A Poverty Trap Model to Analyze Income Distribution in Latin America

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"If the fundamental fact of human diversity and its far-reaching implications come to be recognized more widely in welfare-economic analysis and in public-policy assessment, then the approach would certainly need some radical transformation. The operations would have to move from the income space to the space of the constitutive elements of well-being and also of freedom, if the intrinsic importance of freedom is accepted. Social-welfare analysis would then take a different form, and the evolution of inequality and of distribution badness would then have to reflect that foundational transformation."

Sen, Amartya (1992;101)

I Introduction

The World Bank considers that during the 1990s the Latin American countries have the most unequal income in the world; the 20% poorest receive less than 5% of the GDP (The Economist, 1996). It is projected that the top 10 per cent (the richest people) receive 33 per cent of the national income.

The depth of economic restructuring has produced new winners and losers. The structural disparities characteristic of the region's systems of production have been exacerbated by the increasing productivity gap between large companies in the vanguard of the modernization process and the wide assortment of activities that have failed to keep pace, where the bulk of employment is concentrated. Not only does this situation provide a material basis for greater social inequities by emphasizing domestic disparities in productivity and income; it also affects the capacity for growth by restricting linkages between different sectors of production, the dissemination of technical progress and the momentum that exports could provide.

Therefore, in Latin America the accumulation process has not managed to achieve either the pace or the patterns required to generate jobs of sufficient productivity, at a rate that would make it possible to do away with structural heterogeneity. Structural heterogeneity can be thought of as the coexistence of forms of production and social relations -of ownership, labor and trade- pertaining to different phases in the history of development, but interacting within politically unified

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national societies.

It is axiomatic that the structural adjustment process will have effects on income and its distribution. At any given point in time, economies have a certain production pattern or structure for tradable and non-tradable, a given level and composition of aggregate demand, and an associated set of prices and payments to factors of production. This in conjunction with an array of implicit and explicit monetary transfers, is what determines the distribution of income as well as the income levels of social and economic actors in absolute terms.

By definition, financial stabilization and structural adjustment programs seek to modify the level of aggregate demand (usually the aim is to reduce it in order to bring expenditure into line with income) and the composition of production (by increasing the proportion of internationally tradable goods and reducing that of non-tradable) and to realign the prices of goods, services and factors. Obviously, with all these changes, income distribution and levels will be altered.

Consequently, this process will inevitably create winners and losers. The interest of this paper is to analyze how this process affects the poor and most vulnerable sectors of society.

What is the connection between income inequality and the macro-economic variables that are center stage in most economic debate? What is the inter-relationship between economic performance and income distribution? How use the economic theory to explain what is happening to the income individuals, families and households? These are the questions that this writing tries to answer thinking in the Latin American countries.

In that sense this paper has two chapters. The first one "Methodological aspects" examines in section a) *How is it possible to analyze income distribution*; here is investigated why most theories of distribution have been almost wholly concerned with distribution between "factors of production", and left out the distribution between "persons". In order to complement these different interpretations a four-quadrant diagram is designed.

In section b) *Social class and information to analyze income distribution*, is explained the methodology that will be applied in this paper to analyze income distribution in Latin America.

The second chapter studies the problem of income distribution in Latin America considering the relation of both the analysis of distribution between "factors of production" and "persons", using the information from household income and expenditure survey carried out by the Economic Commission for Latin America and the Caribean (ECLAC, 1996). Unfortunately it does not exits a more detailed series data.

The figures are not necessarily based on the same concepts of income, method, calculation or period of time, although this study has chosen those series that give a reasonable span of years and which are intended to be consistent over time. Changes in the personal distribution are large enough to affect our view of aggregate economic performance.

The conclusion is that Latin American income inequality typically increases as

the concentration of growing. Technologically advanced enterprises in cities widen the gap between rural and urban per capita income. Income inequality also intensifies in the urban sector with the accumulation of assets in the hand of a relatively small number of owners of modern enterprises.

The authorities have to adopt measures to modify some of the structural factors that condition the process and limit the inequalities generated. There are no universal patterns and it is necessary to adopt other ways to develop, based on a different understanding of modernization that gives priority to equity in meeting basic human needs.

In the past, changes in income distribution have often been dismissed as too insignificant to be worth attention. But this can no longer be done. Changes in the distribution of the magnitude observed in Latin America in the 1980s can affect the view of aggregate economic performance. The Gini adjustment is only one of many possible, but it shows that taking account of distribution changes can give a different picture of growth performance: the record of the 1980s looks impressive.

II Methodological Aspects

a) How is it possible to analyze income distribution?

Most theories of distribution were almost wholly concerned with distribution as between factors of production. Distribution as between persons, a problem of more direct and obvious interest, was either left out of the textbooks altogether, or treated briefly (Atkinson, 1997).

The relationship of the factor distribution with the personal distribution of income is typically not spelled out. "For the most part, economy theory has been concerned with the theory of functional distribution of income among factors although some economists have been interested in the distribution of income or of wealth as a descriptive and statistical problem rather than as a problem of economic analysis. Nevertheless, the theory of the personal distribution of income developed under the impetus of the 'War on Poverty'" (Johnson, 1973).

Statements about the division of national income between wages and profits do not tell directly what determines the share of the top 20% or the bottom 20% of income recipients. The factor distribution is certainly part of the story, but it is only part, and the other links in the chain need to receive attention.

In this trend, new ideas are appearing. Kuznets (1955) considered a two sector economy in which overall inequality depends on the proportion employed in each sector, on the degree of inequality within sectors, and on the difference between the mean incomes in the two sectors. A rise in the proportion employed in the higher income industrial could, on certain assumptions, lead first to rising and then falling overall inequality. This suggested 'long secular swing in income inequality' has had influence in the interpretation of the income distribution. It was written in the 1950s, but there continued to be a widespread belief that income inequality in developed countries continue to fall, steadily (Tinbergen, 1975).

Table 1. Distribution of Income in Urban Households by Quintiles

(Percentages)

Country	*Year*	*Quintile 1(poorest)*		*Quintile 2*	*Quintile 3*	*Quintile 4*	*Quintile 5(mas rico)*	
		Decile 1	Decile 2				Decile 9	Decile 10
Argentina	1980	2.8	4.0	10.6	15.7	21.7	14.4	30.9
	1986	2.0	4.4	9.8	15.2	19.9	14.2	34.5
	1990	2.3	3.9	8.7	14.2	20.9	15.2	34.8
	1992	2.3	3.6	9.3	15.1	22.3	15.9	31.6
Bolivia	1989	0.7	2.8	8.7	13.1	20.5	16.4	37.9
	1992	1.5	2.9	8.6	12.7	19.6	14.7	40.0
Brazil	1979	1.3	2.6	7.9	12.2	20.0	16.9	39.1
	1987	1.0	2.0	6.8	10.9	18.6	16.5	44.3
	1990	1.0	2.0	6.6	11.1	19.7	18.0	41.7
Chile	1987	1.8	3.1	9.0	12.8	19.6	16.5	37.2
	1990	1.7	3.3	9.3	13.5	19.4	15.5	37.2
	1992	1.9	3.3	9.4	13.1	18.9	15.0	38.3
Colombia	1980	0.9	2.5	7.6	11.3	18.9	17.5	41.3
	1986	1.0	2.9	9.2	14.4	21.3	16.1	35.3
	1990	1.5	3.1	9.0	13.6	21.0	16.9	34.4
	1992	1.3	2.9	8.8	14.0	21.7	16.9	34.5
Costa Rica	1981	2.3	4.5	12.1	16.7	24.5	16.9	23.2
	1988	2.3	4.1	10.8	16.2	23.3	15.7	27.6
	1990	1.6	4.1	12.1	17.0	24.5	16.1	24.6
	1992	1.8	3.9	11.4	17.0	23.5	15.6	26.9
Guatemala	1986	1.2	2.7	8.6	14.0	21.5	15.6	36.4
	1989	1.0	2.6	8.4	13.1	21.3	15.6	37.9
	1990	1.7	3.0	8.6	12.7	20.8	16.1	37.1
Honduras	1990	1.5	2.5	8.3	12.8	20.2	16.1	38.9
	1992	1.5	3.0	8.7	13.2	20.8	17.4	35.4
Mexico	1984	3.2	4.7	12.3	16.8	21.9	15.4	25.8
	1989	2.5	3.7	10.1	13.4	19.0	14.4	36.9
	1992	2.7	3.8	10.1	13.6	19.4	15.6	34.8
Panama	1979	1.2	3.5	10.8	15.9	22.7	16.8	29.1
	1986	1.2	3.1	10.0	14.9	22.0	15.9	33.0
	1989	1.4	2.8	9.0	13.6	20.3	16.7	36.2
	1991	1.1	2.8	9.4	14.3	22.0	16.3	34.2
Paraguay	1986	2.2	3.6	10.6	14.5	20.2	17.1	31.8
	1990	2.7	4.1	11.8	15.7	21.4	15.4	28.9
	1992	2.0	3.7	10.5	14.9	23.3	16.4	29.2
Uruguay	1981	2.7	4.1	10.9	14.7	21.2	15.2	31.2
	1986	3.0	4.4	10.4	14.3	19.7	14.7	33.6
	1990	3.5	4.7	11.9	15.4	19.9	13.3	31.2
	1992	3.8	5.2	12.9	16.6	21.0	14.6	25.9
Venezuela	1981	2.5	4.4	13.2	17.1	24.9	16.0	21.8
	1986	1.9	3.7	10.6	15.8	22.8	16.2	28.9
	1990	2.0	3.7	11.1	15.9	22.8	16.2	28.4
	1992	1.8	3.9	10.7	15.9	22.9	16.8	28.1
Latin America	1979-1981	2.0	3.7	10.4	14.8	22.0	16.2	30.9
	1984-1988	1.9	3.5	9.8	14.5	21.0	15.8	33.5
	1989-1990	1.8	3.3	9.6	14.0	20.8	15.8	34.5
	1991-1992	1.9	3.5	10.0	14.7	21.6	16.0	32.4

Source: ECLAC (1996-97)

However, income inequality did not continue to fall. "In the United States, the Gini coefficient of inequality for household incomes rose between 1968 and 1992 by three and a half percentage points, which more or less took the coefficient back to the level before the decline in the 1960s" (Atkinson, 1997; 301). Additionally, in the developed countries the gap between the state social politics and the social necessities is increasing. The social security finance is the public finances main problem in the developed countries (Gonzales, J. I., 1998; 9).

Atkinson said: "not only has the 'Kuznets curve' been confounded by recent events, but it has also become clear that it is misleading to talk of 'trends' when describing the postwar evolution of the income distribution" (1997; 303).

In Latin America there is evidence of widening differential in the distribution of income: the participation of the bottom decile (2%), remains without improving its very low level between 1980 and 1993 (Table 1), compared with the highest level participation (30.9%) for the top decile, which grew 2%. There was also a large rise in the proportion of families without income from work: in Argentina, for example, it passed from 2.6% in 1980, to 17.2% in 1996; in Panama from 10.4% to 16.4%; and in Venezuela from 6.6% to 12.3% (Table 2) (ECLAC, 1996-1997).

As is already indicated, there is at present limited connection between economic theory and the explanation of personal income distribution. In recent literature (Ocampo, 1998) (ECLAC, 1996-97) there appears to be widespread agreement on a straightforward explanation of rising earnings dispersion: there has been a shift in demand away from unskilled labor in favor of skilled workers. In Latin America this has led to a fall in the relative wage of unskilled workers, and hence a rise in dispersion. Here in fore, this paper tries to define a model that explains this phenomenon combining the "functional" and "personal" interpretation of income distribution.

Table 2. Urban Open Unemployment Rates

(Average annual rates)

Country	1980	1982	1985	1988	1990	1992	1994	1996
Argentina	2.6	5.3	6.1	6.3	7.5	7.0	11.5	17.2
Barbados	12.6	13.7	18.7	17.4	15.0	22.4	21.9	21.0
Bolivia	7.1	8.2	5.8	11.5	9.5	5.8	5.8	4.2
Brazil	6.3	6.3	5.3	3.8	4.3	5.8	5.1	5.4
Chile	11.7	20.0	17.0	1.2	6.5	5.0	6.3	7.0
Colombia	9.7	9.1	14.1	11.3	10.5	10.2	8.9	11.2
Costa Rica	6.0	...	6.7	6.3	5.4	4.3	4.3	6.6
Guatemala	2.2	6.0	12.0	8.8	6.5	5.7	5.2	4.9
Honduras	8.8	9.2	11.7	8.7	7.8	6.0	6.3	6.5
Mexico	4.5	...	4.4	3.5	2.7	2.8	3.7	5.5
Nicaragua	18.3	14.0	24.2	6.0	11.1	17.8	20.7	16.1
Panama	10.4	10.1	15.7	16.3	16.8	14.7	13.7	16.4
Paraguay	3.9	...	6.1	4.7	6.6	5.3	4.4	8.2
Peru	7.1	...	10.1	7.1	8.3	9.6	8.8	8.9
T & T	9.9	9.9	16.0	21.1	20.0	19.6	19.0	...
Uruguay	7.4	11.9	13.1	9.1	9.3	9.0	9.1	11.9
Venezuela	6.6	7.8	14.3	7.3	10.4	7.8	8.7	12.3
Latin America	6.2	7.3	6.8	5.9	6.2	6.3	6.3	7.7

Source: Social Development and welfare. ECLAC (1996-1997)

One of the important contributions to analyze income distribution problem is that by James Meade (1964). He set the acquisition of marketable skills in the wider context of home background and the transmission of advantage from generation to generation, through both human capital and material inheritance. He described a model of intergenerational transmission. Among other elements, parental income and wealth affected educational attainment. Property was accumulated through saving and inheritance and the rate of return to savings were assumed to be an increasing function of wealth.

Here it is tried a model that has the following basic assumptions. First, it combines the supply and demand model of skill differentials with a model of imperfections in the capital market (Galor and Zeira, 1993, pay particular attention to the effect of the financial capital market on investment in human capital), and the transmission of wealth from generation to generation. Second, it is assumed a small economy open to world capital and product markets; the interest rate {r} is therefore the world interest rate, but the wages are determined in the labor market where the demand is that of profit-maximizing firms with identical production functions (assumed to be Cobb-Douglas). Third, there are increasing returns to investment in human capital (h), in particular, investment has to cross a minimum threshold level in order to yield any benefit (Basu, 1997).

The outcome depends on the various parameters. Fig. 1(a) shows a situation like that in Atkinson (1997), where there is a long-run equilibrium with two groups, with different amounts of capital, where the richer groups are skilled workers and the poorer are unskilled workers. The initial level of inherited wealth, i, is shown on the horizontal axis in the right hand quadrant. Those with more than i_l have sufficient collateral to invest in education (in order to simplify here only education is considered, but it would be possible to consider more human capital investment: health, nourishment, etc.). Like the theory of endogenous growth here is considered the policy implication of emphasizing education and literacy. Thus, in Romer's model (1986) individuals have the option of cutting down on current consumption and building up the level of knowledge, which helps the economy be more productive in the future.

The lower right hand quadrant shows the distribution in a specified generation of people (it is assumed in this paper a Lorenz curve). If investment in skill is rationed by the capital market constraint, the proposition below i_l determines the proportion of unskilled workers, denoted by l_u.

The wages for skilled and unskilled labor are shown in the bottom left quadrant as functions of the proportion of unskilled workers. These functions are derived from the profit-maximizing conditions of firms, and depend negatively on the rate of interest. It is assumed that skilled workers spend the fraction S, of the period being trained, and then work for the remaining (I - S) and there is a minimum level of consumption which has to be financed by the individual during training, which grows during the training period at exponential rate.

Comparing Wu with Wse^{-rS}, it is possible see whether or not people would choose education if unconstrained. The diagram has been drawn subject to the capital market

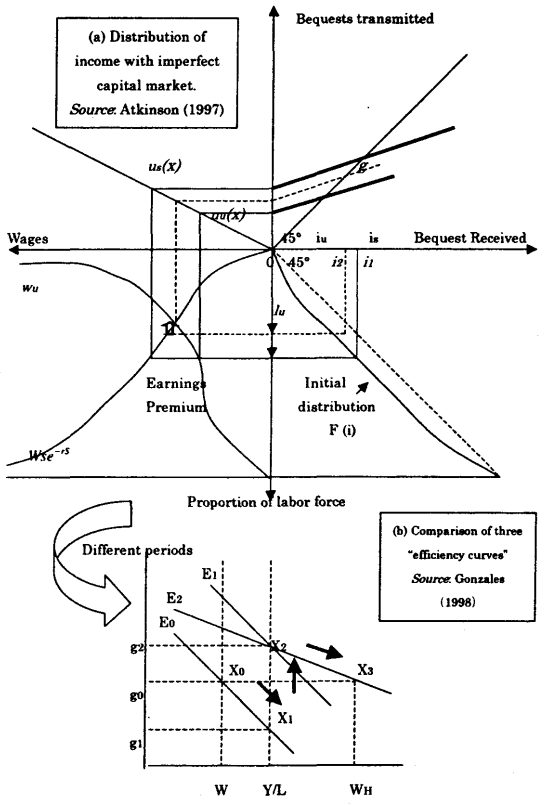

Fig. 1. Rising Earnings Dispersion Model

constraint, so that the supply of skilled labor consists of those who can borrow to finance the acquisition of education, and the wage premium exceeds the compensating differential.

The wage premium gives an advantage to skilled workers in terms of lifetime earnings, which feeds into the determination of bequests out of earned income in the top left-hand quadrant. In turn, this determines the point of interception in the overall bequest relationship, and hence the wealth inherited by the next generation -see the top right-hand quadrant in Fig. 1(a). From this, it is possible to see how the distribution evolves over time. With the combinations of parameters shown, the initial class division is maintained, with people initially bellow i_l converging to i_u and people initially above i_l converging to i_s (shown by the dashed lines).

This could transform the dynamic evolution, with people in the lower class unable to accumulate sufficient collateral. They would become trapped in an unequal distribution. The distribution would change increasing the gap in favor of people above i_l.

Combining Basu's (1997) methodology, here it is a mathematical explanation. People distribute their total wealth between their personal consumption (c units) and

their bequest to their children (b units). Individuals have the following utility function:

$u = c^{a} b^{1-a}$

Where $0 < a < 1$

If an adult has a wealth of y units, his problem is to choose c and b such that

Max $u = c^{a} b^{1-a}$

Subject to $c + b = y$

By going through the standard Lagrangian maximization, given y, the consumer's utility is given by

$u = ey$

Where the amount bequeathed is given by $b = (1-a)y$. It is assumed that money must be borrowed at an interest of i and lent at an interest of r, where $i > r$. If a person inherits x units and chooses not to acquire education then as an adult that person will have a wealth of $(x+w_u)(1+r) + w_u$. Replacing:

$u_u(x) = e((x+w_u)(1+r)+w_u)$,

$b_u(x) = (1-a)(x+w_u)(1+r)+w_u$

If a person inherits x and decides to acquire education,

$u_s(x) = e(x-h)(1+r)+w_s)$, if $x \geq h$

$e((x-h)(1+i)+w_s)$, if $x < h$,

$b_s(x) = (1-a)((x-h)(1+r)+w_s)$, if $x \geq h$,

$(1-a)((x-h)(1+i)+w_s)$, if $x < h$,

The top left hand quadrant in fig. 1(a) represents $u_s(x)$ and $u_n(x)$

Assume ϕ_t be the density function for inheritances for individuals born in period t. Hence, if L denotes the population size of each generation, then

$$L = \int_0^a \phi_t(x)\, dx$$

A person will acquire education if that person receives an inheritance above i_1. The number of people who acquire education is given by

$$L_{ts} = \int_{i1}^{a} \phi_t(x)\, dx \text{ and } L_{tu} = L - L_{ts}$$

The model turns to the dynamics and is possible to know what sort of a density function will evolve in the long run. $b_u(x)$ and $b_s(x)$ are the information to define how much a person will bequeath to his child. If a person inherits x_t in a period t, then the person will bequeath x_{t+1} defined as:

$x_{t+1} = b_u(x_t)$, if $x_t < i_1$

$b_s(x_t)$, if $x_t > i_1$

The top right hand quadrant in fig. 1(a) illustrates the function x_{t+1} and also a 45° line. It is evident from fig. 1(a) that in the long run the distribution of wealth (or inheritance) will converge to two polar cases, i_u and i_s.

This has several implications. Consider an economy in which per capita wealth exceeds g. If this wealth is poorly distributed, so that few people have wealth exceeding g, the economy will end up quite poor. If, on the other hand, this is a society of perfect equality, the society will end up rich. Hence a better distribution helps. Considering the i_2 point, fig. 1(a), here the cost of education is lower (for example, as a result of state subsidies), so that i_2 now lies below as smaller earning premium (shown by the dotted

line). The unskilled are subject to the capital market constraint, so the wage premium exists.

Considering that over generations and especially because of state role, the unskilled wealth is rising, so that eventually the point is reached where the capital market ceases to be a constraint and the wage differential is at the equilibrium level. It is heading towards a situation where, as Atkinson (1997) said, there is only one class. In that sense, is possible naming this as a "utopia" process ("utopia" because ultimately the capital market imperfection ceases to be operative).

This model also suggests that it may be worthwhile subsidizing education, even if this means having to tax skilled workers. Galor and Zeira (1993) rightly observe such a scheme may be relatively efficient because (unlike in a scheme where people borrow for their own education and therefore their repayment has to be monitored): "the government avoids the need to keep track of each individual borrower by giving the subsidy to all students and taxing all those who have a higher income" (p. 43). The initial distribution can affect the long-run prosperity and poverty of nations, with a better distribution contribution to long-run prosperity.

The object of this section has been to incorporate income distribution into the mainstream of economics through a four-quadrant diagram. It yields comparative static and dynamics. For instance, the model can be used to investigate the consequences of a rise in the real interest rate. It affects the demand for labor, shifting the w_u and w_s curves inward (it is moving round the factor/price frontier). The rise in r increases the compensating wage premium e^{-rs}. In the top left-hand quadrant the propensity to bequeath rises, as does the slope in the top right hand quadrant. At the same time, the rise in r increases the necessary collateral, and hence il.

According to the model, technical change affecting the relative demand for skilled and unskilled labor could shift apart the curves in the bottom left hand quadrant. For this purpose, it is appropriate takes the Gonzales' (1998) study, where is considered a study of production in relation with the time and the distribution.

The analyses of different periods in fig. 1(b), considers three efficiency curves. The first E_0 represents the old technique. The other E_1 and E_2 correspond to two new techniques. The curve E_0 is parallel to E_1 because both techniques have the same relation between the variables.

The horizontal axis has two variables: the salary (w) and the means productivity, or product per worker (Y/ L). The vertical axis represents the growth rate movement (g). X shows the production scale. This is determined by the technology and the moment in which started the preceding production process.
$G=(l+g)$; l represents the input of labor force. L_T includes the l_0X_T process started in the present period (T) and the process started in previous periods ($l_1X_{T-1}+...+l_nX_{T-n}$)

$$L_T = l_0X_T+l_1X_{T-1}+...+l_nX_{T-n}$$
$$= X_T\,(l_0+l_1G^{-1}+...+G^{-n}\ell_n)$$

The same technique is developed in a bigger scale when bigger value of X. The product Y in the moment T is

$$Y_T = X_T\,(y_0+y_1G^{-1}+...+G^{-n}y_n)$$

"y" represents the goods finished in each process. The relation between Y_T and L_T shows the productivity in moment T that corresponds to the technique (Y_T/L_T) is constant.

Starting with the old technique E_0, in order to understand the comparison of three "efficiency curves" fig .1(b), the production scale is X_0, and the growth rate is g_0. The production in X_0 is insufficient to satisfy the demand. If with the same technique the scale of production is increased to X_1, the quantity of production increases but the growth is reduced. Increasing the production scale, the entrepreneur has more workers and that implies a bigger wage.

If the demand pressure persists, it is necessary to change the technique. In whichever of the two new techniques (E_1 or E_2) the production scale X_2 is associated with the same old technique wage. With the new technique the growth rate is g_2. Growing demand would obligate a change of the production scale to X_3. In this point the total product and the growth rate returns to g_0. In X_3 the wage reaches W_H.

The tension between the productivity and the wage creates adequate conditions to have a new invention and improve the productivity. At the moment the new technique is introduced it is possible maintain the old wage, but if the demand continues increasing, it is necessary to modify the production scale and that situation presses up the wages. The labor force cost is an incentive to change the technique. The redistribute policy, inherent in the definition of W, affects the technological development. The fig. 1(b) explains the relation between the productive structure and the differential cost of the productive factors.

The process duration is influenced by the initial situation of the economy. If there exists an excess of labor force (Lewis, 1954)(Gonzales, 1998), the pressure on the wages will take more time than if the process starts in a level near to the full employment.

The model just described falls well short of incorporating all the rich detail of Gonzales' (1998) efficiency curves interpretation, Atkinson's (1997) model of income distribution, Basu's (1997) analysis of distribution and development, and Meade's (1964) account of the determination of incomes. There is no marriage in the model, or differential family size, or social contracts, and it does not do justice to important strands in the recent literature, but it is an intent to incorporate income distribution into the mainstream of economics.

In conclusion, the economic analysis of the distribution of income is in need of further development before one can hope to give a definitive answer to what determines the extent of inequality and why inequality has increased. This means that current economic theory has a lot to contribute. It certainly offers insights into parts of the interpretation, but what is required is for the different elements to be brought together. What is needed is an overall framework, bot conceptual and empirical, within which to fit the different mechanisms. The skill shift explanation for wage differential is valuable, but it is only part of the story. The labor market cannot be seen as totally independent from the capital market. The distribution between persons is important for that reason it will be considered the social classifications and their roll in the

studies of income distribution. This study will tray to retake this aspect in defining Latin American income distribution.

b) Social class and information to analyze income distribution

The social system is to be designed so that the resulting distribution is just; however things turn out. "To achieve this end it is necessary to set the social and economic process within the surroundings of suitable political and legal institutions. Without an appropriate scheme of these background institutions the outcome of the distributive process will not be just" (Rawls, 1971, 275).

Amartya Sen (1992) said that the importance of distinction between seeking equality in different spaces relates ultimately to the nature of human diversity. It is because we are so deeply diverse, that equality in one space frequently leads to inequality in other spaces. "There are diversities of many different kinds. It is not unreasonable to think that if we try to take note of all the diversities, we might end up in a total mess of empirical confusion" (Sen, 1992; 117).

In fact, general analyses of inequality must in many cases, proceed in terms of groups -rather than specific individuals- and tends to confine attention to *inter-group variations*. "In doing group analyses we have to pick and choose between different ways of classifying people, and the classifications themselves select particular types of diversities rather than others"(Sen, 1992; 118). In the literature on inequality, the classification most widely used has been that of economic class -either defined in terms of Marxian or some similar categories (mainly, concentrating on ownership of means of production and occupation), or seen in terms of income groups or wealth categories.

The importance of this type of class-based classifications is obvious enough in most contests. They also indicate why it is the case that equality in the space of, say, libertarian rights does not yield anything like equality of well-being, or equality of the overall freedoms to lead the lives that people may respectively value. The crucial relevance of such class-based classifications is altogether undeniable in the context of general political, social, and economic analysis.

The problem of identifying and defining the strata of classes is highly complex, both because of their intrinsic nature and structural position -which can only be conceptualized in a broader general theoretical framework- and due to their own internal heterogeneity, which grows ever greater with the modernization of society. Besides these complications, there are those of a methodological nature, which arise when one attempts to situate these social aggregates in specific contexts, i.e., when one thinks about them as occupational, consumption or income layers. The practical distinctions differ considerably.

For the purpose in this paper the following income strata will be distinguished, in order to analyze income distribution: *high*, those in the top 5 percent of the distribution; *upper middle*, those immediately below, but not lower than the top 20 per cent (top 5 to 20 percent); *lower middle* or intermediate, a vaguer category which generally refers to the levels beneath the preceding ones but above the bottom 40 per cent of the distribution; and *popular*, the remaining bottom 40 per cent, within which

the *poor* represent the bottom 20 per cent of the distribution. For this analyses the information from "household income and expenditure" carried out by the Economic Commission for Latin America and the Caribbean will be used (ECLAC, 1996-1997)

To repeat, these groupings are conventional and approximate, and sometimes there are slight nominal or aggregate changes. In Latin America distribution is most dynamic in the top 20 per cent, which is also where most of the modern sector of the economy is concentrated; this group receives more than 49% of the GDP (Table 1).

Overwhelming data deficiencies in Latin America greatly complicate any effort to measure variations in the distribution of income. Data almost invariably relate to income in a year, are seldom available by appropriate expenditure units. For example, it would be desirable to have income data for family expenditure units adjusted for the number of persons in the family and their stage of participation in the labor force. In addition, income distribution data ideally should refer to secular income levels and should take account of movements of individuals between different income groups over time. Because the figures, here is considered the distribution of income and not the distribution of wealth.

Furthermore, except for recent years in a few countries, data are usually available for only a small number of broad income groups. Finally, the raw data on incomes received, even in some developed countries, are notoriously unreliable (Adelman, 1973: 150). They pose several special problems regarding comparability, and adjustments could be made for only a few of them.

Ⅲ Income Distribution in Latin America

On the average from 1979 to 1992, over 13 Latin American countries (table 1), the poorest 60% of the population received 29 percent of total income. The standard deviation of their income share was 5 percent; it was from 24% (Bolivia, Guatemala) to 36% (Uruguay).

The share of total income of the richest 10% of all households has tended to rise, whereas the share of the poorest 40% of the households has remained constant or have actually shrunk. The findings indicate that the region continues to suffer from a great deal of inequality and to experience serious difficulty in making improvements in that distribution pattern even in countries that have achieved high growth rates (Sarmiento, 1992). The hypothesis considers in this paper is that the wide income gap between skilled and unskilled workers and its tendency to broaden even further during the 1990s have helped to perpetuate the marked concentration of income that is typical of the vast majority of Latin American countries.

According to the methodology used in Adelman, I. And Morris, C's study (1973), and with information from the World Bank (1997), the results summarized in Figure 2 show that the allocation of income to the poorest 60% of the population was "explained" by: the extent of structural heterogeneity, the level of social and economic modernization, and the expansion of secondary level education.

The poorest 60% received a relatively large share of total income 32% under

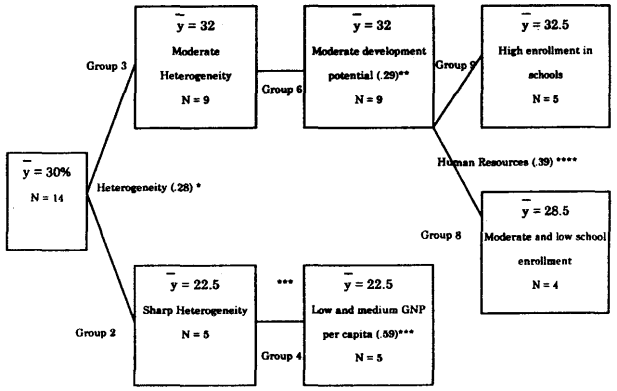

Fig. 2. Analysis of Share of Income of the Poorest 60 Percent of the Population

GROUP MEMBERS. Group 4: Bolivia, Brazil, Guatemala, Honduras and Peru; Group 9: Argentina, Costa Rica, Paraguay, Uruguay, Venezuela; Group 8: Mexico, Panama, Colombia, Chile.

* The other candidate variables that distinguish well among all 14 countries are the abundance of natural resources (20%), the extent of direct government economic activity (20%), and the political strength of the traditional elite (18%).

** The next most important candidate variables at this step indicate that a higher average share to the poorest 60 % is associated with less ethnic homogeneity (25%), lower scores on the character of agricultural organization (22%), and less modernization of industry (20%).

*** There are no significant alternative candidates at this step.

**** The other important variable at this step is the structure of foreign trade (35%). The more exports are diversified, the higher the share of the lowest 60% of the population.

Source: Table 1 and Adelman & Morris' methodology (1973) with the World Bank (1997) information.

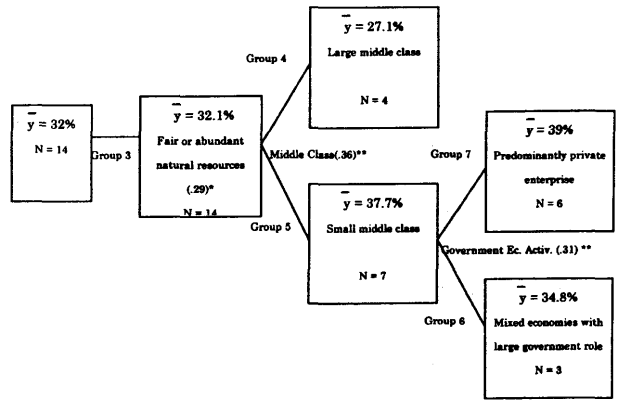

Fig. 3. Analysis of Share of Income of the Wealthiest 10 Percent of the Population

GROUP MEMBERS. Group 7: Bolivia, Brazil, Chile, Guatemala, Honduras and Peru; Group 6: Argentina, Colombia, Mexico, Panama; Group 4: Costa Rica, Paraguay, Uruguay, Venezuela.

The two most important alternative candidate variables show that a lower share of income of the top families is associated with greater direct government participation in economic activity (23.8%) and broader popular participation in political processes (20%). The remaining significant variables indicate that less concentration of income at the top is associated with more political strength of the labor movement (17%), a less powerful traditional elite (17%), higher per capita GNP (16%)

**There are no significant alternative variables at this split.

Source: Table 1 and Adelman & Morris' methodology (1987) with the World Bank (1997) information.

substantial development associated with major efforts to improve human resources (group 9). Their income share was smallest where a sharply heterogeneous development process had been initiated by military or elite ideologically oriented to receive most of the benefits of economic development (group 4). The remaining subgroups of countries, in which the income share of the poorest 60% ranged from 27 to 30%, include both fairly well-developed moderately heterogeneous countries (group 8).

When economic growth begins in a subsistence agrarian economy through the expansion of a narrow modern sector, inequality in the distribution of income typically increases greatly, particularly where foreign exploitation of rich natural resources provides the motivating force for growth. This is one aspect traditionally associated with the Kuznets hypothesis. The income share of the poorest 60% declines significantly, and the income share of the top 5% increases strikingly.

The gains of the top 10% are particularly great in very low-income countries where a heterogeneous dualistic structure is associated with political and economic domination by traditional elite (figure 3). Their share increases with greater natural resources available for exploitation and decreases with the government role in the economic sphere.

As developing nations become less heterogeneous, the middle-income group is the primary beneficiary under two possible development strategies available to countries that are at least moderately developed. Widely based social and economic advances, combined with consistent efforts to improve human resources and facilitated by a reasonable abundance of natural resources, typically favor the middle sector.

"Where resources are sparse, the middle sector may nevertheless benefit through the development of a diversified manufacturing export sector supported by government economic role and expanding financial institutions" (Adelman, I. & Morris, C., 1973). In contrast, when neither of these strategies is followed but rapid and quite widespread economic growth under moderate heterogeneity nevertheless take place, the relative position of the middle quintile worsens, with the benefits of economic change going rather to the upper 20% of the population.

With relatively high levels of development and a capacity for more broadly based economic growth, the poorest segments of the population typically benefit from economic growth only when the government plays an economic role and when widespread efforts are made to improve the human resource base. These hypotheses are suggested by both the implied gains to the poor in group 9 in Figure 2 (analysis for the poorest 60%) and the major losses implied by the characteristics of group 4 in Figure 3 (analysis for the richest 10%).

This analysis provides some grounds for speculating about the mechanisms that depress the standard of living of the poorest 40%. In the very earliest stage of heterogeneous growth, increased wage payments to workers in modern sectors, extractive, and industrial enterprises tend to be more than offset by relative prices, and product availability. Since increased cash wages are not immediately matched by increased availability of consumers' goods, higher prices erode gains in money income.

Subsistence farmers and low wage payments to workers in no-modern sectors are particularly hard hit by rising prices. Typically they suffer both declines in real income and nutritional deficiencies as they become dependent on the market for mayor necessities.

The factors at work to worsen the positions of the poorest 40 percent appear to be changes in product and technology within both agricultural and nonagricultural sectors, rapid expansion of the urban industrial sectors, migration to the cities, lack of social mobility, and inflation.

Several concomitants of the growth process characteristic also operate to worsen the absolute position of the poor. As agricultural output expands, the no-elasticity of international and domestic demand for many agricultural products tends to reduce the real income of agricultural producers. Simultaneously, mechanization in industry trends to appropriate markets formerly supplied by large numbers of artisans and cottage workers. The destruction of handicraft industries acts to reduce incomes and increase unemployment among rural and urban poor (table 2) and a growth in the no-formal sector of the economy.

Thus, to summarize, technological change, the commercialization of the traditional sector, and urbanization all combine to reduce the real income of the poorest 40 percent of the population in very low income countries. Those middle- and upper- income groups benefit that are better able to finance the application of more advanced capital-intensive techniques of production.

This kind of development has conducted Latin America to an eternal conflict between two objectives: growth and social equity. The comparison of six Latin American countries presented by Sarmiento (1992) shows that countries which have

Table 3. Latin America (six countries): Distribution of Household's Income and Economic Growth

Country	Year	Gini Coefficient*	Average per 5 years % growth of GDP-1980/85
Argentina	1980	0.365	-2.1
	1986	0.406	0.3
	1995	0.42	6.1
Brazil	1979	0.518	1.3
	1987	0.540	1.9
	1995	0.56	1.0
Colombia	1980	0.484	2.5
	1986	0.467	4.8
	1995	0.48	4.0
Costa Rica	1981	0.340	0.2
	1988	0.360	4.4
	1995	0.43	4.6
Uruguay	1981	0.350	-2.7
	1989	0.350	3.7
	1995	0.4	4.5
Venezuela	1981	0.370	-2.0
	1986	0.390	2.9
	1995	0.48	3.8

*If everyone has the same income, the Gini coefficient is zero; if all income is concentrated in the hands of one individual the Gini coefficient is one.
Source: Gini 1980-1986, Sarmiento (1992); Gini 1995, Londoño (1996); Average per 5 years % growth GDP, ECLAC, 1996-1997.

advanced in one of these directions have not made progress in the other. Argentina and Uruguay have the highest levels of social equity and the lowest growth rates, while Brazil and Colombia have the highest growth rates and the lowest levels of social equity (See table 3). Additionally, when the GDP has gone growing the Gini coefficient has been growing too. That is to say inequality is increasing, Latin America is in a trap of inequality.

Evidence cited by Kuznets (1953) on the early stages of economic growth in currently advanced nations suggests a relative worsening of the position of the poor. Studies of contemporary underdeveloped countries also lend support to the hypothesis that phases of economic growth increase the inequality of income distribution. Recently, that evidence has been brought forward of absolute declines in the average income of the poorest 40 to 60 percent of the population, associated with economic growth in these countries (See tables 1 and 3).

It is not too much to say that the level of inequality in Latin America is deep as well as diverse. The Gini coefficients of various countries shows that levels of inequality vary between 0.63 and 0.42 within the region. This indicates that in some countries the wealthiest 10 percent of the population have 84 times more resources than the poorest 10 percent while in other countries the ratio is 15 to 1 (Londoño, 1996, pg. 130). The greatest levels of inequality can be found in Honduras and Peru; the lowest can be found in Uruguay and Barbados.

Although country to country differences exist, "15 out of 17 countries in the region have higher than expected levels of inequality given their levels of development. Empirical estimates of the Kuznets curve -which predicts inequality according to levels of development- for a sample of 102 countries show that on average the Gini coefficient for Latin American countries is 4.1 points higher than countries with similar per capita income levels" (Londoño, 1996).

All these figures indicate that the relationship between level of economic development and the income share of the poorest 60 percent of the population is asymmetrically U-shaped. Both extreme underdevelopment and high levels of economic development are associated with greater income inequality; between these extremes a more equal income distribution is generally associated with a lower level of development. This suggests that the process of economic modernization shift the income distribution in favor of the upper middle class and high-income groups.

The analyses are consistent with the distribution implications of heterogeneous economy models. These models suggest that the initial spurt of growth of the modern sector in low-income country worsen the relative income distribution. This situation could continue until the marginal product of labor in the agricultural and no modern sectors rises to the level of the institutional wage in the industrial sector.

The absolute position of the poorest 40 percent apparently continues to worsen as countries move toward less heterogeneous growth pattern unless major efforts are made to improve and expand human resources.

There is no automatic, or even likely, trickling down of the economic growth benefits to the poorest segments of the population in developing countries. On the

contrary, the absolute position of the poor tends to deteriorate as a consequence of economic growth, especially when the latter is moderate.

In other words, Latin American income inequality typically increases as the concentration of growing, technologically advanced enterprises in cities widens the gap between rural and urban per capita income. Income inequality also intensifies in the urban sector with the accumulation of assets in the hands of a relatively small number of owners of modern enterprises.

This concentration is accelerated by the spread of capital-intensive industrial technology through at least three factors- the ease with which owners of modern enterprises obtain capital abroad, the inability of small-scale enterprises to obtain financing, and a growing preference of medium and large entrepreneurs for advanced modern technologies. This labor-saving bias of technological advance, the rapidity of urban population growth, the migration to cities of unemployed rural workers, and the lack of social mobility all tend to swell the numbers of urban impoverished and to decrease the income share or the poorest segments of the urban population (Nolan, 1987).

The tendency above mentioned has been increased recently. There is a growing amount of evidence in the literature that economic liberalization and globalization have tended to lead to a deterioration in income distribution. Ocampo (1998) says that during the last 25 years the introduction of economic liberalization measures has been associated with a deterioration -in some cases of considerable proportions- in income distribution (p. 2). This evidence is from cases in Argentina, Chile, Colombia, the Dominican Republic, Mexico and Uruguay. A comparative study by Robins (1996) also indicates that trade liberalization has had a deleterious effect in terms of social equity in various countries of the region.

It is important to emphasize that the above observations should by no means be interpreted as signifying that economic reforms are the cause of the region's current levels of social inequality. Far from it, as was noted early, the inequality existing in Latin America is a deeply rooted phenomenon that is, in particular, associated with a striking degree of inequality in the distribution of human capital and wealth. In many countries, the situation in terms of distribution took a turn for the worse during import-substitution stage. The experience of the 1980s can rightly be interpreted as irrefutable evidence of the social costs associated with macroeconomic imbalance (e.g. the regressive effects of the destabilization of general price levels) as well as with the initial impact of the adjustment processes undertaken in order to correct those imbalances.

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