

## A Poverty Profile of Mexico in 1989

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### ABSTRACT

Absolute poverty increased in Mexico between 1984 and 1989, with most of this increase concentrated in rural areas. This paper attempts to provide a profile of the poor based on the 1989 data from INEGI's Income-Expenditure Survey. The paper concludes that rural wagedworkers and campesinos are the most numerous among the poor and face the greatest depths and severity of poverty. On the other hand, the poor self-employed in nonagricultural sectors are consistently worse off than poor workers. These factors help to explain why inequality among the poor is significant and targeting of poverty alleviation at the most severely poor is needed, especially the poorest of the poor in the agricultural sector.

### RESUMEN

El incremento absoluto de la pobreza en México, sobre todo en las áreas rurales, entre 1984 y 1989. Este trabajo intenta proporcionar un perfil de la pobreza basado en datos de la Encuesta de Ingreso-Gasto elaborada por el INEGI en 1989. Aquí se concluye que los campesinos y trabajadores rurales asalariados constituyen el grupo más numeros de pobres y se enfrentan a los grados más profundos y severos de pobreza. De manera consistente, los pobres que trabajan por cuenta propia en sectores no agrícolas del país padecen los estragos de la pobreza aún más fuertemente que los trabajadores pobres. Estos factores ayudan a explicar por qué la desigualdad entre los pobres es un dato significativo y por qué es necesario enfocarse en el alivio de los sectores que padecen de la pobreza más aguda, especialmente en el sector agrícola.

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## 1. Introduction

As the article by Diana Alarcón in this volume suggests, there was a clear increase in absolute poverty in Mexico from 1984 to 1989, and most of this increase was concentrated in rural areas. According to Alarcón's estimates, which are based on an analysis of 1989 data and are compared with Santiago Levy's results for 1984, the extent, depth, and severity of extreme poverty all increased between 1984 and 1989.<sup>1</sup>

This is reflected in increases in the headcount ratio, the proportionate poverty gap measure, and the distribution-sensitive FGT index. Additionally, rural areas accounted for an increasing share of all three measures.<sup>2</sup>

Thus, a comparative study of poverty between 1984 and 1989 suggests that the policies of stabilization and structural adjustment implemented in the late 1980s in Mexico imposed a heavy cost on low-income households and a disproportionately higher cost on rural households. Not only did extreme poverty increase more in rural areas in terms of the number of people, but also in terms of the total shortfall of their expenditures from the poverty line and the widening of the distribution of expenditures among the poor.

In this article we attempt to construct a partial poverty profile of the extremely poor

in Mexico based on microdata from INEGI's 1989 Income-Expenditure Survey. We consider our efforts a first approximation: considerable more work needs to be done to clarify the characteristics of the poor. For the purposes of comparative analysis we divide the population into three major categories: extremely poor households, households not extremely poor but still below the moderate poverty line, and households which are nonpoor, i.e., above the moderate poverty line.<sup>3</sup>

In 1989 extremely poor households constituted 18 percent of all households and 23.4 percent of the total population. This group is the focus of our attention. Nonpoor households were the top 27 percent of all households and 20.6 percent of the total population.<sup>4</sup> Those households in the middle range -- i.e., neither nonpoor nor extremely poor -- accounted for 55 percent of all households and 56 percent of the total population. Since the average characteristics of this middle group often approximate those of the whole sample, we only occasionally focus on it.

## 2. Sociodemographic Characteristics of the Poor<sup>5</sup>

We begin with a very brief and rough outline of some of the sociodemographic

1 See Santiago Levy, *Poverty Alleviation in Mexico*, Working Paper Series, no. 679 (Washington, D.C.: The World Bank, 1991).

2 For further details, see Diana Alarcón, "Changes in the Distribution of Income in Mexico during the Period of Trade Liberalization," Ph.D. dissertation, University of California, Riverside, December 1993.

3 Levy also made estimates of poverty based on constructing a line of moderate poverty. The construction of the consumption basket used to define moderate poverty was based on the pattern of consumption of the seventh decile, but it includes several other consumption goods considered essential components of a minimum standard of living. Not surprisingly, over 70 percent of the population have usually been classified as poor when such a methodology is used. The methodology used to construct the consumption basket for moderate poverty can be found in: COPLAMAR, *Macroeconomía de las necesidades esenciales en México: situación actual y perspectivas al año 2000*, 2d. ed. (Mexico: Siglo XXI, 1989): Appendix II.

4 All of the above percentages are based on the whole sample of 11 525 households, which are weighted in order to represent the underlying population. Our results based on weighted data usually differ only marginally from those based on unweighted data, which we used initially in order to compare our results to those of the Levy study.

5 In much of the analysis in this section and others, we analyze the characteristics of the head of household. As is well known, this is not a completely reliable indicator of the condition of the whole household. We hope in the future to supplement our current findings with an analysis of all household members.

characteristics of the poor in Mexico and then turn our main attention to occupational questions. As the statistics above suggest, the average family size of the poor was larger than that of the nonpoor in 1989. This finding is typical for the poor in developing countries. Table I shows that for the extremely poor the average family size is 6.5 members, while for the nonpoor it is 3.7 members. The average family size for all households is 4.9 members.

Having a female head of household is often associated with poverty, but this does not appear to be the case in Mexico. For the extremely poor, only 10.2 percent of household heads are women, whereas among all households 14.6 percent are led by women. Poor households headed by women actually have a higher total quarterly per capita income than all poor households, i.e., over 204,000 pesos versus about 197,000 pesos.<sup>6</sup> Although in regression analysis the male gender of the head of household is a significant positive determinant of household income for the whole population, for the poor it is not.

If the average age of the head of household were older than average, this could partly account for the poverty of the household. Typically there is a parabolic relationship between age and income: income rises with age, but with diminishing returns, and eventually begins to fall as age continues to increase.<sup>7</sup> The average age of the head of household for the whole population is 45.2 years. The heads of extremely poor households are only slightly older than average, i.e., 45.5 years. It is interesting that among the extremely poor, the rural heads of households are almost a year younger than the population average, whereas the urban household heads are significantly older. The average age of female heads of poor households is substantially above average, i.e., 56 years, and

pulls up the average for both rural and urban poor heads of households. The average age for all poor male household heads is only 43.9 years.

Other than age, education is another important component of human capital and thus a potentially significant determinant of household income. For the population as a whole, 12.5 percent of household heads report that they cannot read, and a slightly higher percentage (namely, about 13 percent) report that they cannot write. Among the extremely poor, 27 percent of the heads of households cannot read, and 28 percent cannot write. Among the nonpoor, however, under 3 percent can neither read nor write. The educational level among the extremely poor is significantly lower than for the rest of the population. In regression analysis on all households, the level of formal education of the head of household is a powerful positive determinant of income. The average head of household completes primary school. The average head of nonpoor households completes secondary school, whereas the average head of extremely poor households reports never completing primary school. Among the *rural* extremely poor, the educational level is even lower, i.e., an average of no instruction whatsoever.

Characteristics of the labor market in Mexico may also contribute to poverty. The extent of unemployment may be one factor, although open unemployment is often not characteristic of the poor, especially if they work in agriculture. For all households 4.8 percent of the heads of households report that they did not receive income in the last six months. The extremely poor report a 7 percent average. The *urban* extremely poor are much worse off, at least in terms of formal joblessness, with 12 percent declaring that they received no income in the last 6 months.

6 All expenditure and income statistics for 1989 are reported in old pesos. In order to convert to new pesos, divide all figures by 1000.

7 Regression analysis bears out this relationship between the age of the household head and per capita household income for the Mexican population as a whole.

Only 2 percent of the nonpoor report such a situation. Hence, structural or cyclical unemployment may be a factor contributing to extreme poverty, certainly to urban extreme poverty.

In summary of our brief overview, our clearest result is that poverty is most stron-

### 3. The Geographical Location of Poverty

Often a significant proportion of poverty in developing countries is attributable to regional factors: people are poor because they reside in poor, backward regions of

**TABLE I**  
SOCIODEMOGRAPHIC FEATURES OF THE POOR

	<i>Extreme Poor</i>	<i>Non Poor</i>	<i>All HH</i>
Avg family size	6.5	3.7	4.9
Percent female heads	10.2	—	14.6
Age of household head	45.5	43.3	45.2
rural hh head	44.3	—	—
urban hh head	47.6	—	—
female hh head	56.0	—	—
Percent that cannot read	27.0	2.7	12.5
Percent that cannot write	28.0	2.9	13.0
Education level	incomplete primary	completed secondary	completed primary
rural hh head	no instruction	—	—
urban hh head	incomplete primary	—	—
Percent without income			
in last six months	7.0	2.0	4.8
rural hh head	5.0	—	—
urban hh head	12.0	—	—

Source: Own calculations based on INEGI-ENIGH, 1989.

gly correlated with lack of education. Age and gender do not appear to be particularly significant determinants of poverty. As expected, the household size of the poor is much larger than average. Open unemployment also appears to contribute somewhat to poverty, but mainly among the urban poor.

the country. The data from the 1989 Income-Expenditure Survey are representative of the country as a whole, but not of individual states. This hampers our ability to identify the geographical location of poverty in terms of administrative unit. Nevertheless, our results can be regarded as generally suggestive of where both the poor and the nonpoor are concentrated.

Over 20 percent of the extremely poor are located in the poor southern states of Chiapas, Oaxaca, and Guerrero. Another 20 percent are located in the states of Veracruz and Guanajuato. Chiapas appears to have a high concentration of the poorest of the poor. Almost 14 percent of the bottom half of the extremely poor and over 16 percent of the bottom quarter are located in Chiapas alone. Oaxaca, Veracruz, and Guanajuato also have higher percentages among the poorest of the poor than among the poor as a whole. The six border states of Baja California, Chihuahua, Coahuila, Nuevo León, Sonora, and Tamaulipas have little poverty -- accounting together for only 8 percent of all the poor. By contrast, these same six states account for over a quarter of all nonpoor households. Over 30 percent of nonpoor households are located in the Federal District and the State of México alone.

#### **4. Occupations and Sectors Where the Poor are Employed**

The poor in Mexico are heavily concentrated in certain job positions and occupations. The survey supplies information on the kind of occupational positions that the poor hold -- namely, whether they are owners of businesses, self-employed, rural wageworkers, or nonagricultural workers or employees. Table II shows that most heads of extremely poor households are self-employed, accounting for 41.6 percent of the total. Another 31.5 percent are nonagricultural workers or employees, and 23.7 percent are rural wageworkers. Examining the bottom 50 percent of the extremely poor and then the bottom 25 percent, we find that the percentage of nonagricultural workers or employees decreases while the percentages of rural wageworkers and of the self-employed increase. Among the bottom 25 percent, only 19 percent are nonagricultural workers or employees, whereas over 29 percent are rural wageworkers and over 49 percent are self-employed. Clearly, the heads of extremely poor households with the latter

two positions are more concentrated among the poor who are relatively worse off, whereas household heads who are workers or employees outside of agriculture are more concentrated among the poor who are relatively better off.

The survey divides the economy into nine sectors. The majority of the extremely poor (i.e., 59.5 percent) are found in the agricultural sector. The next highest concentration is in services (11.6 percent), followed by construction (9.2 percent), industry (8.5 percent), and commerce (7.6 percent). As we examine first the bottom 50 percent of the extremely poor and then the bottom 25 percent, the percentages of the latter four sectors drop, while the percentage of agriculture rises, first to 69.3 percent and then to 72.3 percent. Not only are most of the extremely poor found in agriculture, but the worse off among them are heavily concentrated in that sector. There are also significant numbers of the poorest in construction and retail trade. Within industry a notable percentage of the poorest are found in the production of nonmetallic minerals, and within services an important percentage are concentrated in personal and professional services. The middle range of poor households -- those neither extremely poor nor above the moderate poverty line -- are more likely to be found in retail trade, transportation, industrial sectors such as food, beverages, and tobacco, and in services such as public administration, restaurants and hotels, and repair and maintenance. The heads of nonpoor households are relatively more concentrated in industries such as textiles and clothing, chemicals, and machinery and equipment, and in services such as professional services, research, and medical services.

The survey divides the employed into twenty-one occupations. But the extremely poor are concentrated in a limited number. The majority (i.e., 57 percent) work in agriculture. Another 20 percent are direct workers, helpers, or laborers in industry; 6.7 percent are vendors, including those without a fixed location for their business; and 5 percent are domestic workers or

workers in public or personal services. Comparing the occupational composition of the poorest 25 percent to that of all the extremely poor, we find that the percentages of three occupations are higher for the poorest: wagedworkers or campesinos in agriculture, street vendors, and domestic workers. People in these occupations tend to be among the poorest of the poor. Over

## 5. Measures of Poverty by Sector and Position

In order to more fully understand the extent, depth, and severity of poverty, we divide our total sample into ten major categories and a residual. Knowing that the great majority of the heads of extremely poor households are either self-employed

**TABLE II**

PERCENTAGE OF POOR IN EACH OCCUPATIONAL POSITION

<i>Occupational Position</i>	<i>All of the Extremely Poor</i>	<i>Bottom 50% of Poor</i>	<i>Bottom 25% of Poor</i>	<i>Non poor</i>
Nonagricultural Workers and Employees	31.5%	21.4%	19.0%	66.0%
Agricultural Wagedworkers	23.7%	28.5%	29.1%	2.2%
Self-Employed	41.6%	47.1%	49.2%	21.3%
Others	3.2%	3.0%	2.7%	10.5%

69 percent of the bottom quarter of the extremely poor work in agriculture. Those heads of households in the middle range between the extremely poor and the non-poor are more concentrated among direct workers in industry, established merchants, transport equipment operators, and office workers. Heads of nonpoor households are more concentrated among professionals, technicians, teachers, salesmen, mid-level administrative and office workers, supervisors, managers, administrators, and owners of businesses.

In summary, the poor are heavily concentrated in agriculture. Most poor are either agricultural workers or smallholders, and it is among these occupations that we find a heavy concentration of the poorest of the poor. Some poor are industrial workers, but they tend to be the better off among the poor. Among the urban poor, many of the poorest are found among informal-sector occupations such as street vendors and domestic workers.

or workers, we examine each of these positions within the five sectors where we know the poor are concentrated: agriculture, industry, construction, commerce, and communal and social services. We ignore four economic sectors -- mining, electricity and water, transport and communication, and financial and property services -- because insignificant fractions of the poor work in these sectors. We also ignore positions such as owners of businesses since very few of the poor have such positions. With two basic positions and five sectors, we generate ten economic categories of the extremely poor. For each of these ten categories we generate estimates of the extent, depth, and severity of poverty and the contribution of each category to each of these aspects of poverty for the whole population. Table III shows the headcount ratio (HCR), proportionate poverty gap (PPG), and distribution-sensitive FGT index (FGT) for households in each of the ten categories and the contribution of

**TABLE III**

## MEASURES OF POVERTY BY OCCUPATIONAL CATEGORY

<i>Occupational Category</i>	<i>Headcount Ratio</i>	<i>Contribution to Overall HCR</i>	<i>Proportionate Poverty Gap (PPG)</i>	<i>Expenditures as% of Poverty Line</i>	<i>Contribution to Overall PPG</i>	<i>FGT Index</i>	<i>Contribution to Overall FGT</i>
Agricultural Workers	0.53	17.2%	0.205	61.6%	19.3%	0.107	20.8%
Campeños	0.46	21.7%	0.177	61.8%	30.2%	0.089	31.6%
Industrial Workers	0.13	5.2%	0.037	70.4%	4.5%	0.016	4.0%
Industria Self-employed	0.23	2.0%	0.077	65.9%	2.0%	0.036	1.9%
Construction Workers	0.24	6.1%	0.060	75.1%	4.4%	0.024	3.7%
Construction Self-employed	0.38	1.1%	0.148	60.7%	1.2%	0.071	1.2%
Workers in Commerce	0.12	2.9%	0.029	75.6%	2.1%	0.010	1.5%
Self-employed in Commerce	0.15	3.4%	0.047	67.7%	3.2%	0.022	3.2%
Workers in Services	0.12	8.4%	0.029	74.7%	6.2%	0.011	5.1%
Self-employed in Services	0.15	2.2%	0.053	65.6%	2.2%	0.024	2.2%
Total Households	0.23		0.080			0.039	

each category to the poverty measure for the whole population.<sup>8</sup>

Agricultural wagedworkers and agricultural self-employed have the highest concentrations of the poor. Of the total households led by agricultural workers, 53 percent are extremely poor; among households with heads who are classified as agricultural self-employed, 46 percent are extremely poor. The construction sector has the next-highest concentration of poverty: 24 percent of household heads who are construction workers lead extremely poor households, and 38 percent of the much smaller number of the construction self-employed lead poor households. The lowest concentrations of poverty are found among industrial workers, workers in retail and wholesale trade, and workers in communal and social services.

The overall headcount ratio of the poor for the whole population is a weighted average of the headcount ratio for each of our ten categories and the residual. The percentage contribution of the headcount ratio for each category to the overall headcount ratio, i.e., 0.23, is found by multiplying the headcount ratio for each category by its population weight -- the percentage of the *total* population found in each category -- and then dividing this by the overall headcount ratio. This in effect gives *the percentage of all the poor* who are in each category. Column 2 in Table III shows that the agricultural self-employed, or campesinos, lead about 27 percent of all extremely poor households; agricultural wagedworkers lead about 17 percent. Workers in communal and social services lead 8 percent of all poor households, and construction workers head 6 percent.

Table IV gives a measure of the relative incidence of poverty for each of our ten categories.<sup>9</sup> The relative incidence, which

is found in column 3, is a ratio of (1) the category as a percentage of all poor households to (2) the category as a percentage of all households. If the category is more concentrated among the poor than among the whole population, the measure of relative incidence will exceed one. This signifies, in other words, that certain categories of households are overrepresented among the poor. This is clearly the case for campesinos and agricultural wagedworkers. The ratio for the former is 2.28, while that for the latter is 1.98. The self-employed in construction are also overrepresented in poverty. Households led by construction workers are neither overrepresented nor underrepresented, while all of the other categories of households are underrepresented among the poor.

Returning to Table III, we see that the depth of poverty by category, as incorporated in the measure of the proportionate poverty gap (PPG), follows the same general pattern as the extent of poverty. The PPG measure multiplies the headcount ratio by the expenditure gap, namely, the relative shortfall of the poor's expenditure from the poverty line. The depth of poverty is most serious among agricultural wagedworkers and campesinos, followed by the self-employed in construction, self-employed in industry, and construction workers. In all four nonagricultural sectors -- industry, construction, commerce, and services -- poverty is deeper among the self-employed than among workers. The opposite is the case in the agricultural sector: poverty is deeper among rural wagedworkers.

As column 5 shows, campesinos make the greatest contribution, namely, 30 percent, to the overall PPG measure (0.08). Not only are the households headed by campesinos a significant percentage of all

8 For an elucidation of this methodology, see Lionel Demery, "The Poverty Profile," in *Understanding the Social Effects of Policy Reform*, ed. Lionel Demery, Marco Ferroni, and Christiaan Grootaert (Washington, D.C.: The World Bank, 1993).

9 For an early application of this concept, see Sudhir Anand, *Inequality and Poverty in Malaysia* (Washington, D.C.: Oxford University Press, for the World Bank, 1983).



households (namely 14 percent) but also, as column 4 reports, their average per capita expenditures are only about 62 percent of the poverty line.<sup>10</sup> Households headed by agricultural wagedworkers contribute 19 percent to the overall PPG measure. Their average per capita expenditures are also only about 62 percent of the poverty line, but they are a smaller percent-

most serious among agricultural workers and campesinos; it is also significant among the construction and industrial self-employed.

Column 7 shows that campesinos and agricultural wagedworkers also make the greatest contribution to the overall FGT measure (0.039). Households headed by agricultural workers contribute 21 percent to the

**TABLE IV**

RELATIVE INCIDENCE OF POVERTY

<i>Occupational Category</i>	<i>Category as % of all households</i>	<i>Category as % of all poor</i>	<i>Relative Incidence of Poverty (% of all poor/ % of all households)</i>
Agricultural Workers	7.5	17.2	2.38
Campesinos	13.7	27.1	1.98
Industrial Workers	9.7	5.2	0.54
Industrial Self-Employed	2.1	2.0	0.97
Construction Workers	5.9	6.1	1.04
Construction Self-Employed	0.7	1.1	1.67
Workers in Commerce	5.8	2.9	0.50
Self-Employed in Commerce	5.5	3.4	0.62
Workers in Services	17.1	8.4	0.49
Self-Employed in Services	3.3	2.2	0.67

age of total households than those led by campesinos.

The severity of poverty by category, as incorporated in the measure of the FGT index, follows the same general pattern as the depth of poverty. Because the relative shortfall of expenditures of each poor household from the poverty line is squared, the FGT index gives greater weight to those households falling furthest below the poverty line. The severity of poverty is

overall measure, while households headed by campesinos contribute 32 percent.

Reading just across the percentage contribution of each category (columns 2, 5, and 7) to each respective measure of poverty (HCR, PPG, FGT), we find that the shares of both campesinos and agricultural wagedworkers rise. This indicates that the depth and severity of poverty are serious problems for these households, beyond the mere fact of their poverty. The contri-

<sup>10</sup> This percentage is equal to 1 minus the income gap ratio.

bution to each respective measure clearly falls for industrial workers, construction workers, workers in retail and wholesale trade, and workers in social and communal services. This indicates that while there may be a significant incidence of poverty among these households, the depth and severity of their poverty are not as serious as they are for campesinos and agricultural workers. Column 4 shows, for example, that the average per capita expenditures of the four former categories of households are a somewhat higher percentage of the poverty line — falling in the 70 to 76 percent range.

In summary, what most clearly stands out from our findings is that the extent, depth, and severity of poverty are all most serious among rural wagedworkers and campesinos. The depth of poverty is also a significant problem among the self-employed in a number of nonagricultural sectors. With the exception of agriculture, poor self-employed are invariably worse off than poor workers in each sector.

## 6. Inequality among the Poor

In designing poverty alleviation measures, it is important to determine the distribution of expenditures and income among the poor themselves. The distribution-sensitive FGT index gives us some sense of the severity of poverty. As previously mentioned, it is 0.039 for 1989. But this measure can be decomposed into two components: (1) the contribution of the proportionate poverty gap, and (2) the contribution of inequality among the poor.<sup>11</sup> Using this decomposition technique, we find that inequality among the poor accounts for 29 percent of the value of the FGT index.

Table v gives other measures of the degree of inequality among the poor. The Gini coefficient for the distribution of per capita expenditures among the poor is 0.19. This measure does not reflect dra-

matically sharp differences among the poor, but it does indicate that inequality among them is worth examination. Starting from the top decile of the poor, there is a *gradual* drop in the share of total expenditures accounted for by each decile. The share of total expenditures accounted for by the top decile is 14.7 percent; the share accounted for by the bottom decile is 6 percent. The ratio of the share of the top 20 percent of the poor to the share of the bottom 20 percent is 2:1.

Table v also includes a Gini coefficient of the distribution of per capita income among the poor. The Gini ratio for income is much higher than for expenditures, namely, 0.31. The top decile of the extremely poor receives 24 percent of all income of the poor. The ratio of the share of total income of the top 20 percent of the poor to the share of the bottom 20 percent is 5:1. The differences in the Gini ratios for expenditures and income suggest, among other factors, that income is prone to more fluctuation among the poor and that considerable "consumption-smoothing" by the poor must be occurring.

Of particular interest to us is the proportion of total inequality among the poor accounted for by the mean difference in income level between the rural poor and the urban poor. The mean total quarterly per capita income of all poor households is about 197,000 pesos. The mean per capita income of the urban poor is about 249,000 pesos. The mean per capita income of the rural poor is only 68 percent of that of the urban poor, namely, about 169,000 pesos. Considering just the percentages of the total poor in each of the two groups — the rural poor and the urban poor — and assuming that there is no inequality within each group, we can calculate a measure of the relative mean deviation, which we find to be 0.180. Based on the same assumptions, we can

11 See Martin Ravallion, *Poverty Comparisons: A Guide to Concepts and Methods, Living Standards Measurement Study*, Working Paper No. 88 (Washington, D.C.: The World Bank, 1992).

**TABLE V**  
INEQUALITY AMONG THE POOR

	<i>Gini Ratio</i>	<i>Ratio of top 20% to bottom 20%</i>	
Expenditures per capita	0.19	2.1	
Income per capita	0.31	5.1	
	Theil Index	Inequality within urban-rural	Inequality between urban-rural
Income per capita	0.017	89.3%	10.7%

Source: Own construction based on INEGI-ENIGH, 1989.

**TABLE VI**  
COMPOSITION OF HOUSEHOLD INCOME

	<i>Bottom 25%</i>	<i>Bottom 50%</i>	<i>All Poor</i>	<i>Urban Poor</i>	<i>Rural Poor</i>	<i>Non Poor</i>	<i>All HH</i>
Wages	45.18%	48.37%	52.12%	61.26%	44.93%	41.23%	46.6%
Profits	2.37%	4.12%	4.26%	5.94%	2.94%	12.64%	10.2%
Services	2.57%	2.15%	2.51%	3.87%	1.43%	8.55%	6.5%
Agric & LVSTK	20.58%	16.07%	14.33%	5.52%	21.26%	2.95%	4.9%
Rent	0.40%	0.48%	0.32%	0.41%	0.25%	4.56%	2.7%
Coop	0.00%	0.01%	0.01%	0.00%	0.01%	0.30%	0.2%
Transfer	4.98%	4.36%	3.91%	3.58%	4.16%	6.43%	6.0%
non monetary	23.98%	24.41%	22.54%	19.42%	24.99%	22.45%	22.0%
Other	0.03%	0.03%	0.00%	0.00%	0.03%	0.00%	0.5%

Source: Own calculations based on INEGI-ENIGH, 1989.

also estimate the cumulative population and cumulative income of the rural poor and urban poor and thereby estimate a Gini coefficient. For just the two groups, with perfect equality within each one, the Gini coefficient of this simplified distribution is 0.097. Allowing for the full distribution of per capita income by individual household, the Gini ratio is 0.31, as reported above.

In order to achieve the same purpose, we also estimated a population-weighted Theil index for the distribution of per capita income among the poor. As indicated by Table V, the Theil index is 0.17. The within-group inequality -- accounted for by the distribution of income both within the rural poor and within the urban poor -- accounts for 89.3 percent of total inequality among the poor. The between-group inequality -- namely, the difference in mean income levels between the urban poor and the rural poor (holding within-group inequalities constant) -- accounts for the other 10.7 percent of total inequality.

In summary, inequality among the poor is noteworthy, more so for income than for expenditures. Inequality accounted for by differences just in mean income levels between the rural poor and the urban poor is an important part of total inequality among the poor.

## 7. Sources of Income among the Poor

Examining the sources of income of a poor household gives us a more comprehensive picture of poverty than merely identifying the occupation and sector in which the head of household is employed. Table VI shows how the income sources of the poor are different from those of the population as a whole. The poor are relatively more reliant on wages and income from farming and livestock. Profits, rents and interest,

income from personal services, and even, somewhat surprisingly, transfers are more important for the population as a whole.

Over 52 percent of the income of the extremely poor comes from wages, which is significantly higher than the 46.7 percent share of wages in total income among the whole population, and certainly higher than the 41.2 percent share among the nonpoor. Income from farming and livestock accounts for 14.3 percent of the poor's income, whereas for the whole population this share is only about 5 percent, and for the nonpoor about 3 percent. As we examine first the bottom 50 percent of the poor and then the bottom 25 percent, we find that the share of wages progressively declines (reaching about 45.4 percent for the bottom quarter), while the share of income from farming and livestock progressively rises (reaching 20.6 percent for the bottom quarter). This indicates that wage income is more characteristic of the better off among the poor, while income from farming and livestock is more prevalent among the worse off.

Examining the shares of income from farming and livestock among the rural poor and the urban poor, we find that the overall share for the poor as a whole, i.e., 14.3 percent, is dominated by the large share of farming income among the rural population, i.e., 16.2 percent.<sup>12</sup> However, even among the rural poor wages still account for about 45 percent of their total income. Among the urban poor wages account for a very high share, namely, 61.3 percent of total income. For the extremely poor as a whole, profits, rents and interest, and income from personal services are not significant sources of income, but for the rural poor they are considerably less important than for the urban poor. The reverse appears to be the case for transfers: this source constitutes a larger share of income among the rural poor than among

12 The 1989 Income-Expenditure Survey does not strictly differentiate between rural and urban areas; it differentiates between what it calls "high-density areas" and "low-density areas." For an explanation of this distinction, see INEGI, Encuesta Nacional de Ingreso-Gasto de los Hogares 1989 (Mexico: INEGI, 1992).

**TABLE VII**

CONCENTRATION RATIOS OF INCOME COMPONENTS AMONG THE POOR

<i>Income Component</i>	<i>Concentration ratio</i>
Total income per cap	0.31
Wages	0.33
Commercial profits	0.30
Industrial profits	0.33
Services	0.32
Agriculture	0.25
Livestock	0.28
Rents and interest	0.48
Transfers	0.32
Cooperative income	-0.16
Self-consumed output	0.14
Imputed housing rent	0.36

Source: Own calculation based on INEGI-ENIGH, 1989.

the urban poor. The share of nonmonetary income among the poor appears to differ little *in aggregate* from the share of this income source among the population as a whole or among the nonpoor in particular. When we examine the two components of nonmonetary income -- imputed rental value of housing and the value of self-consumed output -- we find, however, that there are important differences between the rural poor and the urban poor. While imputed rent accounts for 15.6 percent of the income of the urban poor, self-consumed output accounts for a mere 3.8 percent. For the rural poor the roles of these two components are reversed: imputed rent accounts for 10.3 percent of the total while self-consumed output accounts for 14.7 percent.

In summary, the poor are more reliant on wage income and income from farming and livestock than the rest of the population. However, it is the worse off among the poor who rely most on income from farming and livestock, especially self-consumed output.

### **8. Concentration Ratios of Income Sources among the Poor<sup>13</sup>**

An examination of the shares of components in the total income of all the extremely poor and then of the bottom half and the bottom quarter of the extremely poor does not directly inform us how each component of income is divided between the worse off among the poor and the better off. Concentration ratios can help to

13 For an illustration of the use of this methodology, see a recent publication: Azizur Rahman Khan, Keith Griffin, Carl Riskin, and Zhao Renwei, "Household Income and Its Distribution in China," in *The Distribution of Income in China*, ed. Keith Griffin and Zhao Renwei (New York: St. Martin's Press, 1993).

supply this information because the distribution of each component of income is generated by ranking all the poor by their *total* per capita income (not by the per capita amount of *each* component). If the concentration ratio of the component is higher than the Gini coefficient for the distribution of total per capita income, this indicates that the distribution of the component is skewed toward the better off among the poor. If the concentration ratio of the component is lower, the distribution of the component is skewed toward the worse off among the poor.

As reported above, the Gini coefficient of the distribution of total per capita income among the extremely poor is 0.31. Table VII lists the concentration ratios for each of the components of total income received by the extremely poor. The concentration ratio of wages is 0.33, signifying that its distribution is slightly skewed toward the better off among the poor. The distributions of income from personal services, industrial profits, rents and interest, imputed housing rent, and transfers are similarly skewed to one degree or another. The distribution of rents and interest is the most biased toward the better off among the poor, with a concentration ratio of 0.48. The relatively high concentration ratio of transfers indicates that they tend to be disproportionately allocated to the better off among the poor rather than the worse off. If the severity of poverty is of concern, this finding may indicate poor targeting of government transfers.

The major sources of income on which the worse off among the poor are most reliant are components of agricultural income -- income from farming, income from livestock, and self-consumed output -- and this is reflected in the low concentration ratios for each of them. The distribution of self-consumed output is the most skewed

toward the poorest of the poor, with a concentration ratio of 0.14.<sup>14</sup>

## 9. Conclusion

Undoubtedly, it is the rural wagedworkers and campesinos of Mexico who are the most numerous among the poor and have to confront the greatest depths and severity of poverty. The fact that so many smallholders are seriously afflicted indicates that their landholdings are not sufficient to provide a minimally acceptable standard of living. Hence, poverty alleviation programs initially need to allocate the largest share of their resources to rural development, to create off-farm employment as well as to boost agricultural incomes. Allocation of funds to primary and secondary schools in the countryside can play a decisive role in this endeavor since there is such a strong correlation between lack of education and poverty. If the depth and severity of poverty are of major concern, the self-employed in nonagricultural sectors should also be targeted, such as with credit, subsidies, and training. Small-scale and medium-sized firms, which tend to have relatively labor-intensive structures of production, could be promoted, in order to provide jobs not only to the self-employed in the informal sector, but also to the agricultural workforce. The promotion of the construction industry, for example, could contribute to alleviating poverty. Public employment programs designed to build infrastructure could play an important role in providing jobs to some of the most severely poor.

14 Income from cooperatives is the component most prevalent among the poorest of the poor, with a negative concentration ratio, but it is an insignificant proportion of the poor's total income.