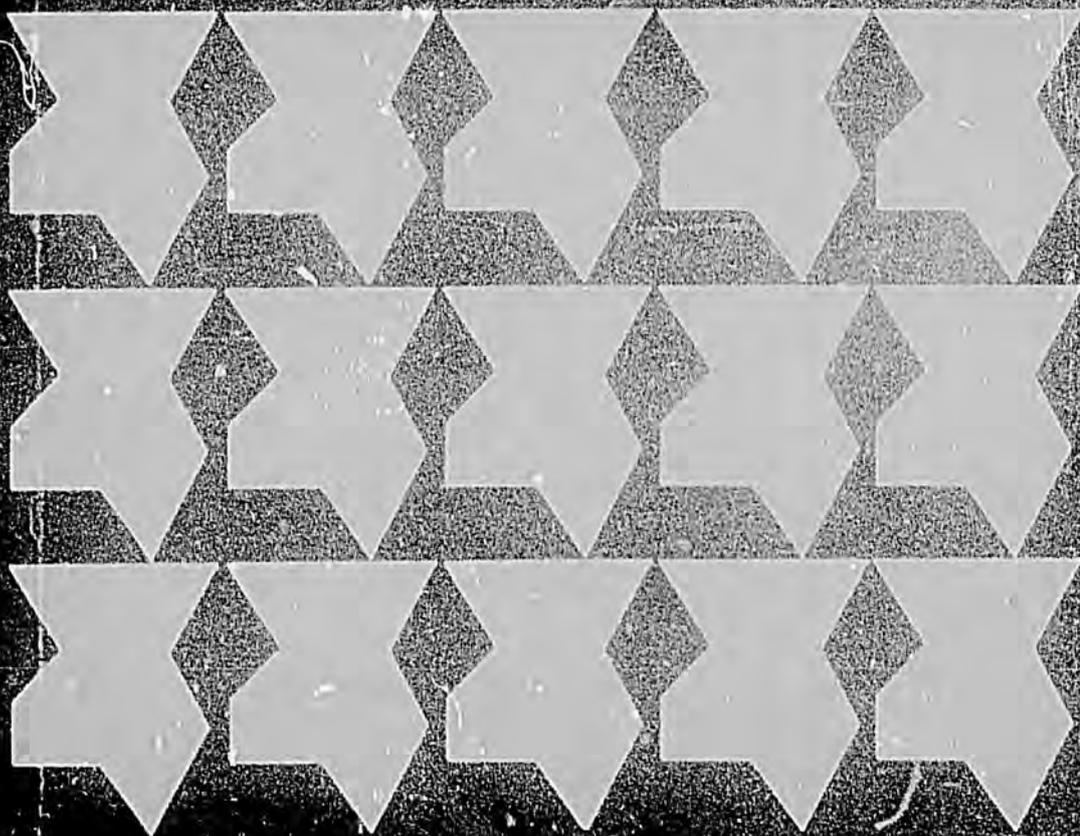


DEVELOPMENT STUDIES PROGRAM

Center for International
Development Studies



Development Studies Program

Case Studies in Development Assistance No. 5

GROWTH AND EQUITY IN MEXICO

by

Lyndon B. Johnson School
for Public Affairs
University of Texas/Austin

This paper reflects the views of the authors and not necessarily the views
of the Agency for International Development

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PREFACE

This study was conducted under a contract between the Agency for International Development (AID) and the Lyndon B. Johnson School for Public Affairs of the University of Texas at Austin. The research was accomplished during the 1977-1978 academic year as a policy research project involving both faculty and graduate students of the LBJ School. The purpose of the study was to examine the relationship between overall economic growth and the distribution of that growth.

Chapter I introduces the purpose of the study and describes the methodology used. Chapter II provides an informational backdrop of Mexican growth with emphasis on the period from 1950 to the present. Chapter III describes the findings related to such areas as income distribution, education, agriculture, health and nutrition. Chapter IV presents the conclusion and recommendations.

The study contains three annexes dealing in greater detail with the material in the body of the report. Of particular value, we believe, are the statistical tables and the analysis of Mexico's growth without equity. The analysis was prepared by three graduate students who were members of the project; Louise Flippin, Carol Kreps and Conway Kuykendall.

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EXPLANATORY NOTE

In order to examine equity on a regional basis, this study has divided Mexico into six regions - North, Pacific North, Central, Pacific South, Gulf, and Federal District. Allocation of Mexico's states and territories into the various regions is based upon a standard grouping commonly utilized within Mexico itself.

These regions and their components are shown graphically in the figure on the next page. For convenience, the regions have been numbered 1 through 6. This numbering is used throughout the text and annexes.¹

REGIONS AND STATES OF MEXICO

NORTH (1)

- 1. Coahuila
- 2. Chihuahua
- 3. Durango
- 4. Nuevo Leon
- 5. San Luis Potosi
- 6. Tamaulipas
- 7. Zacatecas

CENTRAL (3)

- 13. Aguascalientes
- 14. Guanajuato
- 15. Hidalgo
- 16. Jalisco
- 17. Mexico
- 18. Michoacan
- 19. Morelos
- 20. Puebla
- 21. Queretaro
- 22. Tlaxcala

PACIFIC NORTH (2)

- 8. Baja California Norte
- 9. Baja California Sur
- 10. Nayarit
- 11. Sinaloa
- 12. Sonora

GULF (5)

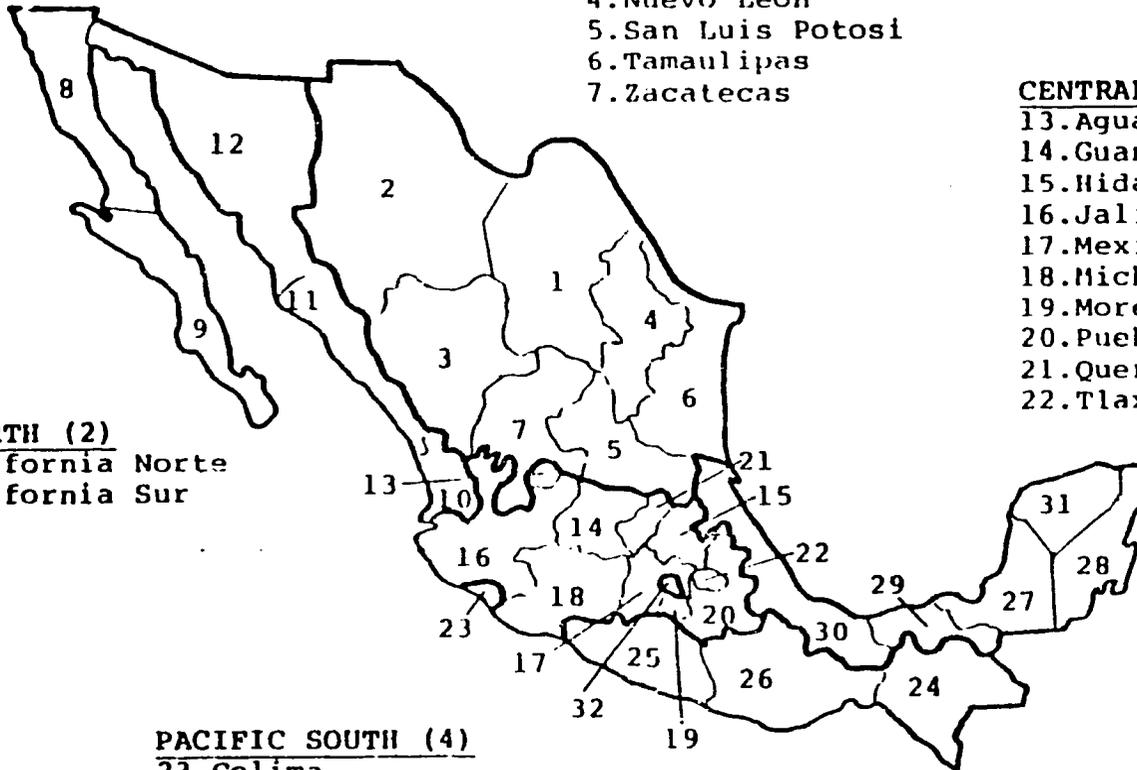
- 27. Campeche
- 28. Quintana Roo
- 29. Tabasco
- 30. Veracruz
- 31. Yucatan

PACIFIC SOUTH (4)

- 23. Colima
- 24. Chiapas
- 25. Guerrero
- 26. Oaxaca

FEDERAL DISTRICT (6)

- 32. Distrito Federal



1. INTRODUCTION

A. Purpose

The purpose of this study was to examine the relationship between overall economic growth and the distribution of that growth in Mexico. The period examined was the period since 1950, from about the time of the Lázaro Cárdenas presidency but with major emphasis over roughly the past two decades. The "equity" in the title of the study is defined as distributional equity: how and the population share in the economic and social benefits that Mexican political, social, and economic policies brought about?

Literature on the growth and development process in developing countries has been extensive in recent years. ^{1/} Some of the U.S. literature has observed that income in most developing countries is unequally distributed and that external development assistance did not always "trickle down". This perception played a major role in stimulating the PIDER (the Spanish initials for Integrated Rural Development Program) project, under which Mexico, with the help of the World Bank and the Inter-American Development Bank, is devoting several hundreds of millions of dollars to rural development. PIDER is supposed to help the smaller farmers and rural residents, in contrast to past programs which benefitted primarily large landowners and agro-industry, but it is one of several steps needed to effectively address Mexico's major socio-economic problems.

Countries have different growth patterns. In some, high overall growth in GNP has been accompanied by reasonably equitable distribution of that growth. Inaner, et. al., for example found that the growth rate of the lowest 40 percent income groups showed an improvement of relative equality in the 1950s and 1960s in Taiwan, Colombia, and South Korea. The Philippines, Brazil, and Mexico (Mexico between 1963 and 1968) only showed the reverse, a relative deterioration of the position of the lowest 40 percent despite high overall growth rates. ^{2/}

The Mexican experience in recent decades is consistent with earlier speculation by Kuznets that increasing inequality in income distribution is associated with growth in developing countries for a variety of reasons: e.g., the rise in productivity through technological modernization of larger commercial farms, the growth in the urban sector of relative importance of occupations with a long training period and high skills content, the increase in industrial sector and capital consumption changes as manufacturing development occurs, and so on. ^{3/} Kuznets' studies

also show that distributional inequality is greater in developing than in developed countries. 4/ What is not clear, however, is the per capita income level at which a country can be considered developed, or whether greater distribution of income begins to occur as the per capita income reaches and surpasses this level. 5/

Irma Adelman has referred to two extreme strategies, either grow now and redistribute (and educate) later, or redistribute (and educate) now and grow later. 6/ In a study for the World Bank, David Morawetz suggested that initial distribution of assets could be an important determinant of the trend in inequality. 7/

In examining Mexico's growth, we sought to determine its patterns and how it dovetailed with other actual or conceptual patterns. We were conscious of the recent literature on meeting basic human needs, and kept poverty and basic needs issues in mind as we examined data on Mexico. 8/

One major conclusion derived from this study was that the older, accepted strategies of development were tried and worked in terms of generating growth in Mexico. Economic growth has been substantial in recent decades. The new models stressing distribution were not seriously tried, at least since the 1930s, except perhaps imprudently during the Echeverria administration, when they could not really have worked given the stagnancy of the Mexican economy.

B. Methodology

Our purpose was to describe equity in terms of income distribution and in the provision of vital (basic) services. The descriptions we sought were of three varieties: 1. to analyze relationships and hopefully causality among critical variables over time; 2. to bring out the equity aspects of the Mexican scene in series of tables giving precise visual data; and 3. to describe the equity aspects of Mexican development.

The first was a detailed compilation of data in which more than 1,000 variables were examined, taxing our computer capacity. The effort was only partly successful. Time series necessary for this purpose were inadequate. Data were intermittent, compiled on different bases, and frequently just unavailable. Data collection techniques in Mexico are often chaotic; for example, literacy data may be

based on asking people how many persons six years and older in a household are literate. We also had the impression that much material in Mexico is "political". Good data permitting inferences regarding economic distribution are not available.

The second presentation in tabular form can be found in Annex A. The equity study makes up the body of this report. The two parts reveal a growing but essentially unequal Mexican society of enormous explosive potential, not only in terms of population growth but also in terms of distribution of education and health services, housing and employment opportunities.

The research effort involved the assembly, collection, and analysis of four types of information: (1) time series statistical data; (2) intermittent statistical data; (3) data and information generated by studies of economic growth and equity in Mexico; (4) information generated by interviews and personal contacts with scholars and officials in the United States and Mexico.

Documents from the Mexican government and from various international organizations as well as the work of academic researchers were used to generate the data set. The data were manipulated to focus on equity issues. The variables thus obtained were in the following sectors:

- | | |
|--|--|
| --Manufacturing | --Transportation |
| --Agriculture | --Communication |
| --Health and Nutrition | --Foreign Trade |
| --Education | --General economic indicators such as consumer price indices and Gini coefficients |
| --Credit | |
| --Government expenditures by functional area | --Miscellaneous |
| --Government receipts by source | |
| --Income and general demographic data | |

One of the more serious problems encountered in the development of the data set was the unavailability of regional data. These data are either not maintained, or not published by the Mexican government. This was important to our analysis since we wished to examine equity not only on a personal or family level, but also on a regional level. For this purpose, Mexico was divided into five regions plus the Federal District, as explained in the introductory explanatory note. We were able to aggregate state information to the regional level in some cases, but not in all. The reliability of some state data is questionable; we have pointed this out where appropriate.

In the statistical analysis phase of our research we used correlation analysis as an indicator of relationships. Once sets of correlated variables were identified, we shifted to partial correlation analysis and after refinement attempted to generate regression equations relating economic growth to equity. The time series were inadequate to support meaningful regression equations.

C. Structure of the Report

The next section provides a background on recent economic growth and development in Mexico. This is followed by our findings on the equity aspects of growth, in terms of income distribution and sectoral developments. A final section summarizes our conclusions and recommendations.

The Annexes contain tabular data, a Mexican quality of life index by state for 1970, and an analysis giving the equity aspects of the Mexican growth experience using a model developed by Gary S. Fields to examine the Brazilian experience. 9/

II. Background of Mexican Growth

The literature on Mexico is replete with references to the twin and mutually supporting themes of political stability and economic growth. ^{10/} If stability and growth were the goals after the institutionalization of the revolution in the 1930s, the policy can be regarded as eminently successful. Overall growth rates have been high, and government has succeeded government through a controlled and generally non-violent electoral process. (See Table 1)

Table 1. Annual Growth Rates in Real GDP

	(Percent)			
	<u>1925/40</u>	<u>1940/50</u>	<u>1950/60</u>	<u>1960/75</u>
Gross domestic product	1.6	6.7	6.1	6.6
Per capita product	0	3.9	3.0	2.8

Sources: 1925-1960, Clark W. Reynolds, The Mexican Economy, (New Haven, Conn.: Yale University Press, 1970), p. 22; 1960-1975 Inter-American Development Bank, Economic and Social Progress in Latin America, 1976 Report, p. 229.

This sustained high rate of growth over approximately three-and-a-half decades is remarkable. To put this into context, it is useful to keep in mind that the per capita growth target contained in the 1961 Charter of Punta del Este and in the Second Development Decade of the United Nations was 2.5 percent a year. Though Mexico's growth slowed in the 1975-1977 period (1975: 4.2 percent gross, or less than 1 percent per capita; 1976: about 2 percent gross or about -1.5 percent per capita; 1977: about 2.8 percent gross or about -0.6 percent per capita), ^{11/} the earlier pattern is likely to reassert itself under the Portillo administration. Already in 1977, the first year of the new administration, Mexico has passed through a difficult stabilization process. ^{12/}

According to the most recent World Bank Atlas (1977), Mexico's GNP per capita in 1975 was the equivalent of about \$1000.

Mexico's political structure of one-party democracy under the aegis of the Partido Revolucionario Institucional (PRI) has been the subject of much study. ^{13/} The consensus of the examinations indicates that the stability of the Mexican system is the result of successful conflict resolution within the party and by the continual absorption of new interest groups.

The various wings of the party have each shared, in generally alternating fashion, in the big prize of Mexican politics, the presidency. (See Table 2)

Table 2. Recent Mexican Presidents and their Terms of Office

		*
		Political Tendency
Lazaro Cardenas	1934-1940	Left
Manuel Avila Camacho	1940-1946	Center-left
Miguel Aleman	1946-1952	Center-right
Adolfo Ruiz Cortines	1952-1958	Center
Adolfo Lopez Mateos	1958-1964	Center-left
Gustavo Diaz Ordaz	1964-1970	Right
Luis Echeverria	1970-1976	Left
Jose Lopez Portillo	1976-	To be seen

* The characterization is subjective and based on the Mexican political spectrum.

The stress on overall economic growth was not accompanied by a comparable stress on income distribution. (See Table 3)

Table 3. Distribution of Family Income in Mexico

	Percent of family income			
	1950	1958	1963	1969
Lowest 20%	6.1	5.0	4.2	4.0
30% below the median	13.0	11.7	11.5	11.0
30% above the median	21.1	20.4	21.7	21.0
15% below the top 5%	19.8	24.3	24.3	28.8
Top 15%	40.0	38.6	38.3	36.0
	100.0	100.0	100.0	100.0
Top 20%	59.8	62.9	62.6	64.0

Source: ILO world employment program working paper by Wouter van Ginneken, reprinted in *The Economist*, April 22, 1978, Mexican Survey, p. 16. See also Tables A15-A16 in the Annex.

The issue of the distributional aspects accompanying growth will be the subject of detailed examination in this study. During the years of power of the presidents labeled as conservative in tendency in Table 2, stress was placed on promoting private investment in the hope that distributional equity would follow, while during the years of those marked as leftist, more attention was paid to the provision of services and other benefits to the poorer income groups. However, in the sweep of the past 25 years, under administrations of presidents of varying political persuasions, the curve has been reasonably consistent: the lowest 20 percent of the families did not improve their relative income position, and this position may even have deteriorated, while the top 20 percent maintained its position. (The data on the top 20 percent and the middle 60 percent are conflicting, in that some sources show the middle gaining and others show the top group gaining. All sources show no relative improvement in income for the lowest 10 or 20 percent, although there have been distributional gains in other areas, such as life expectancy, infant mortality, and others.)

One of the overwhelming facts of Mexico's economy is its remarkable high rate of population increase, an acutely aggravating factor in many of Mexico's development problems. The Inter-American Development Bank estimated that the annual population growth rate from 1970-1976 was

3.5 percent. Mexican data show an acceleration in the rate of natural increase, at least until 1975, stemming primarily from the persistently declining death rate (Table 4). Recent work at the Colegio de Mexico suggests that the rate of population growth may have peaked and is now tapering off, but more time must elapse before this can be established with certainty.

CELADE (El Centro Latinoamericano de Demografia) estimated recently that Mexico's population would be 132 million in the year 2000, compared with 59 million in 1975. ^{14/}

Table 4. Natural Increase in Mexico's Population, 1940-1975
(Rates per thousand)

<u>Year</u>	<u>Birth rate</u>	<u>Death rate</u>	<u>Natural increase</u>
1940	44.3	23.2	21.1
1945	44.9	19.5	25.4
1950	45.5	16.2	29.3
1955	45.1	13.3	31.8
1960	44.6	11.2	33.4
1965	44.1	9.4	34.7
1970	42.1	9.6	32.5
1975	44.5	8.6	35.9

Source: Nacional Financiera, S.A., Statistics on the Mexican Economy, 1977, pp. 6-7, from data of the General Bureau of Statistics.

This immense rate of population increase affects all other aspects of Mexico's development--the per capita income growth rates, the provision of such key services as education, health care, housing, nutrition, the land tenure situation in agriculture, and the creation of jobs. These strains, in turn, exacerbate the push factors driving Mexicans to illegally seek employment in the United States.

The most significant area of growth in Mexico's economy has been in industry (Tables 5 and 6). As can be seen from Table 6, the contribution of manufacturing to the GDP grew from 18.4 percent in 1950 to 23.1 percent in 1975, while that of agriculture declined over the same period from 11.7 to 5.6 percent.

Table 5. Mexico's Gross Domestic Product by Activity, 1950-1975
(Millions of 1960 pesos)

	<u>1950</u>	<u>1955</u>	<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>
<u>Gross Domestic Product</u>	86,973	114,049	150,511	212,320	296,600	390,900
<u>Primary Sector</u>						
Agriculture	10,176	12,330	14,790	19,921	21,140	22,116
Livestock raising	4,032	5,624	7,966	9,008	11,848	13,764
Forestry	992	720	882	955	1,149	1,332
Fishing	242	187	332	338	398	483
<u>Industry</u>						
Mining, petroleum, and coal	3,943	4,615	7,434	10,508	15,534	22,115
Manufacturing	16,064	21,423	28,892	44,761	67,680	90,928
Construction	2,998	3,951	6,105	8,534	13,583	20,167
Electricity	462	845	1,502	2,769	5,357	8,083
<u>Services</u>						
Trade	25,799	35,756	46,880	67,368	94,491	121,526
Transportation and communication	2,912	3,760	4,996	6,443	9,395	15,049
Banking, government and other	19,917	24,642	32,251	44,063	59,592	80,651
<u>Adjustment for banking</u>	- 564	-1,076	-1,519	-2,208	-3,567	-4,684

Source: Nacional Financiera, S.A. (1977) Statistics on the Mexican Economy.

**Table 6. Mexico's Gross Domestic Product by Activity, 1950-1975
(Percentages of GDP by Sector)**

	<u>1950</u>	<u>1955</u>	<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>
<u>Gross Domestic Product</u>	100.0	100.0	100.0	100.0	100.0	100.0
<u>Primary Sector</u>						
Agriculture	11.7	11.4	9.8	9.3	7.1	5.6
Livestock raising	4.6	5.3	5.2	4.2	3.9	3.5
Forestry	1.1	.6	.5	.4	.3	.3
Fishing	.2	.2	.2	.1	.1	.1
<u>Industry</u>						
Mining, petroleum, and coal	4.5	4.0	4.9	4.9	5.2	5.6
Manufacturing	18.4	18.7	19.1	21.0	22.8	23.1
Construction	3.4	3.4	4.0	4.0	4.5	5.1
Electricity	.5	.7	.9	1.3	1.8	2.0
<u>Services</u>						
Trade	29.6	31.3	31.1	31.7	31.8	31.0
Transportation and communication	3.3	3.2	3.3	3.0	3.1	3.8
Banking, government and other	22.9	21.6	21.4	20.7	20.0	20.6
<u>Adjustment for banking</u>	-.6	-.9	-1.0	-1.0	-1.2	-1.1

Totals may not add to 100% due to rounding.

Source: Based on figures from previous table.

There has been a heavy dosage of government intervention in promoting Mexico's manufacturing sector. Some of this intervention has been direct. The State owns more than 800 enterprises and agencies, enters into joint ventures with domestic and foreign private interests, and invests directly in areas which it deems appropriate. ^{15/} While compared with other countries, the participation of the central government in "GDP" appears relatively small; when the rapid growth of the parastatal sector is included, the share of the public sector in GDP increases substantially. Public investment, both directly by the central government and by the state-owned enterprises, has represented a growing share of aggregate capital formation. Some state intervention is indirect. The government is active, particularly through the Nacional Financiera, in helping to raise funds abroad for industrial activities. Government-owned banks themselves provide a significant share of all credit supplied to the Mexican economy. Mexico has protected its domestic industries (and agriculture) through a variety of devices, such as tariffs, quantitative restrictions, and prescriptions for domestic content for industrial products manufactured in Mexico.

Data on Mexico's GDP by type of expenditure vary depending on the source, but the trend seems to be for a decline in private consumption, and an increase in capital formation (Table 7).

Table 7. Mexico's Gross Domestic Product
by Type of Expenditure, 1950-1975

(Percentages, based on current market prices)

	1950	1960	1970	1975 ^{p/}
Private Consumption	80.7	75.6	71.6	63.7
General government consumption	4.7	6.3	7.7	10.9
Increase in stocks	.8	3.1	2.9	5.2
Gross domestic capital formation	12.7	16.9	19.6	23.1
Exports of goods and services <u>Less</u> imports of goods and services	1.0	-2.0	-2.0	-3.1
Gross Domestic Product	100.0	100.0	100.0	100.0

^{p/} preliminary figures

Totals may not add to 100% due to rounding.

Sources: 1950-1960 Banco de Mexico, S.A. Cuentas Consolidadas Y Acervos de Capital 1950-1967.
1970-1975 Secretaria de la Presidencia. Informe a Jose Lopez Portillo. Based on figures from Banco de Mexico, S.A.

Again, while the data are inexact, employee remuneration as a percentage of total income seems to have risen over time, as seen in Table 8.

Table 8. Mexico's Gross Domestic Income
by Nature of Income, 1950-1975

	(Percentages, based on current market prices)			
	1950	1960	1970	1975 ^{p/}
Employee Remuneration	25.3	31.1	34.8	37.5
Operating Surplus	67.4	59.7	53.5	47.4
Capital Depreciation	3.9	4.9	6.8	7.9
Indirect Taxes <u>Less</u> Subsidies	3.2	4.2	4.8	7.0
Gross Domestic Income	100.0	100.0	100.0	100.0

^{p/} preliminary figures

Totals may not add to 100% due to rounding.

Sources: 1950-1960 Banco de Mexico, S.A. Cuentas Consolidadas Y Acerves de Capital 1950-1967.
1970-1975 Secretaria de la Presidencia. Informe a Jose López Portillo. Based on figures from Banco de Mexico, S.A.

As a result of the relative growth of manufacturing compared with agriculture, combined with the concentration in government policy on investment in agricultural infrastructure that tended to encourage large as opposed to small landowners, more and more of Mexico's population has been moving to urban areas (Table 9). This shift in population, however, is still substantial. It was 37 percent in 1976, based on official data.

Table 10 presents the relative growth rates of rural and urban areas over the decades since 1930. In recent decades, the urban population has been growing at a rate about four times as great as that of the rural population. The data are somewhat distorted in favor of urban growth, by Mexico's definition, denoting a locality of more than 2,500 persons. However, apart from this distortion, the urban population increase in absolute numbers has concentrated in the larger metropolitan areas, such as Mexico City and in the border regions of the north.

Table 9. Mexico's Urban Rural Population, 1930-1976

Year	Population in thousands			Percent of total	
	Total	Urban	Rural	Urban	Rural
1930	16,553	5,541	11,012	33.5	66.5
1940	19,654	6,896	12,758	35.1	64.9
1950	25,791	10,983	14,808	42.6	57.4
1960	34,923	17,705	17,218	50.7	49.3
1970	48,993	28,710	20,283	58.6	41.4
1976	60,102	38,105	21,997	63.4	36.6

The urban-rural dividing line is 2,500 inhabitants

Source: Nacional Financiera, S.A. (1977), Statistics on the Mexican Economy.

Table 10. Growth Rates of Mexico's Urban and Rural Population, 1930 - 1976

(Percent)

Years	Population		
	Total	Urban	Rural
1930-1940	18.7	24.4	15.8
1940-1950	31.2	59.2	16.0
1950-1960	35.4	61.2	16.2
1970-1976	22.6	32.7	8.4

The urban-rural dividing line is 2,500 inhabitants

Source: Based on figures in Table 9 Nacional Financiera, S.A. (1977) Statistics on the Mexican Economy, p.5

Mexico's balance-of-payments pattern in recent decades has been maintenance of a deficit in merchandise trade. Table 11 shows this in summary form. The trade deficit and the deficit on goods and services took a quantum leap in the mid-1970s (see data for 1975 and 1976) for a variety of reasons. The IMF has noted that the public sector deficit rose from 4 percent of GDP in 1976. This was financed through absorption by the government of much domestic private financial savings and a rise in external debt. Price increases in Mexico (Table 12) were larger than those in Mexico's international competitors (competitive position). The net earnings from tourism declined as Mexican travel in the United States and elsewhere increased. The balance on frontier transactions likewise diminished as the higher Mexican rate of inflation encouraged, prior to the 1976 devaluation, a rising volume of Mexican consumer buying on the U.S. side of the border.

Table 12. Mexican Price Indices, 1940-1976 (1954=100)

	<u>Wholesale</u>	<u>Cost of Food</u>	<u>Consumer Price Index</u>	<u>Workers Cost of Living</u>
1940	23.9	20.8		21.3
1950	72.5	70.5		75.3
1960	137.5	151.7		154.2
1970	174.1	192.1	108.7	201.0
1976	355.6	393.8	222.1	446.5

Note: Annual averages

Source: Nacional Financiera, S.A. (1977) Statistics on the Mexican Economy, pp. 218-219.

In September 1976 Mexico severed the peso's link with the dollar which had been fixed at 12.50 pesos per dollars since 1954, and allowed the peso to float. The rate at the end of June 1978 was 22.5 pesos per dollar.

Table 11 also shows the dramatic improvement in the merchandise trade account which occurred in 1977, the first year of the new administration's stabilization program and under the depreciated peso rate. The rapid upward adjustment of prices in Mexico during 1977 and 1978, however, leaves a repetition of this degree of improvement in doubt except for the impact of oil developments on the country's balance of

Table 11. Mexico's Balance of Payments, 1940-1977
(Millions of dollars)

	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Exports of goods	94	493	738	1281	2851	3316	4093
Imports of goods	<u>132</u>	<u>596</u>	<u>1186</u>	<u>2327</u>	<u>6580</u>	<u>6039</u>	<u>5488</u>
Trade Balance	<u>-38</u>	<u>-103</u>	<u>-448</u>	<u>-1046</u>	<u>-3719</u>	<u>-2714</u>	<u>-1395</u>
Invisible receipts	119	333	633	1652	3444	3915	3917
Invisible payments	<u>59</u>	<u>172</u>	<u>485</u>	<u>1552</u>	<u>3418</u>	<u>4264</u>	<u>4301</u>
Net invisibles	<u>60</u>	<u>161</u>	<u>148</u>	<u>100</u>	<u>26</u>	<u>-331</u>	<u>-384</u>
Balance on goods & services	<u>22</u>	<u>58</u>	<u>-300</u>	<u>-946</u>	<u>-3693</u>	<u>-3044</u>	<u>-1780</u>
Errors and omissions	-3	62	182	499	-406	-1983	?
Long-term capital (net)	2	51	109	504	4318	4655	?
Change in reserves of Bank of Mexico	22	172	-9	102	165	-333	?

Source: Nacional Financiera, Statistics on the Mexican Economy, 1977, from Bank of Mexico Data; 1977 data from IMF Survey, also from Mexican data.

payments.

Mexico's current account deficits in its balance of payments has been financed in large part by substantial external borrowing. Borrowing was approximately \$3 billion net in 1977 and is expected to be roughly at the same level in 1978. The total outstanding official debt at present is between \$23 and \$24 billion, including about \$3.5 billion of short-term debt. 16/

Looking into the future, the balance-of-payments pattern is likely to be different in view of Mexico's apparent oil reserves. Given the recent discoveries of substantial petroleum reserves, Mexico's future merchandise trade balance is likely to be in surplus and Mexico should be able to finance its development program from oil export revenues rather than from a further buildup in debt. There is nothing in this process, however, that assures that these increased revenues will be used to promote greater distribution in Mexico. If the government defers action which seeks to break the endemic patterns of maldistribution, problems resulting from disparities are likely to intensify and require more drastic measures later on. If the oil revenues are mainly used to promote industrial growth, the gap between the rural and urban centers may even become wider. As it is, much of the oil revenue during the initial phases of oil development will be re-absorbed by the highly automated and capital-intensive oil industry. This study examines some of these issues and points out the areas in which progress must be made if the Mexican society is ever to approximate equity of income distribution.

III. Findings

A. Income Distribution

As already noted, longitudinal data on Mexican economic and social phenomena are difficult to obtain on a consistent basis. The reliability of the underlying data of what seem to be uniformly constructed time series is often suspect. Data on income distribution reflect these difficulties. However, income distribution data have been gathered assiduously by academicians, researchers from international organizations, and in special surveys under the auspices of the Bank of Mexico. Like most income distribution data, the figures probably are not precise, but neither do they seem to be as "political" as much other Mexican data (such as those on literacy, education, and infant mortality).

Tables 3 and A.15 contain data from the same source for 1950 and 1958, but the sources differ for later years. The Economist table (based on ILO estimates) shows the top 20 percent income group as improving its relative position in 1969 as compared with 1950, whereas the Bank of Mexico data show the reverse for 1968 as compared with 1950. Table 13, compiled from the material in Table A.15, is a reasonable basis for reaching some conclusions about the trend of income distribution in Mexico. We have not gone beyond 1968 in the following table given the uncertain reliability of this later data. Later Bank of Mexico material indicates that income distribution patterns in the mid-1970s do not differ significantly from those of 1968. 17/

Table 13. Estimated Family Income
(percent)

<u>Percent of families</u>	<u>1950</u>	<u>1968</u>
Lowest 10 percent	2.7	1.3
Lowest 20 percent	6.1	3.6
Lowest 40 percent	14.3	11.2
30 percent below the median	13.0	13.5
30 percent above the median	21.1	26.4
Middle 60 percent	34.1	39.9
Highest 40 percent	75.4	75.6
Highest 20 percent	59.8	56.5
Highest 10 percent	49.0	40.1
Highest 5 percent	40.2	29.0

Source: (see next page)

- Source for (1950) Ifigenia de Navarrete, "La Distribucion del Ingreso en Mexico; Tendencias y Perspectivas", in David Ibarra et. al., El Perfil de Mexico en 1980, Vol. 1 (Mexico: Siglo Veintiuno Editores, S.A.) 1970, p. 37.
- (1968) Banco de Mexico, La Distribucion del Ingreso en Mexico. (Mexico: Fondo de Cultura Economia), 1974, p. 8.

What emerges from Table 13 is that the lowest income groups, whether defined as the lowest 10 percent or lowest 20 percent or lowest 40 percent of Mexican families, were relatively worse off in 1968 than they were in 1950.

Similarly, the highest income families, whether defined as the highest 5 percent, or 10 percent, or 20 percent, received relatively less of total income in 1968 than they had in 1950, although the top 20 percent still received a major share of all income. It should be noted that we are suspicious of the substantial change in the highest five percent group between the two years shown, but do not know whether percent of family income is too high in 1950, too low in 1968, or some combination of the two. The middle groups, particularly the group of families 30 percent above the median, appear to have improved their relative position at the expense of the lowest income and the highest income groups. If this group, those in the sixth, seventh, and eighth deciles, can be considered middle class, then it is this class that seems to be improving its relative position.

Some cautionary points should be made. The relative shares over roughly these two decades have changed by one or two percentage points for each decile, except for the two highest decile groups (the ninth decile improved its relative position substantially and the position of the highest income decile showed a relative deterioration). Changes of this magnitude would seem to fall in the normal range of error. And, for the lowest income groups, when other indicators are examined, such as life expectancy, their positions have improved absolutely.

However, one overwhelming fact is clear: Mexico is a most unequal society, even when contrasted with other Latin American countries. The upper 5 percent of families in 1968 received more income than the lowest 60 percent; the upper 10 percent received about as much income as the lowest 80 percent. These disparities are similarly reflected in other areas, such as nutrition, education, and morbidity.

A cautionary note should be added. Income distribution tends to be unequal in developed as well as in less developed countries. Table 14, comparing income distribution in Mexico and the U.S. illustrates this point. However, the difference between Mexico and a developed country, e.g., U.S., lies in the tails -- the higher shares going to the few families at the top and the lower shares going to the people at the bottom.

Table 14. The Distribution of Household Income
(Percent of Total)

	United States		Mexico
	(1976)	(1968)	(1968)
Poorest fifth	4.3	4.2	3.6
Second fifth	10.4	11.1	7.5
Third fifth	17.0	17.6	13.2
Fourth fifth	24.7	24.6	18.9
Richest fifth	43.6	42.5	56.5
Top 5 percent	16.5	16.2	29.0

Source: U.S.: Bureau of the Census, "Household Money Income in 1976 Selected Social and Economic Characteristics of Households" (January 1978).

Mexico: Banco de Mexico. La Distribucion del Ingreso en Mexico, 1968. (1974). Mexico, D.F., Fondo de Cultura, 1974.

Annex C examines the beneficiaries of Mexican growth between 1958 and 1968 by actual peso income groups rather than percentage of shares of income. It shows that the very poorest Mexican families, those roughly at the bottom 5 to 10 percent, did not share relatively in Mexican growth. However, if the poor are defined as the lowest 40 percent, their relative share increased more than proportionately, though their absolute increase was less than the increase in shares of upper-income families.

Mexico's inequalities are also spatially distributed. Regional differences recur in almost all fields-- literacy, transportation and communications facilities per inhabitant, availability of doctors, etc. As can be seen in Table A.19, showing per capita income for 1969, the

most affluent regions are the Federal District and Region 2 (the Pacific North of Mexico), and to some extent Region 1 in the North. The poorest regions in terms of per capita income are Region 4 (the Pacific South), Region 3 or the Central areas of the country, omitting the Federal District, and Region 5 along the Gulf. Region 3 contains more than one-third of Mexico's population, and its standing is as high as it is because it contains two major urban centers, Guadalajara and Puebla as well as a number of other relatively high income cities such as Cuernavaca, Toluca, Celaya, and Queretaro among others. To some extent, the income effects of these populations mask the poverty of the the rural population of Region 3.

To a certain extent, the continuation of regional differences is a natural phenomenon. One would expect the poorest regions to have more of their populations living in homes without electricity than the wealthier regions, and they do. They have more inhabitants per doctor, literacy rates (even as literacy is generously defined by the official statistics) are lower, and in general they receive less private credit. A more germane question is whether these disparities are exacerbated by current government policy. Based on the availability of statistical evidence, this is hard to answer. In the past, government policy certainly aggravated these differences. Lower literacy rates are a reflection of relatively lower investment in primary and secondary schools in poorer regions. Region 2 has more irrigated land than any other region of the country despite the fact that its population is the smallest of any region. It has more irrigated land than Region 3, which has more than four times the population. This is a reflection of past governmental investment priorities which, naturally, had to channel water into irrigation where hydrologic and soil conditions were most suitable, not necessarily where the largest numbers of impoverished farmers lived. The irrigated farming land of the Northwest contributed to a substantial increase of marketable agricultural surplus, for both domestic and export markets.

For the more recent period, government action seems to have had both an exacerbating and leveling impact on regional disparities. For example, disparities in the availability of roads have been reduced, although largely by constructing unpaved (mainly gravel) roads in the poorer regions. Food subsidies seem to be benefitting the poorer regions; although, as one would expect, diet still correlates highly with income: that is, the higher the family income the more adequate the diet. In addition, the subsidized, low price provision of other basic consumer goods through the CONASUPO distributional network has provided an additional measure of relief for some low-income families, even though the range of items available through CONASUPO outlets is

greater in urban than in rural locations.

Broadly speaking, the Mexican tax system appears to be highly regressive. Income taxes represented less than 25 percent of the tax take in 1975. The remainder consisted of various types of indirect taxes, particularly on sales and turnovers. Precise data on Federal Government expenditures by state were not available, and it was thus not possible to calculate state by state or regional transfers operating through the tax and expenditures systems. Among the higher positive correlations from our computer studies (in each case higher than .8 and usually more than .9) were between per capita income in current prices and various types of public investment for social welfare, urban and rural services, medical facilities, and education, which would at least imply that this part of government expenditures is greatest where per capita incomes are highest. However, because of a suspect data base, we do not wish to overstate this point. On the other hand, information from other sources tend to confirm this impression. Although coverage of the social security system has increased in recent years, the system and its associated services continue to favor only a minority of the total population. The urban groups are the main beneficiaries of these services, whereas the majority of rural people are still excluded from them. Housing policy still directs most public subsidies into the urban areas, which are, as mentioned earlier, the higher income areas. Public expenditures on elementary education may have spread into the poorer, less urbanized areas in recent years, but expenditures on secondary and higher education continue to channel public sector resources primarily to the more favored urban centers.

Again, as for income distribution, an important conclusion emerges: Mexico, despite some recent lessening of differences among regions, remains a fundamentally divided nation. The general level of well being, whether measured by per capita income or by various indicators of quality of life, differs markedly by region. Annex B, containing state-by-state figures of the physical quality of life index devised by the Overseas Development Council (ODC), illustrates the quantitative differences among the regions. We would treat this as representing a general rather than a precise description since we suspect the consistency of the data going into this index. We attempted to gather time series on all three elements of the index, but were unable to find life expectancy data at age 1, by state, for years earlier than 1970.

To summarize, it can be said that if the poor are defined as the bottom half of the population, then benefits of economic growth have accrued to them. Their relative incomes have improved, they live longer, and more of them are going to school. Equally significant, the middle class seems to be growing -- as defined by income distribution patterns. However, when looked at from the vantage point of the family or region, this process has not gone far enough to alter the basic inequalities of the society. As will be noted in the following sections, the disparity in incomes cuts across other indicators -- education, health, agriculture, namely, the real as well as the monetary indicators.

B. Education

In the promotion of equity, availability of education merits a place alongside redistribution, or perhaps ahead of it. ^{18/} The conclusion derived from studying the educational aspect of Mexican development is comparable to that reached for income -- some, perhaps even much progress has been made, but the record is mixed and extremely discriminatory. The rich get educated, which is not surprising, since those living in the richer states or regions have a better chance to enter and stay in a primary school for the prescribed six years than those from poorer regions. It is better to be living in an urban area than in a rural area if parents desire a reasonable degree of education for their children.

More specifically:

- the data vary by source, but somewhere between 54 and 60 percent of those entering primary school graduate six years later (1970-71 data) if they live in an urban area, whereas the percentage is between 10 and 13 percent if they live in a rural area;
- the percentage of school drop-outs is higher in the primary schools of rural areas than in those of urban areas in part because there are fewer conveniently accessible secondary schools in rural areas than in urban areas to provide a stronger incentive for completing grades;
- a very high percentage of the rural population lacks access to secondary education, and hence, access to the higher education for which secondary schools provide a bridge;

- lacking access to secondary and higher education, a large portion of the rural population is cut off permanently from the jobs which have a higher skill component and which are correspondingly more remunerative;
- if one lives in Region 2, the country's richest, the chances are good that both federal and state expenditures per student will be higher than if one lives in Regions 3 or 4, which are poorer;
- this means, if looked only at the primary school level, the Federal Government is not systematically compensating for the lesser ability of the poorer states to finance education, although here the pattern is inconsistent;
- another way to address inequality is to note the large number of private schools providing secondary education, located mainly in urban areas. These schools account for almost half of the total number of schools. These graduates are most likely to enter universities upon completion of their secondary education.
- per student expenditures for higher education are more than five- and a-half times as great (1975) than for primary education, which implies substantial subsidy for the children of the more affluent families rather than for the offspring of the poorest family;
- these disparities are reflected also in literacy (an end result as opposed to an input, such as expenditures). The probability for a person to be literate is substantially greater in the more affluent regions and in the urban areas;
- even this simplifies reality. While simple literacy is now more than 95 percent, i.e., that proportion of the population six years of age or more who have entered or completed one year of primary school, less than half the population is functionally literate, i.e., those nine years of age or more who have had enough schooling to retain reading skills.

Some history might put the progress in this sector into better perspective. The evidence available indicates that in pre-revolutionary Mexico over two-thirds of the population was illiterate. Of total school age population, about one-fourth attended primary school at some point. This figure is now closer to 100 percent, although, as already noted, many students drop out later. Education in rural areas was almost non-existent at a time when over two-thirds of the nation's population was rural. It is now available but not with ease. The 1917 Constitution, specifying the goals of the Revolution, addressed in particular the educational needs of the nation. Constitutional revisions in 1921 soli-

dified the dominant role of the federal government in meeting these needs. The federal government was authorized "to establish, organize, and support in all the Republic" elementary and secondary schools. To carry this out a cabinet-level office, the Secretaria de Educacion Publica, SEP, (Department of Public Education) was established. Today, the SEP has responsibility for federal schools of all types and levels in the country, and exerts supervisory authority over all state and privately funded schools.

Education expenditures in real terms have increased by about 95 times since 1925. The number of students enrolled in primary schools has increased from 3 million in 1950 to 10.8 million in 1975. Despite this progress, education in Mexico can be characterized by its distributional inequities within different levels of the school system and geographically within the nation. The educational sector reinforces the general picture of social and economic disparities between developed, urbanized regions of Mexico and the less developed rural areas. This is reflected in expenditure allocations by the federal and state governments, and most importantly, in the end results of the educational system -- namely, the continuing high functional illiteracy and drop-out rates at the primary level.

Clark Gill has commented:

Although great progress has been made, much more is necessary. In assessing Mexico's education accomplishments, one must remember that the nation is building rather than merely sustaining an economy and an educational system; and that after the Revolution of 1910 it faced tremendous social and economic obstacles in its struggle against poverty and ignorance. 19/

Some years later, Gill commented on the development-education relationship:

"...with more than half its population under 20 years of age, the cost of providing schools for burgeoning enrollments has been mounting at a steady pace. Under these circumstances, providing the educational programs required by an industrializing nation is a constant challenge." 20/

The federal government provides the bulk of financial support for education (Table A.36). Until recently, the share of the federal budget directed to education increased steadily. Between 1970 and 1975, however, the share directed to education declined by about 10 percentage points while at the same time total student enrollment increased by 30 percent.

Table 16. Federal Budget Education Allocations

	(Percent of Budget)							
Year	1921	1930	1940	1950	1960	1968	1970	1975
Percent	5	11	12	9	19	25	28	17

Source: Gill, 1969, 1977; Cline, 1971.

As a share of GNP, total expenditures on education (including federal, state, municipal, and private) increased from about two percent in 1960 to more than three percent currently. This is still not high. At a 1966 meeting in Santiago, Chile, a goal of four percent was set for the 1970 education/GNP ratio.

Among the different levels of education, as one would expect, primary school funding receives the bulk of absolute expenditures. (See Table A.37). Primary education with a duration of six years is required in principle of all children between the ages of 6 and 14. While this age group is growing rapidly, since 1971 there has been a steady decline in the share directed toward primary education and a corresponding rise in other levels. The most dramatic percentage increase has been in higher education (Table 17). Higher education's share of the budget of the Secretaría de Educación Pública has grown from 9.7 percent in 1971 to 14.9 percent in 1976. At the same time, however, it should be kept in mind that good quality higher education is provided in very few locations in Mexico as far as education in most disciplines is concerned.

Table 17. Federal Expenditures per Student, 1971-1975 (Current pesos)

	1971	1975
Primary	463	1,124
Secondary (Basic)	1,667	3,415
Secondary (Upper)	3,600	7,551
Higher Education	3,294	6,252

Source: Secretaría de Educación Pública, Informe de Labores

An important equity point emerges from these data. Higher education in Mexico, as in many countries, is subsidized, e.g., through tuition remission. Entrants into the universities tend to be children of upper income Mexicans; it is thus the rich who are mainly subsidized. In this respect, socioeconomic biases are perpetuated.

Expenditures on secondary education have grown less in absolute terms than on primary education in the 1970s, but have maintained their proportional share while primary educational expenditures have not. No specific taxes are earmarked for primary education at either the state or federal level. However, a special tax on salaries above a prescribed level is levied by the federal government to support expansion of secondary and higher education. This exemplifies a concern by those benefitting from the availability of graduates from secondary schools.

Private schools at the secondary level (both basic and upper cycle) still enroll approximately 25 percent of the secondary student population. (1972 information) In 1975-76, roughly 50 percent of the secondary schools were private. The teacher-student ratios in private schools are markedly higher than those of federal and state public schools. The Mexican public school system is partially blocked because of the marked drop-off rate in public school enrollment between the primary and secondary levels.

Since secondary education is disproportionately private, due to the higher opportunity cost for poor families, most students in higher education come from higher income families. We do not have recent data on family income levels of students at universities to document this point. However, a 1963 study of students from the Autonomous National University of Mexico (UNAM) found that their family incomes were 3.2 times the national average. ^{21/} In a nation where only 9 percent of the families had average monthly incomes of more than 3,000 pesos, 43 percent of UNAM students came from this income bracket. Indirect evidence suggests that this finding is still accurate.

Another distributional finding relates to the regional allocation of federal expenditures. For 1974, information is available for about two-thirds of the states.^{22/} Even though some important states are missing (such as Nuevo León, Mexico, and Veracruz as well as most of Region 5), some tentative conclusions can be reached. In rank order of real peso expenditures by the federal government, four states in

the relatively prosperous Regions 1 and 2 were in the top ten. Two of the economically better off states in Region 3, Puebla and Jalisco, were also in the top ten. Region 4, which consistently ranks low in social and economic indicators does have two of its four states in the top ten, Oaxaca and Guerrero. Based on the 1974 data, the federal government is allocating educational expenditures in part to help those states least able to afford their own outlays, and in part to those states least in need of this help (Tables A.39 and A.40). Under a consciously redistributive policy, federal expenditures would be greater in the least developed states. There is no such a consistent pattern in Mexico.

State governments contribute about 20 percent to total educational expenditures. The degree of a state's economic development seems to be related to its commitment to fund education (Table A.40). In 1973, Nuevo Leon contributed 68.6 percent of its total budget to education; in 1974, Baja California Norte contributed 52.6 percent of its total budget to education. Both are relatively prosperous states. This is in stark contrast to Oaxaca which in 1973 and 1974 allocated roughly 15 percent of its total budget to education.

The variation among states is dramatically reflected in regional per student expenditures by the states. In 1972, Region 2 spent five times as much as Region 4 per student on primary education. (Table A.44). In the same year, the regions taken together spent about 50 percent of their educational budgets on primary education. But Regions 1 and 2, with about 30 percent of all students enrolled in primary schools that year, had about half of all state expenditures directed toward education.

Statistics on literacy require examination on at least two levels. Using the definition of simple literacy (those who completed the first year of primary education or the equivalent), literacy rates increased dramatically (by more than 20 percent), between 1966 and 1972, rising from 73 to 96 percent (Table A.47). Using the U.S. literacy definition, which focuses on the minimum level (four years) to assure retention of acquired skills, there was also a large percentage increase of 21 percent between 1966 and 1972. According to this definition, 42 percent of the Mexican population was literate by 1972, as compared with 34.6 percent in 1966. More significantly, under the functional literacy criterion, the absolute numbers of illiterates seem to be increasing. The annual rate of population increase is greater than the annual rate of increase in functional literacy, which portends a growing future problem.

The magnitude of the problem in combating illiteracy was demonstrated by the results of the eleven year plan on education initiated by President López Mateos in 1959. Proposed increases in state and federal expenditures were intended both to keep students in school longer and to reach persons outside the education system. The program succeeded in part in that average grade completion increased from 2.2 to 2.8 years. However, population growth and the number of drop-outs resulted in an increase of functional illiterates of 3 million.

Drop-out rates in primary education, particularly in rural areas, are high (Tables A.55 and A.56). As noted before, chances to successfully complete six years of primary education are greater in the urban areas than in the rural localities. Over time this urban advantage has persisted. In 1965, 41 percent of the urban students completed six years of primary school. This figure increased to 54 percent in 1970. In rural areas the percentages were 6 percent in 1961 and 10 percent in 1971. The familiar litany of regional disparities surfaces again when drop-out rates are identified by regions. As can be seen in Table 18, the rate of successful completion of primary education in Region 2 was twice that of Region 4 in 1971. The reasons for this have been discussed above; namely differential allocations to education, the large rural population of the poor regions, and the like.

Table 18. Students Completing Six Years of Primary Education, 1971

(Percent of those entering)

	<u>Total</u>	<u>Urban</u>	<u>Rural</u>
Region 1	39	63	16
Region 2	42	64	19
Region 3	32	58	14
Region 4	21	62	8
Region 5	25	51	10

Source: La Alfabetización y la Enseñanza Primaria en México en 1971. Revista del Centro de Estudios Educativos, Vol. III, (1973).

The 1970 census indicated that 42 percent of the population 15 years and older had not completed primary education.

As one would expect, educational attainment is related to later employment, as shown in Table 19. The functionally illiterate tend to work in sectors not requiring skills obtained in schools -- agriculture, construction, and the category of unspecified employment. The literate work in government and commerce, and other sectors requiring skills acquired through special or trade schools.

Table 19. Employment and Literacy, 1970

	Percent Economically Active Population, by Sector	Percent Functional Literates	Percent Functional Illiterates
Agriculture/livestock	39.4	27.3	82.7
Petroleum/mining/ construction	1.8	61.8	38.2
Industry	16.7	61.4	38.5
Construction	4.4	40.6	59.4
Commerce	9.2	61.6	38.4
Services	16.7	63.6	36.3
Transportation	2.8	64.5	35.3
Government	3.1	74.5	25.3
Insufficiently Specific	5.8	40.0	59.9

Source: Victor Urquidi, "Empleo y Explosión Demográfica", Demografía y Economía, Vol. 8, No 2 (1974). (Based on original census data from 1970).

C. Agriculture

The agricultural sector is not only one of the reasonably successful elements of Mexican economic growth but also one of the more striking failures of equity-oriented development. Data on land tenure show highly skewed patterns of landholding. Government expenditures, perhaps even more than in education, have favored large landholders and largely overlooked the agricultural majority. Although government programs to provide needed credit to smaller farmers have been insufficient

to meet their needs, credit has nonetheless been available. Much of the problem has been with small farmer access to lending institutions and the mechanics of small scale lending itself. The data already given show the disadvantages of the small farmer, or more particularly a landless peasant, in Mexico. Unemployment and underemployment are high in rural Mexico. All these factors are accelerating rural outmigration and are indirectly contributing to migration to the U.S.

Many studies on Mexican agriculture were drawn for this paper.^{24/} Only the highlights of our studies, as they affect equity considerations, will be noted at this point. Other data are contained in the tables in Annex A.

First, a few comments on land tenure. There were large-scale land reform programs during the 1920s and 1930s when nearly one quarter of Mexico's national territory was redistributed.^{25/} Under President Lazaro Cardenas' administration (1934-1940) the distribution of large estates peaked; the agrarian reform was codified in the *Codigo Agrario* of 1934; and credit organizations were established in each rural sector under the *Banco Nacional de Credito Ejidal*, founded in 1934. The name "ejido", taken from the Indian word for communal land, was given to the distribution system, the distributed lands, and often to the farm communities formed under the system. Ejido land is either held in common by a village or by individual families. The latter parcels are limited to less than 10 hectares and generally include both arable and non-arable land. They are held in usufruct by the family; the head of the family does not own the land, which remains inalienable, but he can bequeath it to his oldest son. A number of the communal ejidos are large cooperatives where commercial crops are farmed collectively. Examples are the Laguna cotton cooperatives and the Yucatan sisal plantations. In 1941, holders of small private lands outside the ejido programs obtained certificates guaranteeing against expropriation of their holdings.

Many of these ejido plots, as is the case with many of Mexico's small private farmers, are too small and unproductive to allow family income to rise above the subsistence level. This situation has worsened over time as fathers divide their land among their sons, thereby decreasing the amount of land, and therefore income, which is available to its inhabitants.

Rural population growth combining with the decline since 1940 in ejidal redistribution and factors such as the erosion of arable land or its loss through overly-intensive cultivation have produced a growing population of landless workers. After the Echevarria administration's abortive

policy of encouraging squatting on large estates, the Portillo administration has announced the exhaustion of land availability for ejidal distribution.

As much as 50 percent of the rural population is under 30 years of age.^{26/} As a result, a large segment of rural labor is dependent on day wages paid by large landowners. The prevailing poverty of the rural populace has frustrated the development of locally accessible sources of off-farm employment, making it often difficult to find adequate employment. As a consequence, there are today large numbers of unemployed and underemployed workers in Mexican agriculture.

Table 20 shows the extent to which private cropland is still concentrated in the hands of a few. Over half the farm units occupy slightly more than one percent of the total farming area. Just under one percent of the large farming units control almost 60 percent of the arable land. Irrespective of legal limits on private landholdings -- 200 hectares of seasonal land or 100 hectares of irrigated land -- land concentration is high. For example, in the Yaqui Valley, according to Stavenhagen, 85 proprietors control 116,800 hectares of the best irrigated land, which are registered under 1,191 names. In other words, each landowner controls, on the average, 1,400 hectares.^{27/}

Table 20. Distribution of Private Cropland, 1970

Size of Holding (in hectares)	Number of Holdings		Total Area	
	1,000	% of Total	1,000 Hectares	% of Total
Up to - 1.0	225	25.6	145	.20
1.0 - 5.0	266	26.7	735	1.04
5.1 - 10.0	101	10.1	777	1.10
10.0 - 25.0	101	10.1	713	1.01
25.1 - 50.0	60	6.0	267	.38
50.1 - 100.0	48	4.8	683	.97
100.1 - 200.0	32	3.2	764	1.09
200.1 - 500.0	24	2.4	7,765	11.07
500.1 - 1000.0	8	.8	6,457	9.21
1000.1 - 5000.0	7	.7	18,150	25.87
5000.1 and over	2	.2	23,690	33.77
TOTAL	997		70,144	

Source: V Censo Agrícola Ganadero y Ejidal: Resumen General, Mexico, 1975.

Table A.70 provides another revealing breakdown of land tenure. Although ejidal land in 1968-69 made up 62 percent of all land, and private landholdings 38 percent, irrigated lands were divided equally among the two types of tenure. Practically all of the private landholdings, irrigated or otherwise, were in holdings of more than 5 hectares.

Large estates have benefitted most from the government's overall plan to increase the nation's crops. This sector of the rural population has generally received disproportionate amounts of capital investment for irrigation. Most credit goes to these farmers and to other farmers in relatively prosperous regions, including publicly provided credit at what are likely to be concessionary rates of interest. 28/ It has been estimated that small-scale farmers obtain 75 to 85 percent or more of the money they borrow from individual moneylenders at excessively high rates of interest. Simon Williams believes that only 25 percent of all farmers are served in any way by either public or private banks; and for small farmers, 70 to 80 percent of this comes from government banks. 29/

Analysis of the data reveals striking but not surprising regional disparities in Mexican agriculture. As we expected the Pacific North (Region 2) outshone the rest on almost all counts including even the credits granted to ejidal farmers from official banks. Per capita incomes were higher and densities (and average size of holdings) allowed more land to fewer people. The amount of irrigated land is much greater, relatively, in Region 2 as is the amount of machinery available (Tables A.71, A.72).

Among the reasons cited in the literature for the sizable differences on growth rates among Mexico's regions are the following:

1. There have been significant regional differences in the amount and quality of additional land put under cultivation. Although the increase in areas has been relatively greater in the Gulf and Pacific South, the positive change in the proportion of irrigated lands/new lands has been greatest in the Pacific North.

2. Shifts in cropping pattern among the regions. For example, there has been a greater response to higher value and higher yielding crops in the Pacific North than elsewhere. We will return to this point.

3. Many technical developments, including improved varieties, better irrigation, and increased use of proper fertilizers, have related directly to the principal crop grown in some regions (e.g., wheat in the Pacific North). Therefore, the regions have experienced different average rates of growth.

4. Finally, the greater the degree of commercialization of productive units, the easier the access to credits, which in turn led different regions to grow at different rates.

A major component of the foregoing situation has been to accelerate the shift away from agricultural employment towards urban jobs, mostly in services and in industry. On the basis of data from 1970 census, Mexico's population was divided roughly 59 percent urban, 41 percent rural (using the generous Mexican definition of "urban" as a locality with more than 2,500 people). Of the economically active population, 61 percent was urban and 39 percent rural, which tracks reasonably closely with the total population. When further broken down by region, only in Region 4, the country's poorest, does the rural work force significantly outnumber that in urban areas. The two are about equal in Region 5, and in all others the urban exceeds the rural. Wage rates are consistently lower in rural than in urban areas, and they are lower in Region 4 than in any other region of the country. It is in the rural areas of the country where landlessness and low wage labor exert pressures to migrate to the urban centers.

Although not appropriate in all cases, wheat can be regarded as a commercial crop grown on large commercial farms with the intent of selling it to grain millers for profit. Considerable corn is grown for sale too, but the vast majority of farmers who grow corn do so primarily to put food on their own tables. Producing a marketable surplus is only secondary. It may be instructive, therefore, to examine what has been happening to production of these two crops.

Average corn yields in 1940 were 626 kilograms per hectare. In 1970 they had risen to 1200 kilograms per hectare. In 1940 wheat yields averaged 736 kilograms per hectare and by 1970 they were slightly more than 2200 kilograms per hectare. ^{30/} Thus, in this 30-year period corn yields improved by 91 percent and wheat yields increased by 188 percent.

The 1960 Agricultural Census classified farmers by their principal crop at which time the figures showed that corn predominated on 748,378 farms (54.8 percent) while wheat predominated on only 28,388 farms (2.1 percent). Corn is mostly grown as a principal or subsidiary crop by

at least two-thirds of Mexico's farmers. It is estimated that the number of corn growers exceeds those who grow wheat by 40 times. Taking this one step further, we can see that, on the average, each wheat farmer has approximately 17 hectares, while the average corn farmer has only about three hectares. 31/

Our intention is not to describe the agricultural sector in detail, but to examine whether activities in this sector tend to narrow or widen economic disparities which exist throughout the Mexican community. There is evidence that agricultural programs -- those dealing with government investment, credit, application of appropriate technology, marketing skills, and the like -- support the general disparate development of the country. These differences are reflected in the tables in the Annex. This conclusion is generally recognized within Mexico itself so that it is possible that this may change. What is more likely, however, is only a gradual progress toward equitable agricultural development, resulting in a continued exodus from rural to urban areas.

D. Health

We attempted to relate health data, particularly such aspects as morbidity and infant mortality, by income group and by region, to determine precise correlations. Unfortunately, the data in the health area are such that it is not possible to do this with any precision. The Mexican authorities recognize this themselves. For example, the Ministry of Health noted in 1974:

Morbidity statistics, which are the most efficient indicators for analyzing health problems, are not reliable in Mexico....32/

The Ministry in 1973 stated the following:

The absence of reliable statistics on health personnel has created a basic problem for our planning. The only available information is concerned solely with health personnel working in the hospitals or for the public health institutions. Information on private practitioners has been left out. 33/

An example of the problem we faced in our computer analysis (and in constructing a physical quality of life index) can be seen in Table A.63 on infant mortality from 1959-1971. The data show the lowest infant mortal-

ity for Region 4, which is incongruous in the face of all other available data from this poorest of the regions; the explanation may lie in the inefficiency of information gathering and recording systems in the region. The high rate of infant mortality in the Federal District can perhaps be explained by better data collection and because of the substantial influx of people. The relatively low level of infant mortality in the country's richest Region 2 is not surprising.

In most respects, the available data from the health sector are consistent with findings in other sectors and on income distribution. Table A.61 shows the 10 principal causes of morbidity in 1971. It is important to note that all of these diseases are preventable. Rich and poor alike may contract any of them, but the poor are more likely to suffer from diseases that result from an inadequate diet or the lack of preventive inoculation. Table A. 62 lists the 10 principal causes of infant mortality.

The three principal health care institutions in Mexico are the Ministry of Health Assistance (SSA), the Mexican Institute of Social Security (IMSS), and the Institute of Social Services and Security for Employees of the State (ISSSTE). Different sources give different figures on the percent of the population for which each institution is responsible. According to Ramos, the SSA is responsible for 80 percent of the population, whereas the IMSS, the ISSSTE, and other small health service agencies are responsible for 20 percent. ^{34/} The SSA states in a 1971 document that it has responsibility for 50 percent of the population, and the private health sector for 20 percent. ^{35/} According to the SSA, in 1974 it was responsible for 71.5 percent of the population, and the other institutions for 28.5 percent. ^{36/} Finally, the Presidential Message of 1977 stated that the smaller public institutions cover 37 percent of the population, and the SSA covers 59 percent. ^{37/} Looking at these four sources, the SSA supposedly extends coverage for 59 to 80 percent of the population, and the smaller public institutions for 20 to 37 percent.

The system is organized so that certain workers are insured for health care through their jobs. They receive health care from agencies such as the IMSS and the ISSSTE. The goal of the SSA is to provide health services to every Mexican who is not insured through his or her work situation.

Table A. 59 gives medical personnel data by health institutions in 1970. As can be seen, the SSA, which in theory is responsible for at least 60 percent of the population, has control over a much smaller percentage of medical personnel.

Compounding the problem of its inadequate health resources, there is a maldistribution of doctors in Mexico and the number of inhabitants per doctor in each region (Table A.58).

The Ministry of Health and Assistance has been unable to meet its goal of providing health services to a majority of the Mexican population mainly for three reasons: (a) it employs too small a segment of the health personnel; (b) its health resources are unevenly distributed throughout the country; and (c) it has a budget that is proportionately too small to be able to fulfill its goals.

The Mexican Institute of Social Security (IMSS) was founded in 1942 under Avila Camacho's presidency to provide health services to employees in industry and agriculture. It is a decentralized agency that provides coverage for sickness, accidents, maternity, invalidity, and old age. It is primarily concerned with providing medical care and financial aid to IMSS beneficiaries and their dependents. Although the IMSS services extend to the agricultural sector, the majority of IMSS beneficiaries work in industry and in the commerce and service sectors. There are several important groups that are not eligible for the IMSS health care plan. These include domestic workers, the self-employed, the temporary workers, and individuals working in small-family run business.

The statistics vary as to how many people the IMSS covers. On one page of the President's Message of 1976 it says that 20 million were covered by the IMSS health plans in that year, while two pages later it states that 16.7 million were covered. 384

According to Table A.59, the IMSS employed 25 percent of the doctors in Mexico in 1970. It controlled 22 percent of the health facilities with-out beds and 12 percent of those with beds. IMSS services are not evenly distributed throughout Mexico. Although there are IMSS beneficiaries in every state, the covered population is concentrated in the Federal District, Nuevo León, Jalisco and the state of Mexico, as well as in a few other highly urbanized areas.

The Institute of Social Services and Security for Employees of the State (ISSSIE) was founded in 1960, during the presidency of Lopez Mateos to consolidate health services for federal employees. However,

the employees of certain government agencies were not included in the ISSSTE and continue to receive health care from their own agencies' health plans. These include the National Lottery and the Ministry of Health and Assistance.

The President's Message of 1976 stated the ISSSTE covered 4 million people in that year, or about 6 percent of Mexico's population. ^{39/} Yet, according to Table A.59 it employed 11 percent of Mexico's doctors. The ISSSTE has 30 percent of the health facilities without beds, but less than one percent of the facilities with beds. The ISSSTE is financed by the federal employees and the government. It offers the same health care services as does the IMSS.

Many Mexicans depend on indigenous practitioners for health care, such as curanderas, often women who use herbal or natural remedies to cure an illness. It is also hard to calculate how many people use indigenous medicine. Roemer estimated that possibly 5 million people regularly used some form of indigenous medicine in 1964. ^{40/} That would have been about one eighth of the population. If the tendency is the same in 1978, it would mean that 8 million people currently resort to indigenous medicine as their primary source of health care.

There are a number of government agencies that offer health services just to their employees. The most important of these are the national petroleum industry (PEMEX), the military, and the national railroads.

PEMEX offers health care services to its workers and their families through a subsidized program. PEMEX has a proportionately higher number of doctors; it pays relatively high salaries and offers good working conditions. In the early 1960s an attempt was made to incorporate the PEMEX workers and their families into the IMSS health program, but the petroleum workers' union rejected the idea. Military personnel and their families get free health services under a federal program. In 1970 the military employed 2.44 percent of the doctors in Mexico. The railroad workers and their families also get free health care under a federal program. The per capita health care budgets of these three groups of federal employees are higher than the budgets of the big health care providing agencies, especially compared to the SSA. Other government agencies administering their own health programs are the national electricity company, the national sugar cooperative, the National Lottery, and the Ministry of Health and Assistance.

In 1973 the SSA believed that 26 percent of Mexico's doctors were in private practice. ^{41/} Many doctors who work for the public health care institutions also maintain a private practice. However, many specialists have private practices only, and they cater to Mexico's upper income groups. Private doctors owned 30 percent of the hospitals with beds in 1970. Usually these hospitals have fewer than 25 beds, and are used predominantly for maternity cases and abdominal surgeries.

The SSA estimated in 1974 that 20 million Mexicans, mainly in rural areas, lacked medical care. ^{42/} Lopez Portillo, in his 1976 Presidential message, said that 18 million Mexicans have no access to health care (12 million in rural areas, 6 million in urban zones). ^{43/} In other words, close to one third of the population cannot obtain health services except from indigenous practitioners.

C. Nutrition

The statistical evidence under this heading is consistent with that of other sectors: nutritional deficiencies are an important associated cause of infant deaths; people in rural areas have more deficient diets than those in urban areas; dietary deficiencies track well with regional income disparities; consumption of certain types of high-protein foods, such as meat and eggs, correlate closely with income; and, as one would expect, the lower the income, the higher the proportion spent on food.

Four different types of statistical measurement have been used to study nutritional status in Mexico:

1. Quantification of food energy or nutrient intake, focusing on calories, protein, and the various vitamins and minerals. The quantification may involve estimates of availability, usually for large aggregate studies, or empirical measurements of actual consumption, for microstudies done at the local level.

2. Surveys taken in conjunction with the decennial census as to whether the individual has consumed certain food products-- meat, eggs, milk, fish, wheat-based flour products--within a specific period prior to the census interview.

3. Small-scale studies of child nutrition, dividing malnourished children by weight into three classes. Class I malnutrition refers to a body weight of 10-24 percent below normal; Class II malnutrition, 25-39 percent below normal; Class III malnutrition (severe), more than 40 percent below normal.

4. Nutritionally-related disease or mortality statistics, especially infant mortality. A Pan American Health Organization survey of the city of Monterrey, conducted as part of a hemispheric nutrition study, found that malnutrition was a primary cause in 4 percent of infant deaths and an associated cause in another 48 percent, for a total of 52 percent.^{44/} Specific nutritional-deficiency diseases such as marasmus and kwashiorkor thus contributed only marginally to the mortality rates; however, for those major diseases which were the direct cause of a large number of deaths -- gastroenteritis, pneumonia, influenza -- malnutrition was an associated cause in more than half the cases. It can be ascertained, then, that malnutrition plays a significant role in the overall Mexican infant mortality rate (60+ per 1000 births, or about three times the rate of the United States). Results of these measurements are shown in the Annex tables.

The Instituto Nacional de Nutrición (INN) of Mexico has for a number of years compiled annual food balance sheets, which describe the availability of nutrients on a per capita basis. Total domestic agricultural production is computed; exports are subtracted; imports are added; adjustments are made for changes in stocks; waste is subtracted; use for seed, fodder, and industry is subtracted; a nutritional value is ascribed to the remainder; and this value is divided by population estimates. These figures indicate that per capita calorie availability has shown a slight increase since 1958. It has hovered for several years close to FAO's recommended figure of 2600 calories per day. Protein availability and animal protein availability have followed very similar patterns with respect to the recommended figures of 75 and 25 grams per day, respectively.^{45/}

However, 1976 saw a drop for both calories and protein. It remains to be seen whether this is only a temporary aberration or a sign of increasing difficulties in the face of rapid population growth. The latter scenario is a definite possibility, since Mexico's agricultural growth has recently peaked and reverted to a status of domestic deficit. Such a trend would portend even greater hardship than now exists for that stratum of the population whose nutritional status is already low.

Studies have shown rural areas to be worse off nutritionally than urban areas. A combination of 26 studies prior to 1963 demonstrated this fact. 46/ A combined set of 100 surveys conducted over a ten-year period by INN showed a similar rural-urban dichotomy in 1970. INN's study further broke the rural component into five geographic regions (not corresponding with those of the Policy Research Project). The results showed that the South and Southeastern regions had the lowest nutritional status with respect to rural areas, while the North had the highest. 47/ Table A.66 describes this more fully.

The Banco de Mexico compiled survey data in 1968 on disposition of income within seven family income brackets (Table A.21). Families in the lowest bracket (less than 300 pesos per month) devoted 60 percent of the expenditures to the purchase of food. The figure decreased for higher income brackets, but even for families with 1000-3000 pesos per month, 46 percent of all expenditures were devoted to food.

The lowest-income families also showed heavy reliance on the traditional diet of corn and beans. The two foods accounted for about 79 percent of total solid food consumption according to weight. These same families showed a low consumption of animal products; meat consumption, for instance, was only about three-fourths of a pound per capita per month. Protein derived from corn and beans made up for animal protein deficit to some extent; however, the indicated combined consumption of these two items was less than 500 grams per capita per day. Such an amount leads to great difficulty in achieving recommended protein requirements, especially since a large portion of these two foods goes toward meeting human energy (calorie) requirements.

With increasing income, there has been a shift in diet composition from corn to other cereals (primarily wheat), followed by a shift from cereals as a whole to animal products. Consumption of fruits, vegetables, and other foods has also increased. Shifts among higher income groups are primarily with respect to relative consumption, not absolute consumption. Consumption of cereals and legumes, for example, decreased by only 13 percent from the lowest to the highest income group. Yet consumption of fruits, vegetables, and starches increased by 12 times; of meat and eggs, by 14 times.

The study also broke families down according to number of members. Families with less than 300 pesos and 8 or more members had consumption patterns even more meager than those for the income group as a whole. It seems likely that, in the absence of government programs to avert it,

the growth of interest in export-oriented agro-business will lead to a worsening of the nutritional status of the poorer segments of the population by diverting resources from food production for local consumption to other products. State intervention would be required to ensure that the foreign exchange earnings of the exports be used to finance a counterflow of basic food imports.

F. Other

A few additional points on participation in Mexico's economy might be made to bring out some of the difficulties Mexico faces in the future. As discussed in section II, Mexico's large rate of population growth must dominate any analysis of future development prospects. Table 10 shows the growth of Mexico's economically active population from 1950 to 1970. The annual growth rate over this 20-year period has been approximately 2.3 percent. When calculated by decades, the figures show a total population growth rate of about 3 percent a year in the 1950s, and a 3.4 percent growth annually in the 1960s (Table A.3). More people are entering the work force than can be absorbed. The economically active population has declined from more than 30 percent of total population in 1950 to less than 26 percent in 1970. The Mexican definition of economically active includes anyone who has worked more than one month, and hence includes a large element of underemployment. More than 45 percent of Mexico's population was under age 15 in 1970 (Table A.2), which means that future employment problems are likely to be more severe than the current ones. Even now unemployment and underemployment is substantial, although precisely how substantial is a matter of conjecture. Urquidi has estimated that in 1970, perhaps 80 percent of the economically active population could be classified as fully employed. ^{48/} Given the slowdown in the Mexican economy since 1970, the percentage presumably is lower today.

In recent decades, employment has been declining in agriculture and rising in industry and the government/services area (Table A.11). As implied above, industry is not creating enough jobs to meet the need. Although the urban labor market affords a more diversified range of options for partial employment, underemployment is probably as widespread in the urban centers as it is in the rural areas of Mexico.

One final sector might be noted where there is a pattern of substantial disparity among income groups and regions, namely housing. Luis Manuel

Trejo has calculated that Mexico's housing shortage has progressed from 1.2 million units in 1950, to 2.9 million in 1966, and to 3.2 million by 1971. ^{49/} Given this past progression, coupled with overall economic development in Mexico since 1971, the overall deficit is now probably about 4 million units. Two-thirds of the deficit estimated by Trejo was urban, and this too is an aggravating feature in light of the continuing urban in-migration. In order to supply housing for the current shortage, the annual rate of construction of 210,000 units per year in the 1960-1970 decade would probably have to be increased by more than 50 percent. A massive housing program does bring certain benefits to a development effort. It represents an area of investment-consumption in which the import coefficient is relatively low, so that an expansion of housing output places little direct strain on the balance of payments. It is also an area of production in which the coefficients of production are variable, so that if labor-intensive production methods are chosen a relatively high employment effect can be realized. Moreover, employment expansion in construction tends to improve somewhat the distribution of income.

IV. Conclusion

The study attempted to assess whether absolute improvements in incomes of poorer Mexicans, coupled with greater access to schooling, health facilities, and other basic services, are reflected in relative improvements as well. The preceding sectoral analysis leads us to a mixed conclusion. The poorest 40 percent of Mexican families are just as disadvantaged today as they were two decades ago - perhaps more so - while the middle 60 percent, particularly the upper half of this group, are comparatively better off than they were two decades ago.

We also sought to determine whether government actions worsened, improved, or are neutral with regard to distributional equity. Our conclusion in this respect must also be mixed. In education, wealthy states often receive as much federal help as poorer states, whereas governmental redistribution policies would imply some preference to poorer states. The benefits from agricultural investments in recent decades accrued mostly to the large commercial farmers and ejidos located in the agriculturally more progressive parts of the country. Health services in poor and particularly rural areas remain generally deficient, as compared with wealthier and urban areas. In these respects, the government seems to assist in the maintenance of inequality within the Mexican society. However, the percentage of children entering primary school has increased, death rates have decreased, and these changes reflect government policy as a promoter of equity. Relatively more roads exist, even if unpaved, in poor areas than was the case a few decades ago, and relatively more poor people have access to radios and other means of communication. To some extent, therefore, the government has facilitated dispersion of benefits of Mexican growth and development to all segments of the society. However, this does not change our primary conclusion about the essential inequality of the Mexican development process.

If development requires the growth of a "middle class", namely, a group with requisite technical skills and entrepreneurial capacity to stimulate growth, then Mexico is indeed developing. Data on the beneficiaries of Mexico's income distribution pattern and on entry into secondary and higher education reflect this development. This may be the most important harbinger of continued growth in the future.

If, however, one measures development by the condition of the poorest people in a society -- say, the lowest 10, 20 or 40 percent -- then one must come to a negative conclusion on the Mexican growth model. Indeed,

the growth of the middle class able to enforce its growing consumption claims on the system may well make it all the more difficult to develop and carry out programs that would re-direct income from this growth to less favored segments of the population.

Mexico and Brazil are often cited as example of a particular development model. Both have experienced substantial levels of overall growth over a sustained period. Both have seen the emergence of a modern industrial sector managed by technically proficient entrepreneurs. In each case the state has played a major role as a stimulator and manager of industrial enterprises. Both countries have great regional disparities and the primary government emphasis is on present growth rather than on current distributional equity. For these reasons the project tried to compare the distributional consequences of growth in the two countries, using the model described by Gary Fields.^{50/} The results are contained in Annex C. Our calculations show that the equity aspects of Mexican growth have been similar to those of Brazil. The Fields' model is highly sensitive to how one defines absolute poverty. If the cutoff is low, the poor in Mexico were relatively worse off in 1968 than in 1953. If the cutoff is higher, they are relatively better off. This finding is consistent with less complicated income distribution calculations showing a modestly growing middle class.

Other specific findings on income distribution and on distribution of particular sectoral services are contained in the preceding section. Coupled with the tabular material in the Annex, they tell a reasonably consistent story.

Thus, in education, rural areas remain relatively disadvantaged -- they have fewer schools, fewer teachers, and less money spent per capita than urban areas. Drop-out rates are higher, increasing the number of rural to urban migrants who tend to enter urban labor markets at the most competitive and least remunerative levels. Government expenditures per capita are higher for secondary and particularly for higher education than they are for primary education. This again favors urban areas since more persons living there go beyond primary school. It also implies some subsidization of the rich whose children can attend free universities whereas the children of poor families will more likely not enter institutions of higher education.

The same pattern emerges in agriculture. Irrigated, privately held land is in holdings of more than five hectares, and most of this is in the affluent regions of the country. Agricultural credit availability to holders of small farms is minimal, and generally costly. The resources available to governmental agencies to supplement private credit for small farmers are inadequate. This pattern of disparities repeats itself in other sectors -- such as health, diet, and housing -- and at every level: family, urban, regional etc.

In a sense, none of this is startling. One would expect a substantial degree of inequality in a developing country, particularly one with as high a population growth rate as Mexico. However, given Mexico's sustained growth, and its status as a middle-income country, one might have hoped for a greater diminution of inequalities. The relevant policy issues, therefore, relate to the kinds of measures Mexico might take to reduce future inequality while maintaining high growth rates.

Although we are reluctant to give this kind of advice, particularly as non-Mexicans, because of our admiration for Mexico's accomplishments in recent decades, we hope the following observations of the Mexican scene merit the considerations of policy makers.

1. A national system requires some effort at redistribution through the budgetary process -- taxing those best able to pay and spending proportionately more where the needs are greatest and the means most inadequate. Much more of this can be done in Mexico where the portion of GDP collected in taxes is low even for a developing country.

2. To be more precise, expenditures in rural areas must be augmented at the expense of urban areas. Some redirection of expenditures must be pinpointed at helping the poor farmer rather than benefitting primarily the large landholder. To some extent, some redirection of this nature is taking place, viz., the PIDER project.

3. The expenditure must be redirected and channelled to agriculture and to other critical sectors such as education, health services, and housing. Help at local levels is most needed in rural areas and in the poor regions.

4. Surplus revenues, accrued from export of Mexican oil, should be directed to the urban and rural poor through increased public sector social service programs, and job creation projects.

5. Greater incentives should be provided to private industry in order to encourage the selection of labor intensive over capital intensive investment choices.

More broadly, it is trite to say that Mexico is severely handicapped not only in promoting per capita growth, but also equity, by its burgeoning population. Greater distributional equity will help to lower birth rates and lower birth rates will facilitate the promotion of equity. The problem must be attacked from the equity-promotion vantage, which is the theme of this study. This is not purely an internal Mexican issue since the excess population that finds inadequate opportunity at home streams across the border into the United States. The safety valve would not be as big if distributional equity in Mexico were greater.

Mexico may have an opportunity in the near future to promote both growth and equity without the stereotypical financial constraints facing most countries. Given the new findings of oil and gas which are expected to earn substantial revenues which could be used for accelerating the process of expanding and upgrading educational opportunities, better agricultural opportunities for Mexico's rural majority, improved social services and job-creating industrial programs should permit the government to achieve its desired development objectives.

In conclusion, Mexico's growth policy has been phenomenally successful whereas its equity policy has been sorely wanting, and it is the latter that now deserves the full attention of the Mexican government.

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TABLE A 1
POPULATION BY REGION, 1950-1976

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Total
<u>Number (000's):</u>							
1950	5,181	1,725	9,403	3,361	3,070	3,051	25,791
1960	6,865	2,613	12,329	4,289	4,056	4,871	34,923
1970	9,053	3,908	17,287	5,422	4,681	6,874	48,225
1976 (est.)	11,196	5,005	21,790	6,607	6,921	8,583	60,102
<u>Per Cent</u>							
1950	20.14	6.74	36.54	13.04	11.94	11.64	100.04
1960	19.7	7.5	35.0	13.3	11.6	13.9	100.0
1970	18.8	8.1	35.8	11.2	11.8	14.3	100.0
1976 (est.)	18.6	8.3	36.3	11.0	11.5	14.3	100.0

Notes: Figures for 1950 are adjusted. They include 12,000 persons on the Complementary Census who were allocated among the regions based upon their share of the national total. Also, the 1950 and 1960 censuses were taken in June; that of 1970 was taken in January. Certain per capita figures shown elsewhere in the annex tables adjust for the different census dates and then interpolate population for intercensal years.

Source: Nacional Financiera. Statistics on the Mexican Economy, 1977.

TABLE A 2
POPULATION BY SEX AND AGE GROUP, 1960-1970

AGE	1960				1970			
	Male	Female	Total	%	Male	Female	Total	%
	(000's)				(000's)			
0-4	2937	2640	5777	16.54	4152	4016	8168	16.94
5-9	2706	2511	5317	15.22	3935	3788	7723	16.02
10-14	2234	2124	4358	12.48	3271	3125	6396	13.26
15-19	1739	1796	3535	10.12	2491	2563	5054	10.48
20-24	1405	1542	2947	8.44	1930	2102	4032	8.36
25-29	1196	1309	2505	7.17	1575	1685	3260	6.76
30-34	1009	1043	2052	5.88	1285	1311	2596	5.38
35-39	959	962	1921	5.50	1235	1277	2512	5.21
40-44	674	687	1361	3.90	939	974	1913	4.01
45-49	611	623	1234	3.53	830	807	1637	3.39
50-54	527	536	1063	3.04	590	602	1192	2.47
55-59	405	395	800	2.29	502	510	1012	2.10
60-64	372	373	745	2.13	451	467	918	1.90
65-69	203	211	414	1.19	346	357	703	1.46
70-74	161	172	333	.95	242	246	488	1.01
75-79	91	97	188	.54	120	133	253	0.53
80+	186	187	373	1.07	152	196	348	0.72
Total	17415	17508	34923		24066	24159	48225	

Source: Dirección General de Estadística. VIII Censo General de Población, 1960; IX Censo General de Población, 1970.

Table A.3

ANNUAL RATES OF POPULATION INCREASE

	1950-1960	1960-1970
Region 1	2.8721	2.9121
Region 2	4.266	4.263
Region 3	2.678	3.664
Region 4	2.483	2.462
Region 5	2.844	3.562
Region 6	4.819	3.632
National	3.097	3.407

Note: Computation of rates takes into account the varying census dates for the three years.

Source: Nacional Financiera, S.A. Statistics on the Mexican Economy, 1977.

TABLE A 4

FEDERAL GOVERNMENT RECEIPTS BY SOURCES

(Millions of Pesos)

	1950		1975	
	Total	%	Total	%
Total Receipts	3614	100.00	203,050	100.00
Taxes	2688	74.38	123,706	60.92
On Income	742	20.53	49,203	24.23
On Manufacture and Sale of Industrial Products	511	14.14	30,566	15.05
On Sales	351	9.71	24,042	11.84
On Imports	453	12.53	10,537	5.19
On Exports	529	14.64	2,849	1.40
On Exploitation of Natural Resources	172	4.76	2,661	1.31
10% Surcharge	37	1.02	1,583	.78
Stamp Tax	42	1.16	1,409	.69
On Insurance Premiums	9	.25	377	.19
On Lotteries and Games	24	.66	366	.18
Others	18	.50	113	.06
Other Ordinary Revenue				
Charges for Public Services	726	20.09	8,658	4.26
Other Charges	260	7.19	2,317	1.14
Income from Public Property	316	8.74	2,217	1.09
Capital Income	-	-	1,253	6.17
Borrowing	-	-	70,548	34.74

Source: Nacional Financiera. Statistics on the Mexican Economy, 1977.

TABLE A 5
FEDERAL GOVERNMENT EXPENDITURES

	<u>PER CAPITA (1960 Pesos)</u>	<u>% of GDP</u>
1950	283.47	8.41
1955	398.40	10.48
1960	593.95	13.40
1965	773.35	14.96
1970	762.92	12.58
1975	1325.23	20.30

Source: Nacional Financiera, S.A. Statistics on the Mexican Economy,
1977.

TABLE A 6
FOREIGN INVESTMENT BY COUNTRY OF ORIGIN^a
(Thousands of Dollars)

	<u>1960</u>	<u>1965</u>	<u>1970</u>
Canada	-2064	6341	3984
France	1736	1653	9568
Great Britain	4711	4976	9756
Italy	244	9029	3099
Netherlands	-1223	2641	6127
Sweden	-44	1899	3047
Switzerland	1617	3535	11961
United States	72893	178286	256485
Venezuela	866	393	598
West Germany	371	10348	11236
Others	-679	1571	2020
Total	78428	213876	322775

^a New Investments + Reinvested Earnings - Dividends from Accumulated Earnings + Intercompany Transfers.

Source: Bernardo Sepúlveda y Antonio Chumacero. La Inversión Extranjera en México, 1973.

TABLE A 7
CREDIT, BY SOURCE
(millions of pesos)

	-----Private-----		-Banco de Mexico-		---Other Public---		Total
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	
1951	3,927.3	53.3%	497.0	6.7%	2,951.4	40.0%	7,375.7
1960	14,776.9	44.7	3,465.1	10.5	14,803.0	44.8	33,045.0
1970	84,823.8	58.7	2,425.2	1.7	57,209.6	29.6	144,528.6
1975	161,565.3	48.1	5,385.9	1.7	168,635.6	50.2	335,786.8

Note: Percentages sum to 100% going across.

Source: Banco de Mexico.

TABLE A 8
PRIVATE SOURCE CREDIT, BY SECTOR
(per cent)

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
Industry:						
1960	22.58%	5.07%	9.61%	9.52%	2.48%	50.72%
1970	16.42	4.08	9.90	.58	2.23	66.74
1972	17.29	3.39	11.19	.53	2.44	65.16
Agriculture:						
1960	22.86	20.81	14.00	5.26	3.39	33.67
1970	18.21	37.39	19.94	5.27	.33	18.86
1972	23.96	36.40	22.28	5.45	.29	11.63
Livestock:						
1960	47.26	15.21	10.61	2.88	14.03	10.00
1970	41.33	12.43	17.34	5.25	13.40	10.25
1972	41.26	10.49	16.68	6.53	16.62	8.42
Mining:						
1960	42.84	2.02	5.83	.07	1.01	48.22
1970	1.85	1.87	2.03	.22	.71	93.81
1972	13.43	1.53	3.76	.03	.30	80.95
Commerce:						
1960	23.92	9.96	8.06	1.63	4.34	52.10
1970	17.03	6.87	11.23	1.59	3.38	59.91
1972	16.93	6.54	6.62	1.53	3.35	65.04

Note: Federal District (Region 6) may reflect location of corporate headquarters.
Percentages sum to 100% (except where there are rounding errors) going across.

Source: Comisión Nacional Bancaria.

TABLE A 9
BANKING SYSTEM CREDIT, BY SECTOR
(millions of pesos)

	<u>Industry</u>		<u>Agriculture & Livestock</u>		<u>Mining</u>		<u>Commerce</u>		<u>Federal Government</u>	
	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
1945	1,274.4	31.27	584.0	14.33	9.3	0.23	959.8	23.55	1,248.2	30.63
1950	3,739.9	41.96	1,062.1	11.91	23.7	0.27	1,908.0	21.41	2,179.0	24.45
1960	19,800.4	49.77	5,931.4	14.58	64.0	0.16	8,471.3	21.30	5,643.3	14.19
1970	99,947.3	46.19	17,694.6	8.10	1,099.3	1.59	36,733.9	18.88	47,147.2	24.24
1972	115,284.4	45.05	23,687.7	9.26	4,046.8	1.52	47,856.7	18.70	6,500.7	25.40

Note: Percentages sum to 100% going across.

Source: Banco de México.

TABLE A 10
EMPLOYMENT: ECONOMICALLY ACTIVE POPULATION
(000s)

	<u>1950</u>	<u>1960</u>	<u>1970</u>
Region 1	1609	2112	2039
Region 2	544	605	988
Region 3	2963	3757	4283
Region 4	1067	1415	1346
Region 5	968	1278	1470
Region 6	1085	1705	2080
National	8240	11071	12424

Note: 12 years old and above.

Source: Dirección General de Estadística. VII Censo General de Población, 1950; VIII Censo General de Población, 1960; IX Censo General de Población, 1970.

TABLE A 11
EMPLOYMENT BY SECTOR
(000s)

	<u>Region 1</u>	<u>Region 2</u>	<u>Region 3</u>	<u>Region 4</u>	<u>Region 5</u>	<u>Region 6</u>	<u>National</u>	<u>%</u>
<u>Agriculture:</u>								
1950	952	330	2012	836	643	51	4823	58.3
1960	1160	471	2451	1159	832	46	6144	54.2
1970	886	436	1993	963	804	49	5132	39.5
<u>Extractive:</u>								
1950	48	8	22	4	12	6	97	1.2
1960	53	8	31	8	30	12	142	1.2
1970	67	9	36	6	44	18	180	1.4
<u>Manufacturing:</u>								
1950	162	45	312	82	85	287	973	11.3
1960	272	78	474	78	122	532	1556	13.7
1970	366	114	781	108	139	665	2173	16.7
<u>Construction:</u>								
1950	48	17	64	14	22	63	225	2.7
1960	81	31	121	21	36	118	408	3.6
1970	120	46	204	30	20	122	571	4.4
<u>Electricity:</u>								
1950	4	1	8	1	2	8	25	0.3
1960	7	3	11	2	3	15	41	0.4
1970	8	4	19	3	5	13	53	0.4
<u>Commerce:</u>								
1950	132	44	208	43	70	187	684	8.3
1960	203	82	313	63	108	306	1075	9.5
1970	228	109	372	65	114	311	1198	9.2
<u>Communication/Transportation:</u>								
1950	47	17	52	11	24	60	211	2.5
1960	76	33	88	18	39	102	357	3.2
1970	78	32	98	18	35	96	369	2.8
<u>Services/Government:</u>								
1950	145	59	175	60	78	333	879	10.6
1960	267	111	339	92	126	590	1526	13.5
1970	460	218	648	139	214	863	2567	19.7

Source: Dirección General de Estadística. VII Censo General de Población, 1950; VIII Censo General de Población, 1960; IX Censo General de Población, 1970.

TABLE A 12
 LABOR UNION MEMBERSHIP, 1950-1974
 (000s)

<u>Year</u>	<u>Agriculture</u>	<u>Industry</u>	<u>Services</u>	<u>Total</u>
1950	144	387	286	817
1951	147	397	292	836
1952	148	405	298	852
1953	144	414	307	865
1954	145	476	347	967
1955	147	491	342	980
1956	148	505	347	1000
1957	149	498	366	1013
1958	118	668	416	1203
1959	125	746	407	1277
1960	124	760	414	1298
1961	126	775	423	1325
1962	127	793	434	1354
1963	129	797	439	1365
1964	133	918	501	1551
1965	136	1006	555	1697
1966	132	1020	561	1713
1967	133	1046	567	1746
1968	131	1060	564	1776
1969	137	1062	595	1794
1970	149	1148	677	1974
1971	156	1221	746	2123
1972	158	1303	688	2148
1973	155	1314	704	2176
1974	160	1349	723	2232

Source: Nacional Financiera. Statistics on the Mexican Economy, 1972.

TABLE A 13
MINIMUM WAGE RATES

(Current Pesos per Day)

Year	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6	
	Urban	Rural										
1964-65	15.95	13.20	20.97	18.08	15.41	12.86	13.70	11.77	16.86	14.62	21.50	19.50
1966-67	18.74	15.51	23.96	20.72	17.96	14.98	16.09	13.89	19.46	16.74	25.00	23.00
1968-69	21.67	18.12	27.57	24.27	20.78	17.46	18.61	16.07	22.23	19.23	28.25	26.25
1970-71	25.02	21.03	31.65	26.93	24.10	20.32	21.60	18.65	26.05	22.38	32.00	30.00
1972	29.17	24.54	36.53	32.55	28.33	23.95	25.62	22.11	30.19	26.14	38.00	35.40
1973	34.42	28.96	44.99	38.40	33.44	28.26	30.61	26.38	35.63	30.84	44.85	41.75
1974	39.26	33.04	50.32	43.00	37.98	32.11	34.48	29.77	39.83	34.44	52.00	48.40
1975	48.10	40.39	61.37	52.47	46.33	39.16	42.04	36.31	47.58	41.02	63.40	59.00
1976	58.05	49.28	73.53	62.89	56.51	47.77	51.53	44.65	59.38	51.17	78.60	73.20
1977	78.10	66.97	99.20	84.84	76.47	64.63	69.72	60.44	80.28	69.21	106.40	99.00

Note: These figures constitute the legal rates, but not necessarily the enforced rates.

Source: Comisión Nacional de Salarios Mínimos.

TABLE A 14
 AVERAGE WAGES BY INDUSTRY LABOR FORCE SIZE, 1970
 (thousands of pesos per year)

Region	Overall Average	Industries Employing Five or Less Persons	Industries Employing Six or More Persons
1	21.07	4.96	23.18
2	17.03	5.26	18.73
3	17.03	2.74	23.42
4	9.74	2.32	13.99
5	16.48	2.70	19.97
6	23.57	5.42	25.38

Source: Dirección General de Estadística. X Censo Industrial, 1971.

TABLE A 15
 ESTIMATED FAMILY INCOME BY DECILES
 (per cent)

DECILE	1950	1958	1963	1968
I	2.7	2.2	2.0	1.3
II	3.4	2.8	2.2	2.3
III	3.8	3.3	3.2	3.1
IV	4.4	3.9	3.7	4.5
V	4.8	4.5	4.6	5.9
VI	5.5	5.5	5.2	7.3
VII	7.0	6.3	6.6	8.8
VIII	8.6	8.6	9.9	10.2
IX	10.8	13.6	12.7	16.5
X	49.0	49.3	49.9	40.1

Source: Salinas Arizpe, Orel Javier. Análisis del Efecto del Desarrollo Económico sobre la Distribución del Ingreso Familiar en México, Thesis, Universidad Autónoma de Nuevo León, 1974 (data for 1950, 1958, and 1963). Banco de México. La Distribución del Ingreso en México, 1974 (data for 1968).

TABLE A 16
ESTIMATED FAMILY INCOME BY DECILES, CUMULATIVE
(per cent)

<u>DECILE</u>	<u>1950</u>	<u>1958</u>	<u>1963</u>	<u>1968</u>
I	2.7	2.2	2.0	1.3
II	6.1	5.0	4.2	3.6
III	9.9	8.3	7.4	6.7
IV	14.3	12.2	11.1	11.2
V	19.1	16.7	15.7	17.1
VI	24.6	22.2	20.9	24.4
VII	31.6	28.5	27.5	33.2
VIII	40.2	35.1	34.4	43.4
IX	51.0	48.7	50.1	59.9
X	100.0	100.0	100.0	100.0

Source: Salinas Arizpe, Orel Javier. Análisis del Efecto del Desarrollo Económico sobre la Distribución del Ingreso Familiar en Mexico, Thesis, Universidad Autónoma de Nuevo Leon, 1974 (data for 1950, 1958, and 1963). Banco de Mexico. La Distribución del Ingreso en Mexico, 1974 (data for 1968).

TABLE A 17
GINI COEFFICIENTS, 1969

<u>Region 1</u>	<u>Value</u>	<u>Rank</u>
Coahuila	.515	9
Chihuahua	.540	16
Durango	.588	22
Nuevo Leon	.501	7
San Luis Potosi	.613	25
Tamaulipas	.558	18
Zacatecas	.649	30
<u>Region 2</u>		
Baja California Norte	.486	4
Baja California Sur	.474	3
Nayarit	.460	1
Sinaloa	.473	2
Sonora	.490	5
<u>Region 3</u>		
Aguascalientes	.533	14
Guanajuato	.582	20
Hidalgo	.623	26
Jalisco	.529	13
Mexico	.550	17
Michoacan	.590	24
Morelos	.524	11
Puebla	.628	27
Queretaro	.589	23
Tlaxcala	.538	15
<u>Region 4</u>		
Colima	.495	6
Chiapas	.628	27
Guerrero	.664	31
Oaxaca	.668	32
<u>Region 5</u>		
Campeche	.528	12
Quintana Roo	.519	10
Tabasco	.570	19
Veracruz	.583	21
Yucatan	.636	29
<u>Region 6</u>		
Federal District	.501	7

Source: World Bank.

TABLE A 18
PER CAPITA NATIONAL INCOME
(Pesos/Year)

	<u>Current Prices</u>	<u>Constant (1960) Prices</u>
1950	1707	3372
1951	2039	3499
1952	2186	3507
1953	2198	3571
1954	2540	3645
1955	2941	3800
1956	3211	3893
1957	3598	4053
1958	3775	4097
1959	3962	4132
1960	4302	4302
1961	4512	4364
1962	4703	4417
1963	5063	4612
1964	5779	4981
1965	6087	5128
1966	6541	5302
1967	6917	5448
1968	7404	5696
1969	7914	5856
1970	8546	6054
1971	8923	6052
1972	9766	6273
1973	11415	6524
1974	14490	6678
1975	17001	6728

Source: Nacional Financiera. Statistics on the Mexico Economy, 1977.

TABLE A 19
PER CAPITA INCOME, 1969
(Pesos/Month)

<u>Region 1</u>	<u>Value</u>	<u>Rank</u>
Coahuila	334	8
Chihuahua	408	3
Durango	290	14
Nuevo Leon	334	8
San Luis Potosi	301	11
Tamaulipas	262	18
Zacatecas	165	28
<u>Region 2</u>		
Baja California Norte	516	2
Baja California Sur	389	6
Nayarit	240	21
Sinaloa	404	4
Sonora	371	7
<u>Region 3</u>		
Aguascalientes	165	28
Guanajuato	286	15
Hidalgo	182	26
Jalisco	395	5
Mexico	284	17
Michoacan	207	24
Morelos	258	19
Puebla	299	12
Queretaro	233	22
Tlaxcala	167	27
<u>Region 4</u>		
Colima	284	16
Chiapas	135	31
Guerrero	157	30
Oaxaca	109	32
<u>Region 5</u>		
Campeche	229	23
Quintana Roo	251	20
Tabasco	294	13
Veracruz	302	10
Yucatan	191	25
<u>Region 6</u>		
Federal District	628	1

Source: World Bank.

TABLE A 20
INCOME OF ECONOMICALLY ACTIVE POPULATION,
BY REGION AND MAJOR SECTORAL ACTIVITY, 1970

	<u>Region 1</u>	<u>Region 2</u>	<u>Region 3</u>	<u>Region 4</u>	<u>Region 5</u>	<u>Region 6</u>
<u>Agriculture, Livestock, Forestry,</u> <u>and Fishing</u>						
Total Population (000s)	739.1	377.6	1651.5	757.8	701.7	43.2
Distribution:						
0-1000 Pesos/Month	92.4%	81.8%	95.7%	96.8%	95.7%	75.3%
1000-4999 Pesos/Month	6.5	16.5	3.6	3.6	3.6	19.8
5000+ Pesos/Month	1.1	1.7	.7	.6	.7	4.9
<u>Manufacturing, Extractive,</u> <u>Construction, and Electric Power</u>						
Total Population (000s)	546.7	165.9	998.8	129.2	228.5	807.0
Distribution:						
0-1000 Pesos/Month	57.5%	47.1%	66.5%	81.6%	59.0%	43.8%
1000-4999 Pesos/Month	39.2	48.7	30.8	16.1	38.1	50.7
5000+ Pesos/Month	3.3	4.2	2.7	2.3	2.9	5.5
<u>Commerce, Transportation,</u> <u>Services, and Government</u>						
Total Population (000s)	737.1	340.3	1057.5	204.8	343.9	1245.1
Distribution:						
0-1000 Pesos/Month	61.5%	46.7%	65.9%	68.5%	66.3%	47.6%
1000-4999 Pesos/Month	35.5	48.7	31.2	29.2	31.4	47.1
5000+ Pesos/Month	3.0	4.6	2.9	2.3	2.3	5.3

Source: Calculated from Dirección General de Población. IX Censo General de Población, 1970.

TABLE A 21

FAMILY CONSUMPTION PATTERNS, BY FAMILY MONTHLY INCOME GROUP, 1968

	<u>0-300</u>	<u>301-600</u>	<u>601-1000</u>	<u>1001-3000</u>	<u>3001-6000</u>	<u>6001-10000</u>	<u>10000+</u>
Average Monthly Expenditures (Pesos)	306.59	507.52	875.83	1671.45	3480.19	5851.47	11424.78
Distribution:							
Food	59.5%	58.0%	53.7%	45.9%	36.5%	30.3%	20.7%
Beverages	4.5	4.7	4.6	4.0	3.5	2.8	1.8
Tobacco	1.0	1.1	1.2	.9	.8	.7	.7
Housing	11.9	11.8	12.4	14.7	16.9	19.3	20.5
Clothing	9.6	10.6	11.7	13.5	14.4	14.3	13.8
Household Goods	1.0	1.8	2.5	4.2	6.3	8.2	13.3
Transportation	1.1	1.1	1.4	3.5	5.2	6.3	6.7
Education	.4	.6	.9	1.2	1.9	2.1	3.5
Medical Services	5.4	5.1	5.3	4.7	4.2	3.3	3.7
Other Services	5.5	4.7	4.8	5.3	6.5	7.0	7.4
Other	.3	.6	1.5	2.0	3.8	5.8	7.9

Explanation: Not all income was reported by the families surveyed. Consequently, expenditures as a percentage of income are omitted, since such a breakdown would have produced totals in excess of 100 per cent. Note, for example, that the families nominally in the 0-300 peso income bracket spent more than 300 pesos per month.

Source: Banco de Mexico. La Distribucion del Ingreso en Mexico, 1974.

TABLE A 22
PER CAPITA AVERAGE EXPENDITURES, BY FAMILY INCOME GROUP, 1968

	Family Income Groups (Pesos/Month)						
	0-300	301-600	601-1000	1001-3000	3001-6000	6001-10000	10000+
<u>Comparative Per Capita Expenditures on:</u>							
(0-300 Group Average = 1)							
Food	1.00	2.38	2.11	3.33	5.22	7.53	10.35
Meat/Fish/Milk/Eggs	1.00	2.02	4.25	8.13	14.19	21.13	27.96
Cereals/Legumes	1.00	1.14	1.54	1.55	1.80	2.20	2.44
Fruits/Vegetables	1.00	1.37	2.18	3.90	6.74	9.17	14.13
Starchy Roots	1.00	2.57	3.80	5.73	6.57	8.40	11.00
Clothing	1.00	1.57	2.87	6.09	12.63	22.11	42.09
Housing	1.00	1.41	2.46	5.39	12.19	24.28	51.80
Household Goods	1.00	2.52	5.06	18.11	53.23	120.15	392.69
Transportation/Vehicles	1.00	1.54	3.20	14.78	51.15	137.89	435.99
Education	1.00	1.93	4.40	11.40	36.16	71.06	236.28
Medical Services	1.00	1.35	2.33	3.80	6.61	9.12	20.43
<u>Per Cent of Population in Each Group</u>							
Total Population	4.368	14.568	19.758	41.678	14.088	3.528	2.078
Agricultural Population	8.28	20.43	27.04	30.19	4.66	.80	.60
Non-Agricultural Population	1.93	5.05	15.27	48.72	19.86	5.18	2.98

Explanation: For each product, the average per capita expenditure for the lowest income group was set equal to 1. Hence, for example, the average per capita expenditures for housing in the 3001-6000 peso/month family income category were about 12 times as much as those within the lowest income group.

Source: Banco de México, La Distribución del Ingreso en México, 1974, Tables II-1 and IV-2.

TABLE A 23
 WHOLESAL PRICE INDEX, CONSUMER ARTICLES, MEXICO CITY, 1950-1976
 (1954 = 100)

<u>Year</u>	<u>All Consumer Articles</u>	<u>Food</u>	<u>Personal Use</u>	<u>Household Use</u>
1950	73.4	70.3	79.5	80.0
1951	91.3	90.7	87.3	91.0
1952	96.1	97.4	93.4	89.6
1953	93.5	94.7	93.3	89.2
1954	100.0	100.0	100.0	100.0
1955	114.2	114.1	114.0	114.1
1956	120.8	120.5	118.7	115.0
1957	126.6	127.1	122.6	119.5
1958	133.7	135.9	127.0	127.2
1959	134.7	136.5	128.3	131.2
1960	139.8	142.8	130.2	135.6
1961	141.1	142.9	136.3	144.9
1962	145.6	147.3	145.5	147.0
1963	145.2	146.4	144.9	147.6
1964	151.9	155.1	145.6	146.5
1965	155.4	157.7	151.6	151.5
1966	158.4	160.8	155.5	153.2
1967	164.4	167.8	159.7	152.9
1968	168.1	171.8	163.7	154.4
1969	172.9	176.1	167.0	155.2
1970	185.3	189.1	173.5	157.0
1971	193.9	198.2	177.1	168.2
1972	199.9	204.0	185.3	171.9
1973	229.5	235.6	211.2	184.3
1974	283.2	293.6	246.6	231.5
1975	315.3	330.4	280.2	258.2
1976	385.5	393.8	346.9	300.0

Source: Nacional Financiera, S.A., Statistics on the Mexican Economy, 1977.

TABLE A 24
ELECTRIC ENERGY PRODUCTION, 1950-1975

	<u>Total</u> (Million KWH/Year)	<u>Per Capita</u> (KWH/Year)
1950	4423	171.5
1955	7002	232.5
1960	10813	309.1
1965	17248	417.1
1970	28608	504.9
1975	43288	747.8

Source: Nacional Financiera. Statistics on the Mexico Economy, 1977. Dirección General de Estadística. Anuario Estadístico.

TABLE A 25
GASOLINE CONSUMPTION, 1950-1975

	<u>Total</u> (Million Liters/Year)	<u>Per Capita</u> (Liters/Year)
1950	2200	85.3
1955	3426	113.8
1960	4738	135.4
1965	5863	141.8
1970	8413	172.0
1975	11060	191.1

Source: Nacional Financiera. Statistics on the Mexican Economy, 1977. Dirección General de Estadística. Anuario Estadístico.

TABLE A 26
KILOMETERS OF ROADS, BY REGION

Region	-1955-			-1970-			% Increase, (C) over (A)
	Total (A)	Paved (B)	% (A) of (B)	Total (C)	Paved (D)	% (D) of (C)	
1	8,494	6,149	72.4%	18,153	12,518	69.0%	+113.7%
2	4,568	2,755	60.3	9,917	7,051	71.1	+117.1
3	7,987	5,640	70.6	21,692	12,124	55.9	+171.6
4	3,074	1,912	62.2	10,353	4,176	40.3	+236.8
5	3,055	1,820	59.6	11,716	6,414	54.8	+283.5
6*	98	98	100.0	51	51	100.0	- 48.0
National	27,276	18,374	67.4	71,882	42,334	58.9	+163.5

*Region 6 figures should be ignored. They reflect an aberration in the data, since the figures only include non-urban roads.

Source: Dirección General de Estadística. Anuario Estadístico.

TABLE A 27

HOUSING: DEMAND AND INVESTMENT, 1971-76

<u>Region</u>	<u>Demand</u>		<u>Investment</u>		<u>Attended Demand</u>		
	<u>No. of Houses</u>	<u>% of National</u>	<u>Million Pesos</u>	<u>% of National</u>	<u>No. of Houses</u>	<u>% of National</u>	<u>% of Regional Demand</u>
1	325,552	22.3	5,504.0	15.3	60,141	19.3	18.5
2	135,389	9.3	2,536.3	7.1	20,128	6.4	14.9
3	374,272	25.7	9,298.9	25.9	92,720	29.7	24.8
4	73,178	5.0	1,044.5	2.9	5,734	1.8	7.8
5	115,438	7.9	1,622.9	4.5	13,651	4.4	11.8
6	433,686	29.8	15,902.6	44.3	119,987	38.4	27.7
National	1,457,515	100.0	35,909.2	100.0	312,361	100.0	21.4

Source: Instituto Nacional para el Desarrollo de la Comunidad Rural y la Vivienda Popular.

TABLE A 28
OCCUPANTS PER DWELLING

	<u>1960</u>	<u>1970</u>
<u>Region 1:</u>	<u>5.45</u>	<u>5.54</u>
Urban	5.61	5.79
Rural	5.28	5.22
<u>Region 2:</u>	<u>6.11</u>	<u>5.87</u>
Urban	6.00	5.80
Rural	6.22	5.98
<u>Region 3:</u>	<u>5.48</u>	<u>6.00</u>
Urban	5.83	6.12
Rural	5.24	5.86
<u>Region 4:</u>	<u>5.24</u>	<u>5.60</u>
Urban	5.52	5.65
Rural	5.15	5.57
<u>Region 5:</u>	<u>5.45</u>	<u>5.64</u>
Urban	5.57	5.51
Rural	5.38	5.75
<u>Region 6:</u>	<u>5.40</u>	<u>5.72</u>
Urban	5.51	5.61
Rural	3.67	6.23
<u>National:</u>	<u>5.47</u>	<u>5.75</u>
Urban	5.67	5.82
Rural	5.29	5.67

Source: Calculated from Dirección General de Estadística. VIII Censo General de Población, 1960; IX Censo General de Población, 1970.

TABLE A 29

PUBLIC INVESTMENT IN HOUSING, 1971-1976

	<u>Total Investment (million pesos)</u>	<u>Number of Dwellings</u>	<u>Number of Beneficiaries</u>
<u>Total:</u>	29,667.1	212,236	1,298,924
<u>Distribution by Organization:</u>			
INFONAVIT	56.03%	49.82%	52.49%
FOVISSSTE	20.47	15.79	14.45
Departamento del Distrito Federal	4.87	14.22	13.83
BANOBRAS	8.29	9.21	8.78
INDECO	4.29	6.46	6.26
ISSSTE	1.18	2.16	1.89
Fideicomiso BANOBRAS/Ciudad Lázaro Cardenas	1.25	.75	.73
FOVI (direct programs)	.59	.60	.55
FOVIMI	1.80	.41	.40
Dirección de Pensiones Militares	.78	.36	.35
FIDEURBE	.45	.32	.27

- INFONAVIT = Instituto del Fondo Nacional de la Vivienda para los Trabajadores
FOVISSSTE = Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado
BANOBRAS = Banco Nacional de Obras y Servicios Públicos, S.A.
INDECO = Instituto Nacional para el Desarrollo de la Comunidad Rural y la Vivienda Popular
FOVIMI = Fondo de la Vivienda Militar
FIDEURBE = Fideicomiso del Desarrollo Urbano del Distrito Federal

Source: Instituto Nacional para el Desarrollo de la Comunidad Rural y la Vivienda Popular.

ESTIMATED FAMILY INCOME BY DECILES

(per cent)

DECILE	<u>1950</u>	<u>1958</u>	<u>1963</u>	<u>1968</u>
I	2.7	2.2	2.0	1.3
II	3.4	2.8	2.2	2.3
III	3.8	3.3	3.2	3.1
IV	4.4	3.9	3.7	4.5
V	4.8	4.5	4.6	5.9
VI	5.5	5.5	5.2	7.3
VII	7.0	6.3	6.6	8.8
VIII	8.6	8.6	9.9	10.2
IX	10.8	13.6	12.7	16.5
X	49.0	49.3	49.9	40.1

Source: Salinas Arizpe, Orel Javier. Análisis del Efecto del Desarrollo Económico sobre la Distribución del Ingreso Familiar en México, Thesis, Universidad Autónoma de Nuevo León, 1974 (data for 1950, 1958, and 1963). Banco de México. La Distribución del Ingreso en México, 1974 (data for 1968).

TABLE A 30

FINAL SALES PRICES BY TYPE OF HOUSING FOR MEXICO CITY AREA

(Current Pesos per Square Meter)

<u>Type of Housing</u>	<u>1965</u>		<u>1970</u>	
	<u>Land Included</u>	<u>Land Excluded</u>	<u>Land Included</u>	<u>Land Excluded</u>
MCSP	610.0	470.1	887.8	482.1
LCSP	717.7	650.9	891.0	769.5
LCMP	900.4	659.8	1260.0	778.9
GSF	1084.3	933.7	1353.9	1098.8
GSMP	1262.0	981.4	1755.3	1148.2
GLMP	1334.3	1123.0	1646.2	1423.6
LXSP	1826.7	1390.0	2498.0	1624.6
LXMP	2057.8	1854.7	2534.7	2150.5

- MCSP = Minimum-cost single family, least expensively built
 LCSP = Low-cost single family housing of one or two stories, or two story house for two families
 LCMP = Low-cost small multi-family building, generally with five stories
 GSF = Good single-family house, generally with two stories and a small garden
 GSMP = Good small multi-family building, generally with five stories
 GLMP = Good large multi-family building, generally with eight stories
 LXSP = Luxury single family house, generally with two stories, large garden, garage, and servants
 LXMP = Luxury large multi-family building, generally with eight stories

Source: Christian Araud, "Direct and Indirect Employment Effects of Eight Representative Types of Housing in Mexico," In Studies on Employment in the Mexican Housing Industry.

VIII	40.2	35.1	34.4	43.4
IX	51.0	48.7	50.1	59.9
X	100.0	100.0	100.0	100.0

Source: Salinas Arizpe, Orel Javier. Análisis del Efecto del Desarrollo Económico sobre la Distribución del Ingreso Familiar en Mexico, Thesis, Universidad Autónoma de Nuevo Leon, 1974 (data for 1950, 1958, and 1963). Banco de Mexico. La Distribucion del Ingreso en Mexico, 1974 (data for 1968).

TABLE A 31
TELEPHONES BY REGION

	1960		1972	
	No. of Telephones	Inhabitants Per Telephone	No. of Telephones	Inhabitants Per Telephone
Region 1	113,551	60.6	314,017	30.9
Region 2	32,556	80.4	126,723	34.1
Region 3	78,262	156.5*	395,234	47.7
Region 4	11,945	359.6	72,123	79.7
Region 5	24,706	164.5	118,450	52.2
Region 6	284,322	17.2	941,599	8.0
National	545,342	64.1	1,968,146	26.6

Sources: Galindo Calderón de la Barca. El Servicio Telefónico en México. Dirección General de la Estadística. Anuario Estadístico.

TABLE A 32
PER CENT OF POPULATION LIVING IN
HOMES WITH ELECTRICITY, 1970

	Total	Rural*	Urban
Region 1	59.9	28.2	81.8
Region 2	63.4	33.1	82.1
Region 3	56.7	33.2	76.3
Region 4	33.5	19.7	63.4
Region 5	47.7	23.0	74.1
Region 6	94.8	86.4	95.1
National	59.6	28.9	81.2

* Less than 2,499 Inhabitants

Source: Calculated from Dirección General de Estadística. IX Censo General de Población, 1970

<u>Hidalgo</u>	.529	13
Jalisco	.550	17
Mexico	.590	24
Michoacan	.524	11
Morelos	.628	27
Puebla	.589	23
Queretaro	.538	15
Tlaxcala		
<u>Region 4</u>		
Colima	.495	6
Chiapas	.628	27
Guerrero	.664	31
Oaxaca	.668	32
<u>Region 5</u>		
Campeche	.528	12
Quintana Roo	.519	10
Tabasco	.570	19
Veracruz	.583	21
Yucatan	.636	29
<u>Region 6</u>		
Federal District	.501	7

Source: World Bank.

TABLE A 33
 PER CENT OF POPULATION LIVING IN HOMES WITH
 RADIOS OR TELEVISIONS, 1960-70

	<u>1960</u>	<u>1970</u>
Region 1	37.2%	84.0%
Region 2	42.0	85.4
Region 3	28.0	79.4
Region 4	12.7	59.7
Region 5	25.7	72.9
Region 6	75.4	94.6
National	35.4	80.1

Source: Direccion General de Estadística. Anuario Estadístico.

1967	6541	5302
1968	6917	5448
1969	7404	5696
1970	7914	5856
1971	8546	6054
1972	8923	6052
1973	9766	6273
1974	11415	6524
1975	14490	6678
	17001	6728

Source: Nacional Financiera. Statistics on the Mexico Economy, 1977.

TABLE A 34
WATER AND SEWAGE SERVICE, 1960-1970

	<u>Region 1</u>	<u>Region 2</u>	<u>Region 3</u>	<u>Region 4</u>	<u>Region 5</u>	<u>Region 6</u>	<u>National</u>
<u>% Dwellings Without Water Service:</u>							
1960	66.0	66.9	75.5	88.8	76.9	24.5	67.7
1970	34.5	40.6	44.6	64.0	52.3	4.3	39.6
Urban	17.1	25.6	23.9	36.6	33.8	4.1	19.2
Rural*	57.1	65.5	68.4	76.5	70.3	10.4	67.1
<u>% Dwellings Without Sewage Service:</u>							
1960	72.0	60.2	78.8	88.8	78.7	26.5	70.0
1970	55.4	66.0	62.5	79.1	66.9	21.5	57.9
Urban	39.5	52.6	42.5	59.0	47.5	20.5	39.0
Rural*	76.2	88.4	85.4	88.2	85.7	51.6	84.0

* Rural = up to 2499 inhabitants.

Source: Calculated from Dirección General de Población, VIII Censo General de Población, 1960, IX Censo General de Población, 1970.

Mexico	264	17
Michoacan	207	24
Morelos	258	19
Puebla	299	12
Queretaro	233	22
Tlaxcala	167	27
<u>Region 4</u>		16
Colima	284	31
Chiapas	135	30
Guerrero	157	32
Oaxaca	109	
<u>Region 5</u>		23
Campeche	229	20
Quintana Roo	251	13
Tabasco	294	10
Veracruz	302	25
Yucatan	191	
<u>Region 6</u>		1
Federal District	628	

Source: World Bank.

TABLE A. 35
EDUCATIONAL EXPENDITURES COMPARED WITH GROSS NATIONAL PRODUCT
 (millions of pesos, current prices)

	Gross National Product	Total Educational Expenditures	
	A	B	B of A
1959	136,206	2,424	1.8
1960	154,137	3,093	2.0
1961	163,757	3,505	2.1
1962	177,533	4,040	2.3
1963	192,200	4,663	2.4
1964	224,600	6,133	2.7
1965	242,700	6,889	2.8
1966	272,100	7,773	2.8
1967	301,400	8,675	2.9
1968	334,300	9,908	3.0
1969	369,735	10,940	3.0
1970	418,700	12,769	3.1
1971	452,200	14,134	3.1
1972	513,700	17,027	3.3

Source: "El gasto educativo nacional, el desperdicio escolar y la pirámide del sistema educativo en 1970," Cuadro I-7, Vol. II: 4 (1972) and "El gasto educativo nacional, el desperdicio económico y la pirámide escolar en 1970," Cuadro III-8, Vol. III: 4, Revista del Centro de Estudios Educativos.

TABLE
INCOME OF ECONOMICALLY
BY REGION AND MAJOR SEC

	<u>Region 1</u>
<u>Agriculture, Livestock, Forestry,</u>	
<u>and Fishing</u>	
Total Population (000s)	739.1
Distribution:	
0-1000 Pesos/Month	92.40
1000-4999 Pesos/Month	6.5
5000+ Pesos/Month	1.1
<u>Manufacturing, Extractive,</u>	
<u>Construction, and Electric Power</u>	
Total Population (000s)	546.7
Distribution:	
0-1000 Pesos/Month	57.50
1000-4999 Pesos/Month	39.2
5000+ Pesos/Month	3.3
<u>Commerce, Transportation,</u>	
<u>Services, and Government</u>	
Total Population (000s)	737.1
Distribution:	
0-1000 Pesos/Month	61.50
1000-4999 Pesos/Month	35.5
5000+ Pesos/Month	3.0

Source: Calculated from Dirección General de Población

TABLE A 36
COMPOSITION OF EDUCATION EXPENDITURES,
BY GOVERNMENTAL LEVEL AND PRIVATE SECTOR
1960 - 1972
(Millions of pesos, Current)

	1960		1965		1970		1972*	
Federal Government	2,032.9	65.7%	4,618.9	67.0%	8,840.1	69.2%	12,032.5	70.7%
State Government	590.8	19.1%	1,195.0	17.4%	2,203.8	17.3%	2,899.1	17.0%
Municipal Government and Other	93.5	3.0%	178.0	2.6%	272.1	2.1%	319.8	1.9%
Private	376.0	12.2%	897.0	13.0%	1,453.8	11.4%	1,775.8	10.4%
	<u>3,093.2</u>	<u>100%</u>	<u>6,888.9</u>	<u>100%</u>	<u>12,769.8</u>	<u>100%</u>	<u>17,027.2</u>	<u>100%</u>

*Estimates

Source: "El gasto educativo nacional, el desperdicio escolar y la pirámide del sistema educativo en 1970," Vol. II: 4 (1972); and "El gasto educativo en México, 1972" Vol. IV: 4. (1974), Revista del Centro de Estudios Educativos.

TABLE A 37
 EDUCATIONAL EXPENDITURES--SECRETARY OF PUBLIC EDUCATION
 1971 - 1976
 (millions of pesos)

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Primary						
Amount	4,172.3	4,731.5	6,065.9	8,020.3	12,111.0	15,163.9
Percentage	44.0%	40.2%	39.4%	38.7%	33.2%	36.3%
Secondary (Basic)						
Amount	1,498.2	1,818.8	2,545.2	3,293.3	4,807.2	6,691.7
Percentage	15.9%	15.5%	16.2%	15.9%	15.2%	16.0%
Secondary (Upper)						
Amount	371.2	1,052.1	1,476.0	2,309.2	3,518.6	4,360.3
Percentage	9.2%	8.95%	9.6%	11.1%	11.1%	10.4%
Higher Education						
Amount	912.4	1,454.3	1,702.9	1,512.9	2,982.0	3,732.1
Percentage	9.7%	12.4%	11.1%	10.7%	10.6%	14.9%

Note: Percentages do not add to 100. Education expenditures not listed are for education investment subsidies, meeting education debts and other unspecified programs.

Source: Secretaría de Educación Pública, Informe de Labores, 1970-1976.

TABLE A 38
FEDERAL AND STATE EXPENDITURES ON EDUCATION, 1974
(millions of pesos)

	Federal	% Federal Support	State	% State Support	Total
Aguascalientes	143.7	94%	9.8	6%	157.1
Baja California Norte	415.6	56	328.6	44	744.2
Baja California Sur	141.1	--	--	--	--
Campeche	138.9	87	20.8	13	159.7
Coahuila	433.7	84	82.8	16	516.5
Chiapas	350.5	--	--	--	--
Chihuahua	452.7	68	209.4	32	662.1
Guerrero	489.9	84	93.6	16	583.5
Hidalgo	364.0	93	26.2	7	390.2
Jalisco	546.0	61	353.9	39	899.9
Michoacan	603.2	35	1122.0	65	1725.0
Morelos	230.0	86	37.0	14	267.0
Nayarit	288.5	83	57.1	17	345.6
Oaxaca	728.4	97	20.6	3	749.0
Puebla	435.5	68	209.2	32	644.7
Queretaro	152.6	94	10.1	6	162.7
Quintana Roo	113.1	--	--	--	--
San Luis Potosi	283.1	79	73.5	21	356.6
Sinaloa	312.3	--	--	--	--
Sonora	334.8	59	236.0	41	570.8
Tabasco	188.9	75	61.3	25	250.2
Tamaulipas	702.5	82	158.2	18	860.7
Zacatecas	239.4	84	46.6	16	286.5

Note: Figures for the other nine states are not available.

Source: Secretaría de Educación Pública. Informe de Labores, 1970-76.

TABLE A 39
FEDERAL EXPENDITURES ON EDUCATION BY LEVEL AND STATE, 1974

	Total (millions of pesos)	-----Distribution-----			
		Preschool	Primary	Secondary- Basic	Secondary- Upper
Aguascalientes	143.7	4.2%	46.2%	15.6%	13.5%
Baja California Norte	415.6	2.2	47.9	18.2	11.0
Baja California Sur	141.1	5.6	37.2	--	11.1
Campeche	138.9	1.8	52.9	19.4	11.4
Coahuila	433.1	1.6	41.2	22.6	10.8
Chiapas	350.5	1.0	58.2	--	--
Chihuahua	452.7	0.8	46.9	17.0	7.0
Guerrero	489.9	1.7	51.0	17.0	6.4
Hidalgo	364.0	15.0	57.6	12.8	8.0
Jalisco	546.0	1.8	49.8	8.8	10.1
Michoacan	603.2	1.6	57.8	16.8	6.7
Morelos	230.0	2.7	49.0	23.0	8.5
Nayarit	288.5	1.5	56.2	15.3	7.2
Oaxaca	728.4	0.8	52.7	14.6	9.2
Puebla	435.5	1.3	57.4	11.0	5.6
Queretaro	152.6	1.6	52.7	14.6	9.2
Quintana Roo	113.1	2.5	35.5	20.7	15.0
San Luis Potosi	283.1	1.4	60.7	14.3	5.7
Sinaloa	312.3	0.6	48.8	19.7	6.3
Sonora	334.8	0.1	40.3	23.0	--
Tabasco	188.9	0.5	40.3	21.2	3.2
Tamaulipas	702.5	1.9	51.4	23.5	6.4
Zacatecas	239.4	1.5	61.6	--	6.8

Note: Data are not available for the other nine states. Percentages do not sum to 100% because of other educational expenditures such as on higher education and various types of rural and adult education.

Source: Secretaría de Educación Pública.

TABLE A 40
STATE EXPENDITURES ON EDUCATION*
1974

<u>State</u>	<u>Amount</u> (millions of pesos)	<u>Percentage</u> <u>of Budget</u>	<u>Ranking</u> <u>by Percent</u> <u>of Budget</u>
Aguascalientes	9.8	13.8	19
Baja California N.	328.6	52.6	1
Campeche	20.8	22.9	15
Coahuila	82.8	37.5	5
Chihuahua	209.4	24.1	13
Guererro	93.6	23.2	14
Edalco	26.2	34.0	9
Jalisco	359.9	31.2	10
Michoacan	112.2	30.7	11
Morelos	37.0	20.3	16
Nayarit	57.1	36.1	6
Oaxaca	20.6	15.2	18
Puebla	209.2	39.5	4
Queretaro	10.1	16.7	17
San Luis Potosi	73.5	45.4	2
Sonora	236.0	43.0	3
Tabasco	61.3	27.0	12
Tampulipas	158.2	35.1	7
Zacatecas	46.0	35.0	8

*Data not available for Baja California Sur, Colima, Chiapas, Durango, Guanajuato, Mexico, Nuevo Leon, Quintana Roo, Sinaloa, Tlaxcala, Veracruz and Yucatan.

Source: Secretaria de Educacion Publica .

TABLE A 41
STATE EXPENDITURES ON PUBLIC EDUCATION
% OF STATE INCOME
1972

Region I

Coahuila	41.6
Chihuahua	39.8
Durango	36.7
Nuevo León	69.0
San Luis Potosi	51.2
Tamaulipas	35.4
Zacatecas	32.4

Region II

Baja California Norte	56.3
Nayarit	32.3
Sinaloa	39.1
Sonora	38.8

Region III

Aguascalientes	27.8
Guanajuato	37.3
Hidalgo	31.4
Jalisco	42.5
Mexico	32.0
Michoacan	34.4
Morelos	15.0
Puebla	43.1
Querétaro	14.3
Tlaxcala	35.8

Region IV

Colima	28.7
Chiapas	31.6
Guerrero	37.3
Oaxaca	15.3

Region V

Campeche	24.7
Tabasco	38.6
Veracruz	49.4
Yucatan	37.5

Source: "El gasto educativo en México, 1972," Revista del Centro de Estudios Educativos, IV:4 (1974).

TABLE A 22
 STATE EXPENDITURES BY REGION
 1961 - 1971
 (millions of current pesos)

	1961		1966		1971		% Total Population, 1970
	Amount	%	Amount	%	Amount	%	
Region 1	125.1	23%	326.9	30%	641.9	39%	19
Region 2	136.6	25%	275.1	21%	345.0	21%	8
Region 3	160.7	30%	294.4	27%	332.7	20%	36
Region 4	25.3	4%	63.9	6%	42.6	3%	11
Region 5	95.7	18%	178.0	16%	276.7	17%	12
Total	536.4	100%	1,097.3	100%	1,638.9	100%	86

*Does not include Federal District

Source: Anuario Estadístico.

TABLE A 43
 Primary Education
 Regional Expenditures Comparison, 1972

	% Primary Education Expenditures out of Total State Education Expenditures	% of Students in Primary Schools	% Total Population
Region I	33.9	20.2	18.8
Region II	17.4	8.9	8.1
Region III*	32.4	49.1	50.1
Region IV	4.1	10.4	11.2
Region V	12.2	11.4	11.8

*Includes Federal District

Source: "Gasto educativo en México, 1972," IV:4 (1974)

Revista del Centro de Estudios Educativos and

A- , Population by Region, 1950-1976.

TABLE A 44
 Primary Education
 State Expenditures per Student
 1972

	Primary Enrollment (000)	Expenditures (000)	Per Student
Region I	2,029.9	516,605.6	254.4
Region II	893.7	264,796.6	296.3
Region III *	4,929.3	493,431.7	100.1
Region IV	1,046.4	62,753.7	60.0
Region V	1,140.3	185,782.9	162.9
National ** (State	10,039.4	1,523,261.2	151.7

*Includes the Federal District.

** National federal expenditures are 6,209,548.4; per student expenditure is 618.5.

Source: "El gasto educativo en México, 1972" and "Enseñanza Preescolar y primaria en 1972-1973," IV:4 (1974) and IV:1 (1974), Revista del Centro de Estudios Educativos.

TABLE A 45
 Primary Education
 State Expenditures- 1972

	Amount (000)	Percentage
Region I		
Primary	516,506.6	57.54
Total Education Expenditures	898,566.1	
Region II		
Primary	264,786.3	52.1
Total Education Expenditures	508,598.3	
Region III*		
Primary	493,431.7	46.3
Total Education Expenditures	1,021,337.3	
Region IV		
Primary	62,753.7	49.4
Total Education Expenditures	127,138.1	
Region V		
Primary	185,782.9	54.1
Total Education Expenditures	343,427.3	

*Includes Federal District

Source: "El gasto educativo en México 1972," IV:4 (1974)
Revista del Centro de Estudios Educativos.

TABLE A 45
Primary Education
State Expenditures- 1972

	Amount (000)	Percentage
Region I		
Primary	516,506.6	57.54
Total Education Expenditures	898,566.1	
Region II		
Primary	264,786.3	52.1
Total Education Expenditures	508,598.3	
Region III*		
Primary	493,431.7	48.3
Total Education Expenditures	1,021,337.3	
Region IV		
Primary	62,753.7	49.4
Total Education Expenditures	127,138.1	
Region V		
Primary	185,782.9	54.1
Total Education Expenditures	343,427.3	

*Includes Federal District

Source: "El gasto educativo en México 1972," IV:4 (1974)
Revista del Centro de Estudios Educativos

TABLE A 46
 FEDERAL GOVERNMENT EDUCATIONAL EXPENDITURES PER STUDENT,
 BY STATE AND EDUCATIONAL LEVEL, 1974

	<u>Amount</u> <u>(Millions</u> <u>of pesos)</u>	<u>Students</u>	<u>Per</u> <u>Student</u> <u>Expenditure</u>
Aguascalientes			
Primary	86.4	73,769	900
Secondary, basic	22.4	10,630	2,107
Secondary, upper	19.4	1,203	3,729
Baja California Norte			
Primary	199.0	204,905	971
Secondary, basic	75.5	27,854	2,710
Secondary, upper	46.0	8,971	5,127
Baja California Sur			
Primary	52.6	31,404	1,675
Secondary, basic		5,221	
Secondary, upper	15.8	1,500	10,533
Campeche			
Primary	73.5	57,368*	1,281
Secondary, basic	25.6	7,735	3,310
Secondary, upper	15.8	3,869	4,084
Coahuila			
Primary	178.6	100,800	1,771
Secondary, basic	98.1	40,371	2,430
Secondary, upper	46.9	10,456	4,485
Chiapas			
Primary	203.9	295,004	691
Secondary, basic		17,068	
Secondary, upper		7,064	
Chihuahua			
Primary	212.2	345,200	614
Secondary, basic	78.5	34,754	2,258
Secondary, upper	31.7	6,919	4,581
Guerrero			
Primary	249.9	393,500	635
Secondary, basic	84.6	33,177	2,550
Secondary, upper	31.4	10,464	3,000
Hidalgo			
Primary	240.2	281,858*	852
Secondary, basic	46.9	21,697*	2,162
Secondary, upper	29.6	7,095	4,172
Jalisco			
Primary	272.2	736,913	369
Secondary, basic	48.2	57,070	845
Secondary, upper	54.9	35,300	1,555

(Continued)

TABLE A 46
FEDERAL GOVERNMENT EDUCATIONAL EXPENDITURES
PER STUDENT, BY STATE AND EDUCATIONAL LEVEL, 1974

	<u>Amount</u> <u>(millions</u> <u>of pesos)</u>	<u>Students</u>	<u>Per</u> <u>Student</u> <u>Expenditure</u>
Chiapas			
Primary	346.1	2,772	361
Secondary, basic	101.6	39,519	2,571
Secondary, upper	40.7	13,116	1,101
Morelos			
Primary	112.7	138,744	612
Secondary, basic	52.8	22,003	2,400
Secondary, upper		689	
Bayarit			
Primary	162.1	92,536	1,752
Secondary, basic	44.2	12,774	1,460
Secondary, upper	20.8	9,791	2,124
Oaxaca			
Primary	304.0	456,992	840
Secondary, basic	106.1	30,784	1,442
Secondary, upper	66.9	11,191	5,972
Puebla			
Primary	250.0	483,374	517
Secondary, basic	48.0	17,704	1,271
Secondary, upper	24.3	1,362	17,841
Queretaro			
Primary	80.6	101,507*	779
Secondary, basic	19.2	7,375	2,603
Secondary, upper	10.0	3,523	2,838
Quintana Roo			
Primary	40.2	27,857	1,443
Secondary, basic	23.4	4,256	5,498
Secondary, upper	17.0	1,043	16,299
San Luis Potosi			
Primary	171.9	260,665	659
Secondary, basic	40.5	19,288	2,100
Secondary, upper	15.2	6,886	2,153
Sinaloa			
Primary	152.4	302,315	504
Secondary, basic	61.4	21,806	2,816
Secondary, upper	19.6	7,763	2,525
Sonora			
Primary	135.0	226,682	596
Secondary, basic	77.5	33,353	2,325
Secondary, upper		9,777	
Tabasco			
Primary	96.7	188,000	514
Secondary, basic	40.0	14,486	2,761
Secondary, upper	6.0	3,207	1,576

TABLE A 46
FEDERAL GOVERNMENT EDUCATIONAL EXPENDITURES
PER STUDENT, BY STATE AND EDUCATIONAL LEVEL, 1974

	<u>Amount</u> <u>(millions</u> <u>of pesos)</u>	<u>Students</u>	<u>Per</u> <u>Student</u> <u>Expenditure</u>
Tamaulipas			
Primary	360.8	312,993*	1,121
Secondary, basic	165.1	49,546	3,333
Secondary, upper	44.9	12,787	3,511
Tlaxcala			
Primary	91.5	95,684	977
Secondary, basic	28.7	10,417	2,750
Secondary, upper	8.2	1,893	4,332
Veracruz			
Primary	147.5	213,216	692
Secondary, basic		13,591	
Secondary, upper	16.2	4,970	3,260

Source: Secretaria de Educacion Pùblica

* Indicates that only federally supported student data available.

TABLE A 47
SIMPLE LITERACY*

	1966	1967	1968	1969	1970	1971	1972
Population 6 Years Old and Older	34,550,639	35,781,484	37,094,000	38,240,720	39,692,000	41,120,912	42,116,038
Simple Literates	25,284,696	26,660,161	29,312,346	31,911,055	34,668,565	37,506,300	40,507,594
% of Simple Literates to the Population 6 Years and Older	73.1	74.5	79.0	83.4	87.3	91.2	96.1
Simple Literacy -- Increase starting with 1966 (percent)	--	3.4	15.9	26.2	37.1	48.3	60.2

Sources: Secretaría de Industria y Comercio; Secretaría de Educación Pública; and Benites Senteno y Naul Cabrera, Tablas abreviadas de mortalidad de la población de México, 1930, 1940, 1950, 1960 (México: El Colegio de México, 1963).

*Those completing the first year of primary school or those who have completed the equivalent.

TABLE A 48
FUNCTIONAL LITERACY*

	1966	1967	1968	1969	1970	1971	1972
Population 9 Years Old and Older	30,495,816	31,561,498	32,781,060	33,740,130	35,090,889	36,353,986	37,280,358
Functional Literates	10,562,879	10,994,665	11,917,166	12,740,090	13,674,981	14,652,323	15,681,423
% of Functional Literates of the Population 9 Years & Older	34.6	34.8	36.3	37.7	38.9	40.3	42.0
Functional Literacy -- Increase, starting with 1966 (percent)		4.1	12.8	20.6	29.4	38.7	48.4

Sources: Secretaría de Industria y Comercio; Secretaría de Educación Pública; and Benites Senteno y Raúl Corera. Tablas abreviadas de mortalidad de la población de México, 1930, 1940, 1950, 1960 (Mexico: El Colegio de México, 1963).

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*Indicates a minimum level of schooling that assures retention of acquired skills.

TABLE A 43
LITERACY RATES, BY AGE GROUP, 1970

	<u>TOTAL</u>	<u>URBAN</u>	<u>RURAL</u>
<u>Region 1:</u>			
10-39 years of age	92.6	96.0	89.6
40 years or older	75.4	81.1	65.6
<u>Region 2:</u>			
10-39 years of age	90.2	95.1	81.7
40 years or older	70.5	78.1	58.3
<u>Region 3:</u>			
10-39 years of age	79.9	91.4	66.6
40 years or older	55.4	65.9	43.1
<u>Region 4:</u>			
10-39 years of age	63.3	83.2	53.9
40 years or older	42.3	57.2	34.8
<u>Region 5:</u>			
10-39 years of age	74.5	84.8	69.6
40 years or older	57.8	69.4	44.6
<u>Region 6:</u>			
10-39 years of age	83.7	93.9	88.6
40 years or older	62.9	83.2	71.8
<u>National:</u>			
10-39 years of age	81.1	88.8	69.5
40 years or older	62.7	74.7	44.8

Note: Based on official definition of simple literacy.

Source: Dirección General de Estadística. IX Censo General de Población, 1970.

TABLE A 50
LITERATE POPULATION - SIX YEARS AND ABOVE
1910 - 1970

	1910		1920		1930		1940		1950		1960		1970	
	<u>Lit.</u>	<u>Illit.</u>												
Region I														
Pop. (1,000)	1,061	1,487	1,791	1,542	2,829	1,373	3,964	1,517	6,037	1,557				
Percentage	42	58	54	46	68	32	72	28	80	20				
Region II														
Pop. (1,000)	357	459	510	487	927	460	1,503	571	2,118	538				
Percentage	74	56	51	49	67	33	72	28	79	21				
Region III														
Pop. (1,000)	1,541	4,016	2,172	4,166	3,666	3,815	5,375	4,406	9,090	4,575				
Percentage	28	72	14	66	49	51	55	45	67	33				
Region IV														
Pop. (1,000)	336	1,508	467	1,726	560	1,706	1,396	2,053	2,323	1,990				
Percentage	18	82	21	79	16	64	40	60	54	46				
Region V														
Pop. (1,000)	529	1,162	791	1,200	1,267	1,152	1,891	1,373	3,039	1,490				
Percentage	31	69	40	60	52	49	58	42	67	33				
Region VI (D.F.)														
Pop. (1,000)	702	344	1,115	391	2,068	462	3,285	653	4,907	707				
Percentage	67	33	74	26	82	18	83	17	87	13				
Total														
Pop. (1,000)	4,525	9,010	5,845	9,512	11,777	8,507	17,415	10,573	27,514	10,857				
Percentage	33	67	42	58	58	42	62	38	72	28				

Source: V, VI, VII, VIII, IX Censo General de Poblacion.

Note: These are data based on Mexican definition of literacy, starting at age 6.

TABLE A 51
LITERACY
RATES OF CHANGE
1930-1970

<u>Region I</u>			<u>Region V</u>		
	<u>No. Literate</u>	<u>% Change Over Decade</u>		<u>No. Literate</u>	<u>% Change Over Decade</u>
1930	1,061		1930	528	
1940	1,791	69%	1940	791	50%
1950	2,889	61%	1950	1,267	60%
1960	3,964	37%	1960	1,891	49%
1970	6,037	52%	1970	3,039	61%
<u>Region II</u>			<u>Districto Federal</u>		
	<u>No. Literate</u>	<u>% Change Over Decade</u>		<u>No. Literate</u>	<u>% Change Over Decade</u>
1930	357		1930	702	
1940	510	43%	1940	1,115	59%
1950	527	8%	1950	2,068	85%
1960	1,503	62%	1960	3,285	59%
1970	2,115	41%	1970	4,907	49%
<u>Region III</u>			<u>Total</u>		
	<u>No. Literate</u>	<u>% Change Over Decade</u>		<u>No. Literate</u>	<u>% Change Over Decade</u>
1930	2,541		1930	4,525	
1940	2,172	41%	1940	6,845	51%
1950	3,666	60%	1950	12,777	72%
1960	5,375	47%	1960	17,415	48%
1970	9,090	69%	1970	27,514	58%
<u>Region IV</u>					
	<u>No. Literate</u>	<u>% Change Over Decade</u>			
1930	336				
1940	467	39%			
1950	960	105%			
1960	1,396	45%			
1970	2,323	66%			

Source: V-IX Censo General de Poblacion.

Note: These are data based on Mexican definition of literacy, starting at age 1.

TABLE A 52
STUDENT ENROLLMENT IN PUBLIC SCHOOLS*

	1971 - 1976				
	1971-72	1972-73	1973-74	1974-75	1975-76
Primary					
Amount	9,004.0	9,446.4	9,875.4	10,342.2	10,773.2
Percentage	81.34	82.44	84.44	82.44	78.14
Secondary (Basic)					
Amount	894.5	994.5	1,120.4	1,236.1	1,407.5
Percentage	8.34	8.74	9.24	9.64	10.34
Secondary (Upper)					
Amount	242.1	259.1	350.7	421.1	455.9
Percentage	2.24	2.34	2.94	3.24	3.44
Higher Education					
Amount	276.1	310.4	353.2	416.3	477.4
Percentage	2.44	2.74	2.94	3.34	3.54

*Excludes enrollment in private schools.

Note: Percentages do not add to 100 because of the exclusion of pre-school and various technical school students.
Source: Secretaría de Educación Pública. Informe de Labores, 197-1976.

TABLE A 53
SECONDARY EDUCATION

	1972-73		1975-76	
	Number	%	Number	%
Secondary (Basic)				
Federal	2,553	37%	2,727	40%
State and Autonomous	464	21%	763	22%
Private	2,123	52%	3,317	49%
Total	4,123	100%	6,737	100%
Secondary (Upper)				
Federal	65	10%	241	21%
State and Autonomous	181	29%	275	25%
Private	392	61%	607	54%
Total	638	100%	1,123	100%

Source: Secretaría de Educación Pública. Informe de Labores 1976-76.

TABLE A 54
SECONDARY EDUCATION ENROLLMENT

Secondary (Basic)	1970-71			1975-76		
	Number of Students	%	Student-Teacher Ratio	Number of Students	%	Student-Teacher Ratio
Federal	605,207	55	19	1,223,355	55	20
State	186,806	17	17	294,149	15	18
Private	310,204	28	22	490,505	26	23
Total	1,102,217	100		1,998,009	100	
<u>Secondary (Upper)</u>						
Federal	64,130	23	16	162,330	27	15
State and Autonomous	127,866	50	23	303,597	50	31
Private	76,361	27	20	140,867	23	24
Total	268,357	100		606,794	100	

Source: Secretaría de Educación Pública. Informe de Labores 1970-76

TABLE A 55
PRIMARY EDUCATION
Dropout Rate

1959-1965

	No. Entered Grade 1, 1959	% Graduated Grade 6, 1965
Urban	922,100	43%
Rural	1,068,000	6%

1965-1970

	No. Entered Grade 1, 1965	% Graduated Grade 6, 1970
Urban	1,129,000	54%
Rural	1,293,000	9.8%

Source: Secretaría de Educación Pública. La educación pública en México 1964-1970. Cuadro E 13.

TABLE A 56
PRIMARY EDUCATION
Dropout Rate by Region, Urban and Rural,
1965 - 1971

	Urban			Rural		
	Entered grade 1, 1965	Graduated grade 6, 1971	%	Entered grade 1, 1965	Graduated grade 6, 1971	%
	NO.	NO.		NO.		
Region I	202,100	127,608	63%	200,800	32,659	15.4%
Region II	91,300	58,691	64.3%	90,000	16,992	18.9%
Region III	336,400	195,232	58%	466,100	62,933	13.5%
Region IV	66,400	41,396	62.3%	223,900	18,566	8.2%
Region V	113,100	57,251	50.6%	195,800	19,036	9.7%
Federal District	251,000	161,827	64.5%			
National	1,060,300	642,005	60.5%	1,184,600	150,572	12.7%

Source: "La alfabetización y la enseñanza a primaria en México en 1971." *Revista del Centro de Estudios Educativos* Vol. III:1 (1973), Cuadro III-9, p. 163.

TABLE A 57
ECONOMICALLY ACTIVE POPULATION BY EDUCATIONAL LEVEL AND BY SECTOR, 1970

	Total	Without Instruction	1-3 Years	4-6 Years	With Postprimary Education	Without Functional Education (1) + (2)
		(1)	(2)	(3)	(4)	
Agriculture/Livestock	100.0%	43.6%	39.1%	15.2%	2.1%	82.7%
Petroleum/Mining/ Electricity	100.0	14.2	24.0	38.6	23.2	38.2
Industry	100.0	14.2	24.3	43.4	18.0	38.5
Construction	100.0	23.5	35.9	30.7	9.9	59.4
Commerce	100.0	15.7	23.1	42.9	18.2	38.4
Services	100.0	25.7	27.1	34.2	25.4	36.3
Transportation	100.0	10.6	24.7	47.8	16.7	35.3
Government	100.0	8.6	16.7	41.0	34.4	25.3
Unspecified Sector	100.0	30.3	29.6	29.9	10.1	59.9
All Sectors	100.0%	27.1%	30.0%	29.3%	13.4%	57.1%
Total Persons (000s)	12,995	3,517	3,898	3,757	1,743	7,415

Source: Victor L. Urquidí. "Empleo y Explosión Demográfica." *Demografía y Economía* 8:2 (1974), p. 149 (based upon original census data from 1970).

TABLE A 58
NUMBER OF DOCTORS, INHABITANTS PER DOCTOR, 1970

<u>Region</u>	<u>No. of Doctors</u>	<u>Inhabitants Per Doctor</u>	<u>% of All Doctors</u>	<u>% of All Population</u>
1	8162	1775	15.0	18.7
2	2130	1867	6.0	8.2
3	8229	2134	26.0	35.9
4	1373	3890	4.0	11.2
5	2724	2117	8.0	11.8
6	16490	480	43.0	14.3
Mexico	34107	1434	100.0	100.0

Source: Secretaría de Salubridad y Asistencia - Atlas de Salud de la República Mexicana - Mexico: SSA, 1973, p. 90.
Dirección General de la Estadística - Anuario Estadístico.

TABLE A 59
MEDICAL PERSONNEL BY INSTITUTION, 1970

<u>Institution</u>	<u>General Practitioners</u>	<u>Medical Specialists</u>	<u>Dentists</u>	<u>Social Service Doctors</u>	<u>Total Doctors</u>
Total	9,798	14,788	1,491	4,143	30,220
Distribution:					
Private	13.07%	38.57%	7.91%	17.79%	25.94%
Mexico: Institute of Social Security	37.28	19.62	34.34	11.22	24.52
Secretary of Health and Assistance	15.92	13.94	21.33	45.64	19.30
Institute of Social Services and Security for Employees of the Government	17.83	8.09	16.23	5.38	11.28
Department of the Federal District	2.14	3.92	2.42	1.55	2.91
Secretary of National Defense	3.98	1.50	5.63	0.99	2.41
PFMEA	2.95	1.94	2.35	2.75	2.40
Mexican National Railroads	2.08	1.21	1.41	0.95	1.48
Secretary of the Marine	0.94	0.37	1.54	1.18	0.72
National Indian Institute	0.27	----	----	----	0.69
Others	3.54	10.81	6.84	12.55	8.49

Explanation: Percentages sum to 100% going down.

Source: Secretaría de Salubridad y Asistencia - Atlas de Salud de la República Mexicana. Mexico: SSA, 1973.

TABLE A 60
 FEDERAL HEALTH CARE EXPENDITURES, 1971

<u>Institution</u>	<u>of Federal Budget Health Expenditures</u>
IMSS	57.7
ESA	25.0
ISSSTE	11.0
PEMEX	3.3
Other Federal Agencies	3.0

IMSS = Instituto Mexicano de Seguro Social.

ESA = Secretaría de Salubridad y Asistencia

ISSSTE = Instituto de Seguridad y Servicios Sociales de los
 Trabajadores del Estado

PEMEX = Petroleros Mexicanos

Source: 1971 Budget.

TABLE A 61
TEN PRINCIPAL CAUSES OF MORBIDITY, 1971

<u>No.</u>	<u>Cause</u>	<u>No. of Cases</u>	<u>Rate*</u>
1	Gastro-Enteritis	188,946	373.9
2	Influenza and Pneumonia	65,068	128.8
3	Parasitosis	52,004	103.0
4	Dysentery	51,778	102.5
5	Malaria	47,550	94.1
6	Measles	35,400	70.1
7	Whooping Cough	29,772	59.0
8	Equine Encephalitis of Venezuela	23,398	46.3
9	Tuberculosis (All Forms)	18,876	37.3
10	Chicken Pox	16,570	32.8
	Other Illnesses	94,723	187.5

* Per 100,000 Inhabitants

Source: Secretaría de Salubridad y Asistencia. Estadísticas Vitales Demográficas y de Recursos en la República Mexicana. 1965-1973. México: SSA, 1973, p. 11.

TABLE A 62

TEN PRINCIPAL CAUSES OF INFANT MORTALITY, 1972

<u>No.</u>	<u>Cause of Death</u>	<u>No. of Deaths</u>	<u>Rate*</u>
1	Influenza and Pneumonia	35,830	15.5
2	Enteritis and other Diseases	35,154	15.2
3	Perinatal Mortality	25,147	10.9
4	Acute Respiratory Infections	6,008	2.6
5	Septicemia	2,625	1.1
6	Measles	2,527	1.1
7	Avitaminosis and other Nutritional Deficiencies	2,321	1.0
8	Heart Disease	1,773	0.8
9	Whooping Cough	1,609	0.7
10	Bronchitis, Emphysema, and Asthma	1,557	0.7
	All Causes	142,964	62.0

* Per 1000 Registered Live Births

Source: Secretaría de Salubridad y Asistencia. Plan Nacional de Salud, 1974-76, 1977-83, Volumen II: Desarrollo. Mexico: SSA, 1974, p. 53.

TABLE A 63
 INFANT MORTALITY RATE, 1959-1971
 (Deaths of Children Under One Year Per 1000 Births)

	<u>Region 1</u>	<u>Region 2</u>	<u>Region 3</u>	<u>Region 4</u>	<u>Region 5</u>	<u>Region 6</u>	<u>National</u>
1959	66.02	64.51	66.92	64.31	52.49	85.27	74.40
1960	68.02	60.90	67.99	66.55	54.73	85.05	74.19
1961	57.53	59.42	62.30	58.67	51.85	83.13	70.23
1962	63.96	58.76	61.61	58.28	50.77	80.66	69.95
1963	58.95	56.93	79.87	59.26	53.48	79.93	68.52
1964	59.73	54.94	75.55	51.83	50.61	66.83	64.47
1965	53.61	50.34	71.92	52.77	48.03	69.18	60.74
1966	59.64	56.02	72.51	51.78	47.29	68.29	62.87
1967	57.00	53.14	74.77	49.58	46.67	73.06	63.28
1968	54.88	49.32	76.86	57.59	51.76	69.85	64.23
1969	58.87	53.61	77.82	53.01	55.61	76.76	66.72
1970	62.63	51.18	82.25	53.27	54.22	74.72	68.46
1971	57.53	49.99	73.86	48.49	51.98	73.21	63.31

Notes: Figures for Region 4 and possibly for Region 5 are suspect, given their comparative performance with respect to other indicators such as sewage system availability, food consumption patterns, and income. These lower figures may be due merely to a failure to report all deaths, especially where medical facilities and doctors are scarce.

Source: Dirección General de Estadística. Anuario Estadístico.

TABLE A 64
PER CAPITA FOOD CONSUMPTION, PER MONTH, 1968

	Family Income Groups (Pesos/Month)						
	0-300	301-600	601-1000	1001-3000	3001-6000	6001-10000	10000+
(Kilograms):							
Cereals	12.57	14.51	13.53	12.33	11.09	10.94	11.67
Corn	11.84	12.64	10.64	7.75	5.46	4.40	4.40
Wheat	.52	1.44	2.26	3.76	4.77	5.55	6.20
Rice	.19	.39	.57	.72	.74	.86	.92
Legumes	2.48	2.48	2.26	2.09	1.57	1.51	1.47
Starchy Roots	.13	.50	.68	.95	1.00	1.15	1.38
Vegetables	.99	1.54	2.04	2.96	4.17	5.15	7.48
Fruits	.52	.79	1.65	3.46	6.49	8.55	11.53
Sugar	.79	1.22	1.52	1.61	1.67	1.79	2.05
Vegetable Fat	.19	.57	.84	1.11	1.40	1.64	2.04
Butter	.25	.34	.37	.38	.29	.23	.19
Eggs	.30	.38	.61	.96	1.44	1.88	2.39
Meat	.35	.66	1.32	2.42	3.77	5.64	6.27
Beef/Mutton	.21	.38	.75	1.37	2.00	2.75	3.29
Pork	.04	.12	.28	.44	.72	1.12	1.18
Poultry	.08	.12	.26	.50	.86	1.36	1.48
Fish	.03	.11	.23	.39	.51	.72	.75
Coffee	.05	.08	.08	.11	.11	.13	.14
Cacao	--	--	.01	.03	.05	.09	.10
(Liters):							
Vegetable Oils	.14	.23	.77	1.59	3.09	3.86	4.42
Milk	1.12	2.95	5.94	9.96	16.07	18.88	24.04
Cream	--	--	--	.03	.07	.16	.28

Source: Banco de México, La Distribución del Ingreso en México, 1974.

TABLE A 65
FOOD CONSUMPTION PATTERNS OF THE POPULATION, 1970
Per Cent Having Not Eaten Listed Food in Week Prior to Census

	Meat	Eggs	Milk	Fish	Wheat Bread
Region 1	29.6	24.0	33.0	87.7	30.9
Rural*	48.0	35.9	52.0	92.0	47.9
Urban	16.9	15.8	20.5	84.8	19.1
Region 2	18.9	15.6	27.4	63.4	23.5
Rural	28.5	20.9	41.7	71.1	34.9
Urban	13.0	12.4	18.6	58.6	16.4
Region 3	23.2	30.5	44.5	78.5	26.0
Rural	34.5	37.9	62.9	85.0	37.4
Urban	13.0	12.4	18.6	58.6	16.4
Region 4	22.8	24.5	58.5	62.3	29.6
Rural	27.1	27.1	68.3	67.5	35.5
Urban	13.4	19.1	37.3	51.0	16.8
Region 5	17.0	20.2	44.4	54.4	19.9
Rural	21.9	24.1	57.1	62.4	26.5
Urban	11.8	16.0	30.8	45.9	12.9
Region 6	4.1	9.3	12.5	48.9	4.9
Rural	7.7	15.1	23.6	53.8	8.9
Urban	4.0	9.1	12.2	48.7	4.8
National	20.6	23.2	38.0	70.1	23.4
Rural	33.0	31.9	59.0	78.3	36.9
Urban	11.9	17.0	23.3	64.4	14.0

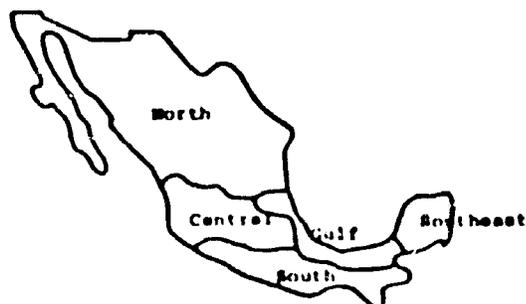
* Up to 2,499 Inhabitants

Source: Calculated from Dirección General de Estadística, IX Censo General de Población, 1970.

TABLE A 66
NUTRITIONAL STATUS OF PRE-SCHOOL POPULATION
IN RURAL AREAS BY GEOGRAPHIC ZONE

	<u>North</u>	<u>Central</u>	<u>Gulf</u>	<u>South</u>	<u>Southeast</u>
Normal: (Body Weight 99-100% of Normal)	30.00	25.10	27.90	19.60	10.00
Malnutrition I: (Body Weight 10-24% Below Normal)	50.0	42.7	44.1	44.2	50.5
Malnutrition II: (Body Weight 25-39% Below Normal)	10.0	20.0	25.5	30.0	34.5
Malnutrition III: (Body Weight 40% Below Normal)	0.0	4.2	2.9	5.4	4.2

Note: Geographic zones do not correspond to regions used elsewhere in this report.



Source: Carlos Peres Hidalgo, Adolfo Chavés, y Berlinda Madrigal. "Recopilación sobre Consumo de Nutrientes en Diferentes Zonas de México, I: Consumo Calórico-Proteico." Archivos Latino-americanos de Nutrición 20:4 (December 1970), pp. 367-381. Figures are based upon a combination of approximately 100 studies undertaken prior to 1970.

TABLE A 67
 CONTRIBUTION OF MALNUTRITION TO CHILDHOOD MORTALITY,
 PAN AMERICAN HEALTH ORGANIZATION STUDY OF MONTERREY, 1972

Per Cent of Deaths of Children Under Five
Years of Age Caused by Malnutrition:

Primary Cause	40
Associate Cause	48
Primary or Associated Cause	52

Per Cent of Deaths of Children Under Five
Years of Age in Which Malnutrition Was
An Associated Cause:

(B) Primary Cause

Measles	76
Diarrhea	70
Other Infective or Parasitic Cause	64
Respiratory Cause	51
Other Cause	34

Source: Alan Berg, The Nutrition Factor, 1973.

TABLE A 68
NATIONAL FOOD BALANCE SHEET, 1964-1976
 (Per Capita)

	<u>Calories</u>	<u>Protein- Grams</u>	<u>Animal Protein- Grams</u>
1964	2494.9	78.4	24.4
1965	2539.2	79.7	25.9
1966	2684.4	84.2	26.3
1967	2582.0	80.9	25.9
1968	2576.9	81.3	25.7
1969	2606.8	79.6	25.7
1970	2669.5	81.4	25.5
1971	2606.4	80.8	26.9
1972	2580.3	80.7	26.4
1973	2607.1	80.1	26.2
1974	2618.8	80.6	26.7
1975	2687.9	81.3	26.5
1976	2519.0	75.3	26.3

Source: Juan Ramirez Hernandez, Unpublished Updated Data, Instituto Nacional de Nutrición, 1976.

TABLE A 69
AGRICULTURAL INDICATORS - BREAKDOWN BY REGION
 (Share of National Total)

	<u>Region 1</u>	<u>Region 2</u>	<u>Region 3</u>	<u>Region 4</u>	<u>Region 5</u>	<u>Region 6</u>
Cultivated Land (Cropped Annually or on a Short Rotational Cycle):	26.27%	14.35%	34.44%	14.41%	9.99%	.14%
Irrigated Land (Cropped Annually or on a Short Rotational Cycle):	28.06	38.26	28.64	3.30	1.49	.05
Population Economically Active in Agricultural and Livestock Production	16.98	7.89	39.80	18.91	15.50	.04
Value of Sales of Agricultural and Livestock Products	24.44	27.87	27.91	9.70	11.59	1.48

Explanations: Per cents add up to 100% going across.

Source: Calculated from Dirección General de Estadística, V Censo Agrícola-Ganadero y Bidal, 1970, Tables 2 and 31; IX Censo General de Población, Table 38.

TABLE A 70
DISTRIBUTION OF IRRIGATED LAND, BY TYPE OF TENURE, 1968-69

	<u>Per Cent of All Land</u>	<u>Per Cent of Irrigated Land</u>
<u>Private Land:</u>	38.36%	49.58%
Holdings Larger than 5 Hectares	34.79	47.13
Holdings 5 Hectares or Smaller	3.57	2.45
<u>Estadal Land:</u>	61.64	50.42

Note: Includes land cropped annually or within short rotational cycles

Source: Dirección General de Estadística. V Censo Agrícola-Ganadero y Estadal, 1970.
Table 2

TABLE A 71
PER CENT OF LAND IRRIGATED, BY TYPE OF TENURE

<u>Region</u>	<u>Private Land, by Size of Holding</u>			<u>Estadal Land</u>
	<u>All Land</u>	<u>Larger than 5 Hectares</u>	<u>5 Hectares or Smaller</u>	
1	20.25%	24.46%	27.71%	14.82%
2	51.32	70.17	55.35	38.14
3	16.01	15.08	13.97	16.75
4	4.41	6.16	4.90	3.77
5	3.27	4.58	2.93	2.85
6	7.09	19.17	4.43	1.15
National:	19.25	26.08	13.18	15.75

Explanation: Figures reflect, within each region and tenure category, the per cent of the total land which was irrigated. Neither columns nor rows sum to 100%. The figures refer to land which is cropped annually or within short rotational cycles.

Source: Calculated from Dirección General de Estadística. V Censo Agrícola-Ganadero y Estadal, 1970. Table 2.

MECHANIZATION OF AGRICULTURE

Type of Tenure	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	National
Private, larger than 5 Hectares							
Animal Power	36.24	7.50	31.04	64.84	60.51	49.20	42.56
Mechanized	43.5	75.5	23.3	11.4	18.1	24.3	33.0
Mixed	26.4	16.8	25.0	23.6	22.0	26.5	23.7
Private, 5 Hectares and smaller							
Animal Power	78.98	55.14	84.74	87.75	74.16	87.84	83.84
Mechanized	12.8	28.3	6.8	2.7	20.3	6.2	7.2
Mixed	8.3	16.6	8.5	10.6	5.4	6.1	9.0
Ejidal							
Animal Power	78.64	30.24	78.74	91.44	78.94	70.14	75.34
Mechanized	12.7	52.6	7.1	5.4	12.0	22.3	14.2
Mixed	8.7	16.5	14.2	3.2	9.1	7.6	10.4

Explanation: Within each region and tenure type, percentages add up to 100% (except where rounding results otherwise). Thus, for example, 12.7% of the ejidal land in Region 1 employed mechanization, while 78.6% employed animal power, and 8.7% employed mixed agriculture.

Source: Dirección General de Estadística. V Censos Agrícola-Ganadero y Ejidal, 1970, Table 27.

TABLE A 73

AVAILABILITY OF TRACTORS, 1965

Number per 1000 Hectares Cultivated:

Region	All Land	Larger than 5 Hectares	5 Hectares or Smaller	Ejidal Land
1	8.01	13.15	11.05	3.79
2	7.97	12.73	22.50	4.54
3	3.88	6.84	4.71	2.88
4	1.58	5.30	1.33	.60
5	3.12	8.55	3.90	1.31
6	6.71	15.16	9.05	.50
National	5.16	9.97	4.84	2.47

Source: Dirección General de Estadística. V Censos Agrícola-Ganadero y Ejidal, 1970, Tables 7 and 28.

TABLE A 74

DENSITY OF AGRICULTURAL POPULATION, BY REGION

(Population Economically Active per 1000 Cultivated Hectares)

Region 1	173.2
Region 2	149.6
Region 3	314.4
Region 4	357.0
Region 5	424.5
Region 6	1,617.1
National:	272.1

Notes: Cultivated land is defined as that cropped annually or within short rotational cycles. The aberration in Region 6 (Federal District) is due to its being almost wholly an urban region.

Source: Derived from Dirección General de Estadística, V Censos Agrícola-Ganadero y Ejidal, 1970, Table 2; IX Censo General de Población, 1970, p. 16.

TABLE A 75

AVERAGE SIZE OF FARM LANDHOLDINGS

1940-1970

(hectares)

<u>Forma</u>	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>
5 Hectares or less	1.24	1.36	1.48	1.44
Over 5 Hectares	340.20	291.57	258.40	178.51
Ejido	1970.20	2212.40	2379.51	3070.66

Source: Derived from Figures of the II, III, IV and V Censo Agrícola Ganadero y Ejidal, Mexico.

TABLE A 76
YIELD OF CROPS BY TYPE OF TENURE, 1960-69
(Tons per Harvested Hectare)

Crop	All Land	Larger Than 5 Hectares	5 Hectares or Smaller	Ejidal Land
Alfalfa	27.10	27.40	26.75	26.92
Beans	.75	.72	.69	.76
Corn	.93	.96	.89	.93
Cotton	2.02	2.02	1.79	2.02
Grain Sorghum	2.11	2.20	1.92	2.00
Potatoes	6.91	8.34	5.57	5.44
Rice	2.24	2.51	2.96	2.12
Soybeans	1.76	1.79	1.95	1.68
Tomatoes	17.61	25.17	9.24	8.31
Wheat	2.56	2.78	1.30	2.23

Source: Dirección General de Estadística. V Censos Agrícola-Canadero y Ejidal, 1970, Table 9.

TABLE A 77
VALUE OF AGRICULTURAL SALES PER HARVESTED AREA, 1960-69
(Pesos/Hectare)

-----Private Land, by Size of Holding-----

Region	All Land	Larger than 5 Hectares	5 Hectares or Smaller	Ejidal Land
1	1,649	1,813	1,985	1,470
2	2,664	3,107	2,114	2,260
3	1,488	1,814	1,416	1,301
4	2,540	2,420	1,892	1,309
5	2,127	1,862	3,386	1,867
6	1,507	2,058	1,546	980
National	1,812	2,238	1,530	1,568

Note: Does not include sales of livestock or animal products. Hectares cultivated during both the winter and spring-summer growing seasons are counted twice.

Source: Dirección General de Estadística. V Censos Agrícola-Canadero y Ejidal, 1970, Tables 10 and 11.

TABLE A 76
VALUE OF AGRICULTURE AND LIVESTOCK
SALES PER ECONOMICALLY ACTIVE POPULATION, 1964-68
 (pesos per capita)

Region 1	8.633
Region 2	18.018
Region 3	4.845
Region 4	3.339
Region 5	5.591
Region 6	10.094
National	5.363

Source: Dirección General de Estadística. V Censo Agrícola-Ganadero y Eidal. 1970, Table 31. II Censo General de Población. 1970, Table 38.

TABLE A 79
PRODUCER-RECEIVED AGRICULTURAL PRICES COMPARED TO GENERAL PRICE INDEXES

	<u>Beans</u>	<u>Corn</u>	<u>Sugar Cane</u>	<u>Wheat</u>	<u>Coffee</u>	<u>Cotton</u>	<u>Wholesale Price Index*</u>	<u>Cost of Food Index</u>
1950	81.1	75.1	81.8	71.4	57.1	90.9	72.5	70.5
1951	79.2	87.1	87.9	96.0	59.6	78.8	89.9	90.8
1952	83.1	97.1	90.9	93.9	61.3	79.1	93.2	99.5
1953	86.7	96.9	93.9	96.7	94.1	78.6	91.4	93.2
1954	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1955	115.5	102.1	109.1	101.9	106.3	97.6	113.6	118.0
1956	125.9	123.5	118.2	105.6	110.5	96.4	118.9	122.9
1957	140.0	135.9	142.4	103.8	129.4	95.9	124.0	129.3
1958	143.6	137.7	142.4	110.4	137.2	91.3	129.5	142.9
1959	148.2	138.8	145.5	112.3	121.7	90.5	131.0	147.8
1960	150.8	141.6	148.5	111.1	116.7	91.4	137.5	151.7
1961	175.7	145.4	160.6	116.8	121.9	97.1	138.8	157.1
1962	185.1	149.0	172.7	114.3	117.3	94.7	141.3	157.2
1963	190.2	182.9	178.8	117.2	123.1	95.3	142.1	156.6
1964	193.9	183.5	187.9	119.8	123.9	96.1	148.1	163.8
1965	195.8	186.2	190.9	120.9	121.5	96.6	150.9	166.5
1966	201.1	178.3	190.9	112.9	122.4	96.7	152.8	172.8
1967	197.2	182.5	197.0	108.7	116.0	96.3	157.2	177.2
1968	197.5	181.4	200.0	109.7	116.9	96.3	160.2	182.8
1969	202.2	173.6	203.0	108.7	125.7	96.9	164.3	185.5
1970	207.6	175.7	206.1	107.8	144.7	99.3	174.1	192.1
1971	220.0	174.8	247.4	110.2	129.9	113.8	180.6	202.6
1972	229.2	175.1	251.5	109.1	130.5	126.2	185.7	206.7
1973	336.1	215.5	257.6	114.0	143.6	210.3	214.9	235.4
1974	629.4	294.1	300.0	172.1	170.7	170.1	263.2	293.6
1975	645.3	399.2	361.6	211.4	178.1	159.9	290.9	330.4

*National Consumer Price Index is not available prior to 1968.

Source: Nacional Financiera, S.A. Statistics on the Mexican Economy, 1977.

TABLE A 80

AGRICULTURE, LIVESTOCK, FORESTRY, AND FISHING SECTORS:
 MEDIAN MONTHLY INCOME OF ECONOMICALLY ACTIVE POPULATION, 1969

	<u>Monthly Median Income</u>	<u>Rank</u>
<u>Region 1</u>	306.31	
Coahuila	377.35	13
Chihuahua	399.50	10
Durango	292.29	19
Nuevo Leon	391.31	11
San Luis Potosi	212.25	27
Tamaulipas	413.73	9
Tlaxtecas	232.84	24
<u>Region 2</u>	632.79	
Baja California Norte	979.45	1
Baja California Sur	752.96	3
Bayarit	530.98	6
Sinaloa	614.47	5
Sonora	752.96	2
<u>Region 3</u>	265.95	
Aguascalientes	358.58	14
Guanajuato	259.12	22
Hidalgo	194.11	29
Jalisco	422.24	8
Mexico	253.93	23
Michoacan	291.67	20
Morelos	381.66	12
Puebla	196.65	28
Queretaro	229.53	25
Tlaxcala	263.01	21
<u>Region 4</u>	188.02	
Colima	530.49	7
Chiapas	214.25	26
Guerrero	171.39	31
Oaxaca	159.41	32
<u>Region 5</u>	296.74	
Campeche	339.74	15
Quintana Roo	332.04	16
Tabasco	307.67	17
Veracruz	292.54	18
Yucatan	189.63	30
<u>Region 6</u>	631.56	
<u>National</u>	278.95	

Source: Dirección General de Estadística. IX Censo General de Población, 1970.

Annex B Physical Quality of Life Index

PHYSICAL QUALITY OF LIFE INDEX

Development planners have relied primarily on monetary indicators, such as per capita GNP, to measure the economic situation and progress in underdeveloped countries. However, given the recent focus on fulfillment of basic human needs, attention also is being given to supplementary indicators -- those which would seek to directly measure progress in eliminating the worst aspects of poverty in a real sense. GNP indicators reflecting a nation's average growth performance fail to provide a complete picture, since the poorest groups of the population might not share in this growth, or the growth in monetary terms might not translate itself into actual physical improvement.

A 1976 Club of Rome report proposed development of a physical quality of life index. Subsequently, the Overseas Development Council (ODC) of Washington, D.C., devised a simple Physical Quality of Life Index (PQLI), as explained in its publication United States and World Development: Agenda 1977. The ODC suggested that its index could be useful for intra-country as well as inter-country comparisons. Since this index has gained currency, the Mexico project undertook to compute the PQLI for each of the 32 Mexican states and territories as part of this study.

The ODC rejected several alternative indicators and settled on an index which was a composite of three items: 1) infant mortality rate (per 1000 births); 2) life expectancy (at age 1); and 3) literacy rate (15 years of age and older). The rationale for this selection is delineated in the ODC publication and will not be repeated fully here. In summary, however, ODC felt that other more specific indicators might bias the index improperly in favor of: 1) models of progress drawn from the developed countries; 2) excessively ethnocentric standards; or 3) indicators tied too closely to per capita GNP. Also, alternative indicators tended to measure inputs (e.g., sewage service) rather than outputs (e.g., deaths from certain diseases).

According to the ODC, the PQLI has the advantage of reflecting distributional (as opposed to average) characteristics within countries. Nations cannot achieve high national averages of the three indicators unless majorities of their populations are receiving the benefits of progress in each area.

Unfortunately, application of the PQLI to the numerous states of Mexico is hampered by two constraints. First, figures for life expectancy are not readily available prior to 1968. Second, infant mortality rates

and life expectancy figures for certain individual states are highly suspect. Thus, the index can only be computed for one census year (1970), and, even then, its accuracy is in doubt.

The most striking example of the accuracy problem is the state of Quintana Roo, for which the claimed life expectancy figure is 73.1 years. If placed alongside the fifty American states, Quintana Roo would fall behind only Hawaii and Minnesota. Similarly, its 26.6 infant mortality rate is surprisingly low.

Quintana Roo is characteristic of several states in Regions 3-5, which are toward the top of the list with respect to these two PQLI indicators, despite being toward the bottom of the list with respect to numerous other indicators -- availability of sewage service, consumption of animal protein products, median income, and even literacy. Guerrero, for example, had the lowest literacy rate in 1970 and the lowest infant mortality rate.

It is conceivable that these states combine unfavorable scores on the other indicators with favorable scores on the two PQLI indicators. More likely, however, the infant mortality and life expectancy statistics reflect a failure to report a significant percentage of deaths. In order, to be included in the infant mortality statistics, for example, an infant's death has to be registered within the institutionalized medical system. Many portions of Region 3-5 are predominantly rural, isolated and suffer from a dearth of medical facilities and personnel.

Based upon this speculative judgment, comparison of a Mexican state's PQLI with the indexes of other countries or populations, or internal comparison with other Mexican states, must be made with caution. However, with some aberrations, the ranking of states seems to conform reasonably well with other data contained in the Annex tables.

Given these caveats, the calculated PQLI scores are as follows:

Calculation of PQLI

Life Expectancy:

$$\begin{aligned} 75 \text{ years} &= 100 \\ 28 \text{ years} &= 1 \end{aligned}$$

If i = index and x = years

$$\text{then } i = \left[(x-28) \frac{(99)}{47} \right] + 1,$$

$$\text{or } i = \frac{99x - 2725}{47}$$

Infant Mortality Rate:

$$\begin{aligned} 9 \text{ per } 1000 \text{ births} &= 100 \\ 229 \text{ per } 1000 \text{ births} &= 1 \end{aligned}$$

If i = index and x = infant mortality rate,

$$\text{then } i = 100 - \left[x - 9 \frac{99}{229} \right]$$

$$\text{or } i = \frac{22891 - 99x}{229}$$

Literacy Rate: The index is the same as the rate.

Composite PQI: The PQI is the average of the three indexes.

1950

----- LIFE EXPECTANCY ----- INFANT MORTALITY ----- LITERACY RATE ----- POLI -----

	<u>Years</u>	<u>Index</u>	<u>Rate</u>	<u>Index</u>	<u>Rate</u>	<u>Index</u>
Quintana Roo			49.9	80.9		
Guerrero			57.4	77.6		
Campeche			58.3	77.2		
Binaloa			59.2	76.8		
Tabasco			59.2	76.8		
Veracruz			59.5	76.6		
Nuevo Leon			62.5	75.3		
Tamaulipas			61.0	75.1		
Nayarit			69.6	71.7		
Durango			71.0	71.5		
Morelos			71.7	70.9		
Baja California Sur			73.2	70.4		
Michoacan			73.3	70.4		
Bonora			74.4	69.9		
San Luis Potosi			75.4	69.5		
Baja California Norte			78.0	68.3		
Chiapas			78.7	68.0		
Queretaro			80.6	67.1		
Yucatan			81.0	66.1		
Cochulla			84.5	65.4		
Sacatecas			90.7	62.6		
Hidalgo			93.7	61.2		
Oaxaca			94.3	61.0		
Colima			96.2	60.1		
Aguascalientes			102.5	57.3		
Jalisco			103.8	56.7		
Chihuahua			103.8	56.7		
Distrito Federal			107.7	54.9		
Guansjuato			109.0	54.5		
Puebla			113.8	52.2		
Tlaxcala			114.7	47.3		
Mexico			136.6	46.4		

Not available for 15 years and above; only available for 6 and above.

1960

<u>LIFE EXPECTANCY</u>		<u>INFANT MORTALITY</u>		<u>LITERACY RATE</u>		<u>POLI</u>	
<u>Years</u>	<u>Index</u>	<u>Rate</u>	<u>Index</u>	<u>Rate</u>			<u>Index</u>
Sinaloa		46.3	83.9	Baja California Norte	86.4		
Morelos		48.9	81.5	Distrito Federal	85.1		
Veracruz		50.3	80.8	Baja California Sur	84.7		
Guerrero		50.9	80.5	Coahuila	84.1		
Michoacan		51.7	80.1	Nuevo Leon	82.4		
Quintana Roo		52.0	80.0	Sonora	80.2		
Campeche		56.7	77.9	Durango	80.0		
Baja California Sur		57.7	77.4	Tamaulipas	80.0		
Tabasco		57.9	77.3	Chihuahua	79.3		
Durango		58.9	76.9	Aguascalientes	77.1		
Nuevo Leon		59.7	76.5	Colima	73.5		
Nayarit		60.0	76.4	Jalisco	69.8		
Tamaulipas		61.8	75.6	Campeche	69.7		
San Luis Potosi		65.3	74.0	Nayarit	69.1		
Chiapas		66.0	73.7	Sinaloa	68.9		
Yucatan		67.6	73.0	Zacatecas	68.7		
Hidalgo		69.0	72.4	Yucatan	68.7		
Baja California Norte		69.0	72.4	Quintana Roo	67.3		
Coahuila		71.2	71.4	Tabasco	66.4		
Sonora		71.5	71.2	Tlaxcala	62.1		
Aguascalientes		74.3	70.0	Morelos	61.9		
Zacatecas		75.1	69.5	Mexico	59.1		
Oaxaca		77.2	68.7	Veracruz	57.2		
Chihuahua		81.1	66.9	San Luis Potosi	56.4		
Queretaro		81.6	66.7	Michoacan	55.4		
Colima		83.9	65.6	Guanajuato	54.9		
Distrito Federal		85.1	65.0	Puebla	52.1		
Jalisco		90.6	62.6	Queretaro	46.0		
Puebla		91.0	62.5	Hidalgo	45.5		
Guanajuato		93.7	61.2	Chiapas	43.1		
Mexico		107.9	54.8	Oaxaca	41.8		
Tlaxcala		110.7	53.6	Guerrero	39.4		

1970

LIFE EXPECTANCY			INFANT MORTALITY			LITERACY RATE			PQLI		
	Years	Index		Rate	Index		Rate		Rate	Index	
Quintana Roo	73.1	96.0	Guerrero	26.3	92.2	Distrito Federal	90.0	Quintana Roo	87.3		
Baja California Sur	71.5	92.6	Quintana Roo	26.6	92.1	Nuevo Leon	87.9	Baja California Sur	86.9		
Sinaloa	68.6	86.5	Binaloa	34.8	88.4	Baja California Norte	87.3	Nuevo Leon	84.8		
Durango	68.4	86.1	Morelos	47.4	82.7	Baja California Sur	86.5	Durango	84.3		
Nuevo Leon	68.3	85.9	Campeche	47.9	82.5	Coahuila	86.2	Einalos	83.5		
Campeche	67.9	85.0	Durango	48.2	82.4	Chihuahua	85.9	Tamaulipas	82.8		
Zacatecas	67.7	84.6	Nayarit	48.2	82.4	Sonora	85.2	Sonora	81.2		
Tamaulipas	67.3	83.8	Michoacan	49.0	82.0	Durango	84.4	Campeche	80.7		
Tabasco	66.5	82.1	Baja California Sur	50.0	81.6	Tamaulipas	84.3	Baja California Norte	80.6		
Sonora	66.4	81.9	Nuevo Leon	52.2	80.6	Aguascalientes	83.4	Nayarit	79.9		
Nayarit	66.3	81.7	Tamaulipas	52.6	80.4	Zacatecas	79.1	Coahuila	79.5		
Michoacan	66.1	81.3	Tabasco	52.8	80.3	Jalisco	79.0	Distrito Federal	79.5		
Baja California Norte	66.0	81.0	Veracruz	55.8	78.9	Colima	77.7	Tabasco	78.9		
Coahuila	65.7	80.4	Yucatan	55.9	78.9	Sinaloa	75.6	Morelos	77.9		
Jalisco	65.6	80.2	Hidalgo	58.6	77.7	Nayarit	75.6	Zacatecas	77.8		
Yucatan	65.6	80.2	Chiapas	58.7	77.6	Campeche	74.7	Chihuahua	77.4		
Morelos	65.3	79.6	Sonora	61.3	76.5	Tabasco	74.3	Yucatan	77.1		
Aguascalientes	65.2	79.4	Oaxaca	62.9	75.7	Quintana Roo	73.9	Aguascalientes	77.0		
Guerrero	65.1	79.1	San Luis Potosi	63.3	75.6	Tlaxcala	72.9	Jalisco	76.4		
Tlaxcala	64.8	78.5	Colima	64.0	75.3	Mexico	72.5	Colima	76.3		
Distrito Federal	64.6	78.1	Baja California Norte	67.8	73.5	Yucatan	72.3	Michoacan	75.7		
Mexico	63.9	76.6	Coahuila	71.6	72.0	Morelos	71.5	Guerrero	74.4		
Colima	63.6	76.0	Chihuahua	73.4	71.0	San Luis Potosi	67.9	Veracruz	73.8		
Guanaajuato	63.5	75.8	Distrito Federal	74.7	70.4	Veracruz	67.9	San Luis Potosi	72.5		
Chihuahua	63.3	75.4	Queretaro	74.7	70.4	Michoacan	63.7	Tlaxcala	69.4		
Veracruz	63.0	74.7	Jalisco	75.9	69.9	Puebla	63.6	Mexico	67.9		
San Luis Potosi	62.7	74.1	Zacatecas	76.6	69.6	Guanaajuato	62.5	Hidalgo	67.6		
Queretaro	62.3	73.2	Aguascalientes	79.7	68.2	Hidalgo	58.4	Queretaro	67.3		
Hidalgo	59.2	66.7	Puebla	87.8	64.5	Queretaro	58.2	Guanaajuato	65.9		
Puebla	58.0	64.2	Guanaajuato	99.5	59.3	Chiapas	54.6	Puebla	64.1		
Oaxaca	55.0	57.9	Tlaxcala	105.0	56.8	Oaxaca	54.3	Chiapas	63.0		
Chiapas	54.5	56.8	Mexico	109.6	54.7	Guerrero	51.9	Oaxaca	62.6		

Annex C Growth Without Equity:
A Mexican Case Study of Income Distribution
1958 - 1968

Prepared by: C.L. Kreps
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In a recent article, Gary Fields (1977) has challenged the conventional wisdom that Brazilian economic growth has benefited only the richer elements of the society. To the contrary, he finds that the poor have participated in Brazil's economic gains in the 1960's.

Mexico, like Brazil, is a populous Latin American country which has experienced rapid economic growth, 1/ and which also has a reputation for a high degree of income inequality. We have therefore examined changes in income relations in Mexico to see if they conform with the pattern noted by Fields in Brazil.

Fields emphasizes that his methodology begins with an absolute poverty approach. He adopts a poverty line, after Fishlow (1972), based upon the 1960 rural minimum wage in the poorest region of Brazil. He then draws conclusions regarding changes between 1960 and 1970, via manipulation of two sets of income bracket data for those respective years. Incomes for 1970 are converted into constant 1960 new cruzeiros, and simple linear interpolation is performed upon the data in order to render the 1970 brackets identical to those of 1960.

Rather than quarrel with Fields' procedures, 2/ this study of Mexican income distribution utilizes the same methodology. There are, however, three exceptions to this statement:

1. Data on income distribution in Mexico for 1960 and 1970, the years used for Brazil, could not be found. Instead, the closest 10-year interval for which figures were available was 1958-1968.

2. The Mexico study is based upon per family income, while the Brazilian study is based upon income per member of the economically active population.

3. Unlike the Brazilian study, the poverty line was not chosen according to any external standard. Fields' figure, for example, corresponds to given Brazilian standards on the lower limit of acceptable income for a family of 4.3 persons. In the present case, the authors felt ill-equipped to make a subjective determination of a Mexican poverty line, and therefore chose a cutoff point according to Mexican sources. This value -- 300 pesos per month in constant 1968 pesos -- was the lowest used by Banco de Mexico (1974) in its 1968 income survey.

It may be of interest to compare this figure with that for Brazil. This can be done as follows:

Fields' average income per economically active person is 5,520 new cruzeiros (1960) per month, or \$U.S. 513 (1960) per year. His cutoff of 2,100 new cruzeiros (1960) thus represent $(2,100/5,520) (513) = \$U.S. 195$ (1960) per year.

The Mexican figure of 300 pesos (1968) per member month first has to be converted to pesos (1968) per member of the economically active population. It can be shown that the latter figure is equal to 300 pesos/month multiplied by the ratio (F/PEA), where F = the total number of families and PEA = the economically active population.

The ratio is unavailable for 1968, but it probably varies only slightly from the 1970 ratio. The latter, as computed from the 1970 census, is approximately .701.

Therefore, we have:

$$\frac{300 \text{ pesos (1968)/family}}{\text{month}} \times \frac{.701 \text{ pesos (1968)/PEA}}{1 \text{ peso (1968)/family}} \times \frac{100 \text{ pesos (1960)}}{130 \text{ pesos (1968)}} \times \frac{1 \text{ U.S. Dollar (1960)}}{12.5 \text{ pesos (1960)}} \times \frac{12 \text{ months}}{\text{year}} =$$

\$U.S. 155 (1960) per economically active person per year.

The arbitrarily chosen figure is thus roughly comparable to that of Brazil. It is difficult to fully evaluate our choice in relation to Fields, however, without knowing the relative costs of living in the two countries.

The raw data, prior to conversion to constant pesos and prior to re-alignment of the 1958 income brackets, are shown in Table I. After these adjustments are made, the data appear as shown in Table II. The aggregation of the 1958 data for the four income brackets above 1,000 pesos (Table III) does not prevent us from duplicating Fields' formulas.

Fields begins with four equations which, after correction for inflation of the peso, 3 are adapted to Mexico as follows: 4/

$$1) \quad \frac{58}{f_p} \frac{58}{F_p} \frac{58}{y_p} + \frac{58}{f_n} \frac{58}{F_n} \frac{58}{y_n} = \frac{58}{F} \frac{58}{y}$$

$$2) \quad \frac{58}{f_p} \frac{58}{F_p} \frac{58}{y_p} = \frac{58}{f_n} \frac{58}{F_n} \frac{58}{y_n} \frac{58}{y_p}$$

$$= \frac{68}{F} \frac{68}{y}$$

$$3) \quad \frac{68}{f_p} \frac{68}{F_p} \frac{68}{y_p} + \frac{68}{f_n} \frac{68}{F_n} \frac{68}{y_n}$$

$$4) \quad \frac{68}{f_p} \frac{68}{F_p} \frac{68}{y_p} = \frac{68}{f_n} \frac{68}{F_n} \frac{68}{y_n} \frac{68}{y_p}$$

where:

$\frac{58}{F}$ = total number of families in 1958

$\frac{58}{y}$ = mean income of all families in 1958

$\frac{58}{y_p}$ = mean income of poor families (below 300 constant pesos in 1958)

$\frac{58}{y_n}$ = mean income of nonpoor families (above 300 constant pesos in 1958)

$\frac{58}{f_p}$ = fraction of families who were poor in 1958

$\frac{58}{f_n}$ = fraction of families who were nonpoor in 1958

$\frac{58}{f_{yp}}$ = fraction of income that went to poor families in 1958

etc. for 1968

The two values of f are unnecessary to the solving of the equation since they cancel out from both sides of all four equations. The six values of f , meanwhile, are shown in Table II. The values of y_{58} and y_{68} , which come from the original sources, are 1,304 and 1,371, respectively, in constant 1968 pesos. The unknowns to be solved for, then are y_{68} , y_{58} , and y_{68} .

Fields, for Brazil, first calculates these values, and then notes the relative growth within the ten-year interval. He observes that the real income of the poor has grown by 21 percent, versus only 28 percent for the nonpoor. This finding suggests that Brazil's rich did not benefit during the 1960s at the expense of the poor. Fields, 1971, p. 273.

In stark contrast, if the survey data for Mexico are to be believed, the poor in that country have fared much worse. The values shown below indicate that Mexico's poor seem to have suffered a 5 percent real decline in real income, while the nonpoor have improved by 86 percent.

$$5) \quad \frac{y_{58}}{y_{68}} = 231.18 \qquad \frac{y_{68}}{p} = 220.25$$

$$\frac{\frac{y_{68}}{p} - \frac{y_{58}}{p}}{\frac{y_{58}}{n}} = -.052$$

$$6) \quad \frac{y_{58}}{y_{68}} = 1169.19 \qquad \frac{y_{68}}{n} = 2180.25$$

$$\frac{\frac{y_{68}}{n} - \frac{y_{58}}{n}}{\frac{y_{68}}{n}} = .865$$

The two values of F are unnecessary to the solving of the equation since they cancel out from both sides of all four equations. 5/ The six values of f , meanwhile, are shown in Table II. The values of y_{5p} and y_{68} , which come from the original sources, are 1,086 and 2,075, respectively, in constant 1968 pesos. The unknowns to be solved for, then are y_{68} , y_{58} , and y_{68} .

Fields, for Brazil, first calculates these values, and then notes the relative growth within the ten-year interval. He observes that the mean income of the poor has grown by 63 percent, versus only 28 percent for the nonpoor. This finding suggests that Brazil's rich did not benefit during the 1960s at the expense of the poor (Fields, 1972, p. 575).

In stark contrast, if the survey data for Mexico are to be believed, the poor in that country have fared much worse. The values shown below indicate that Mexico's poor seem to have suffered a 5 percent real decline in median income, while the nonpoor have improved by 86 percent.

$$5) \quad \frac{y_{58}}{y_p} = 232.36$$

$$\frac{y_{68}}{y_p} = 220.25$$

$$\frac{\frac{y_{68}}{y_p} - \frac{y_{58}}{y_p}}{\frac{y_{68}}{y_n}} = -.052$$

$$6) \quad \frac{y_{58}}{y_n} = 1169.19$$

$$\frac{y_{68}}{y_n} = 2180.25$$

$$\frac{\frac{y_{68}}{y_n} - \frac{y_{58}}{y_n}}{\frac{y_{68}}{y_n}} = .865$$

TABLE I. MONTHLY INCOME PER FAMILY, 1958 AND 1968

<u>Monthly Income per Family (1958 pesos)</u>	<u>Percentage of Families</u>	<u>Percentage of Income</u>	<u>Monthly Income per Family (1968 pesos)</u>	<u>Percentage of Families</u>	<u>Percentage of Income</u>
0-200	7.10	1.41	0-300	5.37	.57
200-300	15.66	4.38	300-600	15.42	3.15
300-400	12.13	4.22	600-1000	19.97	7.67
400-500	12.67	5.34	1000-3000	40.79	33.48
500-750	19.81	10.94	3000-6000	13.02	25.24
750-1000	12.36	13.60	6000-10000	3.37	12.78
1000-2000	14.03	23.48	10000+	2.06	17.11
2000+					

Source: (1958) Navarrate, Ifigenia M. de. "La distribucion del ingreso en Mexico: tendencias y perspectivas," in Ibarra, David et. al. El perfil de Mexico en 1980, Vol. 1 (Mexico: Siglo Veintiuno Editores, S.A.), 1970, p. 64. This material comes from Secretaria de Industria y Comercio, Departamento de Muestreo.

(1968) Banco de Mexico. La distribucion del ingreso en Mexico (Mexico: Fondo de Cultura Economica), 1974, Cuadro II-1.

TABLE 11. MONTHLY INCOME PER FAMILY, 1958 AND 1968, COMPARABLE INCOME BRACKETS

<u>Monthly Income in 1968 Pesos</u>	<u>% of Families</u>		<u>Cumulative % of Families</u>	
	<u>1958</u>	<u>1968</u>	<u>1958</u>	<u>1968</u>
0-300	8.88	5.37	8.88	5.37
300-600	28.09	15.42	37.77	20.79
600-1000	26.00	19.97	63.77	40.76
1000-3000		40.79		81.55
3000-6000		13.02		94.57
6000-10000	36.23	3.37	100.00	97.94
10000+		2.06		100.00

Source: Derived from Table I.

The qualification "seem" is added because of the superficial nature of this conclusion. Upon closer analysis, one finds that the real income decline among the poor may be bogus. This requires some comment.

In actuality, 3.51 percent of the families formerly below 300 pesos moved into the higher brackets by 1968. These families, in all likelihood, were positioned along the upper tier of the 0 - 300 peso bracket in 1958, and hence had a median income above the 232.26 peso median cited for the entire bracket. Their movement into the 300 -600 peso or higher brackets represents a clear gain. On the other hand, the 5.37 percent families who stayed behind were probably among the "poorest of the poor" to begin with -- that is, they were positioned farther from the 300 peso level, and therefore had a median income below the 222.36 peso median cited for the entire bracket. In fact, they may have even been below the 220.25 peso median which the bracket exhibited ten years later. Consequently, it is at least possible that these "poorest" may have experienced some positive growth, despite firstglance appearances to the contrary.

Nevertheless, the overwhelming impression remains that Mexico's poorest have shared only slightly in the country's economic growth. The nonpoor have reaped a much greater portion of the benefits, and the disparity between the two groups is far more significant than in Brazil.

Next, Fields computes the absolute gap between the nonpoor and poor median incomes. He finds that the absolute gap widened by about 25 percent from 1960 to 1970, but that it was a smaller percentage of per capita (economically active population) income in the latter year. Furthermore, the ratio between rich and poor median incomes was reduced from 10.4 to 8.2.

As before, Mexico appears much worse than Brazil in terms of equity. The absolute gap more than doubles over the decade; furthermore, in 1968, it is a higher percentage of per family income. Finally the ratio between nonpoor and poor median incomes almost doubles.

$$7) \quad \begin{array}{c} 58 \\ y \\ n \end{array} - \begin{array}{c} 58 \\ y \\ p \end{array} = 936.83 \quad \begin{array}{c} 68 \\ y \\ n \end{array} - \begin{array}{c} 68 \\ y \\ n \end{array} - \begin{array}{c} 68 \\ -y \\ p \end{array} = 1960.00$$

$$\frac{1960.00 - 936.83}{936.83} = +109.22\%$$

$$8) \quad \frac{y_n^{58} - y_p^{58}}{n - p} = \frac{936.83}{1086} = .86 \quad \frac{y_n^{68} - y_p^{68}}{n - p} = \frac{1960}{2075} = .94$$

$$9) \quad \frac{y_n^{58}}{y_p^{58}} = 5.03 \quad \frac{y_n^{68}}{y_p^{68}} = 9.90$$

In addition, Fields separates the 1958-68 income growth into four component effects: 1) enlargement of the non-poor income sector by persons moving into it from the poor sector (a); 2) enrichment of the original nonpoor sector (b); 3) interaction between the enlargement and enrichment of the non-poor sector (c); and 4) enrichment of the original low income sector (d). These formulas and figures are as follows:

$$a = \left(\frac{f_n^{68} - f_n^{58}}{f_n^{68} - f_n^{58}} \right) \left(\frac{y_n^{58} - y_p^{58}}{n - p} \right)$$

$$= (.9463 - .9112) (1169.19 - 232.36)$$

$$= 32.88$$

$$b = \left(\frac{y_n^{68} - y_n^{58}}{y_n^{68} - y_n^{58}} \right) \left(\frac{f_n^{68}}{n} \right)$$

$$= (2180.25 - 1169.19) (.9112)$$

$$= 921.28$$

$$c = \left(\frac{y_n^{68} - y_n^{58}}{y_n^{68} - y_n^{58}} \right) \left(\frac{f_n^{68} - f_n^{58}}{f_n^{68} - f_n^{58}} \right)$$

$$= (2180.25 - 1169.19) (.9463 - .9112)$$

$$= 35.49$$

$$\begin{aligned}
 d &= \left(\frac{y_p^{68}}{y_p^{58}} - \frac{f_p^{68}}{f_p^{58}} \right) (f_p^{58}) \\
 &= (22.25 - 232.36) (.0537) \\
 &= -.65
 \end{aligned}$$

Expressed in percentages, 3.3 percent of this growth is attributable to effect c, and a negative .1 percent to effect d. The sum a + d, or 3.2 percent, reflects the share of Mexican income growth that went to those families who were originally in the poor sector in 1958. This amount, being quite small, reinforces the earlier calculations which seem to show that Mexico's poor have shared only minimally in the nation's economic growth.

Finally, Fields calculates the extent to which the poverty gap has been closed. This gap is equal to the difference between the poverty line cut-off and the mean income of the poor families, multiplied by the percentage of families who are poor. Applying this formula 6/ to Mexico, we find that the reduction from 1958 to 1968 is 29 percent. This compares with 41 percent for Brazil.

$$\begin{aligned}
 10) \quad -12 \quad \text{Poverty Gap Reduction} &= \\
 &= \frac{\left(\frac{300 - y_p^{58}}{300 - y_p^{68}} \right) \left(\frac{f_p^{58}}{f_p^{68}} - \frac{f_p^{58}}{f_p^{68}} \right) + \left(\frac{y_p^{68}}{y_p^{58}} - \frac{y_p^{68}}{y_p^{58}} \right) \left(\frac{f_p^{68}}{f_p^{58}} \right)}{\left(\frac{300 - y_p^{58}}{300 - y_p^{68}} \right) \left(\frac{f_p^{58}}{f_p^{68}} \right)} \\
 &= \frac{(300-232.26) (.0888 - .0537) + (220.25-232.36) (.0537)}{(300-232.36) (.0888)} \\
 &= 29\%
 \end{aligned}$$

At this point, a question arises as to why Mexico seems to have performed so poorly in terms of equity. This performance is especially embarrassing for Mexico when it is compared to that of Brazil.

The answer proposed here is that the explanation is mainly statistical. A more thorough review of the Mexican income data reveals that a nation's performance with respect to Fields' various indicators may be highly sensitive to where the poverty line is drawn. When this sensitivity is taken into account, optimistic statements about income growth among the Brazilian poor may require modification.

For example, the portion of families below the arbitrarily-drawn Mexican poverty line is a much smaller percentage of the total than the portion below Brazil's poverty line. In Fields' study, fully 37.0 percent of the economically active population falls below the 2,100 new cruzeiros (1960) cutoff in 1960; in 1970, the figure is still 35.5 percent. The corresponding 1958 and 1968 percentages for Mexican families below the 300-peso mark are 8.9 percent and 5.4 percent, respectively. Thus, the conclusions of this study apply to a more narrowly defined group of people.

Suppose, to illustrate this point, that 600 pesos -- or even 1000 pesos -- represented an amount below which a Mexican family was said to be in poverty. While these figures are higher than the amount chosen for Brazil, they are slightly less than 60 percent.

If we then draw three different poverty lines -- 300, 600, 1000 pesos -- and calculate the various quantities which compare poor and nonpoor performance, we find striking differences. With the line drawn at 600, income growth among Mexico's poor is cast in a more favorable light than at 300. Moreover, at a poverty line of 1000 pesos, practically everything that Fields says about comparative income growth among Brazil's poor and nonpoor can be said about Mexico as well (See Table II and Figure A.).

Relevant to this finding, it is particularly interesting that the proportion of poor Mexican families in 1968 (1000-pesos definition) is about 40 percent -- not much different from Brazil's 35 percent in 1970. The relationship between the percent defined as poor and the results obtained, therefore, may not be entirely coincidental. It may be argued that this analysis unfairly cast doubt on Fields' major conclusions. Choosing two extra poverty lines 7 and obtaining different results, may imply that Fields' figures may have come out differently with some other poverty line. After all, he stresses that he is talking about

the population that was poor as defined according to a fixed absolute income level, not about a population grouped with the lower-income strata and defined as a percentage of the total. However, our point is a different one. What is happening to the poor, expansively defined, may not necessarily be the same as what is happening to the poor, narrowly defined. Put another way, what is happening to the poor as a whole may not be the same as what is happening to the poorest of the poor.

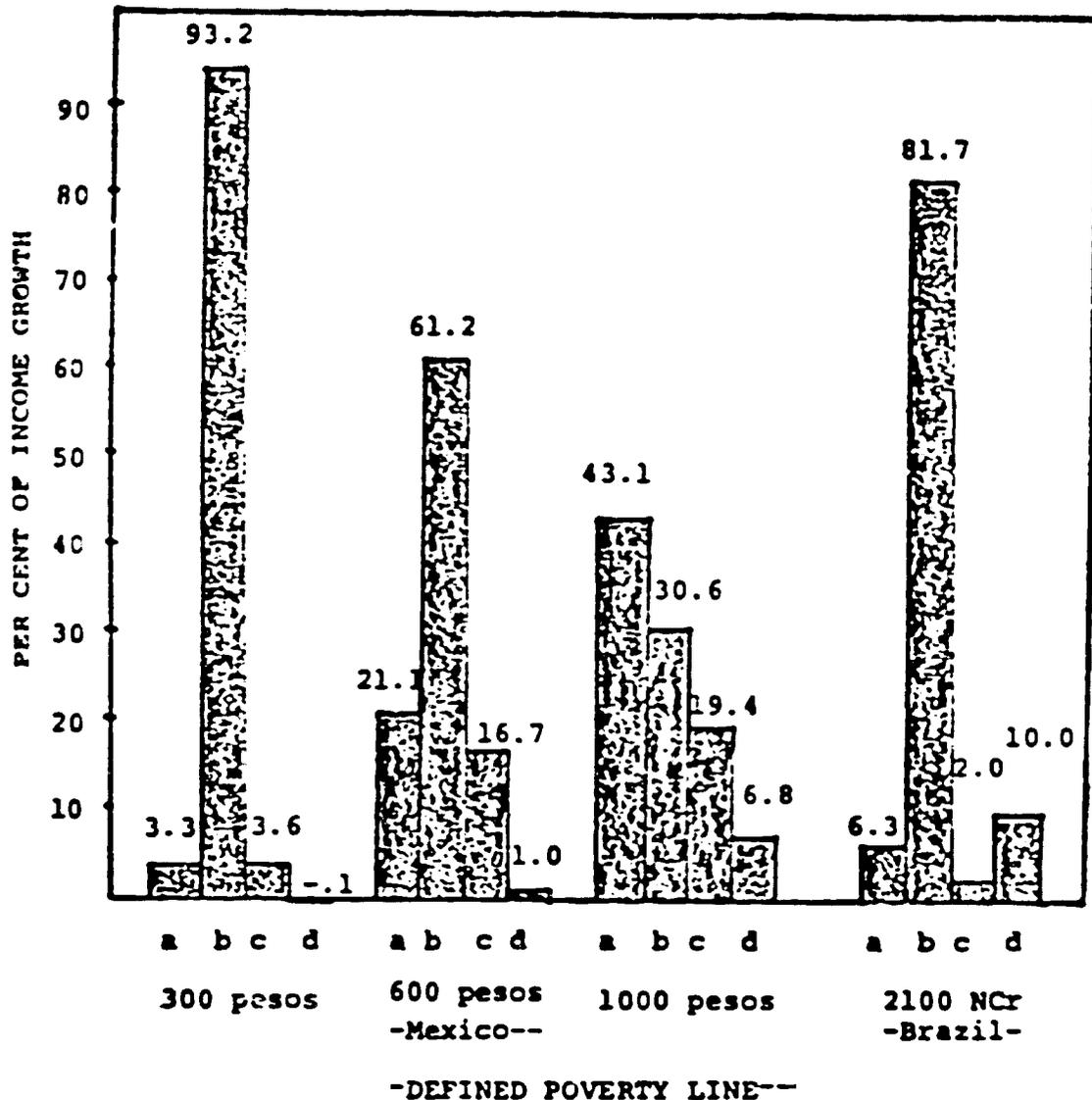
Specifically, 35 percent is a large population about which to make definitive statements based on average results. Such an aggregation may mask internal differences in performance among those who are poor. In Mexico, for instance, the data seem to indicate roughly that the second, third, and fourth deciles (counting from the bottom) have improved their income considerably, even compared to the rich, but that the lowest decile has been left behind. If a like situation has occurred in Brazil among 35 percent of the population which is poor (defined absolutely), Fields' conclusion would have to be modified. The benefits of economic growth would not be reaching all the way down to the bottom income groups, although the poor as a whole appeared to be improving. Fields' methodology might be improved, therefore, if the model were tuned more finely -- that is, if the population were broken down into more categories, rather than just the poor and nonpoor.

Economist Ifigenia M. de Navarrete has done studies along these lines for Mexico. Going beyond identification of a Lorenz curve, she makes certain upward adjustments for nonreported income and calculates the median family income for each decile in constant pesos. These figures, shown in Table IV, are useful because they say something absolute as well as something relative. It would be worthwhile to convert more recent income surveys into a similar form.

Conclusions

We can summarize our findings about Mexico. Choosing a poverty level that encompasses the poorest five to ten percent of the population, the position of these poorest apparently had deteriorated both relatively and even absolutely between 1958 and 1968. We may be missing some imputed income in reaching this conclusion. However, if the poverty line is drawn to include the bottom 40 percent (a percentage frequently used by Robert McNamara, President of the World Bank, in

FIGURE A. GROWTH IN INCOME BY EFFECT, MEXICO AND BRAZIL



Source: (Mexico) Derived from Tables 2 and 3.
 (Brazil) Fields, Gary S. "Who Benefits from Economic Development?--A Reexamination of Brazilian Growth in the 1960s." American Economic Review 67:4 (September 1977), p. 574.

discussing equity aspects of growth), we find that the mean income of the poor increased by more than that of the nonpoor, and that there was a substantial reduction in what Fields calls the poverty gap over the 10 years. We do not know which is the more important conclusion; this depends on a value judgment of the target population.

**TABLE III. PERFORMANCE OF POOR AND NONPOOR INCOME:
MEXICO, WITH VARIABLE POVERTY LINES, COMPARED TO BRAZIL**

	Defined Poverty Lines			
	300 Pesos	600 Pesos	1000 Pesos	Brazil 2100 NCz
I. % increase in mean income of poor	-5.2%	+15.0%	+40.1%	+62.5%
% increase in mean income of nonpoor	+86.5%	+62.8%	+36.8%	+27.7%
II. % increase in absolute gap (difference between mean incomes of nonpoor and poor)	+109.2%	+75.1%	+36.1%	+24.0%
III. Ratio of absolute gap to mean income of total population, * beginning of decade	.86	1.13	1.71	1.36
Ratio of absolute gap to mean income of total population, * end of decade	.94	1.34	1.22	1.27
IV. Ratio of mean income of nonpoor to mean income of poor, beginning of decade	5.03	4.80	5.48	10.38
Ratio of mean income of nonpoor to mean income of poor, end of decade	9.90	6.79	5.35	8.15
V. % reduction in poverty gap (difference between poverty line and mean income of poor times % of total population* which is poor)	-28.6%	-54.6%	-54.2%	-41.4%

*Total population for Brazil refers to economically active population; total population for Mexico refers to families.

Source: (Mexico) Derived from data in Tables I and II.

(Brazil) Fields, Gary S. "Who Benefits from Economic Development?--A Reexamination of Brazilian Growth in the 1960s," *American Economic Review* 67:4 (September 1977), pp. 570-582.

TABLE IV. DISTRIBUTION OF FAMILY INCOME BY DECILE, MEXICO: 1950, 1958 AND 1963

<u>Decile</u>	Adjusted Median Monthly Income per Family (1958 Pesos)			Per Cent of Income			Per Cent of Income, Accumulated		
	<u>1950</u>	<u>1958</u>	<u>1963</u>	<u>1950</u>	<u>1958</u>	<u>1963</u>	<u>1950</u>	<u>1958</u>	<u>1963</u>
I	258	297	315	2.7%	2.22%	1.96%	2.7%	2.22%	1.96%
II	325	375	356	3.4	2.80	2.21	6.1	5.02	4.17
III	363	441	518	3.8	3.29	3.22	9.9	8.31	7.39
IV	421	516	598	4.4	3.85	3.72	14.3	12.16	11.11
V	460	608	738	4.8	4.54	4.59	19.1	16.70	15.70
VI	526	789	834	5.5	5.52	5.19	24.6	22.22	20.89
VII	669	842	1056	7.0	6.29	6.57	31.6	28.51	27.46
VIII	823	1147	1592	8.6	8.57	9.90	40.2	37.08	37.36
IX	1033	1821	2049	10.8	13.59	12.74	51.0	50.67	50.10
X	4687	6605	8025	49.0	49.33	49.90	100.0	100.00	100.00

Source: Nuvarrete, Ifigenia M. de. "La distribucion del ingreso en Mexico: tendencias y perspectivas," in Ibarra, David et al. El perfil de Mexico en 1980, Vol. 1 (Mexico: Siglo Veintiuno Editores, S.A., 1970), p. 37.

Notes

1. Mexico's per capita product grew at a 2.8 percent annual rate from 1960 to 1975. This rate compared favorably with the 2.5 percent target of the 1961 Charter of the Punta del Este and the Second Development Decade of the United Nations.

2. Fields (1972, p. 573) himself raises a question about his simplified linear interpolation. Yet, he states, that even without the biases it introduces, his conclusions would not be reversed.

3. The Mexican peso has inflated as follows: 91.6 pesos (1958) = 100.0 pesos (1960) = 130.0 pesos (1968). (Nacional Financiera, 1977, p. 223-224.) Over the entire 1958-68 period, the exchange rate was 12.5 pesos to the dollar.

4. Fields does not state his equations 1)-4) explicitly in algebraic notation. However, we have done so for Mexico, taking into account that the correction for inflation has already been made.

5. Inclusion of F within the original formulas is useful mainly for understanding their derivation. For instance, it can be seen that $2) \left(\frac{f_{58}}{F} \right) (y_{58}) = \left(\frac{f_{58}}{y_p} \right) (F_{58,58})$. The number of families who are poor multiplied by their mean income equals the total income which went to the poor. This, in turn, is equal to the fraction of income that went to the poor times the total income that went to all families.

6. The calculations are a summary for Fields' equations 10)-12).

7. It is admitted that the 600- and 1000-peso poverty lines are relatively high, and that in Mexico's case it takes a rather high poverty line definition to show the poor to be benefiting. In particular, the 1000-peso mark even exceeds the mean income for all families in 1958. However, these extra poverty lines were chosen only to make the point in the next paragraph of the text.

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