

**Poverty in Brazil: Basic  
Parameters and Empirical  
Results**

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1. Introduction

Poverty is a complex phenomenon which means different things to different people. The relevant concept depends basically on the standard of living and on the way various human needs are met in a given society. Although inadequate social insertion as well as powerlessness and psychological dependency are closely associated to poverty, the most direct way to determine who is poor in a given society is to define a list of basic goods and services needed to function in that society and associate a money value on them. This "poverty line" is the parameter used to distinguish poor from non-poor based on their income.

In Brazil this income related poverty line approach is the most commonly used, although there are various degrees of arbitrariness in fixing its value. Most frequently the official minimum wage is taken as parameter (Fishlow, 1972; Lodder, 1976; Pfefferman and Webb, 1978; Pastore, Zylberstajn and Pagotto, 1983; Hoffmann, 1984; Tolosa, 1991), although its real value has been varying widely and the cost of living in Brazil differs markedly among regions as well as between urban and rural areas. In late seventies, a detailed study on family budget and food consumption was made available<sup>1</sup>. This allowed for the use of consumption patterns for low-income families as a basis for establishing poverty lines (Thomas, 1982; Fava, 1984; Rocha, 1989).

This paper aims at summarizing the basic methodological aspects related to the definition of location and time specific poverty lines for the nine Brazilian metropolitan areas and presenting some of the empirical results obtained through their use together with information from the annual Household Survey<sup>2</sup> (PNAD). Poverty

<sup>1</sup>Estudo Nacional da Despesa Familiar (ENDEF), 1974-1975, was based on a countrywide sample of 55 thousand households.

<sup>2</sup>This research project has been developed in Instituto de Pesquisa Economica Aplicada (IPEA-RJ).

lines, poverty as insufficiency of income indicators and a set of quality of life indicators both for poor and non-poor subpopulations generated by this research are available from 1981 through 1990, except for 1982 and 1984.

The research was limited to the metropolitan areas since the monthly inquiry on prices by the national statistical institute (IBGE) takes place in these areas only. Nevertheless metropolitan areas are of foremost importance in poverty studies for two main reasons. Firstly, 46.8 million people (31% of Brazilian population) lived in these areas in 1990. Secondly, there are acute problems arising from demographic concentration, characteristics of economic activity and high degree of monetization under conditions of poverty in these large urban centers.

## 2. Establishment of Poverty Lines

In order to delimit the poor subpopulation, poverty lines were defined on the basis of an estimate of the effective cost of fulfilling basic needs, taking into account consumer preferences and price differences according to the metropolitan areas. The explicit aim is to consider the existence of significant spatial differences in the cost of living as an outcome of disparities both in the price levels and consumption patterns. There are sufficient empirical evidences to support the idea that a single poverty line - or, more generally, that the use of the same monetary parameter as a yardstick for the entire country - although easier to operate, is analytically inadequate.

Data from the National Family Expenditure Survey (ENDEF), carried out in 1974-1975, were used as a basis for preferences, using the methodology adopted by Fava (1984). In the first step, food preferences are derived. As a basis, the food basket of the second decile (in term of current expenditures) is used. This food basket is adjusted in composition in order to make the number of items more tractable. It is then adjusted in magnitude so as to meet ideal caloric requirements (a daily intake of 2.400 calories). In the second step, non-food preferences are derived. The ratio of food expenses to total expenses (Engel's coefficient) observed for

a specific current expenses decile - the lowest where caloric deficiencies do not occur - was used to estimate the cost of non-food items.

These consumption patterns, specific for each metropolitan area, are thus considered as constant for the entire period under study. The establishment of values for the poverty lines were made for each year based on average prices for the food items that make up the different consumption bundles. These prices derive from the data base assembled by IBGE for calculating price indexes.

Poverty lines thus constructed can be used as parameters for comparing poverty incidence since they encompass a basic norm of having a food basket corresponding to a daily intake of 2400 calories despite local differences. Although poverty lines were calculated and used in current values, they are expressed in Table I in terms of the average yearly legal minimum wage, so as to allow for an easier perception of their evolution during the period.

Taking into account the location and size of population of the metropolitan areas a few remarks can be made. The first is that there is no correlation between the value of the poverty line and urban size. While Sao Paulo (population: 17.4 million) presents high values, compatible with growing costs of urbanization -transportation and housing, for instance-, similar values in Belem (population: 1.2 million) are a result of high trade margins and transportation costs.

The second finding is that the variation in values does not follow a definite regional pattern: high values occur both in the North and the Center-South, thus making unjustifiable the establishment of regionally differentiated minimum wages, as was the case until 1984. It is also evident that the national minimum wage does not relate adequately to specific costs of living, particularly to the relative cost of items that are relevant to the poverty line. Therefore, the national minimum wage, either as an instrument of wage policy or as a parameter for the determination of the poverty line implies an unequal treatment of the different metropolitan areas.

It is exactly the complexity of the determinants that affects unevenly the cost of living for the metropolitan areas, that justifies the adoption of poverty lines based on expenditure structures and specific prices. It is possible that the differentiated effects on the poverty lines might have been amplified due to the diversity in the characteristics of the years under analysis. At any rate, it is evident that the cost of living differentials among the metropolitan areas remain significant, making infeasible the use of a sole parameter for the analysis of the incidence of poverty.

### 3. Poverty as Insufficiency of Income

The most common way of considering poverty as insufficiency of income is using the comparison between income and poverty line to determine the proportion of the poor in the total population. PNAD's income variables were used in order to estimate a "per capita family income", so as to obtain, for each year, the number of people situated below the specific poverty line, relative to the total population of each metropolitan area.

The per capita income is the result of dividing the sum total of all sources of income earned by all family members, by the total number of these members. By considering every family member in the same way, regardless of differences in specific needs related to age, activity and the others factors, this variable implicitly carries some degree of imprecision when comparing the estimated per capita incomes to the poverty line value. However, it is compatible with the acceptance of sole value for the poverty line for individuals with different characteristics.

The results thus derived are presented in Table II. Some remarks of a general character are in order. The proportion which is poor in the first year of the period is extremely high in the Northeastern metropolises, because of the regional effects of the drought(1979-1982). The enormous difference between the proportions in Recife and Curitiba - the ratio is three times larger in Recife than in Curitiba - is evidence of the regional disparities in Brazil accentuated by a temporary phenomenon.

A comparison of 1981 with 1983 indicates a worsening of the incidence of poverty brought on by the debt crisis. This worsening is more extreme in the modernized regions where the economic growth engine is located. In terms of the modern sector, the crisis led the productive units to a restructuring, in terms of output mix, technological change, and cost rationalization in general; this, in turn, had a major impact on the income of the low skilled labor. In the less developed metropolitan areas, the impoverishment effect caused by the macroeconomic crisis is essentially a consequence of the loss of dynamism at the national level; besides, it is dampened by the characteristics of the population inserted in the labor market by branches of activity.

The recovery trend that started in 1984 and was still going on in 1985 had favorable effects, in terms of reducing the proportion of the poor between 1983 and 1985, with the only exception being the Rio de Janeiro metropolitan area .

Between 1985 and 1986, there was a fall in the proportion of the poor in all metropolitan areas, with the exception of Belem. In the Northern metropolis the supply problem associated with the Cruzado Plan resulted in a markedly strong price rise, which eliminated any advantages that might have been brought about through better jobs or the improvement of the income level of the poorer. It is observed, besides, that the drop in the proportion of the poor was more significant in the Center-South than in the Northeastern metropolises. In fact, the location of the dynamic centers and the serious imbalances in the labor market related to the euphoria created during the Cruzado Plan in the Center-South, resulted in a more noticeable improvement in the income of the poor in that region .

Short term cycles in the following years, alternating economic expansion and recessive policies to control inflation, led to a quite consistent oscillation of the proportion of poor, inversely related to the GDP evolution.

Table III lists the absolute number of poor by metropolitan region, giving a complementary picture to the one derived from the

proportions presented above . Rio de Janeiro and Sao Paulo have the largest and growing share of the total number of metropolitan poor - 52% in 1981 and 55% in 1990 . Nevertheless the poor population in these two largest metropolises has the best living conditions among the metropolitan poor.

Although simple and widely used, the proportion of poor does not reflect the intensity of poverty, that is, the gap between income of the poor and the poverty line. The poverty gap ratio gives a complementary picture of poverty from the income angle: it shows how poor the poor are (TableIV).

From 1981 to 1987, changes in the indicator occur roughly in the same sense as the ones in the proportion of the poor. That means that the economic ups and downs were so marked that they affected in the same way the proportion and the intensity of poverty.

For the last three years the tendencies are blurred. The variation on the proportion of the poor, including or excluding individuals around the poverty line, has often a counterveiling effect in terms of the poverty gap indicator.

Comparing 1981 and 1990, the evolution was well differentiated according to Metropolitan Regions. A sharp decline occurred in Fortaleza, while a sharp increase took place in Salvador. The ratio was virtually stable in Rio de Janeiro, but presented a marked increase in Sao Paulo. The result for these two largest metropolises seems to indicate a slightly adverse outcome when the size of the population affected is considered, since 56% of the Brazilian metropolitan population live in Rio de Janeiro and Sao Paulo.

Considering the proportion of poor and the poverty gap ratio together, a more complete picture of poverty evolution is obtained<sup>3</sup> (Table V). The index declines most sharply where it was higher in the beginning of the decade. The amplitude of the set of results is thus clearly reduced reflecting smaller disparities

<sup>3</sup>This poverty index is the same as Sen's and Foster's unweighted for the inequality among the poor (Haguenars, 1986).



among metropolises in relation to these two basic indicators, which has much to do with the drought affecting the Northeast at the beginning of the decade.

The absolute value of the poverty gap in relation to the income of the non-poor (Table VI), while reflecting both the proportion and the intensity of poverty differences among regions, gives additional evidence about the inequality of income between poor and non-poor subpopulations.

Apart from the accentuated decline in these ratios for the Northern and Northeastern metropolises in the decade, the most remarkable evidence is how low the ratios are in both years, specially when considering all metropolises together. Taken for granted a certain underestimation of incomes in the distribution upper limit, these ratios are in fact still lower. This shows that income insufficiency is far from exhausting the poverty issue and that the satisfaction of basic needs not directly associated with private income levels has a foremost importance in fighting poverty.

#### 4. Poverty as a Syndrome of Several Deprivations

Studies on poverty can be roughly classified into two approaches. Besides the traditional "poverty line" approach, it became usual to make use of one or more indicators related to specific types of privation to identify who is poor. The chief advantage of this "basic needs" approach- very popular in the seventies- relies on the fact that it measures poverty by means of effective results in terms of life quality, rather than through indirect indicators such as income. In addition, it stresses the complementarity among different aspects of the quality of life as an important factor to be taken into account in the making of socially oriented policy .

In Brazil, although the poverty line is by far the most frequent approach, some authors have tried to characterize poverty through social variables, considering sets of quality of life indicators(Tolosa, 1978; Cervini, 1986).

In this research our choice was to abandon this dichotomy and combine the poverty line and the social indicators approaches. The use of the income variable has the advantage of permitting a basic delimitation of the target population for social policy purposes: those to which privations in relation to some aspects of life quality are critical because associated with insufficient income. So, for example, although nutritional deficiencies might occur in high income families, as a result of inadequate feeding habits or other cultural factors, this does not call for the same combat strategy or same priority as should be given to malnutrition associated to insufficient income. For those lacking goods or services which must be provide at a macro level, such as water and sewage systems, it is important to know their income level for two reasons. First of all, this can help identify those in most critical need. Secondly, knowledge of budgetary constraints will help in formulating an investment or expediture plan most appropriate for a given target population.

From the annual Household Surveys (PNADs) a set of indicators were constructed for the poor and non-poor subpopulations defined by the poverty lines in each year and metropolitan area. Although the poverty aspects taken into consideration are limited by the very scope of the survey, it was possible to characterize the subpopulations in accordance with the way they are inserted in the labor market, access to schools and sanitation infrastructure, and conditions of confort of the household. Table VII shows the indicators for 1985 that, considering the atypical character of the period, might be taken as an average year.

Looking at the results, one can see that in areas with relatively small proportions of the population below the poverty line, the living conditions reflected by the indicators are worse, since they refer to individuals situated at the extreme of the income distribution. This fact explains, for example, why the indicators for Curitiba, where the proportion of the poor is relatively low (24% in 1985) could evince more adverse living conditions than in Recife, where the proportion of the poor is much higher (47% in this same year).

Some of the indicators are clearly linked to the income level, such as certain items that add comfort to the house (size, durability of construction materials, availability of durable goods such as, for example, a refrigerator). When insufficient income and these types of privation within the ambit of personal consumption occur at the same time, income growth is the most direct way of improving the target population's living conditions.

Other privations are, on the contrary, not closely linked to income. This means that a rise in the level of income of the poor population is not effective in eliminating, at least in the short run, those privations at the macro level. Thus, improvements in the sanitation conditions - water and sewage - depend essentially on the financial and managerial capability of the public sector, and are inelastic with respect to the income levels of the poor.

Let us consider the number of households in Metropolitan Areas that did not have adequate basic sanitation in 1990 ( inadequate water: 1,596 thousand; inadequate sewage: 2,329 thousand). It is evident that these deficits cannot be easily eliminated. To give an idea of recent improvements in this area, in the period 1989 to 1990, approximately 250 thousand water and 239 thousand sewage connections were made annually. In order to establish priorities in the implementation of social policies, income can be used as a criterion to distinguish the poor subpopulation, whose privations are identified and measured. It is assumed that the privations become more critical when associated to lack of income.

By combining income and social indicators criteria, it is possible to distinguish the population which is subject to more critical privations so as to establish priorities in attending to them and to work out different financing plans of public disbursements, according to the capacity of the target population to pay for them. Data provided by Table VIII, where the number of people not reached by the basic sanitation infrastructure is presented, and where a distinction is made between poor and non-poor, demonstrate those differences clearly. The situation is especially critical in Fortaleza where, besides high per cent deficits in basic sanitation, large portions of the population not reached are also poor, in terms of income. The opposite is true

in Curitiba, where less than one third of the population not served by the water and sewage networks is made up of poor people.

## 5. A Synthetic Poverty Index

Although each social indicator is interesting by itself, especially when distinguishing poor from non-poor subpopulations, the idea of a synthetic poverty index is very attractive.

Use of the principal components analysis based on the set of indicators presented in Section 4 for the years of 1981, 1983, 1985 and 1986 aimed at generating for those years a ranking of the metropolitan areas by the quality of life for the poor subpopulation.

Ideally we should have considered indicators related to all relevant aspects of poverty. In practice we were limited by the scope of information available from the Household Survey. As a consequence, some aspects were not directly considered. One such aspect is health. However, health is known to be linked to sanitation conditions for which we have indicators ( water, sewage, garbage collection). Furthermore, the absence of nutrition indicators is compensated by the previous use of the poverty line to define the poor subpopulation, since food consumption is basically linked to income. In any case, the results obtained imply the acceptance of the above set of indicators as adequately representing the multiple aspects of poverty.

The scores presented in Table IX refer to the first component, which explained from 42% to 53% of total variance (respectively in 1981 and 1983). For all years, the weights or factor loadings associated to this first component were consistently high for sanitary and labor market conditions, in spite of a certain instability in the indicators due to the changing proportions of poor in each year.<sup>4</sup>

<sup>4</sup>For a detailed presentation of this analysis and its results see Rocha and Villela (1990).

The first observation that can be made is related to the positions of Fortaleza and Recife, which reflect a particularly dramatic situation in these metropolitan areas: the poverty indexes are the highest, despite the fact that the subpopulations also represent large proportions of the total population. This means, for example, that the living conditions of nearly 60% of the population that make up the poor subpopulations, as defined in 1983 for Fortaleza and Recife, are far below those of the poor subpopulation, that accounted for 30% of the total population of Porto Alegre and Curitiba in the height of the crisis.

In that respect, a comparison must be made between the situation in Fortaleza, on one side, and Belem on the other. Although in terms of poverty as insufficiency of income, seen from the angle of the proportion of the poor to the total population, Belem shows a situation similar to that of Fortaleza and Recife - and clearly unfavorable to theirs in 1986 - its poverty index derived from the eleven indicators differs greatly from those of the two Northeastern metropolises. In fact, Belem stands closer to Salvador, though in an unfavorable position, both from the point of view of income and of the poverty index.

The Sao Paulo Metropolitan Area was placed in all years at the opposite end of the "score" distribution. It should be pointed out, in this respect, that, apart from the fact that the incidence of poverty is somewhat high - going from a maximum of 34% relative to the 1983 income data to a minimum of 17% in 1986 - the poverty index of the subpopulation was consistently better than that of any other metropolitan area. This means that sanitation conditions (water and sewage), as well as the modes of insertion in the labor market, indicators that predominantly influenced the first factor in the analysis of the principal components, are significantly more adequate in Sao Paulo than in the other metropolitan areas. That becomes evident through the 1986 "score": even when it refers to an extreme in the income distribution, the index is lower than that of proportionally larger subpopulations, equivalent to almost half the total population, as is the case of Recife.

The indexes also highlight the relative position of Curitiba and Porto Alegre. Although the proportions of the poor for both

metropolises are very close, the position of Porto Alegre is substantially more favorable than the one of Curitiba in connection with the poverty index.

## 6. Short Term Impacts and Long Term Trends

The short term cycles which characterized the eighties with alternating recession and expansion phases, had direct impact on the incidence of poverty as insufficiency of income, as well as in labor market indicators such as underemployment, unemployment, informal labor and participation rates.

Although economic crisis resulted in a financial crunch, which drastically curtailed public investment in housing and sanitation, its effects do not show in the short run. Data collected through the decade bring some fresh evidence of the long term evolution when we compare results from 1981 and 1990. Since both years have similar characteristics in terms of GDP evolution -there were declines of 4.4% and 4.0% respectively - they represent good standpoints for this evaluation. In terms of incidence of poverty as insufficiency of income, the eighties were clearly a lost decade. The proportion of poor in metropolitan areas declined only slightly from 29.1% to 28.9%, but the absolute number of poor evolved from 10.4 to 13.4 million people. A sharp decline in birth rates and a counterweighting evolution in the labor market (Table X) prevented conditions from becoming more adverse.

Except for precocious labor - percentage of youngsters aged 10 to 14 years old who work - all other indicators present an adverse evolution when the underlying economic conditions are considered. Growing "informality" (percentage of employees without official registration and of self-employed not insured by social security) is closely associated to the declining share of employment in the secondary sector and to "terciarization" in low productivity/low paying activities ( specially trade and non-specialized services).

Increased underemployment (percentage of those working less than 40 hours a week), higher activity rates (percentage of active population in total population 10 years old or more) and higher

female participation rates (percentage of female in total labor force) are all aspects of the same phenomenon: in the absence of economic growth, the declining income for the large majority has led additional people to enter the labor market as a means of fighting the reduction of family income. In this context, the decline of unemployment is not good news: even for non-poor, the declining level of earnings makes unemployment a luxury, so that the once unemployed are soon involved in a new job, even if it is inadequate in terms of required skills and remuneration.

Indicators in Table X show that these trends affected both poor and non-poor, although the situation is much more critical for the poor. Even though in terms of family income these strategies were successful in preventing an increase in poverty as insufficiency of income, it clearly had an adverse effect in terms of lost leisure and family care, as well as in deteriorating living conditions.

The picture is not so bleak as sanitation and comfort of the dwelling indicators are considered. In spite of public investment restrictions, especially in the first half of the decade, sewage and water indicators show a measurable improvement. The same is true for aspects that depend closely on earned income, as quality of the dwelling and refrigerator indicators show. Although absolute deficits are still high, better conditions are in themselves a welcome evolution.

## 7 - Perspectives

The recent survey on family budgets (POF, 1987-1988) guarantees the availability of updated information on consumption patterns. Since those related to the lower end of family income distribution are the basis for defining the poverty lines we have been using, it is timely to proceed to the establishment of updated food baskets and structure of consumption of non-food items. Although the data we have been examining do not indicate significant changes in the composition of food consumption for low - income families, there are considerable alterations in the share of non-food items in total current expenses, which are due to altered family structure, accrued urbanization and participation in the

labor market. Studies on the evolution in family budgets resulting from both consumption and price changes are important instruments to guide government policies on price mechanisms and social services provision as to affect the real income of the poorest.

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**TABLE I: Poverty lines for Metropolitan Areas in selected years, expressed in terms of the highest average annual minimum wage**

Metropolitan Areas	1981	1983	1985	1986	1987	1988	1989	1990
Belém	0.63	0.73	0.72	0.81	0.97	0.91	0.85	1.22
Fortaleza	0.59	0.56	0.52	0.49	0.59	0.54	0.51	0.72
Recife	0.60	0.60	0.62	0.54	0.68	0.65	0.62	0.93
Salvador	0.63	0.63	0.64	0.66	0.81	0.74	0.74	1.02
Belo Horizonte	0.52	0.61	0.63	0.58	0.70	0.67	0.65	0.96
Rio de Janeiro	0.58	0.68	0.74	0.62	0.77	0.76	0.75	1.11
São Paulo	0.68	0.83	0.79	0.77	0.99	0.94	0.90	1.29
Curitiba	0.43	0.54	0.53	0.48	0.59	0.57	0.57	0.77
Porto Alegre	0.59	0.69	0.71	0.64	0.79	0.75	0.73	1.03

**TABLE II - Number of poor in relation total population for Metropolitan areas in selected years.**

Metropolitan Areas	1981	1983	1985	1986	1987	1988	1989	1990
Belém	50.9%	57.6%	43.8%	45.9%	45.1%	46.6%	39.6%	43.2%
Fortaleza	54.0%	56.2%	36.6%	30.1%	37.8%	35.8%	40.7%	41.3%
Recife	55.6%	56.6%	47.5%	39.9%	42.8%	43.9%	47.2%	47.4%
Salvador	43.1%	43.8%	39.5%	37.5%	39.4%	33.9%	39.0%	38.0%
Belo Horizonte	31.3%	44.1%	36.1%	26.4%	27.7%	28.9%	27.2%	29.6%
Rio de Janeiro	27.2%	34.7%	36.8%	23.2%	25.9%	25.1%	32.5%	32.2%
São Paulo	22.0%	34.4%	26.9%	16.9%	20.0%	17.5%	20.9%	21.6%
Curitiba	17.4%	29.6%	24.3%	10.5%	10.9%	10.7%	13.5%	12.2%
Porto Alegre	17.9%	29.7%	23.3%	16.3%	18.7%	21.2%	21.0%	20.9%

**TABLE III**

Absolute number of Poor for the Metropolitan Areas - 1990

Metropolitan Areas	Number of Poor
Belém	532,489
Fortaleza	916,467
Recife	1,451,960
Salvador	942,087
Belo Horizonte	1,112,416
Rio de Janeiro	3,686,548
São Paulo	3,800,539
Curitiba	293,700
Porto Alegre	643,438
Total	13,379,644

TABLE IV

POVERTY GAP RATIO FOR  
METROPOLITAN AREAS IN SELECTED YEARS

METROPOLITAN AREAS	1981	1983	1985	1986	1987	1988	1989	1990
Belém	0.431	0.475	0.424	0.426	0.431	0.474	0.450	0.423
Fortaleza	0.483	0.482	0.408	0.401	0.410	0.420	0.455	0.436
Recife	0.478	0.467	0.458	0.411	0.438	0.469	0.458	0.459
Salvador	0.451	0.455	0.410	0.425	0.453	0.462	0.466	0.515
Belo Horizonte	0.408	0.455	0.413	0.384	0.398	0.385	0.408	0.430
Rio de Janeiro	0.410	0.411	0.424	0.360	0.370	0.394	0.416	0.407
São Paulo	0.376	0.433	0.401	0.359	0.372	0.385	0.364	0.396
Curitiba	0.337	0.409	0.367	0.318	0.353	0.364	0.320	0.409
Porto Alegre	0.371	0.399	0.374	0.371	0.369	0.374	0.374	0.410

Source: Rocha (1992) based on PNAD raw data.

TABLE V: Compounded Poverty Index (\*)  
for Metropolitan Areas - 1981 - 1990

Metropolitan Areas	1981	1990
Belém	0.219	0.183
Fortaleza	0.261	0.180
Recife	0.266	0.217
Salvador	0.194	0.196
Belo Horizonte	0.128	0.127
Rio de Janeiro	0.112	0.131
São Paulo	0.083	0.085
Curitiba	0.059	0.049
Porto Alegre	0.066	0.086

$$(*) \text{ CPI} = \frac{1}{n} \sum_{i=1}^m \frac{Z - Y_i}{Z}$$

**TABLE VI: The Poverty Gap as Proportion of Non-Poor Income for Metropolitan Regions - 1981 - 1990**

<b>Metropolitan Areas</b>	<b>1981</b>	<b>1990</b>
Belém	0.143	0.070
Fortaleza	0.165	0.065
Recife	0.173	0.103
Salvador	0.085	0.066
Belo Horizonte	0.045	0.038
Rio de Janeiro	0.035	0.045
São Paulo	0.028	0.026
Curitiba	0.015	0.011
Porto Alegre	0.019	0.022
All Metropolises	0.042	0.037

**Table VII:** Indicators for the population below the poverty line (% of poor in each condition) 1985

Indicators	Belém	Fortal.	Recife	Salvador	BH	RJ	SP	Curitiba	P.Alegre
Not in School (7-14 years old)	10.6	20.1	17.2	14.1	15.2	15.8	14.6	19.9	18.2
Precocious Labor (10-14 years old)	8.4	14.4	9.2	10.3	10.2	8.3	12.9	20.1	11.3
Informal Labor	58.8	66.5	65.2	57.0	54.7	54.3	46.2	54.7	45.5
Underemployment rate	23.2	22.6	19.3	24.4	22.0	18.8	14.7	16.4	18.1
Participation rate	43.3	48.3	43.0	48.0	47.7	48.6	48.6	40.2	48.7
Unemployment rate	7.9	9.1	7.6	6.9	9.7	9.2	14.0	11.4	10.7
Inadequate water	50.0	64.5	59.3	48.4	33.1	35.6	16.3	43.4	32.5
Inadquate sewage	62.6	63.7	85.5	77.2	57.9	27.1	38.8	62.8	46.8
Inadequate garbage disposal	48.5	63.3	55.6	43.6	65.2	52.0	14.9	47.1	42.1
Without refrigerator	36.5	58.5	49.3	33.2	45.3	22.0	29.8	58.9	30.4
Inadequate dwelling	0.9	6.3	6.3	6.2	0.6	1.8	2.0	8.2	8.8

Note: Indicators refer to the percentage of poor submitted to each inadequate living condition in relation to the relevant category of poor.  
 Ex: Not in School - percentage of poor children aged 7 to 14 not in school as a percentage of total number of poor children in this age bracket



**TABLE VIII**

Number of Persons Living in Inadequate Housebols - 1990

METROPOLITAN AREAS	INADEQUATE WATER			INADEQUATE SEWAGE		
	Poor	Non-poor	Total	Poor	Non-Poor	Total
Belém	162,028	86,094	248,120	263,043	163,358	426,611
Fortaleza	497,901	383,800	881,701	267,628	121,959	389,587
Recife	619,350	183,047	802,397	1,161,811	688,376	1,850,187
Salvador	317,267	104,813	422,080	353,870	198,684	552,554
Belo Horizonte	254,993	145,778	400,771	472,209	470,304	942,513
Rio de Janeiro	1,159,606	829,538	1,989,144	1,049,353	757,667	1,807,020
São Paulo	467,923	526,144	994,067	1,140,176	1,429,275	2,569,451
Curitiba	112,815	228,077	340,892	160,816	286,115	446,931
Porto Alegre	171,982	133,901	305,883	195,773	138,741	334,514

Sources of Raw Data: PNAD

**TABLE IX: Poverty indexes for Metropolitan Areas in selected years**

Metropolitan Areas	1981	1983	1985	1986
Belém	-0.624 (7)	0.498 (3)	0.603 (3)	-0.384 (7)
Fortaleza	1.591 (1)	1.529 (1)	1.070 (3)	1.901 (1)
Recife	0.753 (3)	1.193 (2)	1.230 (1)	1.225 (2)
Salvador	-0.214 (5)	0.299 (4)	0.567 (4)	-0.118 (4)
Belo Horizonte	0.816 (4)	-0.362 (6)	0.076 (5)	-0.353 (6)
Rio de Janeiro	-0.871 (8)	-0.393 (7)	-0.626 (7)	-0.485 (8)
São Paulo	-1.457 (9)	-1.719 (9)	-1.884 (9)	-1.504 (9)
Curitiba	1.139 (2)	-0.282 (5)	-0.0223 (6)	0.037 (3)
Porto Alegre	-0.503 (6)	-0.762 (8)	-0.813 (8)	-0.320 (5)

Note: Values in brackets refer to the relative ranking for the metropolitan areas in each selected year.  
 These scores refer to the first component, which explained 42% of total variance in 1981, 53% in 1983, 45% in 1985 and 51% in 1986

Table X

LABOR MARKET INDICATORS FOR POOR AND NON-POOR IN  
BRAZILIAN METROPOLITAN AREAS - 1981 and 1990 (%)

<u>Indicator</u>	<u>Category</u>	<u>1981</u>	<u>1990</u>
<u>Precocious Labor</u>	Total	7	7
	Poor	8	8
	Non-Poor	7	7
<u>Informal Employment</u>	Total	25	28
	Poor	36	36
	Non-Poor	23	26
<u>Informal Self-Employment</u>	Total	59	66
	Poor	75	84
	Non-Poor	53	61
<u>Underemployment</u>	Total	16	19
	Poor	18	19
	Non-Poor	16	19
<u>Unemployment</u>	Total	7	5
	Poor	16	13
	Non-Poor	4	3
<u>Participation</u>	Total	53	55
	Poor	42	45
	Non-Poor	57	59
<u>Female Participation</u>	Total	35	38
	Poor	33	35
	Non-Poor	36	39
<u>Female Underemployment</u>	Total	29	30
	Poor	34	29
	Non-Poor	28	30

