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THE MEASUREMENT OF POVERTY--AN EXPLORATORY EXERCISE

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Preface

This paper investigates the consequences of several changes in the way poverty is measured. The implications both of changing the structure of poverty thresholds or "poverty lines" and of altering the relative importance of large and small deficiencies below such thresholds are separately studied. The procedure is to tabulate the distribution of poverty found by alternative poverty measures in the U. S. Population Census of 1960, 1/1000 sample.

Highlights

Application of an index to provide poverty threshold differentials by region and urbanization tends to shift some of the previously measured poverty from the South generally to the largest metropolitan areas in the North-East.

Measures that give more weight to the very poor attribute somewhat larger fractions of total poverty to non-whites, female-headed families, the unemployed, farmers, and rural residents.

Conclusions

Even within the narrow frame of annual money income as the principal indicator of poverty, changes in the way poverty is measured have substantial effects on the distribution of total poverty. Since the choice of anti-poverty strategy does depend on our understanding about the distribution of poverty, it is necessary to consider carefully and choose among the alternative measures that are available.

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Introduction

Our basic notions about the extent, distribution and urgency of the problems of poverty, despite many fundamental disagreements about what constitutes the appropriate concept of poverty, are dominated by the measurements produced by a specific, and by no means self-evident procedure. And these basic notions about where poverty is located, what kinds of persons are afflicted, etc., have a profound effect both on the choice of policies to combat poverty and on the allocation of resources among programs serving different parts of the poverty population.

It is, then, of substantial importance to find out how sensitive our practical measures are to variations in the specification of the measurement function. If the relatively minor changes introduced below seem to yield a substantially altered picture of the poverty problem then, at the very least, we must consider carefully the merits of alternative specification. If, as intended, the modifications serve to bring the measure closer to an ideal construct, then the implication of replacing the current measures with revised ones should be assessed.

The rule of measurement currently used whenever the basic data permit determines poverty status as a function of: annual money income of the family unit, the number of persons in the family unit, and farm residence status. This is a function which takes on two values--poor and non-poor--recognizing no further gradations within each category. The current practice of relying on annual money income as the indicator of economic status is maintained in what follows--as, indeed, is the implicit choice of economic status as the essential element of poverty. There are of course persuasive arguments for use of a more comprehensive measure of economic resources of families.[1] There is also a wide range of radically different concepts of poverty that rely on essentially non-economic criteria.[2] But in this paper, attention will be focused on less drastic departures from current practice. The measures used below are of substantial interest in their own right and have, moreover, the inestimable advantage of being applicable to available data.

It is useful to decompose the current poverty function into two sub-functions. The first defines a poverty threshold income or "poverty-line" as a function of family size and farm residence. This threshold value, together with actual income of a family, enters the second sub-function to determine the poverty measure. To be more specific, the function:

$$(1)\quad \hat{y}_1(t) = [\$1000 + \$500n(t)] \cdot (.75)^{f(t)}$$

where $\hat{y}_1(t)$ = current poverty threshold for the t^{th} family

$n(t)$ = number of persons in the t^{th} family

$f(t)$ = 1 if the t^{th} family lives on a farm
= 0 otherwise

provides a very close approximation to the "poverty-lines" developed by Mollie Orshansky--which have been adopted by the Office of Economic Opportunity as the official standard. The second sub-function which completes the current measure of poverty is simply:

$$(2)\quad P_{11}(t) = \begin{cases} n(t) & \text{if } y(t) \le \hat{y}_1(t) \\ 0 & \text{if } y(t) > \hat{y}_1(t) \end{cases}$$

where $P_{11}(t)$ = current measure of poverty, i.e., number of persons below poverty

$y(t)$ = annual money income of the t^{th} family

In terms of this decomposition, one may consider changes in the threshold function, $\hat{y}(n, f, \ldots)$, and changes in the poverty indicator, $P(\hat{y}, y, n)$. In the case of the former, changes will take the form of additional variables, i.e., differences in need beyond those related to family size and farm status. Changes in $P(\hat{y}, y, n)$ will be reflected by altered functional form.

The consequences of altering the rules of measurement are observed by applying each variant to the 1/1000 sample of census returns from the 1960 population census. Each of 15 different poverty measures defined below (including P_{11} above) are evaluated in terms of the total amount and severity of poverty (poverty per capita) found in separate demographic groups, occupational groups, and in distinct geographic categories. Since there is no precise basis for standardizing the aggregate measures of poverty, the comparisons will be in terms of the distribution of poverty among different groups--e.g., does one measure find a larger fraction of poverty in central cities or among female-headed families than another?

Variation in the Threshold Function

Two different formulations of the threshold function are proposed for comparison with $\hat{y}_1$, defined in (1) above. The first elaborates the function by taking account of the age structure of the household in addition to the number of persons in it. To be specific, the function proposed is:

$$(3)\quad \hat{y}_2(t) = \left\{ \begin{array}{l} \$550 + \$750\, n_1(t) \\ \quad + \$600\, n_2(t) \\ \quad + \$350\, n_3(t) \end{array} \right\} \cdot (.75)^{f(t)}$$

where $\hat{y}_2(t)$ = Age-structure poverty threshold for the t^{th} family

$n_1(t)$ = number of persons age 17 or older in the t^{th} family

$n_2(t)$ = number of persons age 6-16 years in the t^{th} family

$n_3(t)$ = number of persons under age 6 in the t^{th} family

and $f(t)$ = farm dummy (defined above).

The choice of allowances for persons of different age was guided by the recently revised equivalence scales estimated by the Bureau of Labor statistics.[3] Their estimates are based on data from the 1960-61 Survey of Consumer Expenditures and use the basic notion that families spending equal fractions of their income on food enjoy equivalent levels of well-being.[4] The above approximation to their equivalence scales was adjusted to place the threshold for a non-farm family of four composed of two adults, one school-age child and one pre-school child at $3000--the same as for a four-person family in $\hat{y}_1(t)$.

The second modification allows for differences in need and/or cost according to region and size of place of residence of the family. It can be written:

$$(4)\quad \hat{y}_3(t) = (\$1000 + \$500\, n(t)) \cdot I(\text{Region}(t), \text{Place}(t))$$

where $\hat{y}_3(t)$ = geographical poverty threshold for the t^{th} household

$I(\text{Region}(t), \text{Place}(t))$ = a geographical equivalence index (tabulated in Table I)

and $n(t)$ = family size (defined above).

The values for the Geographical Index are shown in Table 1. They have been estimated in much the same way and from the same data as the B.L.S. family equivalence scales discussed above. In this case, however, the estimation is based on individual household records for households within a band around the official poverty lines. The methodology is based on fitting constant elasticity curves[5] to expenditures on food and a more inclusive category of necessities. The estimates provided by the regression have been rounded and simplified to produce the index shown in Table 1. The values are normalized, largely by conjecture, to equal 1.000 for the location of an "average" poor person, i.e., to produce roughly the same number of total persons below the threshold $\hat{y}_3$, as below $\hat{y}_1$ and $\hat{y}_2$. In comparison to a flat $3000 in the case of $\hat{y}_1$ (for non-farm families of four persons), $\hat{y}_2$ ranges from $4500 in large Northeastern cities to $2475 for families of four in hamlets and rural areas of the South.

Variations in the Form of the Poverty Function

The function P_{11} specified in (2) above is a very simple kind of poverty measure. It could be termed a "head-count" measure since it simply counts the number of persons in families below the poverty line. This same form of function can be used with both of the revised threshold functions defined above to produce P_{12} and P_{13}. In more general terms, we may write this first poverty function as:

$$(5)\quad P_{1j}(t) = \begin{cases} n(t) & \text{if } y(t) \le \hat{y}_j(t) \\ 0 & \text{otherwise} \end{cases}$$

A closely related function is introduced to investigate the consequences of raising the poverty thresholds by 50%:

$$(6)\quad P_{2j}(t) = \begin{cases} n(t) & \text{if } y(t) \le 1.5\hat{y}_j(t) \\ 0 & \text{otherwise} \end{cases}$$

Another sort of measure of poverty has been used in the literature--namely, the "poverty gap." This measure accords a greater weight to a family's poverty if it is far below the threshold than if it is close to it. In fact it measures the poverty of a family in terms of the dollar distance of family income below the poverty threshold.

Stated precisely, let:

$$(7)\quad P_{3j}(t) = \begin{cases} \hat{y}(t) - y(t) & \text{if } y(t) \le \hat{y}_j(t) \\ 0 & \text{otherwise} \end{cases}$$

A fourth poverty function is derived from $P_{3j}(t)$ by increasing the threshold by 50%:

$$(8)\quad P_{4j}(t) = \begin{cases} 1.5\hat{y}_j(t) - y(t) & \text{if } y(t) \le 1.5\hat{y}_j(t) \\ 0 & \text{otherwise} \end{cases}$$

Finally, a non-linear function of the poverty gap is proposed. It also gives greater weight to poorer families, but at an increasing rate the poorer they get--in contrast to the constant rate implicit in P_{3j} and P_{4j}. It is based on the plausible notion that the personal and social cost or pain increases, not only in proportion to the deficiency of income below some standard, but more than proportionately. Such an assumption is implicit in the argument that it is more important to add $500 to the income of someone $2000 below the poverty threshold than it is to add $500 to the income of someone who is only $500 short of that same threshold. P_{3j} and P_{4j} imply that it is equally important to add to anyone's income as long as they are below poverty. P_{1j} and P_{2j} give no credit at all for increases in income except when an increase pushes total income over the poverty threshold. The explicit form for this non-linear measure is:

$$(9)\quad P_{5j} = n(t)\,\frac{\log(1.5\hat{y}_j(t)) - \log(y(t) + \$100)}{\log(1.5\hat{y}_j(t)) - \log(\hat{y}_j(t) + \$100)}$$

if that expression is positive

= 0 otherwise

This function, ignoring the $100 added to income to prevent zero incomes from producing infinite values, equals zero for incomes at or above $1.5\hat{y}_j(t)$. It equals $n(t)$ when income equals $\hat{y}_j(t)$; $2n(t)$ when income is $2/3$ of $\hat{y}_j(t)$; $(k+1)n(t)$ when income is $(2/3)^k\hat{y}_j(t)$. Another way of describing this measure is to say that it specifies equivalence between the poverty of 1000 persons at $\hat{y}_j(t)$ and 500 persons at $\hat{y}_j(t)$ or 333 persons at 4/9 of the poverty line,

etc. Economists will recognize the origin of this function in notions of diminishing marginal utility of income. It will, in what follows, be termed the "disutility function."

The Application of the Alternative Measures to 1960 Census Data

Combining the three threshold functions with the five variants of the poverty function produces 15 different combinations--or 15 different poverty measures. These will be denoted P_{ij} ($i = 1,2,3,4,5$; and $j = 1,2,3$). Each measure can be evaluated for any family (or individual) for which we have data on annual money income ($y(t)$), family size and age composition ($n_1(t)$, $n_2(t)$, $n_3(t)$, $n(t)$), farm status ($f(t)$), and location by region and place size. The $P_{ij}(t)$ can be summed over all t in a national sample of families and individuals to produce estimates of the total amount of poverty as variously measured. They can also be summed over sub-groups to produce corresponding sub-totals.

The 1/1000 sample of the 1960 census provides the necessary information for evaluating the P_{ij} along with a large and representative sample from which to generalize the results. Its primary disadvantage is that its data are now seven years old. While this may not seriously impair the value of the study for comparison among the P_{ij}, it does reduce the interest one might have in what the various measures indicate about poverty as we are faced with it today. It is hoped that any improvements in our measures of poverty resulting from the analysis here can be applied to more timely data in the near future.

Recognizing that each of the 15 measures of poverty will come up with a different total amount of poverty--some indeed are measured in different units--one needs a basis for comparison among them. By finding the sub-totals of P_{ij} for families and individuals classified by one or two characteristics, and dividing these by the grand total of P_{ij}, the percentage distribution among components of the population is produced. These distributions can be compared and are an important basis for evaluating the several alternatives. Denote by $p_{ij}(k)$ the percentage of total P_{ij} found in class k:

$$p_{ij}(k) = \sum_{t \epsilon k} P_{ij}(t) \Big/ \sum_{\text{all } t} P_{ij}(t)$$

(The notation $\sum_{t \epsilon k}$ denotes summation over all t belonging to the k^{th} group).

Another sort of measure often used to assess the severity of poverty is "incidence,"* a per capita measure, and "relative incidence," the level of per capita poverty in some sub-group relative to its level for the general population. Denote by $\rho(k)$ the fraction of the population falling in the k^{th} group:

$$\rho(k) = \sum_{t \epsilon k} n(t) \Big/ \sum_{\text{all } t} n(t) .$$

Now an indication of relative incidence can be obtained for poverty measured by P_{ij} by taking the ratio:

$$r_{ij}(k) = p_{ij}(k) \Big/ \rho(k) = \frac{\sum_{t \epsilon k} P_{ij}(t)}{\sum_{t \epsilon k} n(t)} \div \frac{\sum_{\text{all } t} P_{ij}(t)}{\sum_{\text{all } t} n(t)}$$

If $r_{ij}(k)$ is greater than one, then incidence of poverty measured by P_{ij} is greater in the kth group than in the general population, and conversely if $r_{ij}(k)$ is smaller than one. In the tables which follow r_{ij}'s will not be calculated, but the ρ's will be provided for each classification so that the r_{ij} can be calculated by the reader.

Table 2 displays the distribution of poverty between the white and non-white parts of the population according to each of the 15 different measures of poverty. Also shown are the several grand totals for the P_{ij}. It will be noted that all measures indicate incidence rates for non-whites more than twice those for the general population. Looking more closely, one finds that the non-white share and relative incidence falls sharply when the threshold is increased by 50%. Compare P_{1j} with P_{2j} and P_{3j} with P_{4j}. This is simply explained by the fact that unlimited increases in the the threshold would eventually include all the population, and the shares would necessarily approach the P's. Aside from that variation, the measures are very similar in their distribution by race. The geographical thresholds yield a somewhat smaller non-white share, especially for the "gap" type measure, but no drastic change is induced.

Table 3 displays the distribution of poverty by family type for a selected group of four measures, along with the basic population distribution. P_{2j} and P_{4j} ($j = 1,2,3$) were eliminated since they generally showed regression from P_{1j} and P_{2j} respectively toward ρ as was noted in Table 2. Among the "head-count" measures P_{ij} ($j = 1,2,3$), there was very little variation by threshold function. Consequently only the distribution for P_{13} is shown. In the case of the "gap" measures, P_{32} (shown) showed more of the poverty among husband-wife families and less among individuals than did P_{31} or P_{33} (shown). Again, the P_{5j} were very similar and only P_{53} is shown. As compared to the head count and disutility measures, the gap measures show less poverty in husband-wife families and more among individuals. Of total P_{33}, 22.3% is found among primary individuals comprising 4.6% of the population, as compared with 9.5% and 11% for P_{13} and P_{53} respectively. Both the gap and disutility measures show almost 20% of the poverty among female-headed households, compared to 16.6% for the head-count measure P_{13}. Finally, it is interesting to note that the incidence of poverty for young husband-wife families is above the population incidence as measured by P_{13}, but below it for the others shown.

Table 4 shows the distribution of poverty by gross occupational categories and work experience of the head. Distributions are shown for P_{13},

*Technically, prevalence is the appropriate term, but "incidence" has been given a currency that will be respected here.

P_{33}, and P_{53}. Since very little change was produced by variations in the threshold formula, tables are produced here only for the geographical thresholds. But given the threshold function, there are striking differences in the allocation of poverty between the Head-count (P_{13}), Gap (P_{33}), and Disutility (P_{53}) measures. Sixty-three percent of P_{13} poverty is found in households with a head possessing a definite non-farm occupation, in comparison with 58% for P_{53}, and only 54% for P_{33}. Only 15% of the gap-type poverty is found among farm occupations, compared to 17% for the P_{13}, and 18.5% for P_{53}. With regard to employment in 1959 (the year to which income data pertains), only 43% of all poor persons are in households headed by a person with less than a half-year of work, but 59% of the gap and 50% of the disutility is found in such households.

Table 5 shows the distribution of poverty by census region and by urbanization, with separate urbanization distributions for the North-East and South. The poverty measures P_{i1} ($i = 1,3,5$), which use the Orshansky thresholds, and P_{i3} ($i = 1,3,5$), which use the geographically revised thresholds, are shown. The expected reduction in the South's share of total poverty is shown for all three variations of the poverty function, with the sharpest reduction (from 49.5% to 35.9%) occurring in the gap measurement. The North-East and, to a much smaller extent, the West received the balancing increases in shares of poverty. It is, however, the South which remains the location of a disproportionate number of the poor even after a fairly radical adjustment of the threshold levels.

Turning to urbanization, it can be seen that the geographical thresholds serve to reduce the poverty share in rural and non-SMSA urban areas, with the share in central cities of SMSA's receiving the offsetting increase. The relative incidence in the rural areas is clearly the highest for the P_{i1} measures, but this picture is altered when geographical thresholds are used in P_{i3}. The center cities have the highest incidence for head count and gap measures and are not far behind the rural areas for the disutility measure. Note also that the urban parts of SMSA's outside the center city contain 30% of the population but only 9% of the poverty--a very low incidence rate.

Within the North-East, which received a substantial increase in its regional share by introduction of geographical thresholds, the shift in distribution by urbanization is toward the center cities of SMSA's. These cities now appear to have more than half of the poverty in the North East region--particularly if the income gap measure is used. Within the South, on the other hand, relatively little change in the distribution by urbanization is induced by the geographical thresholds. The rural areas remain the high-incidence areas and the location of more than half of the South's poverty--and 25% of the nation's, as measured by P_{53}.

The substantial shift of poverty out of all areas of the south induced by the geographical thresholds, coupled with the earlier finding of little change in the share for non-whites, suggests that the shift is largely explained by finding more poor Negroes in cities outside the South (especially the North East) and fewer in the South.

Each of the measures of poverty produces a grand total of poverty as shown in the last column of Table 2. These figures, together with some additional totals calculated in the process of adjusting the level of the geographical thresholds, enable one to calculate the elasticity of the totals with respect to changes in the threshold. The head-count measures each have an elasticity of around 1.4--e.g., a one-percent increase in all thresholds will increase the number of poor persons by 1.4%. The gap measures, in contrast, increase by 2.1 or 2.2% with a 1% increase in the threshold. The disutility measure has an elasticity of 1.2 and is thus the least sensitive of the three to variations in the level of the threshold.

Summary

Of the two basic changes in the poverty threshold function, only the geographical variant showed much consequence in terms of the distributions of poverty considered here. Indeed only the quite obvious and expected change in geographical distribution was noted for it. No doubt the age-structure variant would have produced an equally obvious shift in the age distribution of the poor (away from children), but it did not affect distributions examined here.

While neither of these changes in the threshold produced remarkable or surprising effects--perhaps <u>because</u> they didn't--it is important to consider carefully the implications of the effects they do have. Certainly the urgency and magnitude of the poverty problem in our large cities has impressed itself on everyone, including policy makers, perhaps beyond its importance as measured by the currently used measures. The geographical revision provides some support for our extra-statistical senses about the importance of urban, non-Southern, poverty. Although the consequences of the age-structure thresholds for the age distribution of poverty were not computed, it can be expected that the disproportionate share of poverty suffered by the young--according to current thresholds--would be somewhat reduced. And with that reduction, some of the concern about the next generation would be reduced (though certainly not eliminated).

The variations in the shape of the functions measuring poverty for a given threshold appeared to be of some importance for all of the distributions studied here. In view of these differences, and with an inclination in favor of some degree of convex (to the origin) nonlinearity, it would appear that further analysis--both theoretical and empirical--would be useful. The particular nonlinear function used here is only one of the possibilities, and not one that has been chosen for its demonstrable superiority over others with roughly similar shapes. But, having shown that such changes can make an appreciable difference, it becomes doubly important to investigate the alternatives more fully.

As mentioned in the introduction, the measures applied here are all limited to current money income as the indicator of economic status. More comprehensive measures of the level of

command over goods and services are desperately needed, and may be available in the near future. Most of the basic ideas introduced above would be fully applicable to a more adequate measure of economic level. Thresholds could be defined in terms of such a measure, and the rest of the analysis could be carried out without change.

Table 1: Geographical Equivalence Index, I(Region, Place)

	No. East	No. Central	South	West
Over 1 million	1.500	1.275	1.050	1.200
.25 to 1.0 million	1.500	.975	,900	1.200
.05 to .25 million	1.125	.975	.900	1.050
2,500-50 thousand	1.125	.975	.900	1.050
Under 2500 & Rural Non-farm	1.125	.975	.825	1.050
Rural Farm	1.012	.878	.742	.945

Table 2: Distribution of Poverty by Race

	Type of Measure	Percentage Distribution by: White	Non-White	Total Absolute Measure
Total population	ρ	89.1	10.9	172.2 million persons
Number below threshold:	P_{11}*	72.3	27.7	37.2 million persons
	P_{12}	72.2	27.8	38.9 million persons
	P_{13}	73.1	26.9	39.1 million persons
Number below 1.5 times threshold:	P_{21}	78.9	21.1	65.3 million persons
	P_{22}	79.2	20.8	68.1 million persons
	P_{23}	79.7	20.3	69.4 million persons
Income gap below threshold:	P_{31}	72.2	27.8	$13.75 billion
	P_{32}	71.5	28.5	13.89 billion
	P_{33}	74.1	25.9	14.55 billion
Income gap below 1.5 times threshold:	P_{41}	75.4	24.6	$33.79 billion
	P_{42}	75.2	24.8	34.81 billion
	P_{43}	77.1	22.9	36.66 billion
Disutility function**	P_{51}	71.8	28.2	133.6 million disutility units
	P_{52}	71.8	28.2	137.4 million disutility units
	P_{53}	72.8	27.2	137.0 million disutility units

*The second subscript denotes the threshold function as follows: if 1, the Orshansky approximation (1) above; if 2, the age-structure threshold (3) above; if 3, the geographical threshold (4) above.

**Equals zero above 1.5 times threshold.

Table 3: Distribution of Poverty by Family Type

Type of Measure	P_{13}	P_{32}	P_{33}	P_{53}	ρ
Type of Family:					
Husband-wife					
Head under 25 years	4.3	3.1	3.3	3.7	3.9
Head 25 to 64 years	56.9	46.9	42.3	54.3	74.7
Head 65 or over	10.2	11.4	10.2	9.0	7.0
Male head without spouse	2.5	2.6	2.5	2.4	2.1
Female head without spouse	16.6	19.9	19.4	19.6	7.7
Primary Individual					
Under 65	3.9	7.0	9.6	4.9	2.8
65 or over	5.6	9.1	12.7	6.1	1.8
TOTAL	100.0	100.0	100.0	100.0	100.0

Table 4: Distribution of Poverty by Work Experience in 1959 and Class of Worker

	Weeks Worked:	0	1-26	27-47	48-52	TOTAL
	Class of Worker					
ρ	Farm	.44	.67	1.00	5.15	7.26
	White-collar	1.30	1.24	2.70	26.34	31.58
	Blue-collar	3.18	3.70	9.04	35.73	51.65
	Other	6.55	.28	.47	2.21	9.51
	TOTAL	11.47	5.89	13.21	69.43	100.00
P_{13}	Farm	1.31	2.26	2.73	10.51	16.81
	White-collar	2.31	2.06	1.90	6.26	12.53
	Blue-collar	8.08	9.06	11.85	21.51	50.50
	Other	17.37	.77	.75	1.27	20.16
	TOTAL	29.07	14.15	17.23	39.55	100.00
P_{33}	Farm	1.59	2.34	2.34	8.46	14.73
	White-collar	3.71	2.42	1.56	4.77	12.46
	Blue-collar	10.36	9.83	8.68	13.13	42.00
	Other	27.79	1.14	.85	1.03	30.81
	TOTAL	43.45	15.73	13.43	27.39	100.00
P_{53}	Farm	1.60	2.63	2.91	11.40	18.54
	White-collar	3.04	1.95	1.54	6.35	12.88
	Blue-collar	9.08	8.92	9.68	17.30	44.96
	Other	20.93	.83	.73	1.11	23.60
	TOTAL	34.65	14.33	14.86	36.16	100.00

Table 5: Distribution of Poverty by Region and Urbanization

Type of Measure	P_{11}	P_{31}	P_{51}	P_{13}	P_{33}	P_{53}	ρ
Region:							
North East	15.6	16.2	15.3	21.9	27.2	20.9	24.9
North Central	23.3	23.2	23.6	23.7	23.8	24.0	28.9
South	49.9	49.5	50.2	42.0	35.9	43.1	30.6
West	11.2	11.1	10.9	12.4	13.1	12.0	15.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Urbanization:							
Rural	45.9	43.9	47.6	42.6	38.0	44.8	30.2
Non-Metrop.-Urban	19.6	20.4	18.6	18.6	17.9	17.6	19.0
Fringe of Met. Area	8.9	8.9	8.9	8.9	8.8	9.0	19.9
Center City of Met. Area	25.6	26.8	24.9	29.9	35.3	28.6	30.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North-East Only							
Rural	24.0	22.3	23.5	19.8	17.3	20.8	19.3
Non-Metrop.-Urban	15.2	15.0	14.8	13.4	11.3	12.9	14.0
Fringe of Met. Area	16.9	17.2	18.3	14.8	12.8	16.1	30.2
Center City of Met. Area	43.9	45.5	43.4	52.0	58.6	50.2	36.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
South Only							
Rural	55.6	55.0	57.9	55.5	53.9	58.0	41.5
Non-Metrop.-Urban	21.1	22.0	19.7	21.7	22.8	19.9	22.3
Fringe of Met. Area	5.0	4.6	4.6	4.5	4.3	4.2	11.7
Center City of Met. Area	18.3	18.4	17.8	18.3	19.0	17.9	24.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Footnotes

[1] See Harold W. Watts, "An Economic Definition of Poverty" (Discussion Paper No. 5, Institute for Research on Poverty, 1967), and Burton A. Weisbrod and W. Lee Hansen, "Assessing Economic Welfare of Consumer Units Through a Merging of Income and Net Worth" (University of Wisconsin, unpublished, July, 1967).

[2] Morton S. Baratz and William C. Grigsby, in association with Martin Rein, Conceptualization and Measurement of Poverty (Institute for Environmental Studies, University of Pennsylvania, July, 1966).

[3] B.L.S. Bulletin, 1966, 1570-5.

[4] See "Estimating Equivalent Income or Budget Costs by Family Type," Monthly Labor Review, November 1960, Reprint No. 2335, and Harold W. Watts, "The Iso-Prop Index: An Approach to the Determination of Differential Poverty Income Thresholds," The Journal of Human Resources, Vol. II, No. 1, Winter, 1967.

[5] See Watts, loc. cit.