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**THE SOURCES OF RISING INCOME
INEQUALITY AND POLARIZATION
IN MEXICO FROM 1989 TO 1994¹**

by

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AND POLARIZATION IN MEXICO FROM 1989 TO 1994**

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I. INTRODUCTION

Since the 1982 debt crisis, Mexico has extensively restructured its economy, including rapidly liberalizing its trade and closely integrating with the rest of North America. Exports of manufactures have grown dramatically and the Mexican economy has become much more export-oriented (Table 1). Growth of the economy however has been erratic: average annual growth of GDP per capita has in fact been negative since 1981.

Severe economic contraction characterized the Mexican economy during the early 1980s. The withdrawal of external credits and capital flight led to a net outflow of resources of 6 percent of GDP in the wake of the 1982 crisis. The Mexican government responded with strict policies of stabilization and maintained close compliance with the macroeconomic targets set by the international financial institutions with respect to inflation, budget deficits, trade deficits and debt repayments.

In 1985, Mexico began to shift from stabilization to structural adjustment and rapidly restructured its economy and liberalized its trade. In June of 1985, over 92 percent of imports were covered by import licenses, but by December of the same year this percentage had been reduced to 47 percent. The process of liberalization accelerated when Mexico joined GATT in the summer of 1986. By 1988 official reference prices for trade were eliminated and the trade-weighted average of import tariffs was reduced to 24.5 percent. By 1990 Mexico's economy had become one of the most open among developing countries: only about 8 percent of imports were still covered by import licenses and the average trade-weighted tariff rate had been reduced to only 12 percent.

Liberalization had little success, however, in stimulating economic growth. Economic stagnation still plagued Mexico in the late 1980s. Several shocks contributed to the problem, i.e. the 1985 earthquake in Mexico City, the collapse of oil prices in 1986 and the world-wide stock market crisis of 1987. While the average growth of GDP per capita during 1981-1985 was a negative 0.33 percent, during 1986-1993 it was a negative 0.45 percent. The average

annual rate of gross domestic investment was a negative 2 percent during the whole period of 1980-1990 and continued to decline thereafter (Inter-American Development Bank 1996).

With the negotiation of an agreement with its international creditors under the Brady Plan in 1989, Mexico began to regain the confidence of international financial markets and its economy began to show signs of recovery. Stabilization of the exchange rate and high interest rates attracted large inflows of foreign capital. Inflation was substantially reduced on the basis of reducing the government deficit, negotiating wage-price controls and maintaining exchange-rate stability. While the inflation rate--based on the consumer price index--was 132 percent in 1987, by 1992 it was 15.5 percent and by 1994 only 6.9 percent. Whereas the government deficit was over 14 percent of GDP in 1987, this had been converted to a surplus of 4.5% percent of GDP in 1992 (Inter-American Development Bank 1996).

Growth was propped up by Mexico's signing of the North American Free Trade Agreement at the end of 1993 and by expenditures during the 1994 presidential elections. In 1994, real GDP per capita continued to grow by 1.6 percent. However, gross domestic investment continued to decline, dropping 1 percent a year during the period 1990-1995. Expansion of the economy was also threatened by growing overvaluation of the exchange rate and an increasing current account deficit. In 1987, the current account showed a surplus of 4.3 million dollars, but by 1994 it showed a deficit of 28.8 million dollars.

Large capital inflows had been financing the current account deficit. In 1992 the capital account had a surplus of 27 million dollars, and in 1993 a surplus of 33.8 millions dollars, but in 1994 this was reduced to only 12.7 million. But much of the capital flowing into the country was short-term portfolio investment. This helps explain why gross domestic investment continued to decline throughout this period. In 1989, portfolio investment had constituted only 10 percent of all capital inflows, but by 1993 this percentage had risen to 87 percent.

By December of 1994, Mexico's external accounts were no longer sustainable: the

government had to substantially devalue the peso and speculative capital took flight. The Mexican economy plunged into a severe recession in 1995, real GDP per capita contracting by an estimated 8.7 percent (Inter-American Development Bank 1996).

Benefits and Costs

Debate continues on who has benefitted from Mexico's economic restructuring, and who has been harmed. In this paper, we provide a partial answer to this question by examining the distribution of the components of total household per capita income and in particular the distribution of monetary income received by various positions and occupations in the Mexican labor force. Our period of analysis spans the period 1984-1994, based on the availability of information from income-expenditure surveys. We focus on the distribution of both labor income and employee income because of the surprisingly large impact that they have had on the distribution of total household per capita income.

Employment and wages as a whole have suffered since 1980 (Table 1). Manufacturing employment has contracted by about one-quarter. As a result, the share of informal-sector workers in total employment has increased to over one-third. Real wages have dropped sharply, and the share of wages in total manufacturing value added has plummeted. Blue-collar wages in manufacturing in 1994 were only 72% of their 1980 level. White-collar workers in manufacturing did relatively better: while their salaries dropped by about a quarter from 1980 to 1989, they recovered to be 6% higher than their 1980 level by 1994. Consequently, the disparity in labor-income levels between skilled and unskilled workers widened substantially after 1989.

Inequality

Income inequality progressively worsened in Mexico from 1984 to 1994. As reported by Mexico's National Institute of Statistics, the Gini coefficient of total household income--with households grouped by deciles and ranked by total household income--increased from 0.429 in 1984 to 0.477 in 1994 (Table 2). The increase in inequality was substantial from

1984 to 1989, and afterwards more moderate. Inequality of labor income followed a different pattern: first decreasing from 1984 to 1989 and then increasing sharply from 1989 to 1994².

In this paper, we focus on the changes in income inequality during the period 1989-1994, when the intensification of inequality and polarization of labor income first manifested themselves³. The difference between our results and INEGI's is that we report on 1) the per capita income of households and on 2) individual observations, not grouped data.

For 1989, the sample size of the income-expenditure survey is 11,531 households and 56,999 individuals, for 1992 10,530 households and 50,862 individuals, and for 1994 12,815 households and 60,353 individuals. Our results are based on combining all individuals and their income with their respective households and household income. Most studies are at a disadvantage in this respect since they can only examine the income and characteristics of the household head, which are normally included as part of household-level data.

Our results show that the Gini coefficient of total household per capita income increased from 0.512 in 1989 to 0.519 in 1992 and then to 0.524 in 1994--a modest though significant rise in such a short period of time (Table 3). This followed on the heels of a dramatic rise in inequality from 1984 to 1989 (Alarcon and McKinley (forthcoming (a)) and

² Labor income includes wages and salaries, piece-rate compensation, bonuses and tips, vacation pay and profit shares. This is still a restricted definition of labor income since it does not include income from self-employment, much of which is attributable to labor. One option would be to assume that all income from self-employment is labor income and to determine whether this assumption alters our results, but this is a project for another paper.

³ Mexico is unusual among Latin American countries in having fairly comprehensive and reliable income-expenditure surveys for the last 10 years. They were conducted by the National Institute of Statistics (INEGI) and cover the years 1984, 1989, 1992, and 1994. All four surveys have the same conceptual framework, structure of the questionnaire, time period in which the data were collected, and procedures for sampling and data collection. For a discussion of issues of comparability among the four surveys, refer to the Documento Metodologico for each survey. Although there was an income-expenditure survey for 1977, differences in the methodology and sampling techniques prevent any direct comparison with subsequent surveys.

Alarcon and McKinley (forthcoming (b)). Table 4 shows the change in real total household per capita income by decile from 1989 to 1994. While the income of the richest two deciles increased by about 8.5% to 9% during this period, the income of the poorest decile increased by only 1.4% and that of the second-poorest decile actually declined slightly. With a couple of exceptions, the general pattern shows that the richer the decile, the more its income rose. The sharpest contrasts in trends in real income were in rural areas: while the real income of the poorest rural decile increased by a mere 0.6%, that of the richest rose by a robust 20%.

One of the driving forces of the rise in total inequality during the period 1989-1994 was the increased inequality in the distribution of labor income: while the share of total income attributable to labor income increased slightly, its pseudo-Gini coefficient rose sharply from 0.485 in 1989 to 0.511 in 1992 and then to 0.530 in 1994⁴. In 1994, the pseudo-Gini coefficient of labor income exceeded that of total household income.

The other component that contributed significantly to rising inequality in the distribution of total household per capita income was non-monetary income: while its relative distribution changed little, its share of total income rose by over 4 percentage points. The major sub-component of non-monetary income was the imputed rental value of owner-occupied housing--accounting, for example, for 61% of all non-monetary income in 1994. From 1989 to 1994, the share of imputed rental value rose by 19%. But this was matched by the same percentage rise in the share of all other non-monetary income.

Income from services, agricultural income and transfers contributed only marginally to changes in the distribution of total household per capita income from 1989 to 1994--the former accounting for a slight increase in inequality and the latter two for a slight decrease.

⁴ A pseudo-Gini coefficient for an income component is derived by ranking each component of income--such as labor income--by total household per capita income, not by the value of the component itself. If the latter procedure were followed, the result would be the component's standard Gini coefficient.

The share of transfers dropped and it also became more equally distributed. The share of agricultural income dropped notably, i.e. from 5% to 4%--most of it accounted for by the 30% decline in farming income. The decline in farming income was concentrated among the self-employed and rural peons, who together experienced a drop of 40%. By contrast, the farming income of owners of small and large farms rose by 25%. While total income from livestock declined by 7%, this was due primarily to a 11% drop among the self-employed and rural peons. This drop was counteracted to some extent by a 49% rise in income among owners of small and large ranches. These differential effects help explain why the inequality of rural household per capita income rose more than that of urban household per capita income during this period.

Paradoxically, the component that contributed the most to decreasing income inequality from 1989 to 1994 was profits. This component's share of total household income nose-dived from 13.6% to 9.1%, and also became more equally distributed. From 1989 to 1994, while the Gini coefficient of total household per capita income rose by about 0.012 (from 0.512 to 0.524), the changes in the share and distribution of profits served to decrease the Gini coefficient by about 0.031. What mainly determined the overall rise in the Gini coefficient was the disequalizing contribution of non-monetary income (accounting for a rise of 0.021) and labor income (accounting for a rise of 0.028).

Commercial profits dominated all other categories of profits in Mexico during 1989-1994--accounting, for example, for 57% of all profit income in 1994. But its share declined by 27%. The share of commercial profits received by owners of small and large enterprises dipped by 8%, but the biggest drop in share, i.e. 31%, was among the non-agricultural self-employed. Although a smaller proportion of all profits, industrial profits declined more than commercial profits, i.e. by 39%. This was mainly due to the 57% decline in industrial profits among owners of small and large enterprises. By contrast, the share of industrial profits received by the non-agricultural self-employed rose by 8%.

Polarization of Labor Income

In this paper, we focus on the increasing inequality in the distribution of labor income. But interestingly, labor income also became more polarized during this period. As inequality increases, polarization often increases correspondingly, but the two do not always move in the same direction (Foster and Wolfson 1992). Polarization encompasses two concepts: “increased spread” and “increased bipolarity”. “Increased spread” denotes an unambiguous movement away from the middle of a distribution; this would occur when the rich are getting richer and the poor are getting poorer and the gap between the two poles of rich and poor is widening. “Increased bipolarity” denotes that the distribution around each of the two poles is becoming more bunched or tighter. This would imply that those closer to the middle of the distribution move away from it (and towards their respective pole) while those farther away (because they are beyond the pole) move towards the pole and thus closer to the middle of the distribution. Inequality and polarization would move together when a regressive transfer takes place across the middle of the distribution (i.e. an increased spread), but would move in opposite directions when a pair of progressive transfers takes place on each side of the middle (i.e. an increased bipolarity).

From 1989 to 1994, the degree of polarization of the distribution of labor income increased more than the degree of inequality. Table 5 shows that during this period the polarization index increased by 26%--from 1.28 to 1.61--while the standard Gini coefficient increased by 12%--from 0.495 in 1989 to 0.524 in 1992 and then to 0.554⁵. The increase in the standard Gini coefficient was quite large in itself for such a short period of time. As we shall see later in this paper, this increased inequality of labor income helps to explain why it contributed so decisively to greater inequality in the distribution of total household per capita

⁵ These standard Gini coefficients differ from the pseudo-Gini coefficients reported in Table 3 because in this case labor income is ranked by itself instead of by total household per capita income, as would be the case with the pseudo-Gini coefficient.

income.

The formula for the polarization index (P) includes three major components, the Gini coefficient itself (G), skewness (S) and the “relative median deviation” (T), where $P = (T - G)S$. Skewness is the mean divided by the median. The relative median deviation is derived by dividing the mean of the population above the median by the mean of the population below the median and then dividing this ratio by the overall mean of the distribution. This gives a measure of the ‘spread’ or dispersion around the middle of the distribution. As the table shows, polarization increased more than inequality during this period because skewness rose by 18% and the relative mean deviation by 9%. In other words, there was an increased spread-away from the middle of the distribution of labor income.

II. DECOMPOSING TOTAL INCOME BY POSITION

In order to further detail and clarify the changes in the distribution of total household per capita income, we use the classifications available in the Mexican income-expenditure surveys to categorize members of the labor force according to economic position. We concentrate on the receipt of monetary income by individual household members, which constituted 78% of total income in 1989, 73% in 1992 and 74% in 1994 (Table 3).

Positions in the Labor Force

The surveys classify members of the labor force into various positions based on their relationship to the means of production. These positions are non-agricultural employees, rural dayworkers and peons, small or large employers (depending on whether they employ six or more workers), the self-employed, and unpaid workers in household or non-household enterprises. For the purposes of analysis, we divide non-agricultural employees into two categories, higher-paid employees and basic workers. Higher-paid employees are an elite group consisting of professionals, technical workers, functionaries and directors, supervisors, managers, and operators of moving or transportation equipment. Basic workers are all others. We also divide the self-employed into agricultural and non-agricultural.

According to our classifications, the composition of the Mexican labor force became more polarized over this period. The large middle-income group of basic workers declined significantly as a share of the total Mexican labor force, while those in very low-income positions--rural dayworkers and peons, the agricultural self-employed and unpaid workers--grew. The share of owners of small and large enterprises taken together rose sharply from 1989 to 1992 and then declined from 1992 to 1994; but overall their combined share rose by about 40% (Table 6A)⁶. The share of the non-agricultural self-employed increased slightly, while that of higher-paid employees stayed basically the same. However, the relative average income level of higher-paid employees was the only one to rise from 1989 to 1994 (relative to that of rural peons, our reference group for comparison). Even though both the agricultural and non-agricultural self-employed grew as a share of the labor force, their relative income levels dropped substantially--that of the agricultural self-employed below the level of rural peons.

It is significant that the share of unpaid workers in household and non-household enterprises rose substantially from 1989 to 1994--from a little under 8% to over 11%. This underscores the fact that during this period many Mexican workers were driven into the informal sector and into work without cash remuneration. In 1994, the average cash income level of unpaid workers was only one-tenth that of rural dayworkers and peons. Consequently, despite their significant share of the labor force, they accounted for a mere 0.4% of total income. As a result, this group does not figure prominently in subsequent estimates of income distribution in this paper.

As a result of the above trends, the share of total income received by higher-paid

⁶ These results are likely to be subject to sampling error because of the small number of owners of small and large enterprises. The results for the owners of large enterprises are especially prone to this problem. The instability of the results over the three years for these two groups lends weight to this interpretation, and thus our findings should be treated with some degree of caution.

employees rose significantly, while that of basic workers, the non-agricultural self-employed and the agricultural self-employed dropped (Table 6B). These results were due to differing combinations of employment and income-level effects.

*** The income share of higher-paid employees rose from roughly 14% to over 19%, predominantly because of their sharply rising income levels.

*** Dropping correspondingly was the income share of basic workers--from roughly 32% to 26.6%--due almost exclusively to their abruptly declining share of the labor force.

*** The income share of the agricultural self-employed dropped progressively from 4.6% to 3.2%, despite the rise in their labor force share.

*** The income share of the non-agricultural self-employed also dropped notably--from 10.6% to 8.7%--despite the rise in their labor force share.

III. THE CONTRIBUTION TO INEQUALITY BY POSITIONS

Introduction

The Gini coefficient of total household per capita income can be decomposed into the contribution of components based on three factors: each component's share of total income, its own Gini coefficient, and the correlation of its distribution with the distribution of total income. We designate the last factor the "Gini correlation", which is a ratio of two covariances, i.e. 1) the covariance of income component k and the cumulative distribution of total income divided by 2) the covariance of income component k and the cumulative distribution of component k itself (Lerman and Yitzhaki 1985 and Yitzhaki 1983) (for applications see Adams and Alderman 1992; Adams and He 1995; Karoly and Burtless 1995; and Stark et al. 1986).

Given each component's share of total income (S_k), the higher its own Gini coefficient (G_k) or its Gini correlation (R_k), the greater its "contribution to inequality" ($S_k G_k R_k / G$). In fact, the percentage change in the Gini coefficient of total per capita income (G) attributable to a one per cent change in income component k is $(S_k G_k R_k / G) - S_k$. If the first term, the

component's contribution to total inequality, exceeds the second term, which is its share of total income, a marginal increase in that component will augment inequality. If the second term exceeds the first, a marginal increase will lower inequality (Leibrandt, Woolard and Woolard 1996).

Gross Contribution to Inequality by Position

First, we examine each position's gross contribution to inequality in 1989 and the change in this contribution from 1989 to 1994. In 1989, basic workers accounted for over 26% of the total inequality in the distribution of household income per capita, while higher-paid employees accounted for about 18% (Table 7A). The principal reason for the large share of inequality attributable to basic workers was their 32% share of all income. However, in 1994, this group's income share dropped to 26.6% and their share of inequality to 21.4%. Meanwhile, the share of total income received by higher-paid employees had risen from about 14% to over 19% and because the distribution of their share of income had become more unequal, their share of total inequality became the largest of any group, i.e. over 28%.

The share of inequality attributable to owners of small enterprises dropped somewhat from 1992 to 1994--after having risen appreciably from 1989 to 1992. Over the whole period, however, their share of inequality rose from 7.3% to 8%. By contrast, the share of inequality attributable to owners of large enterprises declined from 5% to 3.4%.

The share of inequality accounted for by both the agricultural and non-agricultural self-employed also declined over the period 1989 to 1994. Already a small 1.4% in 1989, the contribution to inequality of the agricultural self-employed dropped by over half to 0.6% in 1994. There was a dramatic and consequential drop in the contribution of the non-agricultural self-employed from over 11% in 1989 to 7.7% in 1994.

The only group to make a 'negative' contribution to inequality was rural dayworkers and peons: they contributed directly to lowering total inequality by almost 1% in 1989--compared to only 0.5% in 1994.

Marginal Contribution to Inequality by Position

The marginal contribution by each position to inequality is equal to its share of total inequality minus its share of total income. In 1994, only in the case of three positions would increasing their income at the margin have augmented inequality (Table 7B). These three were higher-paid employees and owners of small and large enterprises. Increasing the income of owners of small enterprises by 1% would have augmented inequality by 2.3%, whereas for owners of large firms, the increase in inequality would have been only 1.5%. For owners of large enterprises, this marginal effect was significantly lower than it was in 1989, and only about half of its effect in 1992. For higher-paid employees, the effect in 1994 would have been dramatic, i.e. a 9% rise in inequality--substantially above the marginal effect of only 3.8% in 1989, and even of 6.9% in 1992.

By 1994, higher-paid employees emerged as the largest contributors, by far, to inequality in both gross and marginal terms.

In that same year, the second-biggest gross contributor to inequality was basic workers, but if their income had been increased by 1%, they would in fact have made the greatest contribution to lowering inequality--namely, by 5.2%. In other words, their share of total income significantly exceeded their percentage contribution to inequality. This group's marginal effect was the same in both 1989 and 1992.

Increasing the income of rural peons and both the agricultural and non-agricultural self-employed would also have served to lower inequality in 1994, but by a lesser extent than for basic workers. For rural peons, the marginal effect would have been a negative 3.5% and for the agricultural self-employed a negative 2.6%. For the latter group, the marginal effect would have been more equalizing in 1989 and 1992. By contrast, the effect of increasing the income of the non-agricultural self-employed would have been slightly disequalizing in 1989, i.e. increasing inequality by 0.7% at the margin, whereas by 1994 the effect would have been equalizing, i.e. lowering inequality by 1%. This underscores the fact that while the number

of the non-agricultural self-employed grew relative to other groups, their relative income level dropped significantly.

IV. THE CONTRIBUTION TO INEQUALITY BY EMPLOYEE OCCUPATION

Decomposing Income by Employee Occupation

Since employees--especially higher-paid employees--account for such a large share of total inequality, we decompose this broad classification of positions into eight occupational categories in order to more precisely identify the sources of inequality. Among our category of higher-paid employees, we distinguish technical workers from supervisory and professional employees. Among our category of basic workers, we distinguish six occupations: public workers, industrial workers, industrial laborers and helpers, commercial employees, service workers, and the combined group of low-paid employed street vendors and domestic workers.

For these various categories of employees for the period 1989-1994, Tables 8A and 8B show the changes in their share of the employee workforce and their share of total employee income. Both technical workers and supervisory and professional employees increased their share of total employees. While the income level of technical workers edged up, supervisors and professionals experienced a more dramatic increase, i.e. from 5.6 times to 8.4 times the level of income of peons (our continuing reference group). As a consequence, the share of total employee income received by supervisory and professional employees ballooned from a little over 18% to 29%, while that of technical workers rose by only a little over 1 percentage point (Table 8B).

The experience of public workers was in stark contrast: they experienced a precipitous drop in their share of the employee workforce from 25% to about 17%. Those who were not laid off tended to be higher-paid public workers--as indicated by the rise in their relative income level. Overall, public workers lost over seven percentage points in their share of total employee income.

Industrial workers experienced a decline similar to that of public workers. While their income level remained stable, their share of the employee workforce dropped by five percentage points, from about 24% to about 19%--most of the decline occurring from 1992 to 1994. As a consequence, their share of employee income plummeted by about six percentage points. While the proportion of regular industrial employees was decreasing, that of industrial laborers was shooting up from 7% to over 13%. This drove down the average level of labor income in industry since by 1994 the income level of industrial laborers was only two-thirds that of regular industrial workers; in 1989, laborers' relative income level was already low, but declined by an additional one-eighth by 1994.

The changing composition of the workforce in industry illustrates that employee income in general shifted to lower-skilled, lower-paid occupations. As another example, while the income share of regular service workers dropped, that of street vendors and domestic workers rose. In both cases, their relative income levels remained unchanged from 1989 to 1994. The income level of vendors and domestic workers remained about 60% that of regular service workers. While service workers' share of the employee workforce edged up, that of vendors and domestic workers rose by three percentage points to approximately equal that of service workers.

Like other occupations in the middle-income range, commercial employees lost ground relative to the occupations at both the top and the bottom: their share of employee income dropped from 7.8% to 7.3%--all of the decline occurring from 1992 to 1994.

The general pattern of changes exhibited in Tables 8A and 8B show that the distribution of income among employees became more polarized. Occupations at the two extremes increased their share of total income: supervisory and professional employees at the top and industrial laborers and street vendors and domestic workers at the bottom. Those occupations in the middle, such as industrial workers and commercial employees, lost ground.

Polarization of Employee Income

The polarization of employee income followed a pattern very similar to that reported earlier for labor income. Employee income is a smaller category than labor income because it includes only the income received by non-agricultural employees; labor income is also received by groups other than employees. The standard Gini Coefficient of employee income rose from 0.473 in 1989 to 0.503 in 1992 and then to 0.532 in 1994--a substantial rise of 12% in such a short period of time (Table 9). However, the percentage increase in the polarization index of employee income was over twice as high, i.e. 26%. This was due to the notable 18% rise in skewness--from 1.55 to 1.83. The 9% increase in the relative median deviation was less pronounced. However, the difference between the relative median deviation (T) and the standard Gini coefficient (G)--which is a central component of the polarization index $((T - G)S)$ --did increase from 0.825 to 0.885 during the period 1989-1994. This difference is scaled up by the change in the skewness ratio to generate the difference in the polarization index.

Gross Contribution to Inequality by Employee Occupation

In Table 10A we examine the gross contribution to total inequality of each of the eight employee occupations. The income shares listed in the table are derived by dividing the monetary income of employee groups by total household income, including non-monetary as well as monetary income; and the inequality shares refer to the contribution of each occupation's income to the overall distribution of total household per capita income.

Both technical workers and supervisory and professional employees increased their gross contribution to inequality between 1989 and 1994 (Table 10A). Whereas the contribution of technical workers increased by 1.4 percentage points to 6.2%, that of supervisors and professionals skyrocketed by over 9 percentage points to almost 22%.

All other employee occupations contributed less to inequality in 1994 than they did in 1989. Predictably, the sharpest drop in contribution was that of public workers--due

almost exclusively to this group's falling share of income. In 1989, the contribution to inequality of public workers was the largest of any employee occupation, but by 1994 this group's 11% contribution was well behind that of supervisors and professionals.

The gross contribution to inequality of regular industrial workers also dropped markedly, from 4.3% to 3%. In 1994, this occupation's share of inequality was less than half its share of total household income. Its contribution to inequality dropped below that of commercial employees even though the latter group's share of the employee workforce was half that of industrial workers.

While the share of total income received by industrial laborers and helpers rose from 1989 to 1994, the group's share of inequality dropped. The reason is that while the membership in this occupation was increasing markedly, its average income level was declining.

There was little change in the share of inequality accounted for by commercial employees, regular service workers and employed street vendors and domestic workers. The income share of the latter group did rise by 40% during 1989-1994, but its share of inequality dropped slightly.

Marginal Contribution to Inequality by Employee Occupation

Table 10B shows the marginal contribution to total inequality from each employee occupation—namely, by what percentage would inequality change if the income share of each occupation rose by one percent. This is a relative measure since it takes the difference between each group's share of total inequality and its share of total income.

Surprisingly, boosting the income of technical workers in 1994 would have had virtually no effect on the distribution of total income. The same would have been true with regard to commercial employees.

Only in the case of two groups would boosting their income have served to significantly exacerbate inequality: public workers and supervisory and professional

employees. In the case of the former, augmenting their income share by 1% would have raised inequality by a little over 2%--a slightly more disequalizing effect than in 1989. However, raising the income share of supervisors and professionals in 1994 would have caused a 8.6% increase in total inequality. This was a substantial rise from this group's marginal contribution in 1989, which was a little over 4%.

Among employee groups, the biggest impact on reducing inequality in 1994 would have come from raising the income of industrial workers: a 1% increase in this group's share would have lowered inequality by over 3%. This was a decline from its equalizing effect in both 1989 and 1992. The next-largest impact on reducing inequality would have come from boosting the income of industrial laborers, i.e a 2.6% drop in inequality, which was well over twice the effect in 1989.

Channeling income to regular service workers and to street vendors and domestic workers would also have decreased inequality in 1994, but less so than for industrial occupations. One reason is that these occupations--especially street vendors and domestic workers--accounted for a smaller share of total income. Accounting for a little over 1% of all income, if this latter poor group had been able to marginally increase its income share, this would have correspondingly lowered total inequality by 1%. Marginally augmenting the income share of regular service workers would have decreased inequality by only 0.8% despite the fact that this group had an income share 64% larger.

V. CONCLUSION

From 1984 to 1994, during the period of dramatic liberalization and restructuring of the Mexican economy, income inequality progressively increased--despite a falling share of profits in total income. During the early 1990s, the rising inequality of labor income was the single most significant contributing factor to greater inequality in the distribution of total household per capita income. Employee income also had a distinctly disequalizing impact.

Our findings run counter to the common expectation, based on the well-known

Stolper-Samuelson theorem, that in labor-abundant developing countries the transfer of resources from nontradable goods to tradable goods and the predicted growth of income and employment from such economic restructuring should disproportionately benefit lower-paid, less-skilled industrial workers and the agricultural workforce (Krueger 1990). More recently, theoretical and empirical work have led researchers to entertain the possibility of opposite conclusions (Davis 1996 and Robbins 1996).

In the case of Mexico, while relatively-privileged public-sector workers were adversely affected by restructuring, mainly through loss of jobs, most other employees in highly-paid, skilled positions and occupations clearly gained. The largest gains were reaped by employees in supervisory and professional occupations. By 1994, this group contributed the most, by far, of any employee occupation to total inequality.

Polarization of labor income also intensified during this period--especially between skilled and unskilled workers. While regular industrial workers were losing jobs and income, for example, more poorly-paid industrial laborers and helpers increased their share of total income. The same was true in the service sector, as the share of income going to regular service workers dropped while that going to employed street vendors and domestic workers increased. As a consequence, the polarization indices for both labor income and the smaller category of employee income increased more notably than the respective Gini coefficients, which measured inequality.

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Table I
Macroeconomic Indicators
(Percentages)

	1975-80	1981-85	1986-93
Average annual growth of GDP	6.7	2.1	1.8
Average annual growth of GDP per capita	4.0	-0.3	-0.4
Share of exports in GDP (constant dollars)	5.2	12.6	16.4
Share of wages in manufacturing value added	36.7	27.8	19.6

(Index numbers 1980=100)

	1989	1992	1994
Employment in manufacturing	88.8	84.0	74.2
Wages in manufacturing (blue collar workers)	62.0	68.7	71.7
Wages in manufacturing (white collar workers)	75.3	96.1	106.4
Share of workers in informal sector (2)	25.1	33.0	35.3

Note: 1. Employment and wages in manufacturing correspond to manufacturing firms that employ more than 10 workers.
 2. Proportion of the urban labor force in firms that employ less than 6 workers in services and construction or less than 16 workers in manufacturing (including the owner).

Sources: World Bank Database, 1995. UNIDO. Industrial Statistics. 1994.
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Table 2
Gini and Pseudo-Gini coefficients for total income and wages

	Total Income	Wages
1984		
Income Share	100.0	46.9
Gini & Pseudo Gini	0.4293	0.4435
1989		
Income Share	100.0	46.6
Gini & Pseudo Gini	0.4693	0.4298
1992		
Income Share	100.0	45.8
Gini & Pseudo Gini	0.4749	0.4657
1994		
Income Share	100.0	48.0
Gini & Pseudo Gini	0.4770	0.5100

Calculations are based on grouped data.
 Households are ranked by total household income

Source: Own calculations based on INEGI-ENIGH
 1984, 1989, 1992, 1994.

Table 3
Component's Pseudo-Gini Coefficient and Share of Total Household Income

Components	1989		1992		1994	
	Pseudo-Gini	Share	Pseudo-Gini	Share	Pseudo-Gini	Share
Labor income	0.485	46.6	0.511	45.8	0.530	48.0
Profits	0.614	13.6	0.596	9.9	0.579	9.1
Agricultural income	0.368	5.1	0.413	6.0	0.358	4.1
Income from services	0.594	6.7	0.593	5.9	0.596	7.1
Transfers	0.519	6.0	0.521	5.8	0.497	5.5
Non-monetary income	0.510	22.0	0.510	26.6	0.508	26.2
TOTAL	0.512	100.0	0.519	100.0	0.524	100.0

Note: Calculations are based on household data ranked by total income per capita.

Source: Own calculations based on INEGI-ENIGH 1989, 1992, 1994.

Table 4
Total Real Income per Capita by Deciles (1994 Prices)

Deciles	1989	1992	1994	% change 1989-94
I	240.76	239.60	244.09	1.4%
II	434.34	421.88	434.17	-0.0%
III	592.64	591.85	606.54	2.3%
IV	761.85	762.41	790.20	3.7%
V	954.75	958.60	997.66	4.5%
VI	1,204.90	1,215.31	1,250.47	3.8%
VII	1,519.68	1,552.24	1,598.63	5.2%
VIII	1,991.34	2,053.20	2,113.26	6.1%
IX	2,830.29	3,015.93	3,083.94	9.0%
X	7,435.85	7,819.85	8,067.05	8.5%

Note: Households were ranked by total income per capita.
 Quarterly income in New Pesos.

Source: Own calculations based on INEGI-ENIGH 1989, 1992, 1994.

Table 5
Polarization Index for Labor Income

	1989	1992	1994	Percent change
Polarization index	1.28	1.43	1.61	26%
Gini coefficient	0.49	0.52	0.55	12%
Skewness	1.55	1.65	1.83	18%
Relative median deviation	1.32	1.39	1.44	9%

Note: The above is a standard Gini Coefficient of labor income,
different from the Pseudo-Gini Coefficient reported in Table 3.
All measures are calculated on individuals' labor income.

Source: Own calculations based on INEGI-ENIGH 1989, 1992, 1994.

Table 6 A
Share of Labor Force and Income per Worker by Position in Employment

Position	1989		1992		1994	
	Labor force Share	Income per Worker *	Labor force Share	Income per Worker *	Labor force Share	Income per Worker *
Higher paid employees	11.1	4.0	11.5	4.7	11.2	5.5
Basic workers	47.1	2.2	42.7	2.1	39.4	2.2
Peons	8.4	1.0	8.9	1.0	9.6	1.0
Small owners	2.5	6.3	4.4	4.5	3.4	5.4
Large owners	0.3	25.2	0.9	13.6	0.5	13.4
Agricultural self-employed	9.8	1.5	9.9	1.2	11.3	0.9
Non-agricultural self-employed	12.8	2.7	11.9	2.0	13.6	2.1
Unpaid workers	7.9	0.2	9.8	0.1	11.1	0.1

Table 6 B
Income Shares

Position	1989	1992	1994
	Higher paid employees	13.8	16.9
Basic workers	31.7	27.6	26.6
Peons	2.6	2.8	3.0
Small owners	5.0	6.2	5.7
Large owners	2.7	3.9	1.9
Agricultural self-employed	4.6	3.8	3.2
Non-agricultural self-employed	10.6	7.3	8.7
Unpaid workers	0.4	0.3	0.4

Notes: * Income per worker is the ratio of each group's income to peon's income.

Residual percentage includes monetary plus non-monetary income of unclassified household members.

Source: Own Calculations based on INEGI-ENIGH 1989, 1992, 1994.

Table 7 A
Contribution to Inequality by Position in Employment

Position in Employment	1989		1992		1994	
	Income Share	Share of Inequality	Income Share	Share of Inequality	Income Share	Share of Inequality
Higher paid employees	13.8	17.6	16.9	23.8	19.3	28.3
Basic workers	31.7	26.5	27.6	22.4	26.6	21.4
Peons	2.6	-0.9	2.8	-0.5	3.0	-0.5
Small owners	5.0	7.3	6.2	8.8	5.7	8.0
Large owners	2.7	5.0	3.9	6.8	1.9	3.4
Agricultural self-employed	4.6	1.4	3.8	0.9	3.2	0.6
Non-agricultural self-employed	10.6	11.3	7.3	6.0	8.7	7.7

Table 7 B
Marginal Contribution to Inequality (Percentages)

Position in Employment	1989	1992	1994
	Higher paid employees	3.8	6.9
Basic workers	-5.2	-5.2	-5.2
Peons	-3.5	-3.3	-3.5
Small owners	2.3	2.6	2.3
Large owners	2.3	2.9	1.5
Agricultural self-employed	-3.2	-2.9	-2.6
Non-agricultural self-employed	0.7	-1.3	-1.0

Note: The marginal contribution is equal to the group's contribution to inequality minus its share of total income.

Source: Own Calculations based on INEGI-ENIGH 1989, 1992, 1994.

Table 8 A
Shares of Total Employees and Income per Employee by Occupation

Occupation	1989		1992		1994	
	Work Force Share	Income per Employee	Work Force Share	Income per Employee	Work Force Share	Income per Employee
Technicians	10.6	2.8	11.5	3.0	12.0	3.2
Supervisors & professionals	8.3	5.6	9.7	6.8	10.1	8.4
Public workers	25.0	2.8	18.1	3.0	17.3	3.3
Industrial workers	24.3	2.0	23.2	2.0	19.3	2.1
Industrial labourers	7.0	1.6	11.3	1.4	13.2	1.4
Commercial employees	8.7	2.3	9.1	2.2	8.9	2.4
Service workers	7.7	1.8	7.5	1.7	8.2	1.8
Vendors and domestics	5.1	1.1	7.0	1.0	8.1	1.1

Table 8 B
Share of Employee Income

Occupation	1989		1992		1994	
	Income Share	Income Share	Income Share	Income Share	Income Share	Income Share
Technicians	11.8	13.0	13.1	13.1	13.1	13.1
Supervisors & professionals	18.2	25.0	29.0	29.0	29.0	29.0
Public workers	27.3	20.6	19.9	19.9	19.9	19.9
Industrial workers	19.9	17.8	13.8	13.8	13.8	13.8
Industrial labourers	4.4	5.9	6.5	6.5	6.5	6.5
Commercial employees	7.8	7.8	7.3	7.3	7.3	7.3
Service workers	5.4	4.8	5.0	5.0	5.0	5.0
Vendors and domestics	2.2	2.8	2.9	2.9	2.9	2.9

Notes: Residual percentages are for miscellaneous categories.
Base for income per employee is income of peons.

Source: Own Calculations based on INEGI-ENIGH. 1989, 1992, 1994.

Table 9
Polarization Index for Employee Income

	1989	1992	1994	Percent change
Polarization index	1.21	1.35	1.54	27%
Gini coefficient	0.47	0.50	0.53	12%
Skewness	1.53	1.64	1.80	18%
Relative median deviation	1.27	1.33	1.39	9%

Note: 1. This is a standard Gini coefficient of employee income.
2. All measures are calculated on employee income.

Source: Own calculations based on INEGI-ENIGH 1989, 1992, 1994.

Table 10 A
Contribution to Inequality by Occupations

Occupation	1989		1992		1994	
	Income Share	Share of Inequality	Income Share	Share of Inequality	Income Share	Share of Inequality
Technicians	5.3	4.8	5.8	5.8	6.0	6.2
Supervisors & professionals	8.5	12.7	11.1	17.9	13.3	21.9
Public workers	12.5	14.4	9.2	11.3	9.1	11.3
Industrial workers	8.8	4.3	7.9	3.7	6.3	3.0
Industrial labourers	1.9	0.7	2.6	0.2	3.0	0.4
Commercial employees	3.6	3.6	3.5	3.5	3.4	3.5
Service workers	2.4	1.6	2.1	1.6	2.3	1.5
Vendors and domestics	1.0	0.5	1.2	0.7	1.4	0.4

Table 10 B
Marginal Contribution to Inequality (Percentages)

Occupation	1989		1992		1994	
	Income Share	Share of Inequality	Income Share	Share of Inequality	Income Share	Share of Inequality
Technicians	-0.5	0.0	0.0	0.2	0.2	0.2
Supervisors & professionals	4.2	6.8	6.8	8.6	8.6	8.6
Public workers	1.9	2.1	2.1	2.2	2.2	2.2
Industrial workers	-4.5	-4.2	-4.2	-3.3	-3.3	-3.3
Industrial labourers	-1.2	-2.4	-2.4	-2.6	-2.6	-2.6
Commercial employees	0.0	0.0	0.0	0.1	0.1	0.1
Service workers	-0.8	-0.5	-0.5	-0.8	-0.8	-0.8
Vendors and domestics	-0.5	-0.5	-0.5	-1.0	-1.0	-1.0

Note: Residual percentages are for miscellaneous categories.

Source: Own Calculations based on INEGI-ENIGH. 1989, 1992, 1994.



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