

**RISING INEQUALITY IN MEXICO:
RETURNS TO HOUSEHOLD CHARACTERISTICS AND THE
"CHIAPAS EFFECT"**

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October 14, 1998

Using data from the Mexican National Household Income and Expenditure Surveys, we decompose the effects of returns to household characteristics and geographical variables to determine the relative importance of these factors in explaining the rising income inequality experienced in the 1984-94 period. Whereas household characteristics explain the lion share of the changes in inequality, the deteriorating conditions in the Southern region are found to account for a significant portion of rising income inequality in the country.

This paper is part of the research project "The Microeconomics of Income Distribution Dynamics in East Asia and Latin America", jointly sponsored by the Inter-American Development Bank and the World Bank. We would like to thank Francois Bourguignon for his invaluable advice and support.

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I. INTRODUCTION

Between 1984 and 1994, Mexico experienced a sharp increase in household income inequality. This trend is observed for a set of inequality measures: the Gini coefficient, the mean-log deviation, the Theil index, and the transformed coefficient of variation. The rise in inequality is robust to adjustments to income that account for underreporting and also robust to alternative measures of welfare – per capita and per adult-equivalent units (Table 1).

What accounts for this increase in income inequality? Two possible factors come immediately to mind. One is the widening gap in the returns to skill in the labor market between the less educated and the highly educated. Another factor could be uneven regional development with some parts of the country lagging behind.

In order to test these hypotheses, we estimate a reduced-form household income regression model and apply a simulation methodology on the overall distribution of income. The methodology, first proposed by Almeida dos Reis and Paes de Barros (1991) and Juhn, Murphy, and Pierce (1993) in the context of earnings equations, follows the generalization to the household income model proposed by Bourguignon, Fournier, and Gurgand (1998). The simulation allows the decomposition of the observed changes in income distribution by source. That is we can identify the contribution of changes in household “endowments” separately from the changes in the “returns” to those endowments (and from the changes in the residual term). Furthermore, the simulation allows isolating the effects of specific returns individually, such as returns to education and regional effects. In order to test the robustness of the results, the simulation is carried out for four inequality measures for both income per capita and per adult equivalent unit.

Because the method is applied to a reduced form household income model, strictly speaking the estimated coefficients are not "returns". While in the earning functions à la Juhn et al., the estimated coefficients represent the market returns to individual characteristics, the estimated coefficients presented here capture a whole range of endogenous decisions such as labor force participation and occupational choice, in addition to the market returns. For simplicity we will still refer to them as "returns."

Our results indicate that changes in the returns to education account for the lion share of the observed changes in inequality. In addition, the deterioration in the relative position of the southern part of the country is the second most important factor accounting for the increase in inequality between 1984 and 1994.

II. DATA AND METHODOLOGY

A. DATA

The analysis relies on the Mexican "National household income and expenditure surveys" (ENIGH) for the years 1984 and 1994, produced by the National Institute of Statistics, Geography and Informatics (INEGI). The surveys have national coverage and sample between 4,735 (1984) and 12,815 (1994) households. Income data were adjusted to account for regional inflation. Consumer price indexes for each region, obtained from Banco de Mexico, were used in the adjustment. This allows the removal of dynamic regional effects due to price level differences. Descriptive results are reported for unadjusted income data, and wage and non-wage proportionally adjusted income relative to the wage and non-wage income components of the national accounts, obtained from CEPAL. This is done to account for the distributional effects of underreporting. In the econometric work, underreporting is imbedded in the error term and may

affect some of the coefficients if the independent variables are correlated with the propensity to underreport. This potential correlation is not taken into consideration in the empirical work.

B. METHODOLOGY

The objective of the paper is to identify which factors lie behind the behavior of the distribution of income among households between 1984 and 1994. We proceed in three steps. First, we estimate household income equations for 1984 and 1994. Second, we simulate the distribution of income which would have been observed in 1984(1994) if the returns would have equalled those of 1994(1984). Finally, we calculate the contribution of changes in returns, “endowments”, and the residual term to the observed change in the distribution of income.

1. Income inequality measures

Four distinct income inequality measures are estimated from the original data (deflated using regional price indices¹). These include the Gini, and three measures from the generalized entropy class, i.e. the mean log deviation (E(0)), the Theil Index (E(1)), and the transformed coefficient of variation (E(2)), where the Gini is defined as:

$$G = \frac{1}{2n^2 \bar{y}} \sum_{i=1}^n \sum_{j=1}^n |y_i - y_j| \quad (1)$$

and the generalized entropy class as:

$$E(\mathbf{a}) = \frac{1}{\mathbf{a}^2 - \mathbf{a}} \left[\frac{1}{n} \sum_{i=1}^n \left(\frac{y_i}{\bar{y}} \right)^{\mathbf{a}} - 1 \right] \quad (2)^2$$

¹ The indices only capture different rates of inflation over time, but not regional price differences at a point of time.

² The mean log deviation $E(0) = \frac{1}{n} \sum_{i=1}^n \log \left(\frac{\bar{y}}{y_i} \right)$; the Theil Index $E(1) = \frac{1}{n} \sum_{i=1}^n \frac{y_i}{\bar{y}} \log \left(\frac{y_i}{\bar{y}} \right)$; and the transformed

coefficient of variation $E(2) = \frac{1}{2} CV^2 = \frac{1}{2n\bar{y}^{-2}} \sum_{i=1}^n (y_i - \bar{y})^2$

These measures are calculated for household income per capita and household income per adult equivalent unit, and are thought to provide reasonable higher and lower bounds for the level of income inequality. All these measures are then used in the decomposition and serve to test for the robustness of the results. In table 1, the measures are also presented for both raw data and income adjusted for underreporting.

2. Household income equation specification

Household income equations were estimated as a reduced-form household income model³ at two points in time (1984 and 1994) on both per capita and adult equivalent unit basis. The regression equation was specified as follows:

$$\log(y) = \log \frac{H}{I_h \mathbf{f}} = \mathbf{a} + X_1 \mathbf{b}_1 + X_2 \mathbf{b}_2 + X_3 \mathbf{b}_3 + U \cdot R_{-So} \mathbf{g} + RU \cdot R_{-So} \mathbf{g} + U \cdot So \mathbf{x}_1 + RU \cdot So \mathbf{x}_2 + So(X_1 \mathbf{I}_1 + X_2 \mathbf{I}_2 + X_3 \mathbf{I}_3) + \mathbf{e} \quad (3)$$

where:

H = household income

I_{ht} = deflator (h = region, t = time)

\mathbf{f} = 1 for income-per-capita estimation

= 1 + 0.7*(adults other than the head of ho.) + 0.5*(children) for AEU estimation⁴

X_1 = household demographics (no. of family members in each age/gender category)

X_2 = male and female education (no. of family members in each education/age category; excluded category: adults between 14 and 65 and older than 65 with no education)

X_3 = dummy for household financial and real assets.

U = urban dummy

³ A structural model incorporating labor market decisions by individual (participate/not participate; wage earner/self-employed) is in the workings and will be presented in a follow-up paper.

⁴ The particular adjustment factors, which are found in the literature, provide for a substantial adjustment to household income. This should not be viewed as the optimal adjustment but rather as the upper bound for household income per adult equivalent. Initial adjustments to income to account for economies of scale are not included in this paper. This is because, in the case of Mexico and probably other developing economies, the high correlation between family size and poverty incidence are such that the geometric adjustments for economies of scale reduced poverty measures to near zero values.

RU = rural dummy⁵

$R_{.So}$ = $\{R_1, R_2, R_3, R_5, R_9\}$ regional dummies other than dummy for the Southern region
(excluded category: R_4 – Center-West: Aguascalientes, Colima, Guanajuato, Jalisco, Michoacán – for
urban and rural sectors)

R_1 = North-West (Baja California, Baja California Norte, Sinaloa, Sonora, Nayarit)

R_2 = North-East (Tamaulipas, Nuevo León)

R_3 = North (Coahuila, Chihuahua, San Luis Potosí, Zacatecas, Durango)

R_5 = Center (Hidalgo, Querétaro, Tlaxcala, México, Morelos, Puebla)

R_9 = Federal District

So = Southern region dummy includes South (Tabasco, Veracruz); South-East (Chiapas, Guerrero, Oaxaca);
and South-West (Campeche, Quintana Roo, Yucatán)

The $X\beta$ terms capture the effect of household characteristics on per capita (or adult equivalent) income. The $R_{.So}g$ and Sox terms interacted with urban and rural dummies capture regional fixed effects (such as ethnic characteristics, infrastructure, geography, distance from the capital, distance from the United States, climate, and so on). Finally, the dummy for the Southern region was interacted with the household characteristics variables to provide insight into the differences in the returns to those characteristics between the South and the rest of the country, and to measure the changes in those returns within the time period under consideration.

As it is common in cross-sectional survey data, estimations were found to suffer from heteroskedasticity of the error term and the variance-covariance matrix was adjusted accordingly. Wald tests, based on the robustly estimated variance-covariance matrix, were performed to test joint significance of variables and structural changes in the period.

3. Decomposition method

Let the inequality indicator be described by:

$$D_t = D\{y_t \mid \mathbf{b}_{jt}, \mathbf{g}_{kt}, \mathbf{x}_{kt}, \mathbf{l}_{lt}, \mathbf{e}_t\} \quad (4)$$

⁵ Rural sectors are defined as localities with less than 15,000 inhabitants.

where y_t is defined as in equation (1) and $j=1,2,3$, $k=1,2$, and $l=1,2,3$.

The decomposition then consists in estimating the effects on D_t of changing one or more arguments of $D\{\cdot\}$. Changing β_j , for $j=1,2,3$, amounts to assuming different overall country returns to household demographics, and human and physical assets, respectively. Changing γ_k , and ξ_k for $k=1,2$, amounts to assuming different fixed returns to geographical location and sector (urban/rural) in the Northern and Central regions, and the South. Changing λ_l , for $l=1,2,3$, amounts to modifying the marginal additions of the South to the country returns to household demographics, and human and physical assets.

To estimate the contribution of the changes in the residual term to the overall change in the distribution of income we used the following method. The residuals of 1984(1994) were re-scaled in such a way so that the variance of the residuals in 1984(1994) was equal to the variance of the residuals in 1994(1984)⁶.

Although a number of different experiments can be performed on this framework, our objective is to decompose the observed changes in D_t into an “endowments” effect (demographics, human and physical capital and location) and a “returns” (coefficients) effect to those endowments⁷, i.e., the coefficients.

Let $D(X,r,\mathbf{e})$ be the distribution obtained with endowments X , returns r and errors \mathbf{e} . We want to decompose: $\Delta D = D(X',r',\mathbf{e}') - D(X,r,\mathbf{e})$ ⁸. This may be written as:

$$\begin{aligned}\Delta D &= D(X',r',\mathbf{e}') - D(X',r,\mathbf{e}) + D(X',r,\mathbf{e}) - D(X,r,\mathbf{e}) \\ &= R(X') + E(r,\mathbf{e})\end{aligned}$$

or:

⁶ This assumes the residuals are normally distributed. Juhn et al. (1993) follow a different procedure.

⁷ These returns include the market return to characteristics as well as the returns to labor participation, occupational choice, and other endogenous decisions.

⁸ For a more detailed description see technical appendix.

$$\begin{aligned}\Delta D &= D(X, r', \mathbf{e}') - D(X, r, \mathbf{e}) + D(X', r', \mathbf{e}') - D(X, r', \mathbf{e}') \\ &= R(X) + E(r', \mathbf{e}')\end{aligned}$$

where $R(\cdot)$ is the “returns effect” and $E(\cdot)$ is the “endowments effect”. The decompositions are path dependent. That is: $R(X') \neq R(X)$ and $E(r', \mathbf{e}') \neq E(r, \mathbf{e})$. One possibility is to assume monotonicity and define:

$$R^* = \frac{R(X') + R(X)}{2} \text{ and } E^* = \frac{E(r, \mathbf{e}) + E(r', \mathbf{e}')}{2}$$

The simulation is done by replacing the coefficients of 1984 (1994) with those obtained for 1994 (1984).

III. DETERMINANTS OF HOUSEHOLD INCOME

The household per capita (or per Adult Equivalent Unit) income regressions have substantial explanatory power (Tables A.1-4). The F-tests on the overall regressions are significant at more than 99 percent, and most individual variables are highly significant as well. Results are reported in reference to a household in the Center-West region, that does not report owning a house or financial assets, and where the household head is present.⁹ Household characteristics and regional fixed effects are found to be very significant. Interaction terms measuring the marginal effects of returns in the South on household characteristics are significant as a group in 1994 and weakly significant in 1984, meaning that the returns to characteristics of households living in the Southern

⁹ These are the excluded categories for obtaining a non-singular matrix.

region are significantly different from those of the rest of the country in 1994, while they may not have been so in 1984.

A. HOUSEHOLD CHARACTERISTICS

1. Demographics

Age and gender categories of the household are found to be significant in explaining per capita household income (Table 2). The variables represent the marginal effect of adding a person to the total household size. In the case of adults (where adult is defined as 14 and older), variables represent additions of a person with no education (our excluded category). These marginal effects are found to be negative for both children and adults, meaning that an additional individual contributes less than average income to the family. Also, they are smaller for children than adults. This may be because the addition of a child to the family may induce greater effort from adult family members, while the addition of an adult with no education may induce non-cooperative or free-riding behavior on the part of the other members¹⁰.

2. Human resources

Education of household members is very significant in accounting for differences in household income across years (Table 3). The excluded categories are adults (male and female) with no education. The coefficients measure the marginal effect of replacing an adult with no education by an adult with education (for each specified level). The returns to education are positive and significant. For example, replacing a male with no education by one with “superior” education increases average per capita income by 54 percent in 1984 and 62 percent in 1994. The returns tend to increase with education level and the increase is monotonic at least with respect to “completed” education levels.

¹⁰ There may also be some measurement error associated with larger than average families in agriculture that may contribute to both of these results (the negative contribution and the relative size of children and adult contribution). The contribution of adult female members with no education tends to be lower than that for males. This is consistent with lower labor participation rates of women and unmeasured household production income.

Between 1984 and 1994, large differences appear in the distribution of returns between lower and higher education, pointing to a widening wage gap. This is consistent with other authors' findings on the growing wage dispersion associated with skill differentials (see, for example, Cragg and Epelbaum, 1996). While the returns to education fall for all education levels except "superior," the fall is substantially more marked in the case of men. This may be because greater female labor participation in 1994 partially offsets lower labor market returns.

3. Physical and financial assets

As expected, both financial assets and the home ownership contribute positively to household income (Table 4). Between 1984 and 1994, however, the returns to financial assets decline while the fixed return to home ownership increases. The latter may simply reflect the increase in real estate prices (since the dummy variable does not account for value). The former is consistent with the financial liberalization the country underwent in the period and should generally be associated with declining inequality. However, it is also the case that half as many households reported financial income in 1994 than in 1984 (3.2% and 6.4%, respectively). If reporting financial income in 1994 is correlated with the level of household income, and if that correlation were negative, then one would detect a spurious decrease in the returns to financial assets.

B. REGIONAL EFFECTS

Relative to the Center-West region, regional fixed effects are positive for the urban areas (except for the South) and are negative for rural areas in all regions (Table 5). On average Northern states and the capital do better than the South. Between 1984 and 1994, the relative position of rural areas tend to deteriorate across all regions with the rural South displaying the largest single drop (in absolute terms).¹¹ Here, the most striking result is the sharp worsening of the "returns"

¹¹ Because income variables were deflated by regional consumer price indexes (CPIs), the change in the estimated regional fixed effects between 1984 and 1994 may indicate real differences in purchasing power. This statement should be treated with care since the regional CPIs provide across time adjustments in each region but no cross-regional index structure.

(coefficients) in the Southern region relative to the rest of the country. Because of its symbolic content, we have called this result the “Chiapas effect”.

Deterioration of the terms of trade for the major crops produced in the South may account for some of the negative results observed for the Southern region. For example, between 1984 and 1992, the prices of coffee and cocoa declined by more than 70 percent on the international markets, primarily as a result of the dismantling of the International Coffee Agreement. It is estimated that subsistence income for small farmers in the Southern states of the Pacific coast declined an average of 15 percent and that indigenous producers were one of the groups most severely affected by the decline in the price of coffee, as 65 percent of all coffee producers are indigenous and produce one-third of Mexico’s coffee output¹². This is consistent with the finding that poverty incidence increased very sharply between 1984-94 in the South. For example, Lustig and Székely (1998) find that the incidence of extreme poverty in the Southern region rose from 17 to 29 percent between those two years, and in the Southeast from 16 to 37 percent. Both the relative and absolute standing of the South may be an important explanatory element of the increased income inequality in the country. This question is analyzed in the next section.

¹² World Bank (1996).

IV. DECOMPOSING THE CHANGES IN INEQUALITY

By any measure, Mexico experienced a large hike in income inequality between 1984 and 1994. In the period, and depending on the adjustment performed on the income data, the Gini increased by 8-13 percent, the mean log deviation (E(0)) by 17-30 percent, the Theil Index (E(1)) by 21-37 percent, and the transformed coefficient of variation (E(2)) by 21-74 percent (Table 1).

To understand the origins of this increase, we decompose the change in overall inequality into a “returns effect”, an “endowment effect”, and a “residual effect”. As said earlier, the returns effect is calculated by applying 1994(1984) returns to the 1984(1994) household income equation and calculating the ensuing income distribution. For the residual effect 1984(1994) residuals are adjusted to account for the 1994(1984) distribution of the residuals. Finally the endowment effect is calculated as a difference (see technical appendix). The simulations are path dependent, i.e., the value of the contribution of changes in the returns depends on the structure of endowments to which those return changes are applied (that is, whether the endowments of 1984 or of 1994 are used). They thus provide two separate estimates of the contribution of the observed changes in returns. These estimates are believed to represent the upper and lower bounds of the contributions of changes in returns to changes in overall inequality. This assumes monotonicity of the decomposition relative to changes in returns.¹³

This section presents results using the Gini coefficient with per capita income both for the upper and lower bound decompositions and the average of the two. The decompositions of the other inequality measures and for the adult equivalent units are presented in the Appendix (Tables A.5-

¹³ We have tested monotonicity by calculating the so-called endowment effect using average 1984-1994 returns.

6). Results of the experiment are robust to changes in income inequality measures and income measures (per capita or per adult equivalent unit).¹⁴

In table 6 we can observe that “return effect” accounts on average for 73 percent of the observed increase in inequality as measured by the Gini¹⁵. The “error term effect” --which captures the contribution of changes in the distribution of unobservables-- accounts for about 4 percent of that increase. Finally, the “endowment effect” accounts for the rest.¹⁶

The main result of decomposing the “returns effect” by source is that changes in returns to household characteristics, education in particular, account for 66 percent of those effects (Table 6). This corresponds to 49 percent of the overall change in inequality. Despite the fact that returns to household characteristics represent the lion’s share of the changes in inequality, a notable result is that regional effects contribute with about a third (or 24% of the total observed change in inequality). In particular, it is striking that the South alone (fixed effect and the returns to household characteristics of the South) can explain about 21 percent of the returns effect (or 15% of the total observed increase in the Gini). This result points to the deterioration of general conditions in the South and decreasing returns to household characteristics of the population living in the South.

A. HOUSEHOLD CHARACTERISTICS

Among household characteristics, it is clear that returns to education are mainly responsible for the increase in inequality. Indeed, changes in the returns to the other sources (demographics and capital assets) contribute to increased equality.

¹⁴ By robustness we mean that the ranking of the various contributions are maintained and that the order of magnitude of the relative contributions are very similar irrespective of the inequality measure used. (Tables A.5 and A.6)

¹⁵ Some authors call the “returns effect” the “price effect”

¹⁶ See Appendix for the decomposition formula, some authors call the “endowment effect” the “population effect”.

1. Demographics

Returns to the distribution of demographic characteristics, on average, contribute negatively to inequality. This means, for example, that if the returns prevailing in 1984 were applied to the structure of the family existing in 1994, measured inequality would have decreased by 10 percent. From the regression estimates, it seems that this may arise from increased returns to working age males and more productive older family members (both male and female). Given the fact that generally the incidence of poverty among older individuals is higher than for the average, the increase in returns to them may have an equalizing effect on the distribution of income overall.

2. Education

Among household characteristics and overall, returns to education represent the largest share of the change in income inequality (56%, Table 6, last column). By far it is working age male education that explains the bulk of the change (48%). The increasing income gap among males, evident from the hike in male higher education returns and the drop in low education returns, is responsible for the result. Working age female education has a much smaller contribution to inequality (9%). The interaction of male and female education returns generally results in lower overall inequality than the two would predict separately. This is because the data is at the household level, and when the changes in market rewards affect males and females in opposite directions, some of these effects cancel out at the household level. This will happen either automatically, or because the relative return movement induces substitution between male and female labor outside the household. For example, if there is a negative shock to the male returns given his characteristics, a female in the household may decide to supply more labor to soften the shock¹⁷.

¹⁷ Among the entropy class measures of inequality, the indicator most affected by human resources returns is the mean log deviation, $E(0)$. The fact that this indicator is most sensitive to changes at the bottom of the distribution suggests that the dramatic drop in the returns to low education may be driving the result (Table A.5 and 3).

3. Physical and financial assets

Returns to assets contribute negatively to income inequality changes (-1%, Table 6, last column). From the regression results, it appears that the decrease in the return to financial assets, and the increase in the value of owning a house would partly cancel out, since both tend to be more frequent at the top of the income distribution.

B. REGIONAL EFFECTS

Urban regional fixed effects in regions other than the South contribute little to rising income inequality of the 1984-94 period. The rural areas in those regions, however, have clearly lost out relative to the cities. Rural fixed effects account for 7 percent of increased inequality (Table 6, last column). As we saw before, all coefficients for the rural sectors deteriorated between 1984 and 1994, particularly in the South and Center regions. The fixed effect of the South region alone can explain 9 percent of the increase in income inequality. It is also the only region where both the urban and rural fixed effects are negative and worsening over time. This points to a divergence of the conditions in the South from those prevailing in the rest of the country.

Dynamics in the South may be able to explain about a fifth of the rising income inequality in Mexico attributable to changes in returns. Of this 20 percent about a third is explained by returns to household characteristics of people living in the South. The greatest contribution may come from the South East region, which includes Chiapas, Guerrero and Oaxaca, where poverty rates increased from 17 to 37 percent in the 1984-94 period.¹⁸

¹⁸ Lustig and Székely (1998). Also, the inequality indicator most affected by the deterioration of the returns to Southern household variables is the mean log deviation. This is because the mean log deviation is the most sensitive to changes in the lowest deciles of the distribution among the selected indicators, and the South holds a much larger proportion of the poor than the rest of the country (as compared to a national average of 25% in 1994, the poverty count in the South central region was 41%, in the South Eastern 47% and in the South Western 24%). The fixed effect for the South alone accounts for 12 percent of the variation. The remaining 8 percent is accounted by changes in the return to household characteristics of the population living in the South (Table A.5).

V. CONCLUSION

We have explored the contribution of the returns to household characteristics and regional location to the overall increase in inequality observed in Mexico between 1984 and 1994 using an estimation – based decomposition methodology.

It was found that although the changes in returns corresponding to household characteristics -- particularly for education-- account for the largest share in the change in overall inequality, the worsening conditions in the Southern part of the country accounted for 15 percent of the increase. Not only living in the South carries a penalty but that penalty has risen over time.

While the observed divergence in the behavior of the returns to endowments in the south could also be the result of factors determined by individual decisions in terms of occupational choice, migration and labor participation decisions, there are reasons to believe that this is not the case. Given the large negative terms of trade shock experienced by the south during the period under consideration, it is quite likely that the region's relative backwardness increased.

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Technical Appendix

Decomposition

Let $D(y)$ be the income distribution measure of interest, where $y = PX + \mathbf{e}$, where P are prices, X endowments and \mathbf{e} the error terms. We can then rewrite $D(y)$ as $D(P, X, \mathbf{e})$. Let y be income in year 0 and y' income in year 1. We are interested in explaining the change in income distribution between year 0 and year 1:

$$\mathbf{D} = D(y') - D(y) = D(P', X', \mathbf{e}') - D(P, X, \mathbf{e})$$

This can be decomposed into:

$$\mathbf{D} = [D(P', X', \mathbf{e}') - D(P, X', \mathbf{e}')] + [D(P, X', \mathbf{e}') - D(P, X', \mathbf{e})] + [D(P, X', \mathbf{e}) - D(P, X, \mathbf{e})]$$

which can be expressed as:

$$\begin{aligned} \mathbf{D} &= P(X', \mathbf{e}') + \mathbf{e}(P, X') + X(P, \mathbf{e}) \\ &= P(X', \mathbf{e}') + \mathbf{e}(P', X') + X(P, \mathbf{e}) + [\mathbf{e}(P, X') - \mathbf{e}(P', X')] \end{aligned}$$

Alternatively,

$$\begin{aligned} \mathbf{D} &= [D(P', X', \mathbf{e}') - D(P', X, \mathbf{e}')] + [D(P', X, \mathbf{e}') - D(P', X, \mathbf{e})] + [D(P', X, \mathbf{e}) - D(P, X, \mathbf{e})] \\ &= X(P', \mathbf{e}') + \mathbf{e}(P', X) + P(X, \mathbf{e}) \\ &= P(X, \mathbf{e}) + \mathbf{e}(P, X) + X(P', \mathbf{e}') + [\mathbf{e}(P', X) - \mathbf{e}(P, X)] \end{aligned}$$

$P(X', \mathbf{e}')$ and $P(X, \mathbf{e})$ are calculated by simulating year 0 prices on year 1 endowments and error terms, and year 1 prices on year 0 endowments and error terms. $\mathbf{e}(P', X')$ and $\mathbf{e}(P, X)$ are calculated by transforming year 0 \mathbf{e} to account for year 1 distribution of \mathbf{e} and viceversa. Lastly $X(P', \mathbf{e}')$ and $X(P, \mathbf{e})$ are calculated as a difference:

$$X(P', \mathbf{e}') = \mathbf{D} - \{P(X, \mathbf{e}) + \mathbf{S}(P, X) + [\mathbf{S}(P', X) - \mathbf{S}(P, X)]\}, \text{ and}$$

$$X(P, \mathbf{e}) = \mathbf{D} - \{P(X', \mathbf{e}') + \mathbf{S}(P', X') + [\mathbf{S}(P, X') - \mathbf{S}(P', X')]\}$$

To test for monotonicity with respect to prices, we evaluate these functions at \bar{P} , where $\bar{P} = \mathbf{a}P + (I - \mathbf{a})P'$ and check whether:

$$D(P, X, \mathbf{e}) < D(\bar{P}, X, \mathbf{e}) < D(P', X, \mathbf{e}) \quad \text{or equivalently whether, e.g.,}$$

$$X(P, \mathbf{e}) > X(\bar{P}, \mathbf{e}) > X(P', \mathbf{e})$$

Tables

Table 1
Household Income Inequality Measures

	Gini		E(0)		E(1)		E(2)	
	1984	1994	1984	1994	1984	1994	1984	1994
Unadjusted Income								
Total	44.04	49.29	34.22	42.72	34.63	46.67	51.60	89.91
Per capita	49.14	54.91	42.83	54.05	45.57	60.17	87.47	130.09
Adult Equivalent Units	46.28	52.51	37.56	48.65	39.69	54.36	68.75	111.92
Adjusted Income*								
Total	45.32	49.13	35.83	42.04	38.11	46.62	62.95	94.85
Per capita	50.93	55.28	45.86	54.70	50.47	61.09	110.42	133.61
Adult Equivalent Units	48.05	52.77	40.30	48.98	44.19	55.01	86.23	116.20
<i>1984 = 100</i>								
Unadjusted Income								
Total	100.0	111.92	100.00	124.87	100.00	134.79	100.00	174.25
Per capita	100.0	111.74	100.00	126.21	100.00	132.04	100.00	148.73
Adult Equivalent Units	100.0	113.46	100.00	129.53	100.00	136.97	100.00	162.80
Adjusted Income								
Total	100.0	108.42	100.00	117.32	100.00	122.34	100.00	150.67
Per capita	100.0	108.55	100.00	119.27	100.00	121.04	100.00	121.00
Adult Equivalent Units	100.0	109.81	100.00	121.55	100.00	124.50	100.00	134.76

Note: Figures are based on real household income.

* Income adjusted using the National Accounts' wage and non-wage factors.

Source: authors calculations based on Mexican National Household Income and Expenditure Surveys.

Table 2
Regression results for age and gender
(Dependent variable: per capita income)

	1984*	1994*
Number of children less than 2 years old	-0.234	-0.223
Number of children between 2 and 5 years old	-0.205	-0.226
Number of children between 6 and 13 years old	-0.162	-0.192
Number of male between 14 and 65 years old	-0.319	-0.195
Number of female between 14 and 65 years old	-0.321	-0.304
Number of male older than 65 years old	-0.353	-0.294
Number of female older than 65 years old	-0.450	-0.380

* Coefficients in Bold indicate significance at the 5 percent level or more.

Note: Please refer to Tables A.1 and A.2 for the complete regression model's results.

Table 3
Regression results for education
(Dependent variable: per capita income)

	1984*		1994*	
	Male	Female	Male	Female
Number of household members between age 14 and 65				
with some primary	0.177	0.098	0.042	0.091
with primary	0.281	0.241	0.081	0.170
with some secondary	0.274	0.232	0.101	0.208
with secondary	0.293	0.353	0.165	0.256
with some preparatory	0.277	0.296	0.196	0.234
with preparatory	0.421	0.509	0.310	0.473
with superior	0.538	0.507	0.615	0.577

* Coefficients in Bold indicate significance at the 5 percent level or more.

Note: Please refer to Tables A.1 and A.2 for the complete regression model's results.

Table 4
Regression results for assets
(Dependent variable: per capita income)

	1984*	1994*
Dummy for financial assets	0.364	0.335
Dummy for house ownership	0.064	0.104

* Coefficients in Bold indicate significance at the 5 percent level or more.

Note: Please refer to Tables A.1 and A.2 for the complete regression model's results.

Table 5
Regression results for regional fixed effects
(Dependent variable: per capita income)

	1984*		1994*	
	Urban	Rural	Urban	Rural
North West region	0.131	-0.001	0.191	-0.179
North East region	0.225	-0.063	0.132	-0.094
North region	0.035	-0.385	0.025	-0.377
Center region	0.052	-0.259	0.005	-0.429
South	-0.079	-0.354	-0.154	-0.618
Mexico DF	0.205		0.250	

* Coefficients in Bold indicate significance at the 5 percent level or more.

Note: Please refer to Tables A.1 and A.2 for the complete regression model's results.

Table 6
Decomposition of the Sources of Rising of Household Income Inequality on Per Capita Income (1984-1994)
(in percentage)

Sources	1984			1994			Average 84/94	
	Gini	Contribution to		Gini	Contribution to		Return effects only	Actual change in the Gini
		Return effects only	Actual change in the Gini		Return effects only	Actual change in the Gini		
ORIGINAL INCOME	49.14			54.91				
ESTIMATED INCOME	49.14			54.84				
SIMULATED INCOME :								
TOTAL (I + II + III + IV)			100.00			100.00		100.00
I. Return Effects P(X,e) (a + b + c)	52.77	100.00	62.99	50.03	100.00	83.38	100.00	73.18
<i>a. Household Characteristics</i>	51.52	65.57	41.30	51.61	67.18	56.01	66.49	48.66
Demographics	49.19	1.62	1.02	55.44	-12.44	-10.37	-6.39	-4.67
Education	52.05	80.24	50.54	51.30	73.73	61.47	76.53	56.01
Working age	52.09	81.27	51.19	51.18	76.10	63.45	78.33	57.32
Male	51.78	72.80	45.85	51.93	60.65	50.57	65.88	48.21
Female	49.36	6.14	3.86	53.97	18.09	15.08	12.94	9.47
Older than working age	49.10	-1.01	-0.64	54.98	-2.87	-2.39	-2.07	-1.52
Male	48.89	-6.83	-4.30	55.13	-5.88	-4.91	-6.29	-4.60
Female	49.32	5.15	3.24	54.73	2.45	2.05	3.61	2.64
Assets	49.03	-2.98	-1.87	54.85	-0.20	-0.16	-1.39	-1.02
Absent Head	49.08	-1.48	-0.93	54.89	-0.88	-0.73	-1.14	-0.83
Interaction *		-11.83	-7.45		6.96	5.81	-1.12	-0.82
<i>b. Regional Effects</i>	49.76	17.08	10.76	54.47	7.88	6.57	11.84	8.67
Urban	49.26	3.36	2.12	54.80	0.90	0.75	1.96	1.43
Rural	49.64	13.74	8.65	54.51	6.96	5.80	9.87	7.23
<i>c. South</i>	49.77	17.47	11.00	53.72	23.42	19.53	20.86	15.27
Fixed effects	49.49	9.83	6.19	54.12	14.97	12.48	12.76	9.34
Urban	49.14	0.10	0.06	54.85	-0.20	-0.17	-0.07	-0.05
Rural	49.49	9.77	6.16	54.12	15.14	12.62	12.83	9.39
Household Characteristics	49.40	7.26	4.57	54.41	9.06	7.56	8.29	6.07
II. Error Terms Effect e(P,X)	49.35		3.77	54.62		3.84		3.81
III. Endowment Effect ** X(P',e')			33.75			12.28		23.01
IV. Residual Effect e(P',X) - e(P,X)			-0.51			0.50		-0.01

Note: Based on the decomposition presented in the Technical Appendix

* Calculated as a difference, other interaction terms are not shown since they are small (see appendix for a complete decomposition)

** Calculated as the difference between total change and other components.

Appendix

Table A.1
Regressions for log of per capita household income, 1984

Number of observations	4716
F(77, 4635)	32.43
Probability > F	0.00
R-squared	0.50
Root MSE	0.63

	Coefficient	Elasticity*	t	P> t
Demographics				
Number of children less than 2 years old	-0.234	-0.059	-9.84	0.00
Number of children between 2 and 5 years old	-0.205	-0.115	-14.28	0.00
Number of children between 6 and 13 years old	-0.162	-0.188	-19.03	0.00
Number of male between 14 and 65 years old	-0.319	-0.443	-8.99	0.00
Number of female between 14 and 65 years old	-0.321	-0.471	-9.63	0.00
Number of male older than 65 years old	-0.353	-0.032	-5.62	0.00
Number of female older than 65 years old	-0.450	-0.046	-7.37	0.00
Education				
Number of male between 14 and 65 with some primary	0.177	0.071	4.65	0.00
Number of male between 14 and 65 with primary	0.281	0.075	7.17	0.00
Number of male between 14 and 65 with some secondary	0.274	0.042	6.77	0.00
Number of male between 14 and 65 with secondary	0.293	0.051	7.06	0.00
Number of male between 14 and 65 with some preparatory	0.277	0.023	5.96	0.00
Number of male between 14 and 65 with preparatory	0.421	0.021	8.12	0.00
Number of male between 14 and 65 with superior	0.538	0.065	10.91	0.00
Number of female between 14 and 65 with some primary	0.098	0.044	3.00	0.00
Number of female between 14 and 65 with primary	0.241	0.081	7.04	0.00
Number of female between 14 and 65 with some secondary	0.232	0.028	5.38	0.00
Number of female between 14 and 65 with secondary	0.353	0.070	9.11	0.00
Number of female between 14 and 65 with some preparatory	0.296	0.016	6.03	0.00
Number of female between 14 and 65 with preparatory	0.509	0.027	10.14	0.00
Number of female between 14 and 65 with superior	0.507	0.027	9.16	0.00
Number of male older than 65 with some primary	0.193	0.007	2.23	0.03
Number of male older than 65 with primary	0.489	0.006	4.50	0.00
Number of male older than 65 with some secondary	-0.055	-0.000	-0.43	0.67
Number of male older than 65 with secondary	0.741	0.001	2.03	0.04
Number of male older than 65 with some preparatory	1.250	0.001	2.05	0.04
Number of male older than 65 with preparatory	0.337	0.000	1.25	0.21
Number of male older than 65 with superior	0.847	0.002	3.80	0.00
Number of female older than 65 with some primary	0.260	0.009	3.26	0.00
Number of female older than 65 with primary	0.333	0.005	3.71	0.00
Number of female older than 65 with some secondary	0.602	0.000	7.65	0.00
Number of female older than 65 with secondary	0.804	0.001	2.34	0.02
Number of female older than 65 with some preparatory	(dropped)			
Number of female older than 65 with preparatory	0.731	0.002	3.35	0.00
Number of female older than 65 with superior	-0.168	-0.000	-0.68	0.50
Dummies for Assets				
Dummy for financial assets	0.364	0.439	7.87	0.00
Dummy for house ownership	0.064	0.066	2.73	0.01
Dummy for absent head of household	-0.118	-0.111	-2.23	0.03

* The table presents the estimated elasticity for non dummy variables, and the marginal effect for dummy variables (exponential of the coefficient minus one).

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Table A.1 (cont.)
Regressions for log of per capita household income, 1984

Regional Dummies	Coefficient	Elasticity*	t	P> t
Urban				
Dummy for North West region	0.131	0.140	3.12	0.00
Dummy for North East region	0.225	0.253	5.34	0.00
Dummy for North region	0.035	0.035	0.87	0.39
Dummy for Center region	0.052	0.053	1.51	0.13
Rural				
Dummy for North West region	-0.001	-0.001	-0.02	0.99
Dummy for North East region	-0.063	-0.061	-1.06	0.29
Dummy for North region	-0.385	-0.320	-7.20	0.00
Dummy for Center region	-0.259	-0.228	-6.54	0.00
Mexico DF	0.205	0.227	4.97	0.00
South Fixed effects				
Urban fixed effects	-0.079	-0.076	-1.17	0.24
Rural fixed effects	-0.354	-0.298	-4.42	0.00
South Interactive effects				
Number of children less than 2 years old	0.023	0.001	0.49	0.63
Number of children between 2 and 5 years old	0.001	0.000	0.02	0.98
Number of children between 6 and 13 years old	0.009	0.002	0.55	0.58
Number of male between 14 and 65 years old	0.073	0.021	1.31	0.19
Number of female between 14 and 65 years old	0.022	0.007	0.40	0.69
Number of male older than 65 years old	0.255	0.004	1.84	0.07
Number of female older than 65 years old	0.106	0.002	0.81	0.42
Number of male between 14 and 65 with some primary	0.000	0.000	0.00	1.00
Number of male between 14 and 65 with primary	-0.060	-0.002	-0.84	0.40
Number of male between 14 and 65 with some secondary	-0.109	-0.003	-1.40	0.16
Number of male between 14 and 65 with secondary	0.067	0.002	0.89	0.37
Number of male between 14 and 65 with some preparatory	-0.040	-0.001	-0.45	0.66
Number of male between 14 and 65 with preparatory	0.096	0.001	0.97	0.33
Number of male between 14 and 65 with superior	-0.081	-0.002	-0.92	0.36
Number of female between 14 and 65 with some primary	-0.020	-0.002	-0.36	0.72
Number of female between 14 and 65 with primary	-0.002	-0.000	-0.03	0.98
Number of female between 14 and 65 with some secondary	0.010	0.000	0.13	0.90
Number of female between 14 and 65 with secondary	-0.053	-0.002	-0.76	0.45
Number of female between 14 and 65 with some preparatory	0.021	0.000	0.25	0.81
Number of female between 14 and 65 with preparatory	-0.013	-0.000	-0.10	0.92
Number of female between 14 and 65 with superior	-0.143	-0.001	-1.30	0.19
Number of male older than 65 with some primary	0.052	0.000	0.29	0.77
Number of male older than 65 with primary	0.237	0.000	0.53	0.60
Number of male older than 65 with some secondary	(dropped)			
Number of male older than 65 with secondary	-0.380	-0.000	-0.96	0.34
Number of male older than 65 with some preparatory	(dropped)			
Number of male older than 65 with preparatory	-0.070	-0.000	-0.23	0.82
Number of male older than 65 with superior	0.182	0.000	0.35	0.73
Number of female older than 65 with some primary	0.138	0.001	0.78	0.43
Number of female older than 65 with primary	0.055	0.000	0.19	0.85
Number of female older than 65 with some secondary	(dropped)			
Number of female older than 65 with secondary	(dropped)			
Number of female older than 65 with some preparatory	(dropped)			
Number of female older than 65 with preparatory	-0.378	-0.000	-1.32	0.19
Number of female older than 65 with superior	(dropped)			
Dummy for financial assets	-0.025	-0.025	-0.19	0.85
Dummy for house ownership	0.002	0.002	0.03	0.98
Dummy for absent head of household	0.283	0.328	1.89	0.06
Constant	6.464		167.48	0.00

* The table presents the estimated elasticity for non dummy variables, and the marginal effect for dummy variables (exponential of the coefficient minus one).

Table A.2
Regressions for log of per capita household income, 1994

Number of observations	12791
F(81, 12706)	336.93
Probability > F	0.00
R-squared	0.58
Root MSE	0.63

	Coefficient	Elasticity*	t	P> t
Demographics				
Number of children less than 2 years old	-0.223	-0.048	-15.15	0.00
Number of children between 2 and 5 years old	-0.226	-0.104	-20.59	0.00
Number of children between 6 and 13 years old	-0.192	-0.184	-33.75	0.00
Number of male between 14 and 65 years old	-0.195	-0.269	-9.89	0.00
Number of female between 14 and 65 years old	-0.304	-0.444	-15.99	0.00
Number of male older than 65 years old	-0.294	-0.028	-9.42	0.00
Number of female older than 65 years old	-0.380	-0.041	-13.27	0.00
Education				
Number of male between 14 and 65 with some primary	0.042	0.014	1.92	0.05
Number of male between 14 and 65 with primary	0.081	0.024	3.70	0.00
Number of male between 14 and 65 with some secondary	0.101	0.012	3.95	0.00
Number of male between 14 and 65 with secondary	0.165	0.039	7.48	0.00
Number of male between 14 and 65 with some preparatory	0.196	0.013	6.71	0.00
Number of male between 14 and 65 with preparatory	0.310	0.022	10.05	0.00
Number of male between 14 and 65 with superior	0.615	0.076	20.83	0.00
Number of female between 14 and 65 with some primary	0.091	0.029	4.67	0.00
Number of female between 14 and 65 with primary	0.170	0.056	8.39	0.00
Number of female between 14 and 65 with some secondary	0.208	0.020	7.84	0.00
Number of female between 14 and 65 with secondary	0.256	0.074	12.49	0.00
Number of female between 14 and 65 with some preparatory	0.234	0.013	7.45	0.00
Number of female between 14 and 65 with preparatory	0.473	0.034	16.42	0.00
Number of female between 14 and 65 with superior	0.577	0.048	19.13	0.00
Number of male older than 65 with some primary	0.087	0.003	1.82	0.07
Number of male older than 65 with primary	0.272	0.003	3.89	0.00
Number of male older than 65 with some secondary	0.263	0.000	1.22	0.22
Number of male older than 65 with secondary	0.204	0.000	1.62	0.11
Number of male older than 65 with some preparatory	0.739	0.000	19.10	0.00
Number of male older than 65 with preparatory	0.557	0.001	2.12	0.03
Number of male older than 65 with superior	0.459	0.001	2.78	0.01
Number of female older than 65 with some primary	0.220	0.007	5.17	0.00
Number of female older than 65 with primary	0.486	0.006	7.76	0.00
Number of female older than 65 with some secondary	1.252	0.000	3.25	0.00
Number of female older than 65 with secondary	0.483	0.001	3.63	0.00
Number of female older than 65 with some preparatory	0.393	0.000	1.52	0.13
Number of female older than 65 with preparatory	1.106	0.002	5.63	0.00
Number of female older than 65 with superior	0.913	0.001	3.78	0.00
Dummies for Assets				
Dummy for financial assets	0.335	0.398	8.15	0.00
Dummy for house ownership	0.104	0.109	6.47	0.00
Dummy for absent head of household	-0.033	-0.032	-0.88	0.38

* The table presents the estimated elasticity for non dummy variables, and the marginal effect for dummy variables (exponential of the coefficient minus one).

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Table A.2 (cont.)
Regressions for log of per capita household income, 1994

	Coefficient	Elasticity*	t	P> t
Regional Dummies				
Urban				
Dummy for North West region	0.191	0.210	5.65	0.00
Dummy for North East region	0.132	0.142	4.53	0.00
Dummy for North region	0.025	0.026	1.02	0.31
Dummy for Center region	0.005	0.005	0.24	0.81
Rural				
Dummy for North West region	-0.179	-0.164	-5.93	0.00
Dummy for North East region	-0.094	-0.090	-2.05	0.04
Dummy for North region	-0.377	-0.314	-15.50	0.00
Dummy for Center region	-0.429	-0.349	-20.75	0.00
Mexico DF	0.250	0.284	10.99	0.00
South Fixed effects				
Urban fixed effects	-0.154	-0.143	-3.41	0.00
Rural fixed effects	-0.618	-0.461	-12.93	0.00
South Interactive effects				
Number of children less than 2 years old	-0.031	-0.001	-1.02	0.31
Number of children between 2 and 5 years old	0.001	0.000	0.03	0.98
Number of children between 6 and 13 years old	0.018	0.004	1.45	0.15
Number of male between 14 and 65 years old	-0.030	-0.009	-0.82	0.41
Number of female between 14 and 65 years old	-0.007	-0.002	-0.21	0.83
Number of male older than 65 years old	-0.016	-0.000	-0.26	0.80
Number of female older than 65 years old	0.063	0.001	1.02	0.31
Number of male between 14 and 65 with some primary	0.094	0.008	2.45	0.01
Number of male between 14 and 65 with primary	0.104	0.006	2.41	0.02
Number of male between 14 and 65 with some secondary	0.071	0.002	1.40	0.16
Number of male between 14 and 65 with secondary	0.089	0.003	1.91	0.06
Number of male between 14 and 65 with some preparatory	0.062	0.001	0.88	0.38
Number of male between 14 and 65 with preparatory	0.027	0.000	0.42	0.68
Number of male between 14 and 65 with superior	0.000	0.000	0.00	1.00
Number of female between 14 and 65 with some primary	-0.005	-0.000	-0.15	0.88
Number of female between 14 and 65 with primary	0.012	0.001	0.32	0.75
Number of female between 14 and 65 with some secondary	0.075	0.002	1.40	0.16
Number of female between 14 and 65 with secondary	0.151	0.006	3.58	0.00
Number of female between 14 and 65 with some preparatory	0.068	0.001	1.05	0.29
Number of female between 14 and 65 with preparatory	-0.024	-0.000	-0.37	0.71
Number of female between 14 and 65 with superior	0.048	0.001	0.72	0.48
Number of male older than 65 with some primary	0.158	0.001	1.62	0.11
Number of male older than 65 with primary	0.287	0.000	1.95	0.05
Number of male older than 65 with some secondary	1.228	0.000	2.51	0.01
Number of male older than 65 with secondary	0.270	0.000	0.68	0.49
Number of male older than 65 with some preparatory	(dropped)			
Number of male older than 65 with preparatory	0.207	0.000	0.55	0.58
Number of male older than 65 with superior	0.420	0.000	2.31	0.02
Number of female older than 65 with some primary	-0.069	-0.000	-0.65	0.51
Number of female older than 65 with primary	-0.064	-0.000	-0.43	0.67
Number of female older than 65 with some secondary	-1.313	-0.000	-3.35	0.00
Number of female older than 65 with secondary	(dropped)			
Number of female older than 65 with some preparatory	(dropped)			
Number of female older than 65 with preparatory	-0.204	-0.000	-0.56	0.57
Number of female older than 65 with superior	-0.424	-0.000	-1.51	0.13
Dummy for financial assets	0.141	0.151	1.72	0.09
Dummy for house ownership	-0.093	-0.089	-2.68	0.01
Dummy for absent head of household	0.141	0.151	1.43	0.15
Constant	6.641		274.74	0.00

* The table presents the estimated elasticity for non dummy variables, and the marginal effect for dummy variables (exponential of the coefficient minus one).

Table A.3
Regressions for log of real adult equivalent household income, 1984

Number of observations	4716
F(77, 4635)	52.94
Probability > F	0.00
R-squared	0.45
Root MSE	0.62

	Coefficient	Elasticity*	t	P> t
Demographics				
Number of children less than 2 years old	-0.169	-0.042	-7.48	0.00
Number of children between 2 and 5 years old	-0.143	-0.080	-10.27	0.00
Number of children between 6 and 13 years old	-0.108	-0.125	-12.93	0.00
Number of male between 14 and 65 years old	-0.315	-0.436	-8.99	0.00
Number of female between 14 and 65 years old	-0.318	-0.467	-9.81	0.00
Number of male older than 65 years old	-0.353	-0.032	-5.70	0.00
Number of female older than 65 years old	-0.485	-0.050	-7.98	0.00
Education				
Number of male between 14 and 65 with some primary	0.176	0.070	4.71	0.00
Number of male between 14 and 65 with primary	0.287	0.077	7.41	0.00
Number of male between 14 and 65 with some secondary	0.276	0.042	6.91	0.00
Number of male between 14 and 65 with secondary	0.300	0.052	7.31	0.00
Number of male between 14 and 65 with some preparatory	0.282	0.023	6.14	0.00
Number of male between 14 and 65 with preparatory	0.420	0.021	8.24	0.00
Number of male between 14 and 65 with superior	0.548	0.066	11.20	0.00
Number of female between 14 and 65 with some primary	0.103	0.047	3.25	0.00
Number of female between 14 and 65 with primary	0.255	0.085	7.65	0.00
Number of female between 14 and 65 with some secondary	0.238	0.029	5.65	0.00
Number of female between 14 and 65 with secondary	0.364	0.072	9.59	0.00
Number of female between 14 and 65 with some preparatory	0.301	0.016	6.24	0.00
Number of female between 14 and 65 with preparatory	0.526	0.028	10.58	0.00
Number of female between 14 and 65 with superior	0.518	0.028	9.35	0.00
Number of male older than 65 with some primary	0.184	0.006	2.13	0.03
Number of male older than 65 with primary	0.468	0.005	4.39	0.00
Number of male older than 65 with some secondary	-0.059	-0.000	-0.42	0.67
Number of male older than 65 with secondary	0.717	0.001	2.03	0.04
Number of male older than 65 with some preparatory	1.202	0.001	2.01	0.05
Number of male older than 65 with preparatory	0.404	0.000	1.47	0.14
Number of male older than 65 with superior	0.833	0.002	3.83	0.00
Number of female older than 65 with some primary	0.281	0.010	3.47	0.00
Number of female older than 65 with primary	0.367	0.005	4.15	0.00
Number of female older than 65 with some secondary	0.535	0.000	4.24	0.00
Number of female older than 65 with secondary	0.841	0.001	2.47	0.01
Number of female older than 65 with some preparatory	(dropped)			
Number of female older than 65 with preparatory	0.704	0.002	3.02	0.00
Number of female older than 65 with superior	-0.201	-0.000	-0.83	0.41
Dummies for Assets				
Dummy for financial assets	0.359	0.432	7.76	0.00
Dummy for house ownership	0.065	0.068	2.84	0.01
Dummy for absent head of household	0.025	0.025	0.46	0.65

*: The table presents the estimated elasticity for non dummy variables, and the exponential of the coefficient minus one for dummy variables.

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Table A.3 (cont.)
Regressions for log of real adult equivalent household income, 1984

	Coefficient	Elasticity*	t	P> t
Regional Dummies				
Urban				
Dummy for North West region	0.142	0.152	3.44	0.00
Dummy for North East region	0.225	0.252	5.41	0.00
Dummy for North region	0.040	0.040	1.01	0.32
Dummy for Center region	0.057	0.059	1.68	0.09
Rural				
Dummy for North West region	0.001	0.001	0.02	0.99
Dummy for North East region	-0.055	-0.054	-0.95	0.34
Dummy for North region	-0.376	-0.314	-7.08	0.00
Dummy for Center region	-0.259	-0.228	-6.61	0.00
Mexico DF	0.217	0.242	5.35	0.00
South Fixed effects				
Urban fixed effects	-0.094	-0.090	-1.45	0.15
Rural fixed effects	-0.368	-0.308	-4.83	0.00
South Interactive effects				
Number of children less than 2 years old	0.016	0.001	0.35	0.73
Number of children between 2 and 5 years old	0.004	0.000	0.14	0.89
Number of children between 6 and 13 years old	0.013	0.003	0.75	0.46
Number of male between 14 and 65 years old	0.076	0.022	1.38	0.17
Number of female between 14 and 65 years old	0.030	0.009	0.56	0.58
Number of male older than 65 years old	0.244	0.004	1.79	0.07
Number of female older than 65 years old	0.141	0.003	1.08	0.28
Number of male between 14 and 65 with some primary	-0.005	-0.001	-0.09	0.93
Number of male between 14 and 65 with primary	-0.061	-0.002	-0.87	0.39
Number of male between 14 and 65 with some secondary	-0.112	-0.003	-1.47	0.14
Number of male between 14 and 65 with secondary	0.073	0.002	0.98	0.33
Number of male between 14 and 65 with some preparatory	-0.047	-0.001	-0.54	0.59
Number of male between 14 and 65 with preparatory	0.119	0.001	1.22	0.22
Number of male between 14 and 65 with superior	-0.080	-0.002	-0.92	0.36
Number of female between 14 and 65 with some primary	-0.020	-0.002	-0.38	0.71
Number of female between 14 and 65 with primary	-0.006	-0.000	-0.09	0.93
Number of female between 14 and 65 with some secondary	0.002	0.000	0.02	0.98
Number of female between 14 and 65 with secondary	-0.067	-0.002	-0.96	0.34
Number of female between 14 and 65 with some preparatory	0.023	0.000	0.28	0.78
Number of female between 14 and 65 with preparatory	-0.021	-0.000	-0.16	0.87
Number of female between 14 and 65 with superior	-0.148	-0.001	-1.32	0.19
Number of male older than 65 with some primary	0.054	0.000	0.31	0.76
Number of male older than 65 with primary	0.280	0.000	0.64	0.52
Number of male older than 65 with some secondary	(dropped)			
Number of male older than 65 with secondary	-0.344	-0.000	-0.90	0.37
Number of male older than 65 with some preparatory	(dropped)			
Number of male older than 65 with preparatory	-0.132	-0.000	-0.43	0.67
Number of male older than 65 with superior	0.071	0.000	0.14	0.89
Number of female older than 65 with some primary	0.112	0.001	0.63	0.53
Number of female older than 65 with primary	0.032	0.000	0.11	0.91
Number of female older than 65 with some secondary	(dropped)			
Number of female older than 65 with secondary	(dropped)			
Number of female older than 65 with some preparatory	(dropped)			
Number of female older than 65 with preparatory	-0.346	-0.000	-1.18	0.24
Number of female older than 65 with superior	(dropped)			
Dummy for financial assets	-0.042	-0.041	-0.32	0.75
Dummy for house ownership	0.014	0.015	0.28	0.78
Dummy for absent head of household	0.312	0.366	2.15	0.03
Constant	6.660		179.44	0.00

* The table presents the estimated elasticity for non dummy variables, and the marginal effect for dummy variables (exponential of the coefficient minus one).

Table A.4
Regressions for log of real adult equivalent household income, 1994

Number of observations	12791
F(81, 12706)	513.78
Probability > F	0.00
R-squared	0.55
Root MSE	0.61

	Coefficient	Elasticity*	t	P> t
Demographics				
Number of children less than 2 years old	-0.158	-0.034	-11.03	0.00
Number of children between 2 and 5 years old	-0.161	-0.074	-15.53	0.00
Number of children between 6 and 13 years old	-0.131	-0.125	-23.75	0.00
Number of male between 14 and 65 years old	-0.191	-0.263	-9.97	0.00
Number of female between 14 and 65 years old	-0.295	-0.430	-16.20	0.00
Number of male older than 65 years old	-0.291	-0.028	-9.51	0.00
Number of female older than 65 years old	-0.391	-0.042	-13.84	0.00
Education				
Number of male between 14 and 65 with some primary	0.046	0.015	2.18	0.03
Number of male between 14 and 65 with primary	0.088	0.026	4.14	0.00
Number of male between 14 and 65 with some secondary	0.110	0.013	4.43	0.00
Number of male between 14 and 65 with secondary	0.177	0.042	8.26	0.00
Number of male between 14 and 65 with some preparatory	0.208	0.014	7.29	0.00
Number of male between 14 and 65 with preparatory	0.324	0.023	10.70	0.00
Number of male between 14 and 65 with superior	0.631	0.078	21.80	0.00
Number of female between 14 and 65 with some primary	0.092	0.030	4.86	0.00
Number of female between 14 and 65 with primary	0.178	0.059	9.10	0.00
Number of female between 14 and 65 with some secondary	0.216	0.021	8.39	0.00
Number of female between 14 and 65 with secondary	0.269	0.077	13.56	0.00
Number of female between 14 and 65 with some preparatory	0.243	0.014	7.88	0.00
Number of female between 14 and 65 with preparatory	0.489	0.035	17.11	0.00
Number of female between 14 and 65 with superior	0.588	0.049	19.78	0.00
Number of male older than 65 with some primary	0.082	0.003	1.75	0.08
Number of male older than 65 with primary	0.272	0.003	3.95	0.00
Number of male older than 65 with some secondary	0.257	0.000	1.36	0.17
Number of male older than 65 with secondary	0.202	0.000	1.70	0.09
Number of male older than 65 with some preparatory	0.559	0.000	14.82	0.00
Number of male older than 65 with preparatory	0.537	0.001	2.12	0.03
Number of male older than 65 with superior	0.441	0.001	2.79	0.01
Number of female older than 65 with some primary	0.214	0.007	5.12	0.00
Number of female older than 65 with primary	0.480	0.006	7.90	0.00
Number of female older than 65 with some secondary	1.214	0.000	3.43	0.00
Number of female older than 65 with secondary	0.474	0.001	3.65	0.00
Number of female older than 65 with some preparatory	0.366	0.000	1.56	0.12
Number of female older than 65 with preparatory	1.090	0.002	5.85	0.00
Number of female older than 65 with superior	0.899	0.001	4.03	0.00
Dummies for Assets				
Dummy for financial assets	0.323	0.381	7.94	0.00
Dummy for house ownership	0.104	0.110	6.66	0.00
Dummy for absent head of household	0.105	0.110	2.80	0.01

* The table presents the estimated elasticity for non dummy variables, and the marginal effect for dummy variables (exponential of the coefficient minus one).

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Table A.4 (cont.)
Regressions for log of real adult equivalent household income, 1994

	Coefficient	Elasticity*	t	P> t
Regional Dummies				
Urban				
Dummy for North West region	0.191	0.211	5.79	0.00
Dummy for North East region	0.136	0.145	4.74	0.00
Dummy for North region	0.027	0.027	1.08	0.28
Dummy for Center region	0.009	0.009	0.41	0.68
Rural				
Dummy for North West region	-0.178	-0.163	-6.01	0.00
Dummy for North East region	-0.101	-0.096	-2.25	0.03
Dummy for North region	-0.377	-0.314	-15.81	0.00
Dummy for Center region	-0.436	-0.353	-21.61	0.00
Mexico DF	0.244	0.277	11.01	0.00
South Fixed effects				
Urban fixed effects	-0.168	-0.155	-3.93	0.00
Rural fixed effects	-0.631	-0.468	-13.88	0.00
South Interactive effects				
Number of children less than 2 years old	-0.033	-0.002	-1.13	0.26
Number of children between 2 and 5 years old	0.001	0.000	0.03	0.97
Number of children between 6 and 13 years old	0.018	0.004	1.56	0.12
Number of male between 14 and 65 years old	-0.032	-0.010	-0.90	0.37
Number of female between 14 and 65 years old	-0.001	-0.000	-0.03	0.98
Number of male older than 65 years old	-0.023	-0.000	-0.39	0.70
Number of female older than 65 years old	0.076	0.001	1.23	0.22
Number of male between 14 and 65 with some primary	0.093	0.008	2.49	0.01
Number of male between 14 and 65 with primary	0.103	0.006	2.47	0.01
Number of male between 14 and 65 with some secondary	0.071	0.002	1.43	0.15
Number of male between 14 and 65 with secondary	0.090	0.003	1.99	0.05
Number of male between 14 and 65 with some preparatory	0.058	0.001	0.85	0.40
Number of male between 14 and 65 with preparatory	0.032	0.000	0.51	0.61
Number of male between 14 and 65 with superior	0.005	0.000	0.07	0.95
Number of female between 14 and 65 with some primary	-0.001	-0.000	-0.04	0.97
Number of female between 14 and 65 with primary	0.009	0.001	0.23	0.82
Number of female between 14 and 65 with some secondary	0.071	0.001	1.36	0.17
Number of female between 14 and 65 with secondary	0.149	0.006	3.62	0.00
Number of female between 14 and 65 with some preparatory	0.063	0.001	0.99	0.32
Number of female between 14 and 65 with preparatory	-0.031	-0.000	-0.48	0.63
Number of female between 14 and 65 with superior	0.043	0.001	0.65	0.52
Number of male older than 65 with some primary	0.159	0.001	1.66	0.10
Number of male older than 65 with primary	0.279	0.000	1.93	0.05
Number of male older than 65 with some secondary	1.144	0.000	2.62	0.01
Number of male older than 65 with secondary	0.295	0.000	0.80	0.42
Number of male older than 65 with some preparatory	(dropped)			
Number of male older than 65 with preparatory	0.283	0.000	0.79	0.43
Number of male older than 65 with superior	0.462	0.000	2.67	0.01
Number of female older than 65 with some primary	-0.069	-0.000	-0.66	0.51
Number of female older than 65 with primary	-0.066	-0.000	-0.46	0.65
Number of female older than 65 with some secondary	-1.199	-0.000	-3.32	0.00
Number of female older than 65 with secondary	(dropped)			
Number of female older than 65 with some preparatory	(dropped)			
Number of female older than 65 with preparatory	-0.176	-0.000	-0.50	0.62
Number of female older than 65 with superior	-0.376	-0.000	-1.43	0.15
Dummy for financial assets	0.143	0.154	1.79	0.07
Dummy for house ownership	-0.084	-0.081	-2.49	0.01
Dummy for absent head of household	0.169	0.184	1.66	0.10
Constant	6.824		297.23	0.00

* The table presents the estimated elasticity for non dummy variables, and the marginal effect for dummy variables (exponential of the coefficient minus one).

Table A.5: Decomposition of the Sources of Rising of Household Income Inequality (1984-1994)
(Per Capita Income)

Sources	Contribution to			Contribution to			Contribution to			Contribution to		
	Gini	Return effects only	Actual change in the Gini	E(0)	Return effects only	Actual change in the E(0)	E(1)	Return effects only	Actual change in the E(1)	E(2)	Return effects only	Actual change in the E(2)
1984												
ORIGINAL INCOME	49.14			42.83			45.57			87.47		
ESTIMATED INCOME	49.14			42.83			45.57			87.46		
SIMULATED INCOME :												
TOTAL (I+II+III+IV)			100.00			100.00			100.00			100.00
I Return effects P(X,e)	52.77	100.00	62.99	50.10	100.00	64.72	52.87	100.00	50.01	102.88	100.00	36.18
I.1 Household Characteristics	51.52	65.57	41.30	47.07	58.33	37.75	50.65	69.57	34.79	100.52	84.68	30.64
I.1.a Demographics	49.19	1.62	1.02	43.32	6.77	4.38	45.09	-6.58	-3.29	83.55	-25.38	-9.18
I.1.b Education	52.05	80.24	50.54	48.12	72.86	47.15	52.01	88.26	44.14	104.66	111.50	40.34
Working age	52.09	81.27	51.19	48.21	74.00	47.89	52.39	93.40	46.70	106.23	121.68	44.02
Male	51.78	72.80	45.85	47.78	68.09	44.07	51.37	79.39	39.70	101.72	92.44	33.44
Female	49.36	6.14	3.86	43.03	2.72	1.76	46.33	10.49	5.25	91.22	24.37	8.82
Interaction (male, female)		2.34	1.47		3.18	2.06		3.52	1.76		4.87	1.76
Older than working age	49.10	-1.01	-0.64	42.75	-1.11	-0.72	45.22	-4.77	-2.38	86.15	-8.48	-3.07
Male	48.89	-6.83	-4.30	42.38	-6.20	-4.02	44.93	-8.77	-4.39	86.05	-9.14	-3.31
Female	49.32	5.15	3.24	43.16	4.49	2.91	45.76	2.62	1.31	87.20	-1.67	-0.60
Interaction (male, female)		0.66	0.42		0.60	0.39		1.39	0.69		2.33	0.84
Interaction (working age, older than w.a.)		-0.02	-0.01		-0.03	-0.02		-0.36	-0.18		-1.70	-0.62
I.1.c Assets	49.03	-2.98	-1.87	42.59	-3.34	-2.16	45.41	-2.14	-1.07	87.73	1.74	0.63
I.1.d Absent Head	49.08	-1.48	-0.93	42.73	-1.34	-0.87	45.45	-1.57	-0.78	87.14	-2.09	-0.76
I.1.e Interaction (a-d)		-11.83	-7.45		-16.61	-10.75		-8.40	-4.20		-1.09	-0.39
I.2 Regional Effects	49.76	17.08	10.76	44.12	17.72	11.47	46.52	13.04	6.52	86.91	-3.57	-1.29
I.2.a Urban	49.26	3.36	2.12	43.02	2.60	1.68	45.62	0.71	0.36	85.09	-15.41	-5.57
I.2.b Rural	49.64	13.74	8.65	43.93	15.11	9.78	46.47	12.32	6.16	89.34	12.21	4.42
I.2.c. Interaction (urban, rural)		-0.02	-0.01		0.01	0.01		0.01	0.01		-0.37	-0.13
I.3 South	49.77	17.47	11.00	44.51	23.17	15.00	46.62	14.34	7.17	89.66	14.23	5.15
I.3.a Fixed effects	49.49	9.83	6.19	43.69	11.79	7.63	46.13	7.71	3.86	88.51	6.79	2.46
Urban	49.14	0.10	0.06	42.80	-0.42	-0.27	45.56	-0.13	-0.06	87.44	-0.12	-0.04
Rural	49.49	9.77	6.16	43.73	12.31	7.97	46.15	7.89	3.95	88.53	6.94	2.51
Interaction (urban, rural)		-0.04	-0.03		-0.10	-0.06		-0.05	-0.02		-0.04	-0.01
I.3.b Household Characteristics	49.40	7.26	4.57	43.52	9.48	6.13	46.00	5.85	2.92	88.49	6.68	2.42
I.3.c Interaction (a,b)		0.38	0.24		1.90	1.23		0.77	0.39		0.77	0.28
I.4 Interaction (1-3)		-0.13	-0.08		0.78	0.51		3.05	1.53		4.65	1.68
II. Error terms effect e(P,X)	49.35		3.77	43.26		3.78	46.10		3.66	89.67		5.17
III. Endowment effect X(P', e')			33.75			31.58			46.50			58.67
IV. Left over			-0.51			-0.08			-0.16			-0.02

*Calculated as a residual

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Cont. A.5 (Per Capita)	Contribution to			Contribution to			Contribution to			Contribution to		
	Gini	Return effects only	Actual change in the Gini	E(0)	Return effects only	Actual change in the E(0)	E(1)	Return effects only	Actual change in the E(1)	E(2)	Return effects only	Actual change in the E(2)
1994												
ORIGINAL INCOME	54.91			54.05			60.17			130.09		
ESTIMATED INCOME	54.84			53.92			60.00			129.72		
SIMULATED INCOME :												
TOTAL (I+II+III+IV)		100.00			100.00			100.00			100.00	
I Return effects P(X',e')	50.03	100.00	83.38	43.98	100.00	88.55	49.09	100.00	74.78	101.91	100.00	65.25
I.1 Household Characteristics	51.61	67.18	56.01	47.79	61.61	54.55	52.50	68.75	51.41	113.21	59.37	38.74
I.1.a Demographics	55.44	-12.44	-10.37	55.17	-12.62	-11.17	61.46	-13.33	-9.97	135.44	-20.55	-13.41
I.1.b Education	51.30	73.73	61.47	47.52	64.41	57.03	51.35	79.26	59.27	106.57	83.25	54.33
Working age	51.18	76.10	63.45	47.27	66.90	59.24	50.72	85.02	63.58	101.37	101.94	66.52
Male	51.93	60.65	50.57	48.33	56.17	49.73	52.70	66.85	50.00	106.51	83.47	54.47
Female	53.97	18.09	15.08	52.44	14.89	13.18	57.62	21.81	16.31	124.03	20.48	13.37
Interaction (male, female)		-2.63	-2.20		-4.15	-3.68		-3.65	-2.73		-2.01	-1.31
Older than working age	54.98	-2.87	-2.39	54.23	-3.17	-2.81	60.75	-6.83	-5.11	136.51	-24.41	-15.93
Male	55.13	-5.88	-4.91	54.54	-6.23	-5.52	61.01	-9.23	-6.90	136.48	-24.29	-15.85
Female	54.73	2.45	2.05	53.67	2.50	2.22	59.84	1.55	1.16	130.04	-1.14	-0.75
Interaction (male, female)		0.56	0.47		0.55	0.49		0.85	0.64		1.03	0.67
Interaction (working age, older than w.a.)		0.49	0.41		0.69	0.61		1.08	0.81		5.72	3.73
I.1.c Assets	54.85	-0.20	-0.16	53.97	-0.57	-0.50	60.01	-0.04	-0.03	129.89	-0.59	-0.39
I.1.d Absent Head	54.89	-0.88	-0.73	54.01	-0.96	-0.85	60.11	-0.94	-0.71	130.02	-1.08	-0.70
I.1.e Interaction (a-d)		6.96	5.81		11.35	10.05		3.80	2.84		-1.67	-1.09
I.2 Regional Effects	54.47	7.88	6.57	53.03	8.88	7.87	59.06	8.61	6.44	125.89	13.77	8.99
I.2.a Urban	54.80	0.90	0.75	53.85	0.66	0.58	59.82	1.72	1.29	128.06	5.98	3.90
I.2.b Rural	54.51	6.96	5.80	53.10	8.19	7.25	59.25	6.89	5.15	127.52	7.94	5.18
I.2.c. Interaction (urban, rural)		0.03	0.02		0.04	0.04		-0.01	-0.01		-0.14	-0.09
I.3 South	53.72	23.42	19.53	50.98	29.59	26.20	57.35	24.34	18.20	121.88	28.18	18.39
I.3.a Fixed effects	54.12	14.97	12.48	51.97	19.57	17.33	58.35	15.18	11.35	125.09	16.67	10.88
Urban	54.85	-0.20	-0.17	53.98	-0.64	-0.56	59.94	0.56	0.42	129.17	1.98	1.29
Rural	54.12	15.14	12.62	51.92	20.08	17.78	58.41	14.63	10.94	125.60	14.82	9.67
Interaction (urban, rural)		0.03	0.03		0.12	0.11		-0.01	-0.01		-0.13	-0.08
I.3.b Household Characteristics	54.41	9.06	7.56	52.71	12.19	10.80	58.98	9.37	7.00	126.75	10.69	6.97
I.3.c Interaction (a,b)		-0.61	-0.51		-2.16	-1.92		-0.21	-0.15		0.83	0.54
I.4 Interaction (1-3)		1.52	1.26		-0.08	-0.07		-1.70	-1.27		-1.32	-0.86
II. Error terms effect e(P',X')	54.62		3.84	53.42		4.41	59.34		4.55	126.77		6.92
III. Endowment effect X(P, e)			12.28			7.16			20.77			28.54
IV. Left over			0.50			-0.11			-0.11			-0.72

*Calculated as a residual

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Cont. A.5 (Per Capita)	Contribution to			Contribution to			Contribution to			Contribution to		
	Gini	Return effects only	Actual change in the Gini	E(0)	Return effects only	Actual change in the E(0)	E(1)	Return effects only	Actual change in the E(1)	E(2)	Return effects only	Actual change in the E(2)
Average 1984/1994												
ORIGINAL INCOME												
ESTIMATED INCOME												
SIMULATED INCOME :												
TOTAL (I+II+III+IV)		100.00			100.00			100.00			100.00	
I Return effects (P(X,e)+P(X,e))/2		100.00	73.18		100.00	76.63		100.00	62.39		100.00	50.72
I.1 Household Characteristics		66.49	48.66		60.22	46.15		69.08	43.10		68.40	34.69
I.1.a Demographics		-6.39	-4.67		-4.43	-3.40		-10.63	-6.63		-22.27	-11.29
I.1.b Education		76.53	56.01		67.98	52.09		82.87	51.71		93.33	47.33
Working age		78.33	57.32		69.90	53.56		88.37	55.14		108.98	55.27
Male		65.88	48.21		61.20	46.90		71.88	44.85		86.67	43.95
Female		12.94	9.47		9.75	7.47		17.27	10.78		21.87	11.09
Interaction (male, female)		-0.49	-0.36		-1.06	-0.81		-0.78	-0.48		0.44	0.23
Older than working age		-2.07	-1.52		-2.30	-1.77		-6.00	-3.75		-18.73	-9.50
Male		-6.29	-4.60		-6.22	-4.77		-9.05	-5.64		-18.89	-9.58
Female		3.61	2.64		3.34	2.56		1.98	1.23		-1.33	-0.68
Interaction (male, female)		0.61	0.44		0.57	0.44		1.07	0.66		1.49	0.76
Interaction (working age, older than w.a.)		0.27	0.20		0.38	0.29		0.50	0.31		3.08	1.56
I.1.c Assets		-1.39	-1.02		-1.74	-1.33		-0.88	-0.55		0.24	0.12
I.1.d Absent Head		-1.14	-0.83		-1.12	-0.86		-1.19	-0.74		-1.44	-0.73
I.1.e Interaction (a-d)		-1.12	-0.82		-0.46	-0.35		-1.09	-0.68		-1.46	-0.74
I.2 Regional Effects		11.84	8.67		12.62	9.67		10.38	6.48		7.59	3.85
I.2.a Urban		1.96	1.43		1.48	1.13		1.32	0.82		-1.65	-0.84
I.2.b Rural		9.87	7.23		11.11	8.51		9.07	5.66		9.46	4.80
I.2.c Interaction (urban, rural)		0.01	0.01		0.03	0.02		0.00	0.00		-0.22	-0.11
I.3 South		20.86	15.27		26.88	20.60		20.33	12.69		23.21	11.77
I.3.a Fixed effects		12.76	9.34		16.28	12.48		12.19	7.61		13.15	6.67
Urban		-0.07	-0.05		-0.55	-0.42		0.28	0.18		1.23	0.63
Rural		12.83	9.39		16.80	12.88		11.93	7.44		12.01	6.09
Interaction (urban, rural)		0.00	-0.00		0.03	0.02		-0.02	-0.01		-0.10	-0.05
I.3.b Household Characteristics		8.29	6.07		11.05	8.46		7.96	4.96		9.26	4.69
I.3.c Interaction (a,b)		-0.18	-0.13		-0.45	-0.34		0.19	0.12		0.81	0.41
I.4 Interaction (1-3)		0.81	0.59		0.28	0.22		0.21	0.13		0.81	0.41
II. Error terms effect (e(P,X)+ e(P',X'))/2			3.81			4.10			4.11			6.05
III. Endowment effect (X(P,e)+ X(P',e'))/2			23.01			19.37			33.63			43.60
IV. Left over			-0.01			-0.10			-0.13			-0.37

*Calculated as a residual

**Table A.6: Decomposition of the Sources of Rising of Household Income Inequality (1984-1994)
(Adult Equivalent Units)**

Sources	Contribution to			Contribution to			Contribution to			Contribution to		
	Gini	Return effects only	Actual change in the Gini	E(0)	Return effects only	Actual change in the E(0)	E(1)	Return effects only	Actual change in the E(1)	E(2)	Return effects only	Actual change in the E(2)
1984												
ORIGINAL INCOME	46.28			37.56			39.69			68.75		
ESTIMATED INCOME	46.28			37.57			39.68			68.74		
SIMULATED INCOME :												
TOTAL (I+II+III+IV)			100.00			100.00			100.00			100.00
I Return effects P(X,e)	49.82	100.00	56.91	43.84	100.00	56.58	46.36	100.00	45.51	82.50	100.00	31.86
I.1 Household Characteristics	48.44	61.08	34.76	40.89	52.96	29.96	44.11	66.34	30.19	79.85	80.76	25.73
I.1.a Demographics	46.27	-0.13	-0.07	37.75	2.87	1.62	39.17	-7.69	-3.50	65.67	-22.36	-7.12
I.1.b Education	49.11	79.96	45.51	42.24	74.50	42.15	45.57	88.13	40.11	83.59	107.91	34.38
Working age	49.17	81.61	46.45	42.36	76.43	43.24	45.89	92.95	42.31	84.63	115.49	36.79
Male	48.94	74.97	42.67	42.07	71.77	40.60	45.09	80.91	36.82	81.31	91.33	29.10
Female	46.40	3.58	2.04	37.61	0.73	0.41	40.19	7.55	3.44	71.19	17.81	5.67
Interaction (male, female)		3.06	1.74		3.93	2.22		4.50	2.05		6.35	2.02
Older than working age	46.22	-1.59	-0.90	37.46	-1.76	-1.00	39.38	-4.58	-2.09	67.83	-6.65	-2.12
Male	46.04	-6.69	-3.81	37.18	-6.23	-3.52	39.12	-8.45	-3.85	67.51	-8.95	-2.85
Female	46.44	4.46	2.54	37.81	3.84	2.17	39.85	2.56	1.16	68.77	0.16	0.05
Interaction (male, female)		0.65	0.37		0.63	0.35		1.31	0.60		2.14	0.68
Interaction (working age, older than w.a.)		-0.06	-0.04		-0.17	-0.09		-0.24	-0.11		-0.92	-0.29
I.1.c Assets	46.16	-3.30	-1.88	37.33	-3.81	-2.15	39.52	-2.46	-1.12	68.81	0.45	0.14
I.1.d Absent Head	46.24	-0.95	-0.54	37.52	-0.78	-0.44	39.61	-1.12	-0.51	68.52	-1.63	-0.52
I.1.e Interaction (a-d)		-14.50	-8.25		-19.83	-11.22		-10.52	-4.79		-3.61	-1.15
I.2 Regional Effects	46.89	17.31	9.85	38.72	18.40	10.41	40.57	13.29	6.05	68.97	1.61	0.51
I.2.a Urban	46.32	1.18	0.67	37.59	0.39	0.22	39.63	-0.85	-0.39	67.28	-10.67	-3.40
I.2.b Rural	46.85	16.19	9.21	38.70	18.10	10.24	40.63	14.17	6.45	70.47	12.55	4.00
I.2.c. Interaction (urban, rural)		-0.06	-0.03		-0.09	-0.05		-0.04	-0.02		-0.27	-0.09
I.3 South	47.04	21.61	12.30	39.34	28.23	15.97	40.84	17.30	7.87	70.53	12.98	4.14
I.3.a Fixed effects	46.69	11.55	6.57	38.43	13.68	7.74	40.28	8.98	4.09	69.57	5.99	1.91
Urban	46.29	0.26	0.15	37.55	-0.30	-0.17	39.68	-0.05	-0.02	68.68	-0.48	-0.15
Rural	46.68	11.34	6.45	38.45	14.09	7.97	40.29	9.08	4.13	69.64	6.52	2.08
Interaction (urban, rural)		-0.05	-0.03		-0.11	-0.06		-0.05	-0.02		-0.05	-0.01
I.3.b Household Characteristics	46.62	9.63	5.48	38.33	12.17	6.89	40.18	7.47	3.40	69.56	5.94	1.89
I.3.c Interaction (a,b)		0.42	0.24		2.37	1.34		0.85	0.39		1.05	0.34
I.4 Interaction (1-3)		0.00	0.00		0.41	0.23		3.08	1.40		4.65	1.48

II. Error terms effect $e(P,X)$	46.33	0.89	37.67	0.91	39.80	0.82	69.14	0.91
III. Endowment effect $X(P', e')$		42.32		42.54		53.71		67.25
IV. Left over		-0.12		-0.02		-0.05		-0.01

*Calculated as a residual

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Cont. A.6 (Adult Equivalent Units)	Contribution to			Contribution to			Contribution to			Contribution to		
	Gini	Return effects only	Actual change in the Gini	E(0)	Return effects only	Actual change in the E(0)	E(1)	Return effects only	Actual change in the E(1)	E(2)	Return effects only	Actual change in the E(2)
1994												
ORIGINAL INCOME	52.51			48.65			54.36			111.92		
ESTIMATED INCOME	52.46			48.56			54.26			111.77		
SIMULATED INCOME :												
TOTAL (I+II+III+IV)		100.00			100.00			100.00			100.00	
I Return effects P(X',e')	47.64	100.00	77.43	39.42	100.00	82.40	43.93	100.00	70.43	86.75	100.00	57.96
I.1 Household Characteristics	49.32	65.17	50.46	43.20	58.71	48.38	47.24	67.95	47.86	96.54	60.90	35.29
I.1.a Demographics	53.20	-15.41	-11.93	50.13	-17.18	-14.15	55.82	-15.12	-10.65	116.70	-19.69	-11.41
I.1.b Education	48.93	73.30	56.75	42.68	64.39	53.06	46.07	79.26	55.83	90.78	83.89	48.62
Working age	48.81	75.74	58.65	42.45	66.94	55.16	45.56	84.15	59.27	87.27	97.93	56.76
Male	49.49	61.66	47.75	43.33	57.26	47.18	47.30	67.35	47.43	91.19	82.27	47.68
Female	51.62	17.37	13.45	47.25	14.40	11.87	52.08	21.06	14.83	107.41	17.43	10.10
Interaction (male, female)		-3.29	-2.55		-4.72	-3.89		-4.26	-3.00		-1.77	-1.03
Older than working age	52.61	-3.02	-2.34	48.87	-3.36	-2.77	54.87	-5.88	-4.14	116.35	-18.28	-10.60
Male	52.71	-5.22	-4.04	49.07	-5.54	-4.56	55.06	-7.78	-5.48	116.50	-18.90	-10.95
Female	52.38	1.70	1.31	48.41	1.68	1.38	54.15	1.08	0.76	111.91	-0.53	-0.31
Interaction (male, female)		0.50	0.39		0.51	0.42		0.82	0.58		1.14	0.66
Interaction (working age, older than w.a.)		0.57	0.44		0.81	0.67		0.99	0.70		4.25	2.46
I.1.c Assets	52.47	-0.17	-0.13	48.62	-0.58	-0.48	54.27	-0.06	-0.04	112.06	-1.14	-0.66
I.1.d Absent Head	52.50	-0.71	-0.55	48.63	-0.71	-0.58	54.35	-0.84	-0.59	112.05	-1.11	-0.65
I.1.e Interaction (a-d)		8.16	6.32		12.78	10.53		4.71	3.32		-1.05	-0.61
I.2 Regional Effects	52.11	7.27	5.63	47.82	8.10	6.68	53.47	7.66	5.39	108.64	12.52	7.26
I.2.a Urban	52.51	-0.96	-0.74	48.70	-1.44	-1.19	54.31	-0.45	-0.31	110.86	3.66	2.12
I.2.b Rural	52.07	8.16	6.32	47.70	9.44	7.78	53.43	8.07	5.68	109.53	8.96	5.19
I.2.c Interaction (urban, rural)		0.06	0.05		0.11	0.09		0.03	0.02		-0.11	-0.06
I.3 South	51.20	26.22	20.31	45.54	33.08	27.26	51.53	26.38	18.58	104.46	29.23	16.94
I.3.a Fixed effects	51.69	16.09	12.46	46.64	21.09	17.38	52.63	15.79	11.12	107.62	16.61	9.63
Urban	52.47	-0.09	-0.07	48.61	-0.50	-0.41	54.19	0.67	0.47	111.24	2.14	1.24
Rural	51.68	16.14	12.50	46.60	21.46	17.69	52.70	15.12	10.65	108.12	14.60	8.46
Interaction (urban, rural)		0.03	0.03		0.13	0.10		-0.01	-0.00		-0.13	-0.07
I.3.b Household Characteristics	51.94	10.81	8.37	47.23	14.57	12.00	53.14	10.88	7.66	108.82	11.79	6.83
I.3.c Interaction (a,b)		-0.67	-0.52		-2.57	-2.12		-0.28	-0.20		0.83	0.48
I.4 Interaction (1-3)		1.34	1.04		0.11	0.09		-1.99	-1.40		-2.65	-1.53
II. Error terms effect e(P',X')	52.41		0.91	48.44		1.07	54.10		1.07	111.12		1.52
III. Endowment effect X(P, e)			21.54			16.55			28.52			40.68
IV. Left over			0.12			-0.03			-0.02			-0.16

*Calculated as a residual

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Cont. A.6 (Adult Equivalent Units)	Contribution to			Contribution to			Contribution to			Contribution to		
	Gini	Return effects only	Actual change in the Gini	E(0)	Return effects only	Actual change in the E(0)	E(1)	Return effects only	Actual change in the E(1)	E(2)	Return effects only	Actual change in the E(2)
Average 1984/1994												
ORIGINAL INCOME												
ESTIMATED INCOME												
SIMULATED INCOME :												
TOTAL (I+II+III+IV)		100.00			100.00			100.00			100.00	
I Return effects (P(X,e)+P(X,e))/2		100.00	67.17		100.00	69.49		100.00	57.97		100.00	44.91
I.1 Household Characteristics		63.44	42.61		56.37	39.17		67.32	39.03		67.94	30.51
I.1.a Demographics		-8.93	-6.00		-9.02	-6.27		-12.20	-7.07		-20.64	-9.27
I.1.b Education		76.12	51.13		68.51	47.61		82.74	47.97		92.41	41.50
Working age		78.23	52.55		70.80	49.20		87.60	50.79		104.16	46.77
Male		67.30	45.21		63.16	43.89		72.67	42.13		85.48	38.39
Female		11.53	7.74		8.83	6.14		15.75	9.13		17.56	7.89
Interaction (male, female)		-0.60	-0.40		-1.20	-0.83		-0.82	-0.48		1.11	0.50
Older than working age		-2.41	-1.62		-2.71	-1.88		-5.37	-3.11		-14.16	-6.36
Male		-5.84	-3.93		-5.82	-4.04		-8.04	-4.66		-15.37	-6.90
Female		2.87	1.92		2.56	1.78		1.66	0.96		-0.28	-0.13
Interaction (male, female)		0.57	0.38		0.55	0.39		1.01	0.59		1.49	0.67
Interaction (working age, older than w.a.)		0.30	0.20		0.41	0.29		0.51	0.29		2.41	1.08
I.1.c Assets		-1.50	-1.01		-1.90	-1.32		-1.00	-0.58		-0.57	-0.26
I.1.d Absent Head		-0.81	-0.55		-0.73	-0.51		-0.95	-0.55		-1.30	-0.58
I.1.e Interaction (a-d)		-1.44	-0.97		-0.49	-0.34		-1.27	-0.73		-1.96	-0.88
I.2 Regional Effects		11.52	7.74		12.30	8.54		9.87	5.72		8.65	3.88
I.2.a Urban		-0.05	-0.03		-0.70	-0.48		-0.60	-0.35		-1.42	-0.64
I.2.b Rural		11.56	7.77		12.97	9.01		10.46	6.07		10.24	4.60
I.2.c. Interaction (urban, rural)		0.01	0.01		0.03	0.02		0.01	0.00		-0.16	-0.07
I.3 South		24.27	16.30		31.11	21.62		22.82	13.23		23.47	10.54
I.3.a Fixed effects		14.17	9.52		18.08	12.56		13.11	7.60		12.85	5.77
Urban		0.06	0.04		-0.42	-0.29		0.39	0.22		1.21	0.54
Rural		14.11	9.48		18.46	12.83		12.75	7.39		11.73	5.27
Interaction (urban, rural)		0.00	-0.00		0.03	0.02		-0.02	-0.01		-0.10	-0.04
I.3.b Household Characteristics		10.31	6.92		13.59	9.44		9.54	5.53		9.71	4.36
I.3.c Interaction (a,b)		-0.21	-0.14		-0.56	-0.39		0.17	0.10		0.91	0.41
I.4 Interaction (1-3)		0.77	0.52		0.23	0.16		0.00	-0.00		-0.06	-0.03
II. Error terms effect (e(P,X)+e(P',X'))/2			0.90			0.99			0.95			1.21
III. Endowment effect (X(P,e)+X(P',e'))/2			31.93			29.55			41.11			53.96
IV. Left over			-0.00			-0.02			-0.04			-0.08

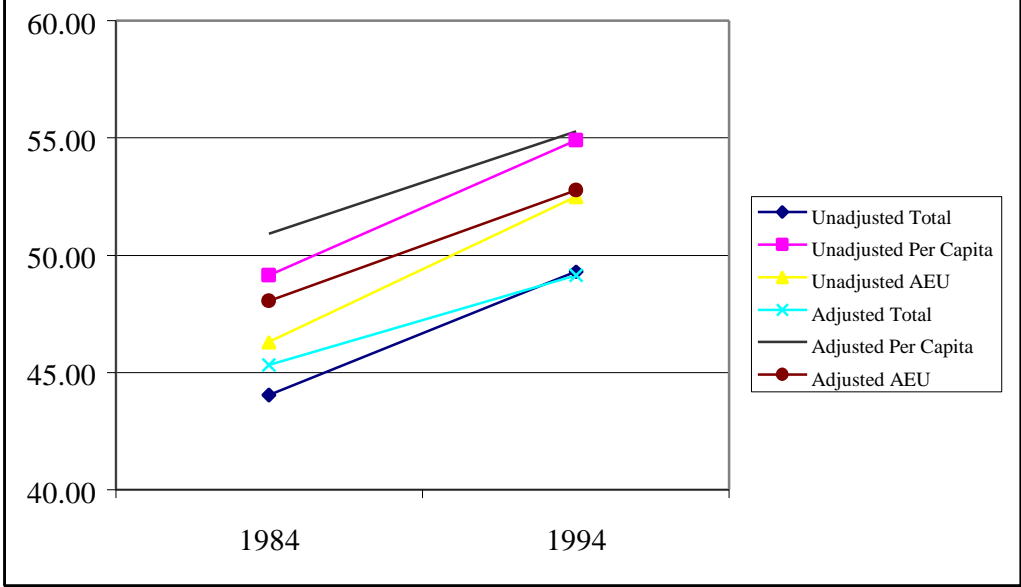
*Calculated as a residual

Table A.7
Test for the significance of Southern variables and Regional variables

	1984		1994	
	F value	Probability	F value	Probability
<i>Adult Equivalent Units regression</i>				
So. Household characteristics	1.10	0.32	2.55	0.00
So. Fixed effects and Household characteristics	2.41	0.00	24.39	0.00
All Regional Fixed effects and So. Household characteristics	6.74	0.00	40.34	0.00
<i>Per Capita regression</i>				
So. Household Characteristics	1.24	0.16	2.43	0.00
So. Fixed effects and Household Characteristics	2.51	0.00	23.40	0.00
All Regional Fixed effects and So. Household characteristics	6.41	0.00	38.00	0.00

Figures

Inequality Measures, GINI



Inequality Measures, E(0)

