

TRAVERSING THE SOCIAL PYRAMID
A Comparative Review of Income Distribution
in Latin America*

Richard Weisskoff
Iowa State University
Adolfo Figueroa
Universidad Católica del Perú

DUKE: Her madness hath the oddest frame of sense,
Such a dependency of thing on thing,
As e'er I heard in madness.

ISABEL: O gracious Duke,
Harp not on that! nor do not banish reason
For inequality, but let your reason serve
To make the truth appear where it seems hid
And hide the false seems true!
Shakespeare, Measure for Measure

INTRODUCTION

The study of the distribution of income summarizes a nation's social organization and the outcome of the forces of social change. The measurement of income distribution itself yields a type of social scorecard, the resolution of claims by competing groups for the economy's output. As an

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indication of social justice, income distribution measures as well the extent to which different groups share in a nation's economic progress.

Most empirical studies of income distribution, however, have been directed to summarizing numerically the entire social organization of a country in a single index (the Gini coefficient, for example) or by means of a single curve (the Lorenz curve, for example). These summary coefficients, however important, tell us only one part of the story, and that is the overall degree of concentration and the distance—in money terms—between the top and bottom deciles. To return to social science, we must transform the “money accounts” into “social accounts.” We want to know who are at the top and who are at the bottom of the income pyramid.

One goal of our study is to review the work of a number of governmental investigators and individual scholars who have attempted to estimate the current size distribution of income to families and individuals. Our goal is *not* to repeat these studies but to compare their findings, using several standard measures of distribution. The pioneer researchers, working more or less in isolation, have been forced to proceed on differing sets of assumptions in order to make the best use of the data available to them. Taking these different approaches, data bases, and assumptions into account, can we draw any generalizations about the income distributions during a nation's growth or make comparisons between the experiences of different countries? These are the tasks of section I of this study.

In most of Latin America, economic development is primarily an urban phenomenon and our attention is constantly focused on her cities. While the countryside may serve as the source of emigrating labor and as the supplier of food, handicrafts, and raw materials, the cities remain as the major centers of transformation, as the poles of growth, and as recipients of the rural surplus. The cities are, in many countries, islands of relative prosperity floating in the poverty of rural seas. Perhaps it has been the reaction to the growing uninhabitability of the city, the attention to upper class needs, or a response to the requirements of industry and trade; nevertheless, the accumulated public and private investment has given rise to the impression that the city is a much better place to live than the countryside. Our objective is not to comment on the mechanism by which people are propelled from the country to the city, the explanation of which requires a complex set of causes and events. Rather, it is our intention to survey the situation seen through the recent empirical studies completed by specific researchers operating in their own environments.

We divide the economy in two ways. The first is based on residence and the second on the producing sector that generates the family income. Do the urban distributions, here compared for nine Latin American coun-

tries, reveal any common elements? As a group, do the distributions of the rural zones sustain the hypothesis that the rural distribution is, for various reasons, less unequal than the burgeoning urban zone? Many nations have become concerned with their urban poor. However, the nation's poor may not live in the city. Nor is it clear that any set of investment programs or redistribution policies for the city would help the poorest of any nation. Hence we are interested in locating the relative position of the urban population within the entire income structure and dividing the economy between agricultural and nonagricultural sectors.

In the opening sections, we present a novel graphic array of "social pyramids." Tapering gracefully upwards, these income pyramids appear more like antennae reaching from their earthly (earthy) base into the sky. Firmly grounded on a massive number of poor families, the "social pyramid" rises slowly at first and then swiftly with the increasing wealth of the fewer and fewer families. The "inverse pyramid" is an upright outstretched "umbrella" and depicts the share of income received by each population decile. Thus the high share of income to the topmost decile forms the roof, tapering down to a narrow share that is distributed to the poorest decile of the people.

In the fourth section of this study, measures of income distribution are applied to Latin American cities. This study is, by its nature, preliminary. The concentration of income would, we suspect, vary with certain basic characteristics of a city and not necessarily with the level of development or with per capita income. Bureaucratic cities or seats of national governments, such as Caracas, Bogotá, or Mexico, we suspect, may tend to greater homogeneity than primarily commercial cities such as Barranquilla and San Juan. Manufacturing cities such as Medellín, Monterrey, and São Paulo may tend to generate greater equality than, say, cities that depend on a major extractive industry, such as Maracaibo, or on the processing of agricultural products, such as Cali.

But none of these intriguing questions is explored here. Our task in the city studies is to collect the information, compare our measurements, and prepare the groundwork for further examination of the linkages of the city with its hinterland and their effects on the distribution of income. In the final sections, we undertake a detailed examination of some new data from eight Latin American cities, presented here for the first time. By studying the socioeconomic characteristics of families throughout the range of income, we hope to form an empirical picture of the people within the different strata and how they vary from city to city. Leaving the aggregate measures behind, we thus plunge within the social pyramid and examine its human cross section.

In concluding this survey, we shall summarize our major findings

and provide an application of our method to an analysis of the Andean Group. In this way, we hope to illustrate our conclusions in terms of concrete policy measures facing a set of countries and, in light of our analysis, examine the motivations and goals behind economic integration. We conclude on a note of speculation.

Before luring the reader into what may prove a tortuous route through the comparative study of Latin American income distributions, we wish to apologize for the almost brutal conciseness with which we are forced to present our summary findings. The literature dealing with the issues of income distribution is so vast, both in the classic and contemporary tradition of political economy, that no aspect of economic development and growth remains untouched by these controversies. Rather than present another analytic model of the process, we have opted to emphasize the *results* of these processes as they are being recorded across Latin America. These basic empirical facts of appearances and reality in themselves may prove useful to researchers who are engaged in the construction of theoretical models. And practitioners and policy makers may find our topographical survey of the continent helpful in evaluating the immense tasks facing those who wish to alter or alleviate what we seek here to record.

I. COUNTRYWIDE DISTRIBUTION

*Techniques of Measuring Income Distribution*¹

Each of the classic summary measures of income distribution represents far too incomplete an index, and any single measure fails to do justice to the underlying breadth and wealth of information. Moreover, summary measures yield contradictory results.² Another measurement technique that retains the descriptive profile of the entire array of the distribution is the comparison of income shares received by successive percentiles of recipients. Three well known summary measures—the Gini Ratio, coefficient of variation, and the standard deviation of the logs of income—together with the array of income shares will be applied to the different Latin American distributions to assist us in comparing inequality and changes during recent periods of time.³

Countrywide Comparisons Over Time

The data assembled in table 1A allow us to examine the time trends within four Latin American countries. The summary measures for the four countries generally indicate an increasing level of overall inequality

in comparing the earliest year for each economy with the latest.⁴ The lone exception to the universal rise in all the summary measures (columns 3–5) is the case of the coefficient of variation for Mexico that, in declining between 1950 and 1963, may reflect rather a change in the shape of the distribution.

The rise in the overall Gini ratios is consistent with several different patterns of changing income shares to quintiles of recipients. From the income shares presented in columns 6–13 of table 1A, two patterns may be distinguished from the trends. The first reflects the gain of the top 5 percent or 10 percent and the relative loss by the lower 90 percent, as in the cases of Argentina and Brazil. The second pattern, in which the bottom 60 percent and top 5 percent yield a portion of their income share to the growth of the middle class (61–96 percentiles), reflects the making of “bourgeois” society, as in Mexico and Puerto Rico. Even if the absolute income of the bottom 60 percent increased with economic growth (and in some cases it did not), our results indicate that the poorest groups benefit relatively less from so-called economic development. In all the cases examined here, the bottom 60 percent suffered relative losses.

A comparison of a wider cross section of income distributions suggests that the general economic level of each country may be related, however roughly, to the coefficients of income concentration (table 1B).⁵ Peru, Mexico, Colombia, and Brazil demonstrate both the lowest per capita income and the highest Gini ratios. At the other extreme, Argentina and Puerto Rico are characterized by the highest income levels and lowest inequality. The high levels of inequality in Peru, Mexico, Colombia, and Brazil reflect the greatest income shares possessed by the top 5 percent in each country and a corresponding downward pressure as exhibited by the comparably small income shares of the lowest 60 percent of the people. The more equal distributions of Puerto Rico and Argentina reflect the greatest spread of income downward to the poorest 60 percent of the population.

How can it be that the income shares to the richest are highest in the poorest countries? We hypothesize that in order for the top 5 percent to sustain a standard of living established by the middle class in the industrial countries, it must mobilize a proportionately larger share of its own country’s output. Inequality appears to be a necessary concomitant. Other observers have stressed an international consumption pattern “learned” or emulated by the upper classes. However, the connection is rarely stressed that the achievement of this pattern requires substantial pressure on the bottom 60 percent of their societies in order that the top afford an affluent if not indulgent level of living.⁶

II. URBAN-RURAL DISTRIBUTIONS⁷

The Urban and the Rural Separately

Two broad patterns of inequality emerge from the comparison of nine urban income distributions (table 2A). First, a more “polarized” distribution is characterized by a less-than-average share for the lower 60 percent and a higher-than-average share for the top 5 percent of recipients, as in the cases of Colombia, Mexico, Ecuador, and Peru. A second pattern that demonstrates the strength of the rising middle classes, here taken to be the 61–80 percentiles, is reflected in the urban distributions of Costa Rica, Puerto Rico, Venezuela, and Guatemala.

The relative equality within the rural zones of different countries may reflect the mixture of agriculture and commerce, rural industry and handicrafts, land tenure and cropping patterns (table 2B). The rural distributions for two small economies, Costa Rica and Puerto Rico, may demonstrate a relatively strong peasantry or agricultural proletariat and the absence of major latifundia, as illustrated by the higher-than-average shares to the bottom 60 percent. In Colombia and Mexico, the top 5 percent in the rural areas receive the largest shares of all the countries.

Urban-Rural Comparisons

The greater range and heterogeneity of urban activities, we hypothesize, may lead to greater inequality within the urban zone as compared to the more homogeneous rural activity. However, if significant dualities exist in the rural zone as well, especially in the form of enclave mining and large-scale plantations, considerable inequality may be observed in both the rural and urban zones.

In comparing the urban and rural distributions for six countries, we note that the mean income of the urban zone ranges from nearly two to three times the rural mean (table 3, column 2).⁸ The ratio of the Gini coefficients (column 3) indicates greater inequality within the urban zone for all cases except Colombia, 1964. Comparison of the other measures (columns 8 and 9) suggests even less unanimity on the question of urban-rural inequality. Because both the means and dispersions of the regional income distributions differ widely, we expect considerable overlapping, especially in the lower tail of the urban with the rural. That this is actually the case will be shown below.

Despite the overlapping of urban and rural distributions, one conclusion is clear: The concentration of income has always resulted in a net transfer of income from the rural to the urban areas. Put more moderately, the urban population, taken as a whole in every case, receives

a correspondingly greater income share than does the rural, indicating greater relative pressure on the rural populace. For the sample average, slightly more than half of the people are urban and claim two-thirds of the national income (table 3, columns 4–5). The most extreme case is Peru in which two-thirds of national income is held by only 43 percent of urban individuals. The income share to the bottom 60 percent in the urban zone is, on the average, 86 percent of the corresponding rural share, while the income share for the urban top 5 percent is 12 percent higher on the average than the corresponding rural share.

The trite observation that the bottom 60 percent of the rural zones receive a slightly higher income share than the urban poor is actually of little consolation. We would, in fact, expect this to be the case, especially in view of the differences in mean incomes (column 1). Certainly in the interests of sheer survival, the bottom portion of the rural population *must* receive a higher share of a much smaller *empanada*.

Where do the urban and rural groups lie with respect to each other? In the most extreme of dualities, all the poor would reside in the backward hinterland and the rich in the modernized city. Alternatively, we might expect the rural area itself to be a mixture of modern, export-oriented plantations and subsistence farms, and the city to be a mixture of modern and traditional as well. If poverty were evenly distributed throughout the urban and rural areas, we would expect both the urban and rural share in each quartile of the countrywide distribution to be equal to its share in the countrywide population. But in all the observed cases, however, we note that rural people dominate the bottom half of the distribution, while urban people dominate the top half (table 4).

To summarize, we cannot overemphasize the overlapping nature of the urban and rural distributions. To characterize the poor as completely rural is inaccurate. Here we wish to emphasize merely the overwhelming dominance of rural poverty that is striking in all countries we have examined. Only a fraction of each nation's poorest resides in its cities, although these may be the most visible.

A novel graphic presentation dramatically highlights the rural location at the base of the overall income pyramid. In figure A, we note the predominance of the rural masses among the lowest income intervals and their almost complete exclusion from the ethereal ranges in the case of Colombia. Few rural individuals reach the top of the national antenna. The "inverse pyramid" (figure B) demonstrates the split in income shares between urban and rural zones for each decile of recipients. From the umbrella-shaped graph, we note for Colombia that the top decile receives 43.9 percent of total income, but the rural recipients within that decile consist of but a small "core" fraction (say 4 percent) of that income. The rural umbrella (shown by the shaded region) is more constricted.

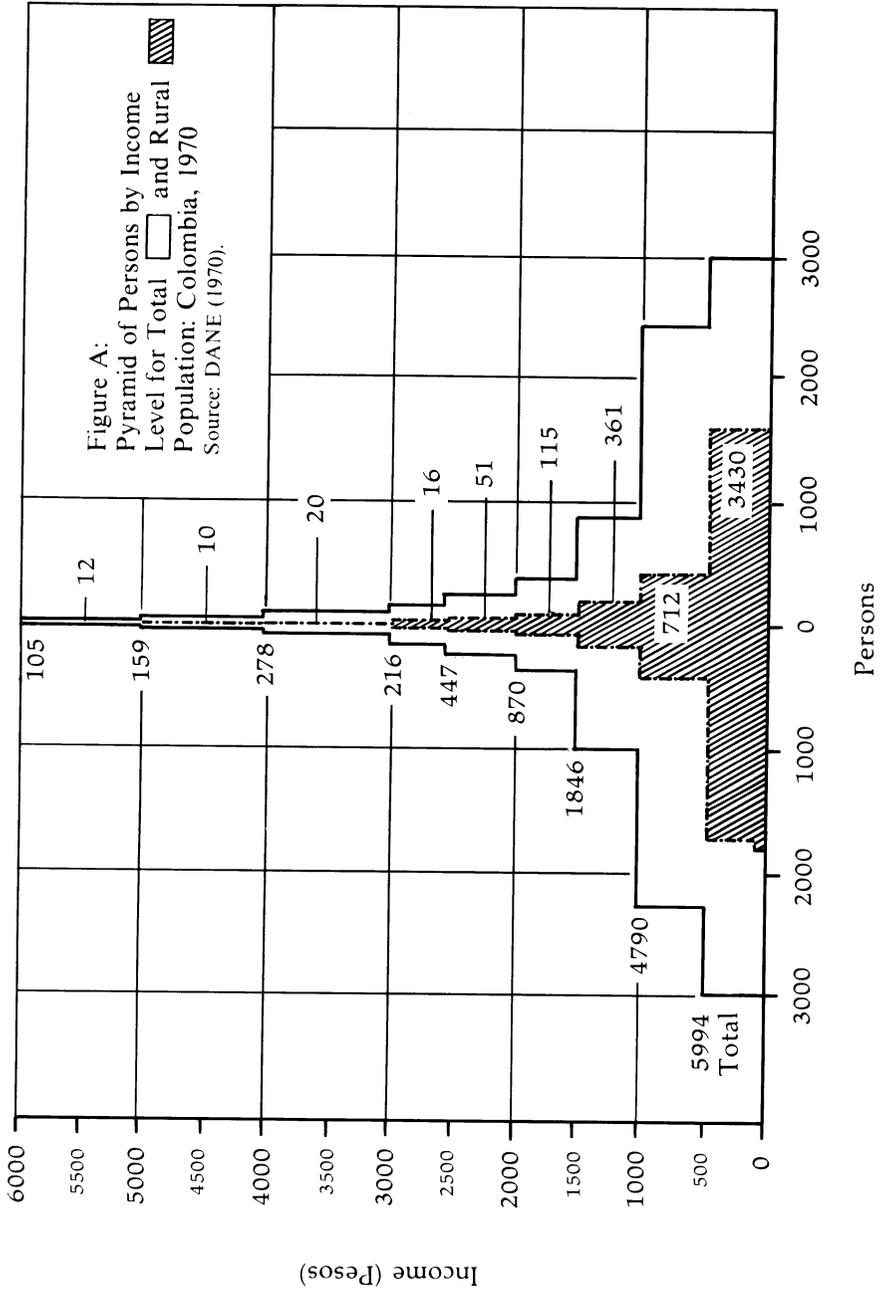
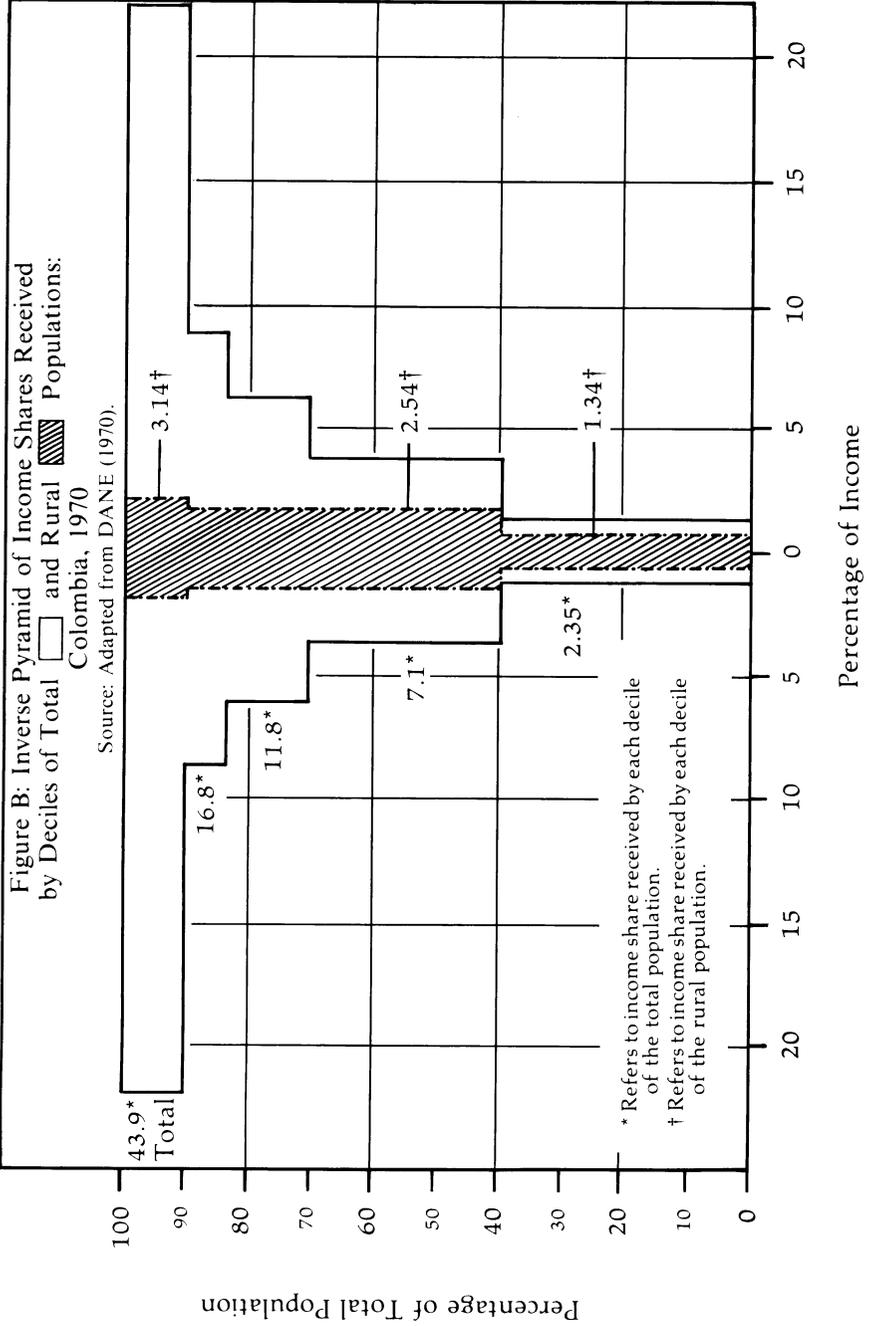


Figure B: Inverse Pyramid of Income Shares Received by Deciles of Total and Rural Populations: Colombia, 1970



III. AGRICULTURAL-NONAGRICULTURAL DISTRIBUTION

For a group of countries we are able to separate the income distribution generated by the agricultural and the nonagricultural sectors. Our interest in isolating agriculture stems from its size, first, as the single most important sector whose profile dominates the countrywide distribution. As development occurs, agriculture declines in relative importance, and the countrywide distribution increasingly reflects the disparity between the two sectors and the degree of inequality in the nonagricultural sector.⁹

Should we expect greater overall equality with the decline of agriculture? Our expectation depends on the growth of the more unequal sector and the spread in the averages. Even if the growing nonagricultural sector itself is more equal—and in some cases it might be—its growth may result in greater overall inequality due to the increasing divergence in productivities of the two sectors.

The characteristic distribution attributed to agriculture, however, is usually held to be more equal; the spread of poverty is more even and the range of incomes relatively narrow. However, in economies where modern and mechanized plantations, together with the concentration of ownership in large units, coexist with small-scale peasant agriculture, these heterogeneous forces may tend to create a society in which agriculture is a greater source of inequality than manufacturing or commerce. Without the modern component in farming, the range of incomes in the agricultural sector is likely to be much below that of the urban sector. In this case, we would expect to find a more homogeneous but poor peasantry.

For all the cases in our sample, the average income in agriculture is lower than the nonagricultural average. The averages for each of the three summary measures formed from ten observations (table 5, columns 4–6) do conform to the conventional wisdom of greater equality within the agricultural than within nonagricultural populations. The exceptions to these overall averages of the Gini ratio and the standard deviation of the logs are the observations for Argentina (both years), Brazil (1970), and the U.S., reflecting perhaps the impact of intensive mechanization in all three countries.¹⁰

On the average, the bottom 80 percent of recipients in agriculture receive a greater share of that sector's income than do the bottom 80 percent in nonagriculture, again due to absolute poverty of the former sector. The uppermost deciles in the nonagricultural sectors receive greater income shares than do the corresponding deciles in agriculture (table 5, columns 7–11), which may reflect the growth of entrepreneurial incomes in commerce and industry. The notable exceptions to these averages are

the nonagricultural sectors in Argentina and the U.S. that both distribute larger shares of income to their poorest and smaller shares to their richest quintiles.

Taking each country as a whole, is it true that the poorest individuals are engaged in agriculture? Since, on average, 29 percent of the total population is engaged in agriculture, a homogeneous distribution of poverty would imply that 29 percent of each quartile be engaged in agrarian pursuits (table 4B). However, the actual distributions arranged by quartiles of the total population reveal that, on the average, about half of the individuals in the poorest quartile work in agriculture, while an average of only 12 percent of the highest quartile are supported in agriculture.

We conclude that although the overall population shares in agriculture vary among countries, the relative position of each agricultural labor force within its respective income pyramid is comparatively uniform: 67–79 percent of a country's agricultural population fall in the poorest half compared to 7–24 percent which fall in the top quartile.

IV. COMPARISONS AMONG CITIES

In Latin America intense and rapid urbanization has emerged with industrialization and economic growth. The city, as the focus of modern production and the residence of a wide range of life styles, lies on the fault line of acute social conflict. The concentration of cities brings people from a wide spectrum physically close together, accentuating social differences and agglomerating social friction. Awareness of social inequities may be expressed in a wide range of phenomena, from petty theft to mass political mobilization. In any case, conflict between classes may be rooted in city inequality, and the route to social harmony may be sought through social change or redistributive mechanisms.

The ranking of the fourteen cities reveals a cursory inverse relationship between the level of per capita income of the city and the concentration indices (table 6). As measured by the Gini ratio, the most unequal cities are Asunción and Monterrey; the most equal, Caracas and San Juan.

The profiles of urban distributions suggested in the quintile shares (columns 6–11) may prove a useful first approximation for distinguishing two broad types of cities. The "bourgeois" city may be defined by higher-than-average income shares to the 41 to 80 percentiles, and lower-than-average income shares to the uppermost 5 percent, as in Guatemala, San Juan, and Caracas. The "polarized" city is characterized by a lower-than-average share to the bottom 60 percent and a higher-than-average share for the top 5 percent, as in Cali, Medellín, Monterrey, and Asunción.¹¹

How do we explain the differing levels of inequality among

cities? The next phase of our work requires that we study other variables that contribute to the underlying causes of inequality. How does the share of manufacturing, trade, and in-migration affect the distribution? What are the institutions that set a lower floor on the standard of living tolerated by the city fathers or the lumpen masses? Is it true that high altitude cities are generally poorer? While several theories of rural-urban migration are statements about the structure of urban income, none is theoretically satisfactory or empirically tested. Hopefully, these foundation statistics will allow us to proceed in this direction.

V. THE RICH AND THE POOR IN THE URBAN ECONOMY

In section II, we attempted to place the urban and rural economies within the context of the countrywide social pyramid and to measure the overall inequality within the urban economy. Here we examine in greater detail the family characteristics of an urban subsample that are drawn from eight cities of four Latin American countries and that constitute the largest portion of their respective urban populations.¹² Having sorted the population initially into quartiles according to the level of family income, we then examined the distribution of families by income and by seven socio-demographic characteristics.

Each characteristic is first distributed across the income quartiles to compare the actual share of that trait with a hypothetical random distribution. For example, if, in the case of Colombia, families with 1–2 members (trait 2), were distributed randomly across the full income range, we would expect both the bottom and top quartiles (the poorest and richest 25 percent) also to contain 25 percent of the small families (table 7, column 5). However, the actual distribution in Colombia reveals that, in fact, the poorest quartile of families contains 45 percent of small families and the richest but 12 percent.

Another way of slicing these bivariate distributions is to focus on each quartile and compare the distribution of traits across the quartile to the distribution for the overall population (table 8). For example, in the case of Colombia, of all the families in the lowest quartile, 11 percent are families of 1–2 members, while 13 percent are families with greater than nine members (columns 9 and 12). Both these shares contrast to the distribution of family sizes in the overall urban Colombian sample in which 6 percent are of 1–2 members and 20 percent are composed of 3–5 members. While the significance of such differences is subject to precise statistical tests, the observations presented here, however crude and preliminary, offer the first detailed quantitative glimpse of the comparative Latin American urban scene.¹³

Distribution of Families by City or Stratum

By virtue of history, investment, migration, or many other reasons, the poorest families of a nation may predominate in certain cities or zones. A housing program thus aimed at helping the "poor" in a relatively wealthy city may do so at the cost of ignoring the very poorest urban citizens who, in fact, may be found predominantly in another town.¹⁴ Only if the distribution of families across the quartiles for a given city or stratum (table 7, trait 1) is identical to the overall distribution would such a housing program, for example, affect comparable classes equally.

In the case of Colombia (table 7, columns 1–4) the average income for Bogota is 18 percent higher and for Barranquilla 11 percent lower than the overall four-city average. Nevertheless, the dominance of families in the Colombian cities that belong to quartiles different from the overall pyramid is not significantly great. However, in the case of Lima, residential strata have been treated as zones within the urban pyramid and demonstrate an expected relationship of strata and income.¹⁵ Of all families living in the newly settled neighborhoods (*Pueblos Jóvenes*), 33 percent fall within the bottom quarter of the overall pyramid (table 7, column 4) and only 5 percent in the top quartile. The distribution of the lowermost stratum, *Lima Baja*, is similar to that of the *Pueblos Jóvenes*, with the exception that 12 percent of the *Baja* neighborhood belong to the highest quartile. In Venezuela, the higher average income of Caracas relative to the total urban average indicates great differences between the two cities.¹⁶ A full 45 percent of the families living in Maracaibo fall in the lowest quartile of the sample compared to 18 percent in Caracas, and only 11 percent in Maracaibo compared to 30 percent in Caracas fall in the top quartile of Venezuela's total urban distribution.

Size of the Family and Number of Income Earners

Two important elements must be considered in comparing distributions of family income: Family size and the number of income earners.¹⁷ In the case of Colombia, we have noted that families with only 1–2 members tend to be overrepresented (45 percent) in the lowest quartile and underrepresented (12 percent) in the highest quartile of the pyramid (table 7, column 5). A similar pattern is also observed in the cases of Asunción, Lima, and the Venezuelan cities: Nearly half of the small-sized families fall in the bottom quartile and only 8–9 percent of small families fall in the top.

Some of the inequality of family income may be explained by the presence in the household of many earners. On the other hand, this

association might run in the opposite direction, especially if the survival of some of the poorest groups depends on the joint contribution of several earners. In the Colombian case (table 7, trait 3), families with three or more earners are concentrated in the top quartile and are underrepresented in the bottom quartile. The case is similar in Asunción with the exception that families with four or more earners are underrepresented in the second and third quartiles.

In the Peruvian case, the “polarity” of income and number of earners is also evident: 12 percent of the families with three earners fall in the bottom quartile and 36 percent fall in the third quartile. Of Limeño families with four or more earners, the effect is even more exaggerated: The top two quartiles are overrepresented by families with many earners, while the bottom two are underrepresented.

Despite these observations regarding the upper tail of the distribution of earners, no pattern emerges from the bulk of the families with one or two earners, and it appears that broad ranges of inequality cannot be ascribed to family composition. The few families with many earners as well as their distribution throughout the population hardly explain the gross inequality of the overall social pyramid.

Principal Source of Income

Government policies that affect salaries, rents, or the price level will have a differential impact on families depending on the significance of different income sources to total family income. In Colombia, for example, families that rely on salaries for their main income source are distributed across all the quartiles (table 7, trait 4), while 37 percent of all families whose major source consists of returns on capital (rent, investment, etc.) are, quite expectantly, found in the top quartile. A similar distribution can be observed for Peru and Venezuela. Except for the distribution of the self-employed in Paraguay (who tend to be overrepresented in the top quartile), both “salaried” and self-employed families tend to be spread rather uniformly throughout the distributions of all the countries. Thus, we expect that aggregate policies aimed at changing all salary levels would affect *all* parts of the social pyramid.

Age of Family Head

The age of the head of the family may be a measure of the relative position in the life cycle of the family, although a titular head may preside over an extended family of several generations. In all but a few cases, the quartile distribution of families by age of the head is similar to the overall popula-

tion. In Lima (table 7, trait 5), the lowest quartile is overrepresented and the highest quartile underrepresented among young families, and in Venezuela, older families predominate among the first quartile and are sparse in the third quartile of that distribution. Within the entire bottom quartiles of both Colombia and Lima, young families do represent a higher share than their role in the overall population (table 8, trait 5). Thus, in Colombia 41 percent of the bottom quartile are young families, compared to 31 percent in the entire population, and 34 percent of the lowest quartile in Lima are young families compared to 24 percent in the entire city. Similarly, in Lima and Venezuela, the top quartiles are underrepresented in their share of young families relative to the overall sample.

Occupation of the Head of the Family

The occupation of the household head may help to identify a family's location in the income pyramid. For example, more than half of all professional families (which includes managers and technicians) in all four urban samples fall in the top quartile (table 7, trait 6). In Colombia, 76 percent of professionals; in Asunción, 54 percent; 62 percent in Lima; and 64 percent in Venezuela fall in the topmost quartile.

By contrast, white-collar workers are relatively evenly distributed among the quartiles, while blue-collar families tend to be overrepresented among the lower quartiles, as in Asunción and Lima, or underrepresented in the top quarter in all four. Those families with a head in personal services ("others") dominate the lowermost quartile in Colombia and Asunción and especially in Venezuela, where 51 percent of this occupational group falls in the poorest quartile.

Formal Education of the Head of the Family

The rough association of income and education may be tested by distributing the level of schooling of the family heads among the quartiles of income (table 7, trait 7). In all cases, those families with none or some primary schooling fall in the lowest quartile and a relatively small share fall in the top quartile. The relationship becomes reversed for families with secondary or university education. In most cases, they are underrepresented in the bottom and overrepresented in the top quartile. It does appear that those families with well-schooled heads are, with more certainty, assured a higher level of income, but the data do suggest a fluid mixing of schooling levels among wide income ranges.

Sectoral Activity of the Head of the Family

The sectoral affiliation of the family head may help to pinpoint a family's location in the social pyramid. However, the three sectors distinguished here (table 7, trait 8) are each relatively heterogeneous. The manufacturing sector, for example, includes both urban handicrafts and modern industry, and commerce includes both street vendors and employees of modern establishments. Nevertheless, the commercial sector is over-represented and manufacturing understated in the topmost quartile of Asunción, for example. Only the government sector affiliation, with its broad ranges of salaries and occupations, fails to distinguish between different quartiles.

Summary

How can we summarize these "slices" through the social pyramid? The pyramid is so diverse that no single characteristic alone can adequately discriminate between rich and poor families. The selection of those traits associated with more than two-thirds of any subgroup of families in either half of the income distribution (table 9) helps to characterize the levels of the social pyramid within each country.

Is it possible to isolate several predominant traits that characterize the lower half (quartiles I and II) as significantly different from the upper half for all the urban populations? We summarize some findings from tables 7 and 8 in table 9, indicating those traits that are outstanding for at least two-thirds of the poor or rich people and reproducing the share of these families in the total population.¹⁸ For example, in the case of Colombia, 70 percent of all small families (that compose only 6 percent of the population) may be characterized as poor, while 73 percent of families with secondary schooling (27 percent of the population) are classed in the top income groups.

In Asunción, low income families may be characterized as small and poorly schooled, while families with three income earners or whose head belongs to the professional class or is university-educated, is more likely to be rich. Each of these latter subgroups represents from 14 to 16 percent of the entire Asunción population, and we expect obvious overlapping between traits.

In Lima, nearly two-thirds of the families who live in the Pueblos Jóvenes and in Baja Lima are considered poor, and together these compose 65 percent of all Lima families. Two-thirds of those families headed by young persons, by blue-collar workers (operatives and artisans), or by persons with primary or no schooling, all fall in the poorest half. At the

top end of the pyramid, rich families are characterized by three or more earners, a professional head of household, or by a head with some university schooling. In Venezuela, poor families tend to reside in Maracaibo, are small in size, work at blue collar or service jobs, or have no primary schooling.

In summary, three characteristics are found to distinguish the top and bottom halves of all four city samples. The one characteristic of poor families that appears to be significant for all the cities is the *absence* of schooling of the head (although these families represent only a fraction of the total population with the exception of Venezuela). At the other end of the scale, we conclude that more than 80 percent of all the families with a head who is either engaged in a managerial occupation (trait 6) or who is university educated (trait 7), fall in the richer half of the social pyramid.

The difficulty in isolating a group of traits that accurately characterize specific quartiles may stem from the single-dimensioned approach applied here. We have found each of our selected sociodemographic traits to be distributed to families throughout the four quartiles. No single trait serves as a sure identifier of a family's stratum, although in a probabilistic sense, some traits do tend to distinguish the rich from the poor. Our superficial survey of several sides of the social pyramid has brought us in a full circle back to its base, the starting point of poverty. In traversing the pyramid's face, we have scarcely penetrated its inner construction. This task is the object of our further collaborative investigation.

VI. CONCLUSIONS

Findings

We have observed two patterns of redistribution during growth: First, the transfer of income shares from the bottom 90 percent to the top 10 percent; second, the "twisting" of the distribution away from the bottom-most 60 percent and topmost 5 percent toward a greater share for the middle 81–95 percentiles. Whichever the pattern of "redistribution" during growth, one fact is clear from these findings: So-called development implies a loss of relative shares to the bottom 60 percent. The only remaining question to be answered is simply which part of the top third benefits from the majority's loss—the upper middle or the uppermost class? In comparing countries, we found a wide range in income concentration from Peru, Mexico, Brazil, and Colombia with the highest inequality and Costa Rica, Argentina, and Puerto Rico with the lowest inequality. The top income classes of the poorest countries command larger income shares than the corresponding groups of the richer nations.

With regard to urban and rural zones, we have noted that the average income in the urban zone is more than twice the rural mean, uncorrected for cost of living differences. The overall measures of inequality are inconclusive with regard to relative dispersion in the urban and rural zones. In view of our findings that in all cases the income share claimed by the urban sector exceeds its population share, we conclude that the process of growth and of income concentration appears to have resulted in a net transfer of income from the rural to the urban areas (section II). Do the nation's poor populate the urban zone? On the average, the composition of the poorest quarter of a country is 69 percent rural, while the richest quartile is composed of 25 percent rural population.

If we consider the agricultural and nonagricultural bifurcation, the mean income in agriculture is one-half the nonagricultural average and relative intrasectoral inequality varies between countries. On the average, the agricultural sector comprises 29 percent of the economically active population and forms 49 percent of the bottom quartile and 12 percent of the top quartile. Although the population share in agriculture varies among countries, the relative position of each agricultural sector in its income pyramid follows a more uniform pattern: 67 to 79 percent of individuals belong to the bottom half, while only 7 to 24 percent reach the top quartile.

We have observed, at first glance, two types of city distributions: "Bourgeois," characterized by an emerging middle-class, and the "polarized" city, with higher concentration of income in the top 5 percent and a lower share to the lower income groups. In our traversal of urban social pyramids constructed from ECIEL budget data on eight Latin American cities, we found the educational level and occupation of the family head to be the major characteristics (among eight analyzed) that most clearly distinguish rich from poor families (section V). Families with heads who are managers or professionals or who are university educated fall almost entirely in the upper half of the income pyramid. By contrast, the uneducated fall mainly in the lower half.

A Redistributive Exercise

The dramatic effect of income redistribution to the lower classes can be demonstrated simply by a mental experiment of transferring income directly from the top 5 percent. By how much would the income share—the standard of living—fall of that top 5 percent in order to double the standard of living of the bottom 40 percent? In the case of Peru, 1961, the lower 40 percent receives 8 percent of income while the top receives 40 percent. Doubling the lower class's share to 16 percent of income would

reduce the top by merely 20 percent. Similar magnitudes hold for Colombia and Brazil.

All this is not to say that such a path towards increasing the standard of living of the lower class is feasible. If anything, this type of calculation merely indicates the degree to which the topmost share is likely to resist any attempt to increase directly the standard of living of the bottommost share.¹⁹ If one compares the income redistribution strategy with the alternative—simple economic growth—the possibility of doubling income in the *future* implies both the necessity and the costs of waiting. For instance, growing at 3 percent per year, it would require twenty years for a country to double its income. Thus our position stands opposed to the conventional belief that prompt redistribution is in error because the result would only “redistribute poverty” among the poor; an empty, nonsense statement without empirical content.²⁰

Another Redistributive Exercise: The Andean Group

As a more concrete example of the application of our method, it seems appropriate to examine our findings for the Andean Group, a subset of countries that are implementing policies towards economic integration. The situation of the countrywide inequality is known for three of the six countries (Chile, Colombia, and Peru) that together represent two-thirds of the total population in the Andean Group (see table 1B). Weighted by population, the top 10 percent of these three countries receives 45 percent of their national income and thus determines a large portion of internal demand. In terms of sheer purchasing power alone, it is this group from which the “need” for economic integration emanates. Despite the skewed distribution in each country, the shallowness of absolute demand severely limits the scale of efficient production of durable consumer goods in any single national market. The techniques of production for these goods, developed in the industrialized countries, require a more substantial market than that guaranteed by the upper classes of a single Andean country.

The widening of the market for domestic production of these goods may be pursued by several routes. First, income may be even further concentrated in the top class, compressing the lower groups and accentuating an already unequal distribution. However, this may not be too practical; the Gini coefficients for these three countries are already above the Latin American average. Alternatively, the production techniques can be totally redesigned, the utility of these goods questioned, and their need forestalled or satisfied in some other way. This may be the path of a country in effect quarantined from the impact of North American

consumerism. Third, if the country does persist in seeking self-sufficiency in satisfying these needs, then national markets may be consolidated by combining the topmost groups of neighboring pyramids, permitting them to benefit from the scale effects of integration. Thus one objective of the Acuerdo de Cartagena is the reduction of the cost of those articles that fill the basket of the upper class, allowing emulatory consumption to proceed unencumbered by inefficient, small-scale technique. At best, some benefits of scale production may "trickle down" to the lowest groups.

Concluding Remarks

We reject the notion that our findings of trends or tendencies of the past imply a necessary path for other nations seeking to traverse similar terrain. A country may seek to reduce the great disparity that we have observed between rural and urban areas and refuse to tolerate the historical poverty of agriculture. Equalization within the rural sector is meaningless in the face of widening sectoral averages. Conventional policies, such as subsidies and public expenditure in rural zones may, at best, retard the deteriorating position of agriculture. The transfer of income from rural to urban zones that we have observed stems from practices of rural neglect, high levels of urban investment, and state attention to infrastructure, energy, and industry. Conventional policies trying to reverse these practices may not sustain rural incomes, and even the gains from direct redistribution, such as land reform, may be undermined by other ongoing market policies.

Finally, the fragmentation of the poor and their dispersion geographically throughout the economy implies that they are unlikely to be reached by conventional compensatory policies. Policies designed to help these fragmented groups may be politically unappealing. The only effective way of raising rural standards may be by directly changing the rules by which society rewards its members and *validates* rather than erodes a more equal distribution of income.

T A B L E 1 A. Time Series of Countrywide Size Distribution of Income

Country [Recipient Unit]	Year (1)	Per Capita Income 1960 U.S. \$ Equivalents (2)	Gini Ratio (3)	Coefficient of Variation (4)	S.D. Logs (5)	INCOME SHARE TO PERCENTILE OF RECIPIENTS									
						0-20 (6)	21-40 (7)	41-60 (8)	0-60 (9)	61-80 (10)	81-90 (11)	91-95 (12)	96-100 (13)		
1. Argentina [H]	1953	786	.41	1.09	.64	7.5	10.7	13.8	31.9	18.1	13.2	9.6	27.3		
2. Argentina [H]	1959	832	.45	1.29	.70	6.9	9.5	12.2	28.6	16.8	12.8	10.1	31.8		
3. Argentina [H]	1961	927	.42	1.18	.67	7.0	10.4	13.1	30.5	17.9	12.7	9.6	29.3		
4. Brazil ^a [E]	1960	289	.52	1.24	1.17	2.5	7.9	12.4	22.7	20.4	16.4	11.6	28.9		
5. Brazil ^a [E]	1970	383	.64	1.32	2.37	.1	4.0	12.5	16.5	16.9	15.0	13.0	38.6		
6. Brazil ^b [E]	1960	289	.49	1.18	.94	3.5	8.1	13.8	25.4	20.3	14.7	11.8	27.9		
7. Brazil ^b [E]	1970	383	.56	1.49	.99	3.2	6.9	10.8	20.8	16.9	14.4	13.0	34.9		
8. Mexico [H]	1950	397	.53	2.50	.72	6.1	8.2	10.3	24.6	15.6	10.8	9.0	40.0		
9. Mexico [H]	1957	488	.55	1.65	.88	4.4	6.9	9.9	21.2	17.4	14.7	9.7	37.0		
10a. Mexico [H]	1963	542	.55	n.c.	n.c.	4.2	6.9	9.7	20.8	15.5	12.7	11.6	38.3		
10b. Mexico ^c [H]	1963	542	.54	1.26	.97	3.5	6.6	11.1	21.2	19.4	17.4	13.4	28.7		
11. Puerto Rico [H]	1953	502	.42	.97	.75	5.6	9.8	14.9	30.3	19.9	16.9	9.6	23.4		
12. Puerto Rico [H]	1963	842	.46	.96	.84	4.5	9.2	14.1	27.9	21.5	17.0	11.7	22.0		
13. U.S. [CU]	1955-7	2,397	.36	.78	.68	6.2	12.6	16.2	35.0	21.9	14.6	9.2	19.4		
14. U.S. [CU]	1960-2	2,837	.36	.72	.70	5.9	12.1	16.5	34.5	22.4	15.1	12.0	16.1		

B. Cross Section of Countrywide Distributions

1. Argentina [H]	53, 59, 61	848	.43	1.19	.69	7.1	10.2	13.0	30.3	17.6	12.9	9.8	29.5
2. Brazil ^a [E]	60, 70	336	.58	1.28	1.77	1.3	6.0	12.5	19.6	18.7	15.7	12.3	33.8
3. Brazil ^b [E]	60, 70	336	.53	1.34	.97	3.4	7.5	12.3	23.1	18.6	14.6	12.4	31.4
4. Chile [E]	1967	660	.50	1.09	.91	3.9	7.7	12.4	24.0	19.5	16.3	18.1	22.7
5. Colombia ^d [E]	1964	364	.58	1.50	1.09	2.6	6.2	10.3	19.1	17.9	15.3	12.2	35.6
6. Costa Rica [E]	1971	625	.37	.80	.64	7.0	12.3	13.8	33.1	21.5	14.9	10.3	20.1
7. Mexico [H]	50, 58, 63	476	.54	1.47	.86	4.9	7.3	9.9	22.2	16.1	12.7	10.1	38.4
8. Peru [E]	1961	353	.62	1.70	1.10	2.3	5.6	9.4	17.0	16.6	14.0	12.0	40.1
9. Puerto Rico [H]	53, 63	672	.44	.97	.80	5.1	9.5	14.5	29.1	20.9	16.9	10.7	22.7
10. U.S. [CU]	55-7, 60-2	2,617	.36	.75	.69	6.1	12.4	16.4	34.8	22.2	14.9	10.6	17.8
Average (excluding U.S.)		484	.51	1.26	.94	4.2	8.0	12.0	24.2	18.6	14.8	12.0	30.4

Sources (in order, lines 1-13): 1, 12, 15, 14, 27, 7, 16, 20, 19, 28, 24, 25, 13.

[H] = Households, [E] = Economically active population, [CU] = Consumer unit.
n.c. = Not calculable from available information.

^aBased on Fishlow estimates.

^bBased on Langom estimates.

^cBased on Banco de México.

^dBased on Urrutia.

TABLE 2 Measures of Income Distribution by Zones
A. Urban Zones

Country	Year	Gini	C.V.	S.D. Logs	INCOME SHARE PERCENTILES OF RECIPIENTS				
					0-60	61-80	81-90	91-95	96-100
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Chile	1967	.48	1.04	.59	25.4	20.0	16.1	17.3	21.0
Colombia ^a	1964	.55	1.32	1.20	21.7	19.3	15.6	12.8	30.5
Colombia (4 Cities)	1967	.47	1.05	.83	25.9	19.2	16.0	17.4	21.3
Costa Rica	1971	.37	.76	.66	32.0	24.4	14.4	11.3	17.7
Ecuador	1968	.51	1.26	.95	24.5	18.0	14.6	13.5	29.2
Guatemala (5 Cities)	1971	.42	.90	.13	29.9	21.3	16.3	11.5	20.8
Mexico	1963	.52	1.63	.96	22.6	20.4	17.2	13.2	26.3
Peru	1961	.49	1.13	.89	24.6	20.7	15.6	12.9	26.0
Puerto Rico	1953	.45	1.02	.83	27.7	21.7	14.9	11.5	24.0
Puerto Rico	1963	.43	.90	.85	28.5	23.0	16.5	11.4	20.4
Venezuela (2 Cities)	1970	.44	.89	.82	27.2	22.1	17.9	14.9	17.6
Average		.47	1.04	.85	26.4	20.9	15.9	13.4	23.1

B. Rural Zones

Chile	1967	.47	.09	.81	26.4	18.7	14.1	18.2	22.4
Colombia ^a	1964	.56	.68	.91	21.9	14.1	13.0	10.8	40.1
Costa Rica	1971	.30	.53	.57	39.9	19.0	14.9	11.1	15.0
Mexico	1963	.47	1.10	.61	26.3	19.5	15.4	12.8	25.6
Peru	1961	.48	1.00	.92	25.5	21.5	17.4	14.0	21.4
Puerto Rico	1953	.33	.65	.60	36.6	22.8	14.3	11.2	14.9
Puerto Rico	1963	.41	.86	.86	31.6	21.8	15.5	10.8	20.1
Average		.43	.70	.75	29.7	19.6	14.9	12.7	22.8

Sources: 14, 8, 9, 27, 7, 22, 16, 28, 24, 25.

^aBased on Urrutia.

T A B L E 3 Comparison of Urban-Rural Distributions

Year (1)	Mean Income (2)	Gini Coeff. (3)	URBAN SHARES		INCOME SHARES RECEIVED BY				S.D. Logs (8)	C.V. (9)	
			% of People (4)	% of Income (5)	Lowest 60% (6)	Top 5% (7)	Urban Rural	Urban Rural			Urban Rural
Chile											
1967	1.94	1.02		71.4		.96	.93	1.03	.96		
Colombia ^a	1.71	.98	60.8	61.6		.99	.76	1.32	.79		
1970	2.31	1.28	48.4	78.8		.88	1.26	1.29	1.27		
Costa Rica	2.15	1.22	61.6	60.6		.57	1.17	1.16	1.20		
1971	2.15	1.22	41.7	60.6		.86	1.02	1.18	.84		
Mexico	2.31	1.09	55.8	74.4		.96	1.21	.96	1.13		
1963	2.67	1.03	42.8	66.7		.75	1.60	1.37	1.57		
Peru	1.81	1.37	49.5	64.0		.90	1.01	.98	1.04		
1961	1.81	1.37	48.6	64.2							
Puerto Rico	1.90	1.06									
1953	1.81	1.37									
1963	1.90	1.06									
Average	2.10	1.13	51.1	67.7		.86	1.12	1.16	1.10		

Sources: Same as table 2

^aBased on Urrutia.

^bBased on Departamento Administrativo Nacional de Estadística (DANE)

TABLE 4 A. Countrywide Quartiles Divided into Rural and Urban Sectors

Country and Year	Rural/Urban Population in Each Quartile				Countrywide Population Share
	I (1)	II (2)	III (3)	IV (4)	
<i>Rural</i>					
1. Colombia, 1964 ^a	52	92	34	29	52
2. Colombia, 1970 ^b	57	49	34	14	38
3. Costa Rica, 1971	83	69	52	28	58
4. Mexico, 1963	67	54	36	21	44
5. Peru, 1961	89	69	43	28	57
6. Puerto Rico, 1953	63	59	51	29	51
7. Puerto Rico, 1963	69	61	47	29	52
8. Average	69	65	42	25	50
<i>Urban</i>					
9. Colombia, 1964 ^a	48	8	66	71	48
10. Colombia, 1970 ^b	43	51	66	86	62
11. Costa Rica, 1971	17	31	48	72	42
12. Mexico, 1963	33	46	64	79	56
13. Peru, 1961	11	31	57	72	43
14. Puerto Rico, 1953	37	41	49	71	49
15. Puerto Rico, 1963	31	39	53	71	48
16. Average	31	35	58	75	50

Table 4 (cont.)

<i>B. Countrywide Quartiles Divided between Agricultural and Nonagricultural Sectors</i>					
<i>Country and Year</i>	<i>Rural/Urban Population in Each Quartile</i>				<i>Countrywide Population Share</i>
	<i>I</i> (1)	<i>II</i> (2)	<i>III</i> (3)	<i>IV</i> (4)	
<i>Agricultural</i>					
17. Argentina, 1953	45	11	10	18	21
18. Argentina, 1961	36	11	8	9	16
19. Brazil, 1970 ^c	70	62	33	11	44
20. Chile, 1967	40	35	13	8	24
21. Colombia, 1970 ^b	51	44	30	12	34
22. Mexico, 1963	68	49	31	23	43
23. Puerto Rico, 1953	49	30	30	13	30
24. Puerto Rico, 1963	30	21	10	6	17
25. U.S., 1957–59	33	7	3	3	11
26. U.S., 1960–62	26	6	3	3	10
27. Average	49	33	21	12	29
<i>Nonagricultural</i>					
28. Argentina, 1953	55	89	90	82	79
29. Argentina, 1961	64	89	92	91	84
30. Brazil, 1970 ^c	30	38	67	89	56
31. Chile, 1967	60	65	87	92	76
32. Colombia, 1970 ^b	49	56	70	88	66
33. Mexico, 1963	32	51	69	77	57
34. Puerto Rico, 1953	51	70	70	87	70
35. Puerto Rico, 1963	70	79	90	94	83
36. U.S., 1957–59	67	93	97	97	89
37. U.S., 1960–62	74	94	97	97	90
38. Average (excluding U.S.)	51	67	79	88	71

Sources: 1, 12, 14, 8, 27, 7, 16, 28, 24, 25.

^aBased on Urrutia data. ^bBased on DANE data. ^cBased on Fishlow data.

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TABLE 5 Measures of Income Inequality: Agricultural and Nonagricultural Sectors

Country, Sector, and Year	Percent of Families (1)	Percent of Income (2)	Average Income Relative to A (3)	Gini Coefficient (4)
1. Argentina, 1953				
Agriculture	21	19	100	.49
Nonagriculture	79	81	112	.37*
2. Argentina, 1961				
Agriculture	16	13	100	.48
Nonagriculture	84	87	131	.41*
3. Brazil (Langoni), 1960				
Agriculture	54	39	100	.42*
Nonagriculture	46	61	182	.47
4. Brazil (Langoni), 1970				
Agriculture	40	20	100	.43*
Nonagriculture	60	80	273	.54
5. Brazil (Fishlow), 1970				
Agriculture	44	18	100	.61
Nonagriculture	56	82	351	.58*
6. Chile, 1967				
Agriculture	24	15	100	.40*
Nonagriculture	76	85	189	.49
7. Colombia, 1970				
Agriculture	34	20	100	.43*
Nonagriculture	66	80	210	.52
8. Guatemala				
Agriculture, 1966	n.c.	n.c.	n.c.	n.c.
Cities only, 1971	n.c.	n.c.	n.c.	n.c.
9. Mexico, 1963				
Agriculture	43	27	100	.50*
Nonagriculture	57	73	198	.52
10. Puerto Rico, 1953				
Agriculture	31	22	100	.33*
Nonagriculture	69	78	157	.43
11. Puerto Rico, 1963				
Agriculture	17	11	100	.41*
Nonagriculture	83	89	170	.44
12. U.S., 1957-59				
Farm	11	7	100	.41
Nonfarm	89	93	165	.35*
13. U.S., 1960-62				
Farm	10	6	100	.41
Nonfarm	90	94	172	.34*
Average (lines 1-11)				
Agriculture	32	20	100	.45*
Nonagriculture	68	80	197	.48
			(180) ^a	

Sources: 1, 12, 15, 14, 8, 16, 24, 25.

n.c. Data for Guatemala are not comparable. The samples refer to different years and together do not exhaust the population.

*Indicates sector of greater equality.

^aIndicates average excluding line 5.

TRAVERSING THE SOCIAL PYRAMID

<i>Coefficient of Variation</i> (5)		<i>S.D. of Logs</i> (6)	<i>INCOME SHARES TO PERCENTILES OF RECIPIENTS</i>				
			<i>0-60</i> (7)	<i>61-80</i> (8)	<i>81-90</i> (9)	<i>91-95</i> (10)	<i>96-100</i> (11)
1.34	.76	25.1	16.4	15.0	10.9	32.3	
1.02*	.59*	33.9	18.0	12.7	9.2	26.0	
1.37	.73	26.9	15.8	13.6	10.1	33.4	
1.14*	.64*	31.4	18.0	12.2	9.6	28.6	
.96*	.76*	29.5	22.2	14.9	10.1	23.1	
1.11	.96	27.0	20.6	14.7	10.9	26.6	
.99*	.75*	29.5	20.1	13.9	13.1	23.1	
1.41	.98	22.0	18.0	15.2	11.0	33.6	
1.21*	2.54	10.8	32.4	15.3	11.1	30.2	
1.53	2.16*	18.9	18.2	15.3	11.4	36.0	
1.38	.66*	31.4	11.6	12.6	10.5	33.8	
1.13*	.88	24.3	20.6	15.6	13.1	26.1	
1.15*	.75*	24.6	22.6	14.5	10.2	27.9	
1.30*	.94	22.9	19.2	15.0	11.9	30.8	
n.c.	n.c.	38.6	22.1	15.0	9.6	14.4	
n.c.	n.c.	29.9	21.3	16.3	11.5	20.8	
1.26	.88*	22.8	17.5	16.6	13.7	29.1	
1.17*	.93	23.2	19.9	17.2	12.7	28.9	
.73*	.58*	36.3	22.6	12.9	9.6	18.4	
.98	.78	29.4	21.4	15.5	9.8	23.6	
1.00	.68*	30.7	19.4	14.0	11.2	24.4	
.93*	.84	28.2	21.9	16.8	11.5	21.4	
.88	.73	30.0	22.4	15.9	10.6	20.9	
.75*	.63*	36.1	21.4	14.3	6.9	19.1	
.87	.74	30.1	22.5	16.0	10.8	20.4	
.69*	.66*	35.4	22.2	14.6	12.2	15.4	
1.14*	.91*	27.8	20.2	14.5	10.9	26.4	
1.17	.97	26.5	19.7	19.7	11.1	27.5	

TABLE 6 Measures of Inequality in 14 Latin American Cities

Country/City	Year (1)	Per Capita Income 1960 U.S.\$ Equivalents (2)	Gini (3)	Coefficient of Variation (4)	S.D. Logs (5)
Brazil					
1. Recife	1960–68 (avg.)	356(1)	.45(7)	.97(7)	.84(11)
2. São Paulo	1971	839(13)	.43(4)	.90(4)	.75(4)
Colombia					
3. Barranquilla	1967	463(3)	.45(8)	1.00(9)	.76(5)
4. Bogotá	1967	575(5)	.45(9)	.97(8)	.81(9)
5. Cali	1967	461(2)	.47(10)	1.05(11)	.80(8)
6. Medellín	1967	494(4)	.48(12)	1.13(13)	.83(10)
Guatemala					
7. Guatemala City	1969	583(6)	.42(3)	.88(3)	.74(2)
Mexico					
8. Mexico D.F.	1963	730(10)	.49(13)	1.06(12)	.91(14)
9. Monterrey	1965	603(8)	.52(14)	1.28(14)	.89(13)
Paraguay					
10. Asunción	1970–71	789(12)	.56(15)	1.30(15)	1.05(15)
Peru					
11. Lima	1968	607(9)	.47(11)	1.01(10)	.87(12)
Puerto Rico					
12a. San Juan	1953	743(11)	.43(6)	.94(5)	.80(7)
12b. San Juan	1963	1242(15)	.40(1)	.85(2)	.75(3)
Venezuela					
13. Caracas	1966	914(14)	.41(2)	.81(1)	.77(6)
14. Maracaibo	1967	587(7)	.43(5)	.95(6)	.74(1)
All Cities Average					
Sources: 5, 6, 9, 22, 16, 23, 28, 24, 25.					

Note: Numbers in parentheses refer to ordinal ranking of each column.

Table 6 (con't.)

<i>INCOME SHARES TO PERCENTILES OF FAMILY RECIPIENTS</i>						
<i>0-40%</i>	<i>41-80%</i>	<i>81-100%</i>	<i>0-60%</i>	<i>61-95%</i>	<i>96-100%</i>	
<i>(6)</i>	<i>(7)</i>	<i>(8)</i>	<i>(9)</i>	<i>(10)</i>	<i>(11)</i>	
13.04	34.79	51.67	27.05	51.00	21.95	
14.76	35.15	50.09	28.04	51.65	20.31	
14.72	31.20	54.08	27.05	51.92	21.03	
13.83	33.25	52.92	27.07	53.09	19.84	
13.46	32.06	54.48	25.87	50.89	23.24	
13.12	29.90	56.98	25.04	51.81	23.15	
15.12	36.13	48.74	29.27	50.40	20.32	
12.28	32.03	56.49	23.54	54.07	22.39	
11.37	30.21	58.42	22.86	47.12	30.02	
9.02	29.02	61.96	19.43	53.84	26.73	
12.57	33.24	54.19	25.62	53.89	20.50	
14.52	36.21	48.87	28.91	49.15	21.54	
15.44	37.29	47.22	30.19	49.96	19.85	
14.61	37.22	48.18	28.83	55.21	15.97	
15.09	34.47	50.44	28.98	48.88	22.14	
13.15	33.48	52.98	26.52	51.53	21.93	

TABLE 7 Distribution of Characteristics Across the Quartiles (percentages of each trait)

		Trait 1 City or Stratum				Trait 2 Family Size				Trait 3 Income Earners			Trait 4 Main Income Source			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) Self- employed	(14)	
Quartile		Bogotá	Baquilla	Cali	Medellín	1-2	3-5	6-8	>9	1-2	3	>4	Salary	Self- employed	Capital	
Colombia	I	19	26	33	29	45*	30	21	16	25	0*	0	27	27	19	
	II	22	31	27	28	24	24	24	29	25	29	0	29	17	19	
	III	29	22	19	22	18	22	25	31	25	29	0	24	26	26	
	IV	30	22	22	21	12*	24	30	23	25	43*	0	20	31	37*	
	Totals (%)	100	100	100	100	100	100	100	100	100	100	0	100	100	100	
	Totals (no.) ^a	252	74	97	131	33	207	203	111		546	7	0	268	149	27
Income Relative to Mean		1.18	.89	.86	.94	.64	.90	1.10	1.13	—	1.29	—	.82	1.16	1.41	
Paraguay (Asunción)	I					50*	24	20	23	27	8*	27	27	15*	17	
	II					25	31	18	23	27	16	9*	27	23	28	
	III					17	25	29	23	24	40*	9*	24	15*	28	
	IV					8*	21	34	31	21	36*	55*	21	46*	28	
	Totals (%)					100	100	100	100	100	100	100	100	100	100	
	Totals (no.) ^a					2.4	8.0	5.6	1.3		13.1	2.5	1.1	11.1	1.3	1.8
Income Relative to Mean						.56	.87	1.35	1.22	.77	1.83	1.79	.79	1.62	1.40	
Peru (Lima)		High	Medium	Low	Pueblos Jovenes					1	2	3	>4			
	I	0	10*	34	33	45*	30	26	17	33	18	12*	6*	28	24	24
	II	0	11*	33	32	18	27	21	26	24	29	19	6*	22	30	18
	III	10*	29	22	29	27	24	23	30	19	28	36*	39*	25	24	24
	IV	90*	50*	12*	5*	9*	19	30	28	24	24	33	50*	26	21	35*
	Totals (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Totals (no.) ^a	10	138	172	99	11	152	175	81	221	125	42	18	257	99	17	
Income Relative to Mean		4.37	1.41	.66	.65	.55	.83	1.10	1.17	.96	.99	1.18	1.39	.93	1.06	1.47
Venezuela		Caracas		Mara- caibo												
	I	18		45*		44*	25	25	25				23	31	22	
	II	24		28		31	23	20	27				24	26	22	
	III	28		16		18	26	24	25				27	22	11*	
	IV	30		11*		8*	26	30	23				26	22	44*	
	Totals (%)	100		100		100	100	100	100				100	100	100	
Totals (no.) ^a	293		104		39	178	127	52				266	88	9		
Income Relative to Mean		1.13		.62		.59	.99	1.14	.99				1.03	.92	1.55	

Table 7 (con't.)

		Trait 5 Age of Head				Trait 6 Occupation of Head				Trait 7 Education of Head				Trait 8 Sector Activity of Head		
		(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
Quartile		<34	35-49	50-64	>65	Profess'l. Manager	White Collar	Blue Collar	Other	None	Primary	Secondary	University	Mfg.	Govt.	Commerce
Colombia	I	33	21	21	28	5*	16	29	37*	48*	35*	8*	3*	25	19	21
	II	22	26	28	16	7*	21	31	27	27	31	19	8*	30	23	20
	III	22	27	24	24	11*	32	27	19	18	24	31	17	27	24	29
	IV	22	26	27	32	76*	30	12*	17	6*	11*	42*	71*	19	33	30
	Totals (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Totals (no.) ^a	171	248	110	25	55	161	204	134	33	314	147	59	145	100	114
Income Relative to Mean	.85	1.00	1.17	1.32	2.57	1.05	.67	.80	.48	.62	1.34	2.45	.82	1.16	1.14	
Paraguay (Asunción)	I	27	24	20	33	4*	21	29	35*	50*	40*	9*	**	29	10*	29
	II	25	29	20	22	11*	21	35*	26	25	31	24	7*	29	27	24
	III	24	24	32	17	32	29	22	20	13*	19	31	37*	29	31	12*
	IV	24	24	29	28	54*	29	14*	19	13*	10*	36*	56*	14*	33	35*
	Totals (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Totals (no.) ^a	5.1	6.3	4.1	1.8	2.8	4.1	5.1	5.4	.8	8.5	5.4	2.7	2.0	5.0	1.7
Income Relative to Mean	.89	.89	1.29	1.09	1.69	1.06	.62	.96	.39	.57	1.44	1.69	.80	.96	1.08	
Peru (Lima)	I	37*	24	21	17	7*	20	38*	25	50*	38*	20	4*	27	20	20
	II	30	23	18	30	12*	27	33	28	17	31	23	11*	39*	20	17
	III	19	26	28	23	19	30	19	28	17	21	29	25	16	30	32
	IV	13*	27	32	30	62*	23	11*	19	17	10*	29	60*	19	31	32
	Totals (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Totals (no.) ^a	99	185	103	31	72	106	144	56	6	196	142	73	91	97	61
Income Relative to Mean	.75	1.01	1.19	1.08	1.91	.98	.60	1.04	.68	.64	1.07	1.86	.79	1.11	1.10	
Venezuela	I	29	25	25	40*	4*	17	33	51*	58*	36*	8*	2*	31	19	27
	II	26	21	21	20	10*	25	34	20	23	29	21	8*	25	24	23
	III	27	28	21	13*	23	33	23	18	15*	24	33	23	25	27	23
	IV	18	27	34	27	64*	25	10*	12*	4*	12*	38*	68*	19*	29	27
	Totals (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Totals (no.) ^a	153	159	72	15	74	124	101	97	51	191	102	53	53	137	52
Income Relative to Mean	.83	1.08	1.19	.96	1.88	.67	.65	.69	.45	.70	1.25	2.11	.88	1.13	.93	

^aGiven in thousands of families.

*Denotes those cells whose share, D_{ij} , falls either 10 percentage points above or below the expected quartile distribution (25 percent) ($15 < D_{ij} < 35$).

**Too few cases

TABLE 8 Distribution of Each Quartile by Characteristic (percentages of each quartile population)

		Average Income				Trait 1 City or Stratum			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		No. of families (thous.)	Absolute	Relative to Mean	Bogotá	Biquilla	Cali	Medellin	Totals
Colombia	I	136	226	.27	35*	14	24	28	100
	II	141	420	.50	39	16	18	26	100
	III	137	683	.81	54	12	13	21	100
	IV	140	2,040	2.42	54	11	15	19	100
	Overall	554	843	1.00	45	13	18	24	100
Paraguay (Asunción)	I	4.4	1,535	.16					
	II	4.5	3,687	.38					
	III	4.3	7,123	.74					
	IV	4.4	25,873	2.70					
	Overall	17.4	9,577	1.00					
Peru (Lima)	I	109	764	.24	High 0	Medium 13*	Low 55*	Pueblos Jovenes 31	100
	II	102	1,574	.49	0	15*	54*	31	100
	III	103	2,709	.84	1	37	35	27	100
	IV	106	7,782	2.40	9	66*	20*	5*	100
	Overall	419	3,239	1.00	2	33	41	24	100
Venezuela	I	106	1,638	.28	Caracas 53*		Maracaibo 47*		100
	II	92	3,169	.53	71		29		100
	III	99	5,931	.91	83		17		100
	IV	100	13,604	2.29	89*		11*		100
	Overall	396	5,931	1.00	74		26		100

Table 8 (cont.)

		Trait 5 Age of Head				Trait 6 Occupation of Head			
		(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
		<35	35-49	50-64	>65	Profess'l. Mgrl.	White Collar	Bluc Collar	Other
Colombia	I	41*	37	17	5	2	19*	43	36*
	II	28	47	22	3	3	25	46	26
	III	28	48	19	4	4	38	40	18
	IV	27	47	21	6	30*	35	18*	17
	Overall	31	45	20	5	10	29	37	24
Paraguay (Asunción)	I	33	35	19	14	2*	20	34	43*
	II	30	42	19	9	7	20	41*	32
	III	28	35	30	7	21	28	26	26
	IV	27	34	27	11	34*	27	16*	23
	Overall	29	36	24	10	16	23	29	31
Peru (Lima)	I	34*	41	20	4	5*	22	57*	15
	II	30	42	19	9	9*	29	47	16
	III	18	47	28	7	16	36	30	18
	IV	12*	48	31	9	47*	25	17*	11
	Overall	24	44	25	7	19	28	38	15
Venezuela	I	41	36	17	6	3*	20*	32	46*
	II	44	36	16	3	8*	34	38*	21
	III	40	43	15	2	17	42*	23	17
	IV	28*	43	25	4	46*	31	10*	12*
	Overall	38	39	18	4	19	31	26	25

Denotes those cells whose share, P_i , falls 10 percentage points above or below the share of that trait in the overall population, P_i ($P_i - 10 < P_i^ < P_i + 10$).

**Too few cases.

Trait 2 Family Size				Trait 3 Income Earners			Trait 4 Main Income Source			
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1-2	3-5	6-8	>9	1-2	3	4	Salary	Self- employed	Capital	
11	45	31	13	100	0	0	62	34	4	
6	36	35	23	99	1	0	72*	23*	5	
4	34	37	25	99	0	0	58	35	6	
3	35	44	19	98	2	0	49*	42	9	
6	37	37	20	99	1	0	60	34	6	
27*	42	24	7	88*	5*	7	86	5	8	
14	57*	23	7	88*	10	2	80	7	13	
9	47	37	7	74	24	2	80	6	14	
5	40	45*	10	65*	21	14	69*	17	14	
14	46	32	8	78	15	7	79	8	12	
				1	2	3	4			
5	41	41	13	72*	23	5	1	72	24	4
2	41	37	21	55	36	8	1	63	34	3
3	35	39	23	42*	35	15	7	70	26	4
1	27	50	22	50	28	13	8	71	23	6
3	36	42	19	54	31	10	4	69	27	5
16	42	30	12				68	30	2	
13	43	28	15				72	26	2	
7	48	31	13				78	21	1	
3	47	38	12				75	21	4	
10	45	32	13				73	24	3	

Trait 7 Education of Head				Trait 8 Sectoral Activity of Head		
(27)	(28)	(29)	(30)	(31)	(32)	(33)
<i>None</i>	<i>Primary</i>	<i>Secondary</i>	<i>University</i>	<i>Mfg.</i>	<i>Govt.</i>	<i>Commerce</i>
12	78*	9*	1*	46	24	30
7	70*	20	4	48	26	26
4	55	32	7	41	25	34
1	24*	45*	30*	28*	35	37
6	57	27	11	40	28	32
9	79*	12*	**	38*	31*	31*
5	60*	30	4*	26	57	17
2	36*	39	23	26	65	9*
2	18*	45*	34*	12*	64	24
4	49	31	16	23	57	19
3	69*	26	3*	44	35	22
1	60*	31	8	55*	30	16
1	41	40	18	23*	47	31
1	18*	39	41*	26*	45	29
1	47	34	17	37	39	25
28*	64*	7*	1*	29	46*	25
13	16*	23	4	22	57	21
8	46	34	12	21	60	19
2*	22*	39*	36*	16	63	22
13	48	26	13	22	57	22

TABLE 9 Summary of Distinguishing Characteristics of Poor and Rich Families in Four Urban Economies of Latin America

		Trait 1	Trait 2	Trait 3		Trait 5	Trait 6			Trait 7			
		City or Stratum	Family Size	Income Earners		Age of Head	Occupation of Head			Education of Head			
			1-2	3 members	4 or more	<34	Mgrl.	Blue Collar	Other	None	Primary	Secondary	University
Colombia	I-II		70				13			76	65	27	12
	III-IV		30				87			24	35	73	88
	Totals		100				100			100	100	100	100
	Share in Total Pop.		6				10			6	37	27	11
Paraguay (Asunción)	I-II		75	24			15			81	72		9
	III-IV		25	76			85			19	28		91
	Totals		100	100			100			100	100		100
	Share in Total Pop.		14	15			16			4	49		16
Peru (Lima)													
		<i>Pueblos</i>											
		<i>Low</i>											
	I-II	66	66	31	12	68	18	70		67	69		16
	III-IV	34	34	69	89	32	82	30		33	31		84
Totals	100	100	100	100	100	100	100	100	100	100		100	
Share in Total Pop.	41	24	13	5	24	17	34		2	47		17	
Venezuela													
		<i>Mara-</i>											
		<i>caibo</i>											
	I-II	74	74				14	67	70	82		28	9
	III-IV	26	26				86	33	30	18		72	91
Totals	100	100				100	100	100	100		100	100	
Share in Total Pop.	26	10				19	26	24	13		26	13	

APPENDIX

Methodological Summary of Data Used in This Study

	<i>Year, Method, Technique, Sources, Assumptions</i>	<i>Imputations</i>	<i>Sample Size/ Population Size</i>
Argentina	<p>For 1953, 1958, and 1961, 25 cells were formed by sector and income source, each distributed among 22 income intervals to recipients. Multiple jobs and recipients were combined into family units across sectors by income class.</p> <p>The data base consists of pieces of production data: Social security registry; withholding tax; 1953 economic census for profits and entrepreneurial income; 1963 consumer survey of Buenos Aires. Sample parts were then blown up to account for sector totals.</p> <p>Procedure assumes (1) an accurate sample prior to magnification to universe size and (2) intracell rigidity during time period, since sample distributions were made for only one year while control totals changed.</p>	<p>No rent imputed for owner-occupied dwellings.</p> <p>No capital gains estimated.</p> <p>Reliance on production data may have omitted migrants, urban lumpenproletariat, and marginal worker in lowest income strata.</p>	<p>Production data; no sample.</p>
Brazil (Fishlow Study)	<p>1960 based on 1.27% sample from demographic census.</p> <p>The Pareto distribution was applied to close the top-tail, and the quartile method for estimating the bottom-tail means.</p> <p>Eight income brackets of reported income were used in both studies, with heads of households as the sample unit, although all individuals are the universe.</p> <p>The census universe plus imputations compared favorably to national account estimates of personal income.</p>	<p>No capital gains estimated, but rent for owner-occupied dwellings was calculated from regression of data on renters from demographic census.</p> <p>Room and board were imputed for domestic servants, and income in kind was estimated from FGV 1962-63 urban family budget data; regressions on money income in log-log form.</p> <p>Unpaid family workers, predominantly in agriculture, were assigned a wage according to sex and age.</p>	<p>1960 sample of 56,000 in individual observations (.0007 sample) stratified by region and education of head.</p>

Methodological Summary of Data Used in This Study (con't.)

	<i>Year, Method, Technique, Sources, Assumptions</i>	<i>Imputations</i>	<i>Sample Size/ Population Size</i>
Brazil (Langoni Study)	Full access to 1960 and 1970 demographic census. He used 100 income brackets of reported income and direct observation of interval means; he could form individuals directly into family on basis of data.	Income in kind adjusted from ABCAR rural surveys for separate income groups. Excludes all unpaid family workers from the distributions.	1960: 1.27% of e.a.p. in 8 income brackets (.0007 sample). 1970: Sample utilized 100 income brackets.
Chile	Based on 1967 national Cedom family survey. Income refers to all money income minus taxes and deductions, a concept similar to "take-home pay." Decile divisions are given by sector, zone, sex, and worker status. Nine income brackets are used also in later analysis.		
Colombia (Urrutia Study)	Based on production data and sample surveys by the author and other investigators. Pieces were then joined to form agricultural, rural nonagricultural, and urban income distributions compatible with each other.	Income of urban domestic servants was ascribed, and agricultural earners who live in large cities were segregated to avoid double counting in summing agricultural and urban distributions. A 1964 rural, non-ag. survey was used to estimate the rest of non-ag. income.	Mixture sample surveys of sectoral analyses.
Colombia (DANE Study)	1970 sample survey in urban and rural areas.	No indication of imputations for food, rent or services.	Sample of 9,233 of e.a.p. in urban and 5,749 in rural. No universe given.
Costa Rica	1971 national sample survey for money income plus income in kind, rent on owner-occupied home, and home-grown food.		3,100 families of 312,000 universe, (.0099 sample).
Mexico (Navarrete Study)	Based on budget surveys and undistributed personal income allocated to top income brackets.		

Methodological Summary of Data Used in This Study (con't.)

	<i>Year, Method, Technique, Sources, Assumptions</i>	<i>Imputations</i>	<i>Sample Size/ Population Size</i>
Mexico (1963 Bank of Mexico Study)	Based on national budget survey under contract by private computing firm. Data never independently analyzed.	Adjustments for food and owner-occupied house. Total private consumption 26% less than national accounts estimates.	4,650 families of 7,329,000 universe, 8.3% nonresponse, (.0006 sample).
Peru	Based on labor force estimates for 1961 by 5 labor force groups and one propertied group, all distributed among 14 income intervals. The 1961 population census reported only employee income and excluded income of self-employed. Disaggregated production data, such as those on livestock and grains, were used to distribute income to rural farm workers. The five groups consist of highland rural people, coast and jungle farmers, wage earners, white-collar employees, urban self-employed, and property-holders.		
Puerto Rico	Budget surveys from labor force rolls and taxpayers lists. Reported income balanced with expenditure items.	Income distributions include home-grown food but exclude imputed rent for owner-occupied home and other income in kind.	2,548 of 461,000 for 1963 survey. (.0055 sample).

NOTES

1. The reader must be forewarned that deep and long-standing controversies surround not only the interpretation and implications of income distribution, but also the method of measurement, the unit of analysis, the quality of the data, and the time period of observation. Every twist and turn in measurement comes face to face with a series of meaningful debates and alternatives. We have dealt with a number of these historical debates elsewhere (see Weisskoff, 1970). Here, we can only beg the indulgence of the weary reader to bear with us in traversing the social pyramid.
2. Lorenz curves intersect; a segment of a distribution may be more or less equal than the corresponding portion of another distribution. The coefficient of variation may indicate declining inequality due to the influence of a swiftly rising mean. The standard deviation of the logs of income, a third standard measure employed here, is influenced the least by changes in the extreme upper values and is often taken to represent the distribution of relative incomes. The use of this last-mentioned measure presumes lognormality, and hence symmetry, of the observed distribution, that is not validated by the measurement of higher moments. In fact, it is the calculation of skewness and kurtosis (not presented here) that defines the more complete shape and pinpoints more precisely the changes in relative incomes.
3. The method employed in interpolating the income shares received by the selected percentile shares of recipients deserves further technical note. In estimating these income shares, the logs of nonstandardized frequency distributions for each country were first accumulated. Then the income received by each decile of recipients was calculated from a linear interpolation of cumulated incomes plotted against the cumulated number of recipients. Two important reservations are the consequence of this procedure. First, it is known that the departure from linearity at both extremes of the cumulated scale may be substantial. Therefore, the accuracy of the income shares received by the poorest 20 percent and by the top 5 percent depends on the proximity of these groups to the original income classes. Second, the summary measures are sensitive to the number of groups in the data. Hence, the Gini ratios presented here have been calculated from a standard number of groups. In this case, the frequency distributions used in the calculation of summary measures themselves are the result of the linear interpolation of the basic data into ten intervals as given by the decile shares and the share to the top 5 percent. Estimation of the summary measures was undertaken using both the standardized interpolated data and the original data using all the frequency groups, that range from 6 to 29 for some country samples. The drawback of the interpolation procedure is that it "creates" income intervals when the original data are too few and "loses" intervals when the original data are too detailed. In this paper, we present only the results from the interpolated data, although both are available on request.
4. In the case of Argentina, the observation for 1959 reflects the effects of a severe recession and major devaluation that resulted in an acute widening of the distribution. The partial "recovery" by 1961 still reveals less equality than in the initial year, 1953, of the data. See the appendix for a methodological summary of data used in this study.
5. Although caution should be exercised in comparing the cross-section mixture of income distributions that refer to households, individuals, and consumer units, and for different periods, we feel that some qualified and useful conclusions concerning broad tendencies may be ventured.
6. Kuznets (1963) argues that inequality in a poor country may be necessary to impede mobility of professionals. But certainly this applies only to a small fraction of the inequity.
7. The urban distributions represent the summation of all individuals living in towns greater than 2,500 inhabitants. Only in the cases of Colombia (four major cities), Guatemala (five major cities), and Venezuela (two major cities) do the distributions reflect only the largest urban areas.
8. The comparison of monetary income alone between the urban and rural areas may exaggerate the differences in *real income* unless some adjustment for differences in cost of

living is made. However, the fact that manufactures or urban products are more expensive in the rural areas indicates that this adjustment is complex and that there may exist offsetting effects. Unfortunately, no statistical work exists on this question for the countries studied here.

9. The statistical distinction between the agricultural and nonagricultural distributions, on the one hand, and the rural-urban distributions, on the other, are analogous to the differences between country GNP and geographic GDP. The urban-rural income concept refers to residential location of the reporting units, while the agricultural-nonagricultural distinction in the next section refers to location of the income-generating unit.
10. The results of the coefficient of variation are less uniform: Five observations suggest greater equality in the nonagricultural sector, and five other cases suggest greater equality for the agricultural sector. It should also be noted that the imputations to agricultural incomes in the nonmonetarized areas are generally inadequate and may therefore exaggerate comparative poverty.
11. It is possible to place the city's population within the national pyramid, as exemplified by the distribution of a city across the national quartiles. In the case of Peru (see Webb, 1961), Lima accounted for almost 20 percent of the country's population. It was found that only 17 percent of Lima fell into the bottom half and 83 percent into the top half of the country's income distribution; 54 percent of the city's population fell into the upper quartile of the nation.
12. The family unit is the basis of observation and analysis. The eight sociodemographic characteristics used here are those available in the ECIEL studies of consumption and family income, reconciled and compared among countries.
13. Those cells for which the observed distribution falls ten percentage points above or below the expected distribution are designated by an asterisk (*) in tables 7 and 8. The cell-by-cell examination of the frequency distributions of the families by quartiles and by socioeconomic traits comprises an overwhelming wealth of detail and description that requires further empirical study. It is hoped that the preliminary investigation presented here may shed some light on elementary hypotheses for the multivariate analysis that must develop from these materials.
14. The same difficulty in comparing prices and real income between urban and rural areas also exists between cities. No attempt here has been made to correct for different costs of living between urban areas.
15. *Stratum* is defined on the basis of housing quality and available services. *Alto* (high) includes houses of good quality with a garage, ample gardens, low block density, and with all public services. *Bajo* (low) includes those houses situated on *callejones* and *corralones*, buildings that are in need of repair, characterized by high block density, and lacking some public services. All others are placed in the *stratum medio* (medium).
16. We expect this is overstated in the absence of a cost of living deflator for Caracas incomes.
17. Considerable variation in family size with family income suggests that the overall income distribution may be considerably altered if incomes are reordered on the basis of income per individual. Thus, a large family with a high total income, that in the first analysis falls in a relatively high percentile, may be "shifted" to a lower percentile if its income is recalculated on a per capita basis. Such adjustments involved in reordering individual incomes should also make allowance for age and composition of the family. If, however, privilege and collective benefits accrue to members of a family on the basis of its total, not per capita income, then it is apparent that individuals with equivalent per capita incomes are not, in fact, equal if they participate in different size households. In this study, we have maintained family size as an independent variable, and rather than redistribute individuals according to their per capita income, we examine the distribution of large and small families across the income pyramid.
18. By "poor" we mean the bottom two quartiles (I-II) and "rich" includes the top two quartiles.

19. The assumption that the increase in share to the bottom would come exclusively from the top is here made purely for illustrative principles. If this were to occur as a sort of penalty to the upper class for having enjoyed such a disproportionate share of income, then the resulting redistribution in some cases would leave the topmost 5 percent with less income than the income accruing to the 90–95 percentiles. In one sense, the higher the income share of the top 5 percent and the lower the share of the bottom 40 percent, the less the top 5 percent must give up in order to double the standard of the bottom 40 percent. Thus, in those countries with a relatively strong lower-urban middle class, the attempts to redistribute would, quite expectantly, threaten to diminish substantially the income to the top. And consequently, we would expect a significant resistance.
20. See Mario Simonsen, *Brasil 2002* (Rio de Janeiro: Ed. APEC, 1972), page 64.

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