulation is threefold: first, to use Mexico's historical data on population, employment, and output to show that the expansion of the HP sector alone is not sufficient for improving the distribution of income, nor for raising the incomes of the poor; secondly, to project the future distributional consequences if a growth-oriented strategy is pursued; and finally, to illustrate the effects of changes in policy parameters on the distribution of income and the alleviation of poverty. The model is summarized by the following four equations:

Total employment growth[43]: $\quad L^* = (1\text{-}c) L_h^* + c L_p^*$ $\quad$ (1)

HP-sector output-employment relations: $\quad L_h^* = g. Y_h^*$ $\quad$ (2)

Target growth in output: $\quad Y^* = (1\text{-}b) Y_h^* + b Y_p^*$ $\quad$ (3)

HP-sector growth: $\quad Y_h^* = e.(Y^* \text{-} L^*) + L^*$ $\quad$ (4)

where L^* = growth of employment, for sector i with i = p denoting the LP sector, and h the HP sector; Y^* = growth of output, for sector i= p and h; c = the proportion of the labor force in the LP sector; b = the proportion of income (output) received by the LP sector; g = the elasticity of employment with respect to output in the HP sector; e = the elasticity of output in the HP sector with respect to total output growth after both output have been deflated by the total labor force; and $*$ indicates a logarithmic growth rate.[44]

Equations (1) and (3) are definitions—that the labor force must be employed in the HP sector or remain under- or unemployed in the LP sector, and that output growth must equal the weighted sum of output growth in two sectors. Equation (2) defines the relations between growth in employment and output in the HP sector. Finally, equation (4) specifies the relationships among aggregate growth, labor force growth, and growth in the HP sector.

Empirically, the employment elasticity g appears, among other factors, to depend on the country's trade regime. For example, in many Latin American countries that pursued an import substitution strategy, available evidence for the manufacturing sector in the 1960s shows that employment grew only about one fourth as fast as output, while the 70% figure has actually been

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[43]   For convenience, the population growth rate and the labor participation rate—and therefore L^*—are assumed given and constant during the period in consideration.

[44]   Note that in simulation exercises, the values of c and b change over time, and are recalculated for each point in time by reflecting changes in Lp/Lh.

exceeded in the 1970s in the manufacturing sector of such countries as Hong Kong, Singapore, Korea, Kenya, and Colombia.[45] The latter group of countries pursued policies that promoted agricultural development, raised the cost of capital, and stimulated labor absorption capacity, especially in exports.

The parameter e in equation (4) summarizes demand relations for output of both sectors. For example, with e > 1, as total output per worker grows, the HP sector is assumed to grow faster than the total output. In this case, the LP sector will grow less rapidly than the total output.

Growth and Distribution in the Golden-Age Period

The distributional implications of the strategy for modern (HP)-sector hypertrophy were simulated by making use of the data observed during Mexico's golden-age growth period (1950-1975). This period seems to represent the best example of Mexico's sustained growth path, which could be considered as approximating Mexico's long-term economic performance under normal circumstances. During the period, the average rate of growth in GDP (Y^*) was about 6% with the labor force growth rate (L^*) approximating 3.3%. The experience of the 1960s and 1970s further suggests the value of g = 0.5, which is somewhat higher than averages for Latin American countries but is about equal to that of Brazil. Using the figures cited in Trejo-Reyes study,[46] the proportion of the labor force in the LP sector (c) is assumed as 0.4; and that of output in the LP sector (b) as 0.11. The HP-sector output elasticity e is more difficult to estimate. Since there is no available estimate of e, one can specify a reasonable range of the values e can take on in the case of Mexico. For an upper limit, e represents the case where all the increases in per capita aggregate output consist of modern (HP) sector output. In this case, e will be equal to the ratio of total output to HP-sector output.[47] For our purposes, we assume the upper limit case of e = 1.12 for Mexico, and also explore the implications of changing the values of e.

The evolution in the patterns of income distribution can be simulated by plugging the above historical values into the system of equations (1)-(4). The results show that Y_p/L_p, per capita income in the poor (LP) sector, initially increases at a small annual growth rate of 0.14 %, while Y_p/Y, the income share of the poor, shows a declining trend at an annual rate of 2.4%. These results roughly correspond with Mexico's past reality; available evidence indeed indicates that during the period the relative distribution of income in Mexico had deteriorated.[48]   It is

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[45] See D. Haley, "Development Policy: New Thinking about an Interpretation," *Journal of Development Studies*, September 1972.

[46] The data are for 1975. See Saul Trejo Reyes, "Distribucíon del ingreso, empleo y precios relativos," *Commercio Exterior*, 32(10), October 1982.

[47] Given that e = (dY_h/Y_h) / (d /Y), since $dY_h/dY = 1$, it follows that e = Y/Y_h.

[48] I.M. de Navarrete, "Distribucíon de ingreso en México: Tendencias y projectiones hacia 1980," in L. Soliss, *La economía mexicana* (Mexico City: Fondo de Cultura, 1975); and also Saul Trejo

important to note, however, that the above simulations took into account only the impact of labor absorption by the modern (HP) sector. Given the scarcity of census data, it was difficult to estimate exactly what the status of the poor in relation to the nonpoor in Mexico had been. The actual situation may not be as bleak as depicted by the above simulation, as some agricultural productivity increases could have raised incomes of the poor. The purpose of the simulation was simply to show that growth in the modern sector alone would not be adequate to reduce distributional inequities in Mexican society.

Projections for the Future

Projections of the employment and distributional consequences if Mexico follows an exclusively growth-oriented strategy are also possible. A recent survey by El Instituto de Estudios Políticos y Económicos del PRI indicated that as of the end of 1987 the proportion of unemployed and underemployed (defined as those who make less than minimum salary) in Mexico's economically active population was about 54%.[49] There was no information on the income share of the poor, b. Extrapolating from the 1983 distributional data, the income share b is now taken as 22.2 percent for 1987.[50] As for other policy parameters, the elasticity value of g is assumed 0.5 as before, and e is then recalculated as 1.28.[51] Lastly, Mexico's demographics show a somewhat reduced rate of labor force growth of about 2.5 percent for the immediate future.

The distributional impact of the expansion of the HP sector can be obtained by combining the system of equations (1)-(4) and by solving for $Y_p{}^* - L_p{}^*$ as a function of $Y_h{}^*$ and L^*

$$Y_p{}^* - L_p{}^* = \{ 1/(be) - (1-b)/b + g(1-c)/c \} \, Y_h{}^* - \{ 1/(be) - 1/b + 1/c \} \, L^* \qquad (5)$$

we obtain

$$Y_p{}^* - L_p{}^* = .44 \, Y_h{}^* - 1.7\% \qquad (6)$$

Equation (6) tells us that the marginal elasticity of LP sector income with respect to the expansion of HP sector output h is 0.44. That is, in the current context of the Mexican economy each percentage expansion of modern sector output raises, by means of labor absorption, the average incomes of the remaining labor force in the LP sector by 0.44 percentage.   The corresponding elasticity of HP sector income can be calculated as 0.5, which is higher than that of

Reyes, op. cit., and INEGI, SPP, *Encuesta nacional de ingreso-gasto de los hogares* to the fourth trimester, 1983, 1986.

[49] *Excelsior*, May 16, 1988.

[50] See Saul Trejo Reyes, op. cit. The calculated figure is likely to be an underestimate. The situation may be worse, given the severity of Mexico's debt crisis.

[51] Calculated as the inverse of the income share of the HP sector. See footnote 2.

LP sector income.[52] This implies that the strategy of prioritizing modern sector development, although it could improve the living standards of the remaining poor provided that its labor absorption rate is sufficiently large, will continue to worsen the distribution of income against the poorer groups of society. Furthermore, it can be calculated from (6) that the growth rate of the HP sector must exceed 5.7% per annum in order to prevent the living standards of the LP sector population from sinking down further.[53]

Comparative Dynamics

The final objective of the simulation is to illustrate the effects of parametric changes in policy instruments in the model. Two policy parameters of interest are e and g.[54] With a fall in the value of e, that is, as the demand for the poor sector's output increases with the rise in per capita aggregate income, there will be favorable consequences for the poor. This can be seen from equation (5) as $d \{ Y_p/L_p \}^* / d\,e < 0$, so long as $Y_h^* > L^*$, or provided that the rate of HP-sector growth exceeds that of labor force growth. For example, starting from the initial values used in the projections in (6) with the value of e declining from 1.28 to 1.0, the poor's revenue elasticity with respect to modern sector output, h, can be shown to rise to as much as 1.43 from a 0.44 low. The rise in the HP sector's labor-absorption elasticity g likewise raises the income of the poor. This can be seen from (6), as $d \{Y_p/L_p\}^*/d\,g > 0$. For instance, increasing the value of g from the historical value of 0.5 to that of 0.7, which is the level experienced by a few export-oriented Asian NICs, will increase the LP sector's income elasticity h to 0.6.

It is also worth observing that the income share of the poor, relative to that of the nonpoor, increases either with a decline in e or with a rise in g. The policy implications are: in addition to the expansion of productivity in the LP sector, the strategies directed toward enhancing the HP sector's labor absorption capacity or toward stimulating the consumption of basic needs goods produced in the LP sector will ensure a more equitable growth path of the economy.

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[52] Making use of (2), $Y_h^* - L_h^* = (1\text{-}g)\,Y_h^* = 0.5\,Y_h^*$.

[53] Obviously if those who are already underemployed were to have their work further reduced, the required absorption rate would have to be that much greater.

[54] Also, for a reasonable range of values assumed for the parameters of the model, we have from (6), $d \{Y_p/L_p\}^* / dL^* < 0$. As would be expected, the reduction in the population growth rate raises the poor's living standards.