NOTE ON MEXICAN ECONOMIC DEVELOPMENT AND INCOME DISTRIBUTION

Adalberto García Rocha

Introduction

This note presents an overview of the distributive situation of Mexico in recent years. Even though the economy attained high rates of growth for a large period, a large majority of the population still receives incomes that are insufficient to meet basic needs. The economic setback that started in 1982 affected the income distribution to an extent that is still unknown, although all partial indicators suggest that both poverty and inequality levels increased. Mexico's economic problems are still those of a typical underdeveloped country: slow growth, large levels of poverty, and extreme income inequality.

This note begins by explaining briefly some of the difficulties involved in assessing distributive progress, where conclusions are drawn from inequality and poverty indices. Technical issues to a minimum. A second section examines some empirical results on Mexico's distributive situation to illustrate the situation before and during the recent critical years. A third section contains various speculations on the causes of the distribution in the case of Mexico and on the role of policy in alleviating poverty and reducing inequality.

1. Technical Comments on Inequality Comparisons

Economic development is a process by which income grows and benefits accrue to a majority of the population. The evaluation of any given development strategy is most often done by observing changes in the levels of income, poverty, and inequality. Poverty and inequality are typically evaluated through summary indices of the size distribution of household or individual incomes.

Comparisons of average income levels, although not exempt from technical difficulties, can be accomplished with some precision. Such is not the case of inequality and poverty levels, where, in addition to statistical difficulties, normative assumptions are unavoidable. Due to lack of data, conclusions are drawn typically from the behavior of poverty and inequality indices of the entire population. This means that people from all ages (individuals born in different economic stages), regions, and educational levels are included in the comparisons. This limits the value of such comparisons.

Normative assumptions make it even more difficult to draw unambiguous interpretations from inequality and poverty indices. Empirical results are determined both by the data and by the indices or formulas used. The indices in turn depends on normative assumptions. We will "see" more or less inequality or poverty depending on the particular formula used. In the case of inequality measurement, the main obstacles arise from a) the fact that many different income distributions can show the same level of inequality, and b) the problem of evaluating various combinations of inequality and income levels. In the case of poverty indices, the difficulties are in deciding on the relative importance of a) the level of poverty, b) the proportion of the poor in the total population, and c) income inequality among the poor.

Another normative aspect has to do with the contribution of growth and distribution to social welfare. The typical assumption, often made implicitly, is that reducing inequality and poverty can compensate for lack of growth. A frequent criticism directed to policy in Mexico during the 80s was that it made low income groups take an inequitable share of the losses due to the fall in economic activity. Welfare costs could thus be minimized by choosing

a more adequate distribution. Redistribution could thus have an important impact on welfare, even if the economy is stagnant. Similar criticisms were made to Mexico's policy during the years of stable and accelerated growth, during which little distributive progress was achieved.

The above comments apply as well to hypotheses on the relationship between growth and inequality. Any empirical correlation between growth and inequality will depend on the particular way inequality is measured.

The above considerations will betaken into account in the next section, where the trends in inquality are examined.

2. Income Inequality and Poverty in Mexico

This section examines empirical evidence on income, income inequality, and poverty in Mexico. The estimates of inequality and poverty levels were obtained from household survey data for various years since 1950. The most recent household survey data used is that of the 1983.

Income Level. Gross Domestic Product per capita grew steadily since the late 50s to 1981, except for the short period 1976-1977. The highest level was observed in 1981 (see Figure 1). After that year, GDP per capita decreased drastically. The most salient distributive change underlying the economic decline is that annual average real wages fell below GDP per capita between 1982 and 1983 (see Figure 2). An corresponding dramatic fall is observed in the share of wages in GDP (Figure 2). Wage earners were mostly affected by the slump, after many years during which wage levels remained above average income. It should be pointed out that the shares of wages and non-wage incomes in GDP are the reverse of those of developed countries. The share of wages in GDP in Mexico fell from an already low level when

compared with other countries. The drop in the share is explained mostly by a fall in real wages, rather than a fall in employment. Mexico's traditional or informal sector is very large, and it has probably grown in size in recent years. The decline in economic activity after 1981 occurred essentially in the modern sector.

{Figure 1}

GDP Per Capita and Rate of Growth
Mexico, 1980-1988

Fig. 2

GDP per capita, Average Wages, and
Share of Wages in GDP. Mexico, 1980-1986

Thousands of Pesos of 1980.   Percentages

TOTAL WAGES/GDP

AVERAGE WAGES

GDP PER CAPITA

Year
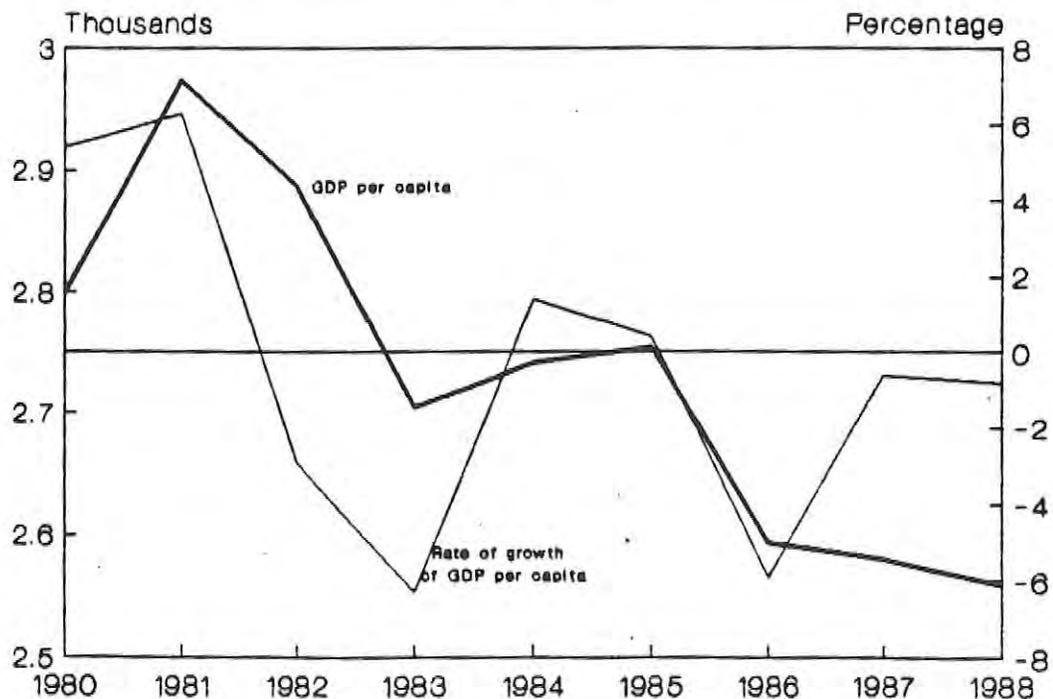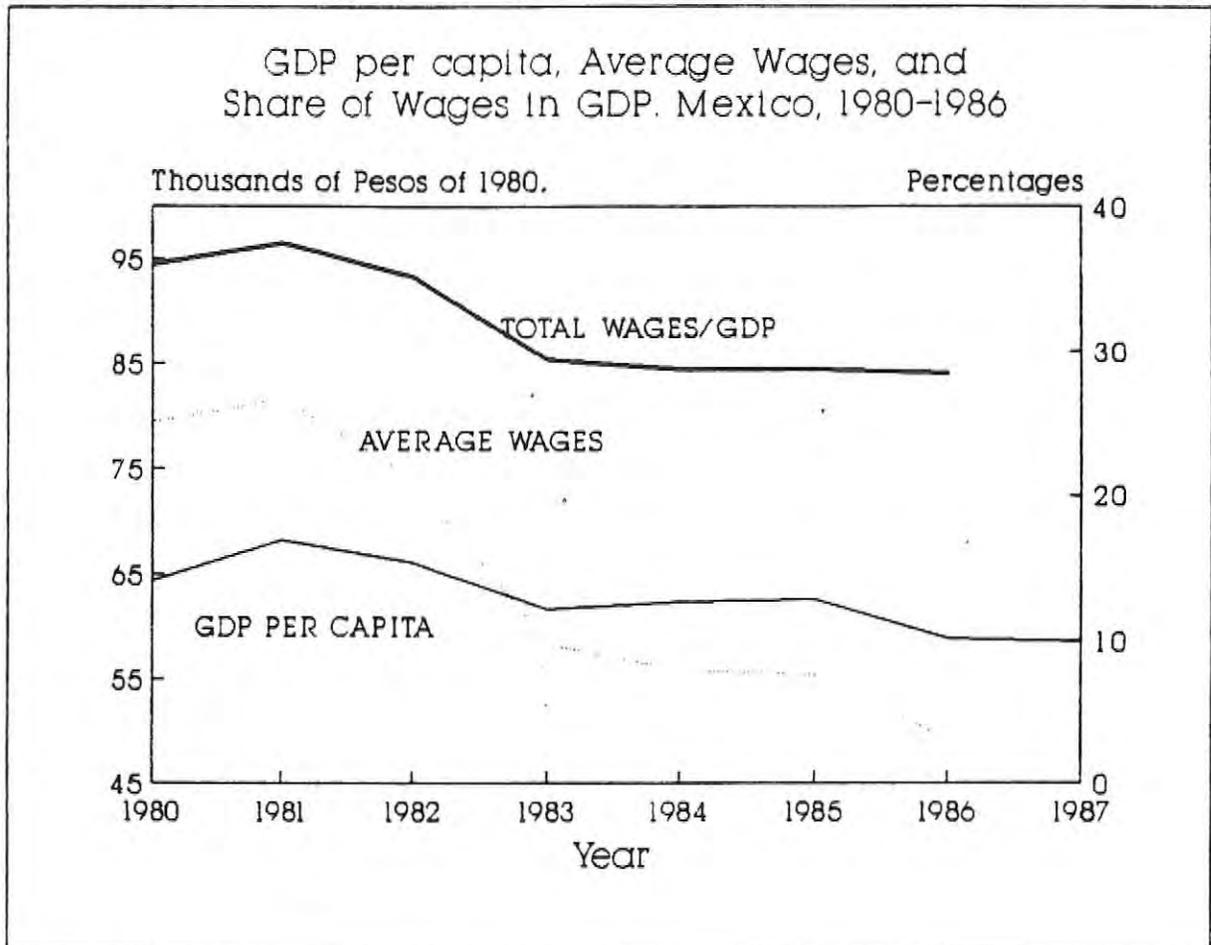
Inequality levels and trends. Inequality levels in
Mexico are much higher than those of European countries. The
Gini coefficients for European countries fall around a level
of .30-.35, whereas the same indicator for Mexico is around
.5.[1]

The trends in inequality, as explained in the previous
section, depend on the normative assumptions behind the
inequality measure used. In order to make the discussion
brief, inequality trends are examined through an index due
to Atkinson (1973) which allows to calibrate the degree of
inequality aversion. Atkinson's formula reflects inequality
at lower income levels, as the parameter of inequality
aversion is increased. Using such index, Figures 3a to 3d
depict inequality rankings for various years between 1950
and 1983.

{Figures 3a-3d}

Inequality levels fluctuate when a low value of the
parameter of inequality aversion is chosen (Figures 3a and
3b). The most recent year appears to have the lowest level
of inequality, so that we might conclude that there is a
declining trend. A clear increasing trend is observed,
however, when the value of the parameter is increased, and
the index gives more weight to inequality at lower income
levels. In the three decades covered by the data, when a
high level of inequality aversion is chosen, inequality in
Mexico shows a clear increasing pattern.

Another way of looking at the changes in inequality is
that of estimating how much inequality would be if all
income growth had accrued to the lowest income groups. This

---

[1] The Gini measure of inequality is 0 when there is
no inequality and 1 when there is extreme
inequality.

Figure 3

(a)

ATKINSON'S MEASURE
θ = .2
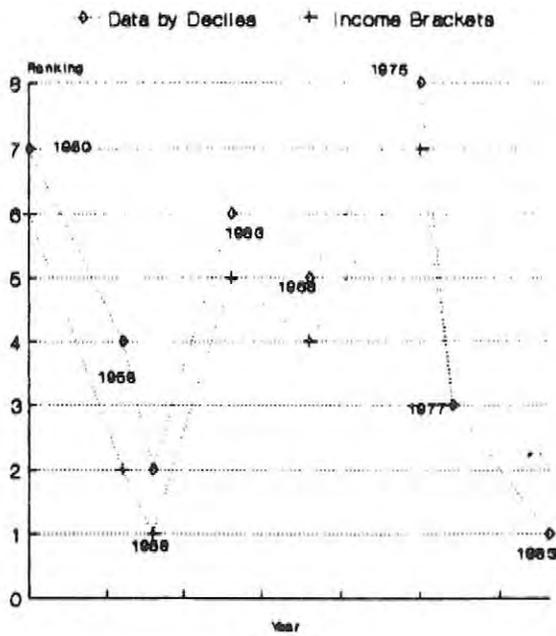
(b)

ATKINSON'S MEASURE
θ = 1
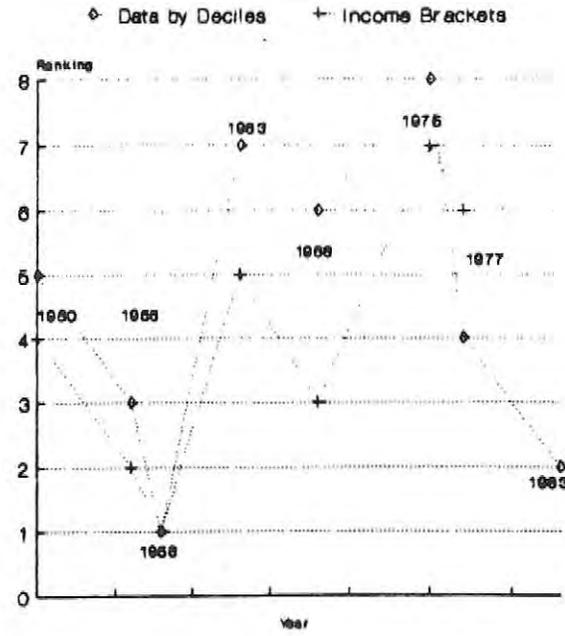

(c)

ATKINSON'S MEASURE
θ = 2
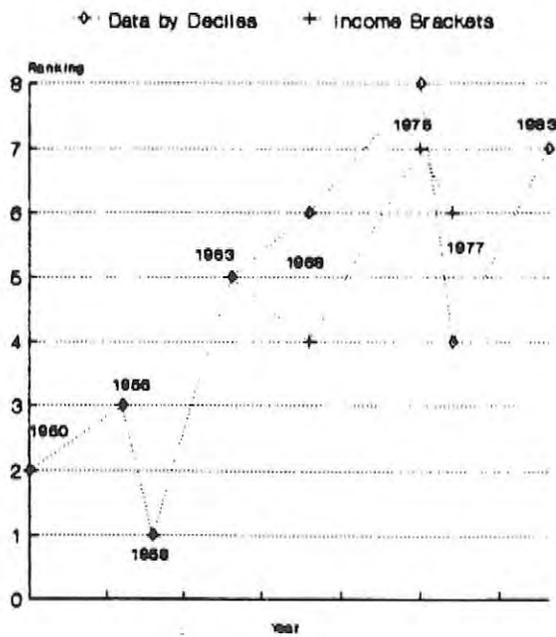
(d)

ATKINSON'S MEASURE
θ = 3
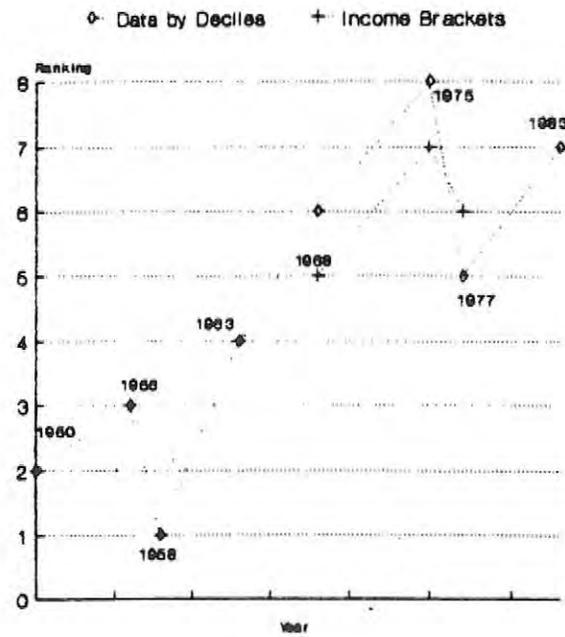
exercise can be applied to data for the period between 1968 and 1977. If all the growth of income in that period had been redistributed to equalize the lower incomes, it would have increased the incomes of the poorest 68.7 percent of the population. The table below shows a comparison between the observed and the hypothetical inequalities, for various levels of inequality aversion.

Observed Inequality and Inequality when all Income Growth is Redistributed to the Lower Income Strata. Mexico, 1968-1977.

Inequality Aversion	Observed	Hypothetical	Observed ⁄ Hypothetical
.1	4.6	3.2	1.4
.5	21.8	14.0	1.6
1.0	43.2	24.2	1.8
2.0	65.4	31.8	2.1
3.0	79.4	35.7	2.2

Source: Authors calculations

The table shows clearly that observed inequality levels in 1977 were from 40% to 120% higher than those that would have been observed if all income growth had been redistributed. The figures show also that the reduction in inequality are more significant the larger the parameter of inequality aversion.

Poverty Levels. Existing data does not allow for adequate comparisons of poverty levels. It is therefore difficult to draw conclusions about the trends of poverty levels. According to some recent calculations (Hernández Laos,1989), nearly 50% of Mexican households receive incomes below a poverty line, and both the number of poor and of people living in extreme poverty have increased since 1982.

The table below contains some indicators on poverty for various poverty lines lower than average income. In this way

we can illustrate how sensitive a poverty index is to changes in the poverty line.

Poverty Indicators. Mexico, 1977

	Poverty Line	Number of Poor	Proportion of Poor H	Poverty Gap (pesos)	Relative Gap I (%)	IH	Sen's Index
1	472.7	625.6	5.3	183.4	38.8	0.0206	0.0287
2	945.4	1639.5	13.9	398.9	42.2	0.0587	0.0791
3	1418.1	2755.9	23.4	615.4	43.4	0.1015	0.1368
4	1890.8	3709.9	31.5	871.6	46.1	0.1451	0.1924
5	2363.5	4528.o	38.4	..1148.7	48.6	0.1867	0.2442
6	2836.2	5345.3	45.3	1415.3	49.9	0.2262	0.2950
7	3308.9	6166.3	52.3	1667.7	50.4	0.2636	0.3451
8	3781.6	6783.4	57.5	1966.4	52.0	0.2992	0.3882

Source: Author's Calculations

According to the figures in the table, when the poverty line goes from 10 to 80 percent of average income, the number of poor households (second column) varies between 626 thousands, which represent 5.3 percent of the total number of households, to 6783 thousands, or 57.5 percent of the population. The poverty gap relative to the poverty line goes from 38.8 percent to 52 percent of the poverty line. The poverty gap grows as the poverty line is increased. This is an indication of a very polarized distribution of income between poor and rich. It must be pointed out that poverty is acute in Mexico since nearly two thirds of the total number of households receive incomes below the average. The product of the head count ratio and the poverty gap (column IH in the table) reflects simultaneously the extent of poverty and its level. An examination of the latter values, the proportion of poor, and the poverty gap, indicates that the changes in IH are mostly due to changes in the proportion of poor. If inequality among the poor is taken into account, such as in Sen's index shown in the last column of the table, the level of poverty becomes larger an grows faster with the poverty line.

Inequality, Age and Educational Level. Figures 4a and 4b show the profiles of income levels by age and educational attainment. Income levels increase and then decrease with age. On the other hand, education has a clear positive correlation with income levels, as these are higher with higher educational levels.

{Figures 4a-4b}

Figure 5 shows how inequality varies with age and educational level. Taking education first, it is observed that the higher levels of inequality occur at the lower levels. Inequality decreases with the educational level. More inequality of educational levels means more inequality of incomes. However, less inequality would exist if a higher and homogeneous educational level were attained.

{Figure 5}

Regarding age, it is found that inequality is highest among the young and decreases steadily with age for the groups 26 and older.

3. Factors Determining the Distribution

The above evidence shows that Mexico has had a poor distributive performance. The explanation is partly in structural problems that take a long time to change, and partly in the recent history of inadequate economic policies. The purpose of the following description is to explain some of the forces that gave rise to a very polarized form of growth and might now present opposition to change.

Since the early 50s, the main feature of Mexico's economic strategy consisted of creating an industrial sector through protectionism or, more precisely, extreme and prolonged protectionism. Protectionist policies had many

(Figure 4)

(a)

AVERAGE INCOME BY AGE AND EDUCATION LEVEL. MEXICO, 1977

Monthly Income (Thousands of Pesos)
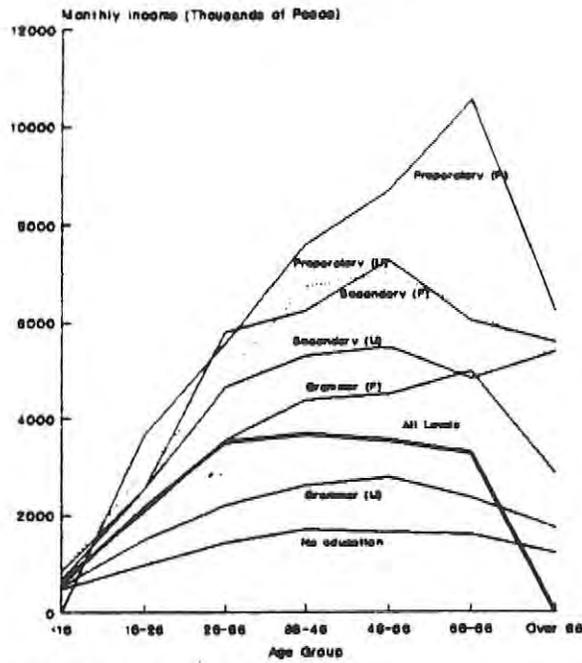
Source: Author's calculations

(b)

AVERAGE INCOME BY AGE AND EDUCATION LEVEL. MEXICO, 1977
(b)

Monthly Income (Thousands of Pesos)
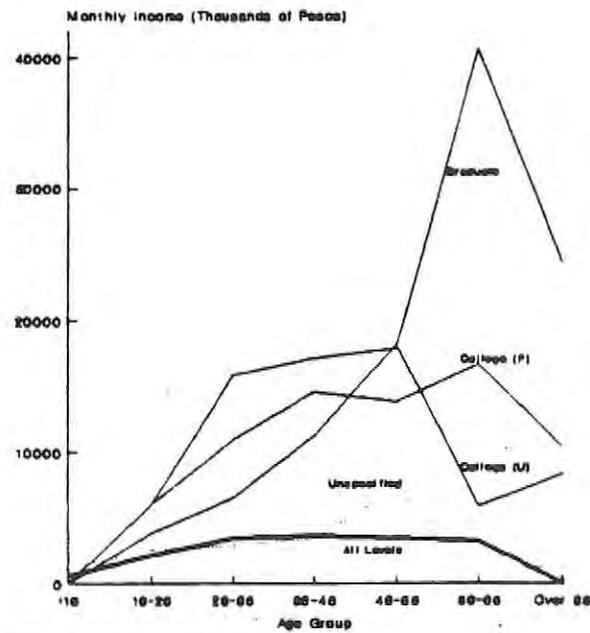
Source: Author's calculations

Inequality by Educational Level and Inequality by Age. Mexico, 1977

(Figure 5)

8b
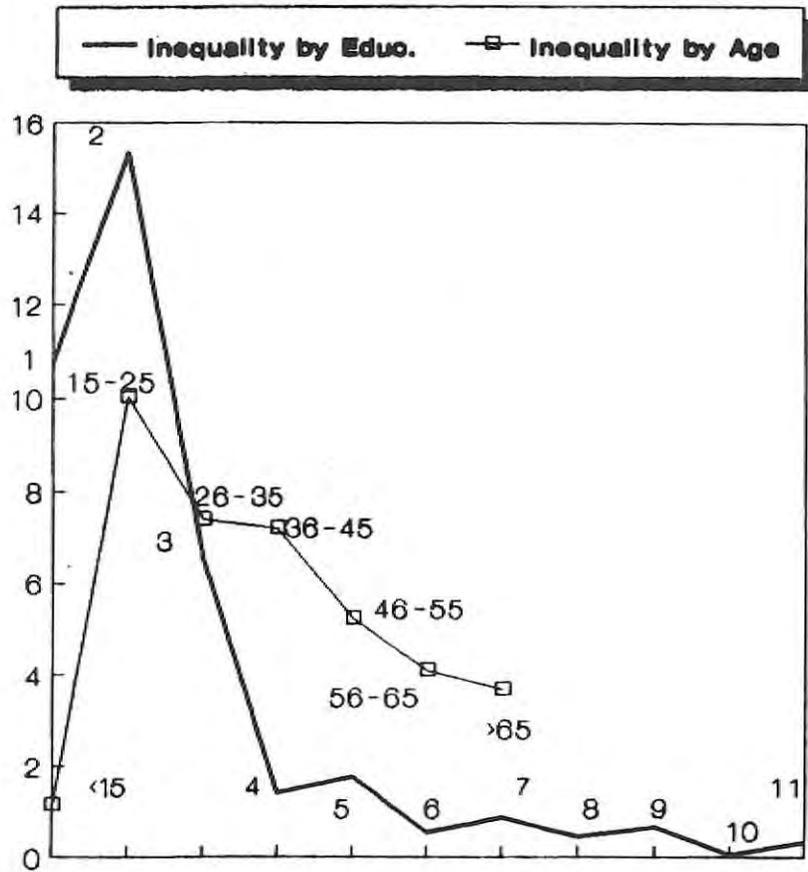
diverse consequences, that were notably unfavorable for the income distribution. The next paragraphs give a succint description of possible connections between the growth strategy and the income distribution.

The essence of the growth strategy consisted of stimulating industrial and urban investment by offering high returns supported by captive markets, direct public subsidies, public investment in infrastructe, and low prices of wage goods. The wage earning population of the urban sector, including the bureaucracy, was guaranteed growing real wages and fringe benefits. A high and sustained growth of productivity was achieved by investment in capital intensive techniques, reinforced by tax concessions on the importation of capital goods. A highly concentrated industrial sector emerged, given the limited size of the markets. Firms met with little domestic or external competition. The demand for skilled, and scarce, labor increased considerably, but only a limited part of the unskilled labor force found employment opportunities. Large income differences emerged between the modern sector and traditional activities, as well as considerable wage differences between skilled and unskilled labor in the modern sector. Protectionism on the other hand caused considerable damage to agricultural activities, where land tenure problems were an aggravating factor. The highly controversial land reform structure which today is more clearly a smoke curtain to postpone effective policies to increase agricultural production,

The strong orientation to the domestic market caused a high regional concentration of economic activity. The largest part of investment went to a small number of large cities, notably Mexico City, Monterrey, and Guadalajara.

The demands for urban services, low cost housing, public education, health services, and transportation

services, absorbed growing proportions of federal spending. A high concentration of public spending on the urban middle and upper classes became inherent to the strategy. On the political side, corporate unionism emerged as the main force to defend and maintain the privileges to the urban areas.

Although expenditures in public education are the largest items in Mexico's federal budget, the benefits to the population are highly regressive. The ability to take advantage of educational services is directly related to the income of the recipient. The level of schooling is a direct reflection of the income distribution.

Inequality and polarization created serious concern that led two federal administrations to attempt to alleviate poverty and inequality through public expenditure measures without any consideration to structural deficiencies.

On the other hand, political pressures lead to a policy that attempted to use all economic policy instruments to achieve distributive objectives. (A different approach would be that of using economic instruments to grow and separate and specific instruments to achieve distributive goals.) The shortcomings of such approach come from the fact that policy objectives become ambiguous or contradictory when they mixed the inherent goals of an instrument with distributive purposes. Such is the case, for example, when criteria to assign rural credit involves both the objectives of expanding production and solving the peasants direct needs, or that of public works or public ownership of enterprises intended also to solve employment problems.

Ownership of enterprises is closely connected with interest groups. The Mexican federal government increased its ownership of enterprises essentially to avoid the protest of workers, unions, bureaucratic interest groups, as well as of ideological crusaders. The ownership of

enterprises never responded to technical arguments such as those of public versus private goods.

As the economy fell into a crisis, it became evident that radical changes were unavoidable. Resources became insufficient to comply with all the demands. Often such demands lead to economic irrationality, especially in the employment policies of public enterprises.

It must be pointed out that many of the basic changes to policy are already underway. A full reorientation to external markets and liberalization has been started, together with the elimination of regulatory absurdities created during the protectionist period. Another fundamental change has consisted of correcting public finance disorder, including a redefinition of public sector expenditure objectives. Recently, a thorough revision of agricultural and rural policy has been started. These are some major achievements of the present administration that would be sufficient to judge favorably its performance so far.

SERIE DOCUMENTOS DE TRABAJO

Los siguientes documentos de trabajo de publicación reciente pueden ser solicitados a:

Rocío Contreras,
Centro de Documentación, Centro de Estudios Económicos, El
Colegio de México A.C., Camino al Ajusco # 20 C.P. 01000
México, D.F.

85/I	Bhaduri, Amit. "The race in arms: its mathematical commonsense".
85/II	Garber, Peter M. and Vittorio U. Grilli. "The belmont Morgan syndicate as an optimal investment banking contract".
85/III	Ros, Jaime. "Trade, growth and the pattern of specialization".
85/IV	Nadal, Alejandro. "El sistema de precios de producción y la teoría clásica del mercado".
85/V	Alberro, José Luis. "Values and prices in joint production: discovering inner-productivities".
85/VI	Urquijo Hernández, Luis Alfredo de. "Las plácticas de ajuste en el sector externo: análisis de un modelo computable de equilibrio general para la economía mexicana".
85/VII	Castañeda Sabido, Alejandro I. "La proposición de inefectividad de la nueva macroeconomía clásica un estudio crítico".
85/VIII	Alba, Enrique de y Ricardo Samaniego, "Estimación de la demanda de gasolinas y diesel y el impacto de sus precios sobre los ingresos del sector público".

85/IX   Alba, Enrique de y Yolanda Mendoza"Disaggregation and forecasting: A bayesian analysis"

86/I   Blanco, Herminio. "The term structure of the futures exchange rates for a fixed exchange rate system: the mexican case".

86/II   Ize, Alain and G. Ortíz."Fiscal rigidities, public debt and capital flight".

86/III   Alberro, José. "La dinámica de los precios relativos en un ambiente inflacionario".

86/IV   Bucay, Nisso ."Wage rigidity and the firm alternative approaches".

86/V   Alberro, José y Jorge Cambiaso."Características del ajuste de la economía mexicana.

87/I   Alberro, José, José Córdoba and Eytan Sheshinsky "On measures of dispersion of relative prices under inflation".

87/II   Alberro, José, Herminio Blanco and Peter Garber "The effects of terminating the mexican two-tiered exchange rate system".

87/III   Fernández, Oscar y Nora Lustig. "Estrategias de crecimiento, sustitución de importaciones y balanza de pagos en un modelo de crecimiento multisectorial".

87/IV   Tornell, Aaron. "Insulating properties of dual exchange rates: a new-classical model".

87/V   Villarreal, Roberto."El manejo de la deuda externa de México en la década 1978-1987"

87/VI   Mercado, Alfonso. "Automatización asistida por computadora y desarrollo industrial en México. El uso de las máquinas-herramienta de control numérico computarizado".

87/VII   García Alba, Pascual. "Un enfoque para medir la concentración industrial y su aplicación al caso de México".

87/VIII   Villarreal, Robert I. "Investment and financing interactions at the firm's level: an econometric simultaneous equation approach".

87/IX   Lustig, Nora. "México: size and impact of non transfer expenditures: 1920-1985".

87/X   Lustig, Nora. "Del estructuralismo al neoestructuralismo: la búsqueda de un paradigma heterodoxo"

88/I   Guerrero, Víctor M. "Obtención de pronósticos óptimos, sujetos a restricciones, con modelos arima".

88/II   Lustig, Nora. "Stabilization and adjustment in post 1982,Mexico:are there signs of export-led growth?

88/III   Yúnez, Antonio. "Theories of the exploited peasantry; a critical review".

88/IV   Unger, Kurt y Luz C. Saldaña, "Las economías de escala y de alcance en las exportaciones mexicanas más dinámicas".

88/V   García Rocha, Adalberto, Aurora Gómez y Miguel Szequely. "Estrutura de la desigualdad en México".

88/VI   Hart, Michael. "Dispute settlement and the Canada- United States free trade agreement".

88/VII   Pérez Motta, Eduardo, Evelyn Greenwell y Gabriela Quezada. "Participación de la mujer casada en el mercado laboral del área urbana en México: un análisis económico de su relación con la división sexual del trabajo dentro de la estructura familiar".

88/VIII   Baillet, Alvaro. "An analysis of direct taxation on mexican taxpayers: a microsimulations approach"

88/IX   Baillet, Alvaro y Arlette Cisneros. "La inversión extranjera directa en el sector de servicios en México".

88/X   Baillet, Alvaro. "La evolución de los ingresos del sector público".

88/XI   Kehoe, Timothy. "A general equilibrium analysis of the indirect tax reform in Spain".

88/XII   Férnadez, Oscar and Nora Lustig. "Optimal allocation of investment and the role of import substitution".

88/XIII   Fernández, Oscar. "Valores y precios en producción análisis de comportamientos destructivos ocultos".

89/I   Unger, Kurt and Luz Saldaña. "MNC, global strategies and technical change: implications for industrializing countries"

89/II   Cuddington, John and Carlos Urzúa. "Primary commodity prices: a time-series analysis of trends and cycles".

89/III   Urzúa, Carlos M. "Tests for multivariate normality of observations and residuals".

89/IV   Crane, Randall. "Tax-price specification and the demand for local public goods".

89/V   Crane, Randall. "A note on hedonic prices in cost/ benefit analysis".

90/I   Ize, Alain. "Trade liberalization, stabilization, and growth: some notes on the mexican experience".

90/II   Sandoval Musi, Alfredo "Construction of new monetary aggregates: the case of Mexico".

90/III   Fernández, Oscar. " Algunas notas sobre los modelos de Kalecki del ciclo económico".

90/IV   Sobarzo, Horacio E. "A consolidated social accounting matrix for input-output analysis".

90/V   Urzúa, Carlos M. "El déficit del sector público y la política fiscal en México, 1980 - 1989".

90/VI   Romero, José. "Desarrollos recientes en la teoría económica de la unión aduanera".

90/VII   García Rocha, Adalberto. "Note on mexican economic development and income distribution".